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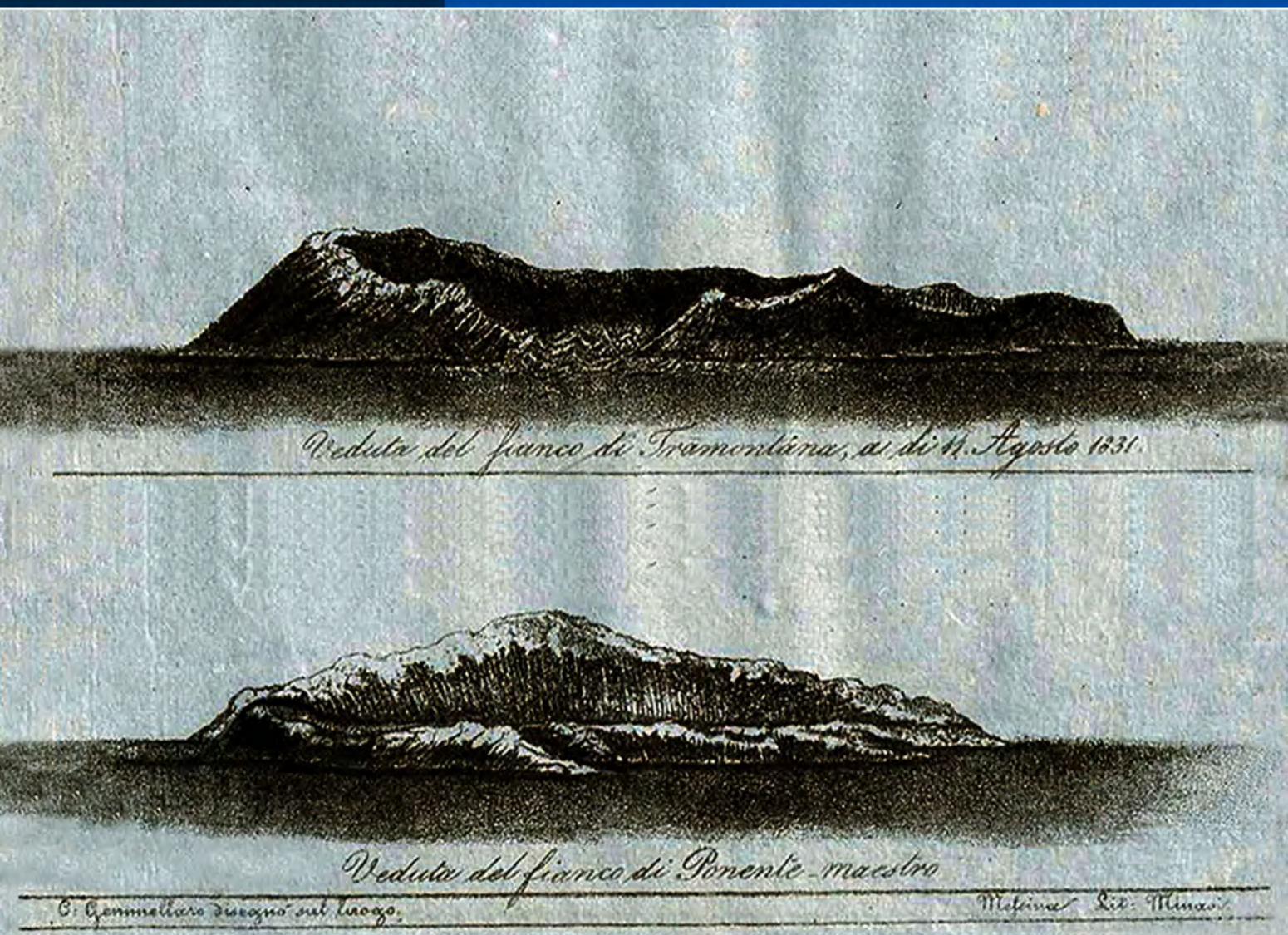
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MONOGRAPH

Ignazio Sparacio

**The contribution of the Sicilian naturalists
to the knowledge of circumsicilian islands
during the 19th century**



Ferdinandea Island, Sicilian Channel, Italy (Carlo Gemmellaro, 1831)

The contribution of the Sicilian naturalists to the knowledge of circumsicilian islands during the 19th century

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ABSTRACT

The 19th was a century of great cultural and scientific innovation. Sicily, despite the numerous political and social problems, was not found unprepared to accept and apply all the new demands that were spread from Europe throughout the world. The Sicilian scientific environment, in particular, had a great development and achieved excellent results in all sectors, weakening the original thrust, until it almost completely disappeared, in the early 20th century. In this work only one aspect of this cultural commitment is represented: the contribution of Sicilian naturalists to the study of the circumsicilian islands. Pietro Calcara, already in the early 19th century, began a preliminary and systematic study of all the circumsicilian islands. Other authors devoted themselves only to some topics that interested these islands: Carlo Gemmellaro, for example, who studied the phenomena related to the appearance of the Ferdinandea island and, in other fields of naturalistic research, Andrea Aradas, Francesco Minà Palumbo, Agostino Todaro, Monterosato, Antonio De Gregorio, Gaetano Platania and Giuseppe Zodda. In addition, Giuseppe Riggio, Teodosio De Stefani-Perez, Luigi Failla Tedaldi and Enrico Ragusa studied, from the entomological point of view, only some of these islands with excellent results. Luigi Benoit promoted a systematic exploration of the circumsicilian islands for the study of terrestrial molluscs - and, with the crucial help of Domenico Reina, he improved their malacological knowledge by also describing numerous new taxa; Michele Lo Jacono-Pojero, participating directly in the research, also described numerous new taxa of vascular plants for the Pelagic Islands and the Aeolian Islands and, finally, Enrico Pirajno devoted himself to the naturalistic study of the Aeolian Islands, failing to publish, however, a relevant part of the results obtained. Brief biographical notes and an annotated list of their works on the circumsicilian islands are provided for all these main authors. A specific “Appendix” also includes all the works on these islands carried out by other authors, Sicilian and non-Sicilian, throughout the 19th century. In the conclusions, brief considerations are exposed on the end of Sicilian naturalistic culture of the 19th century and observations on the current and future situation.

KEY WORDS

Circumsicilian islands; Sicilian naturalists; biodiversity; taxonomy; culture; Italy.

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INTRODUCTION

The 19th century represented, in the history of mankind, one of the periods of greatest development of scientific culture. All the knowledge acquired in the previous centuries were

used and amplified, in a few decades, to improve what was known until then and to realize new studies and discoveries. In 1877, Emanuele Paternò di Sessa, holder of the chair of General Chemistry at the University of Palermo, inaugurated the academic year with a report with the significant

title “Il Secolo della Scienza [The Century of Science]” (Ingraiti, 1987).

“*A questi movimenti la Sicilia, seppure a volte in ritardo, non rimane estranea* [To these movements Sicily, although sometimes late, does not remain extraneous]” (Liotta, 1987a). The 19th century, “*secolo dei Lamarck e dei Cuvier, esordi in Sicilia con grande operosità nelle scienze naturali* [(the) century of Lamarck and Cuvier, debuted in Sicily with great industriousness in the natural sciences]” (Doderlein, 1869–1874).

In fact, Sicily (Fig. 1) was not found unprepared to receive, assimilate and improve all the instances of the new scientific and naturalistic culture mostly coming from Europe. Numerous authors, such as Casini (1985), Liotta (1987a) and Buttitta (1987), retracing the history of Sicily in the centuries before 1800, point out how this was possible.

It began from the great cultural movement (philosophical, astronomical, naturalistic, mathematical, literary) created by Frederick II in the thirteenth century and continued, in the following centuries, with figures of great

international importance as the Brancas (father and son) who laid the foundations for modern plastic surgery in the fifteenth century, Francesco Maurolico (mathematician and astronomer) and Giovanni Filippo Ingrassia (doctor) in the sixteenth century. Of great importance is the experience of the University of Messina in the 17th century, one of the best centers for the spread of Italian Galileanism and where Pietro Castelli realized the first systematic Botanical Garden “Hortus Messanensis”. Borelli (between 1635 and 1670), Paolo Boccone, who published botanical works at Oxford (1674), and Malpighi (around 1670) made important scientific discoveries; Giovan Battista Odierna examined the eye of the fly through the microscope; Father Francesco Cupani (late 1600 early 1700) studied in the Hortus Catholicus of Misilmeri; Father Silvio Boccone (1633–1704) was in constant contact with the European scientific world and many others (see also the work of Domenico Scinà in Nastasi, 1987).

In addition to them, in those years, Academies, cultural institutions, scientific and literary



Figure 1. Geological map of Sicily (1877–1881). It was the first of the entire Geological Map of Italy, carried out by engineers L. Mazzetti, A. Di Stefano, R. Travaglia, E. Cortese, M. Anselmo, and, particularly, Luigi Baldacci (Baldacci, 1886) under the scientific direction of Gaetano Giorgio Gemmellaro.



Figure 2. Stagnone of Marsala and Aegadian Islands (by G. Martinon, 1812 in La Duca, 1975 and Agnesi et al., 1993).

magazines developed and contributed to spread and raise the cultural level in Sicily, even in a social context characterized by strong contradictions, which suffered the Spanish domination and the courts of the Inquisition.

Among the numerous magazines and journals, often of short duration, we should mention: *Il Giornale Letterario*, *Giornale di Scienze Lettere e Arti per la Sicilia*, *Gazzetta dei Saloni*, *L'Occhio*, *La Farfalla*, *Il Contemporaneo*, *Giornale della Commissione d'Agricoltura e Pastorizia in Sicilia*, *Effemeridi scientifiche e letterarie per la Sicilia*, *Il Maurolico*. Furthermore, even simple printing houses printed works and monographs on every subject: historical, philosophical, scientific, literary.

Numerous were the studies and the publications, between the end of 1700 and the early

1800, that described and told, sometimes with emphasis, everything about this environment and their protagonists (Sestini, 1776; Ferrara, 1813; Aradas, 1844–45; Gemmellaro, 1833a). Even new philosophical-scientific instances that occurred in this period such as ideologism and evolutionism (Massa, 2009; Pasta, 2009) were received by Sicilian naturalists without any particular difficulty, just like in the remaining parts of Italy and Europe (Sichel, 1987): a progressive acceptance after an initial distrust.

At the same time, Sicily was the object of studies and the privileged destination of numerous naturalistic expeditions by Italian and European scholars (i.e., Denon, 1788; Houël, 1782–1787; Rafinesque Schmaltz, 1810; Cockburn, 1815; Sayve, 1822; Lefebvre, 1827; Power, 1842;



Figures 3–5. Woodcut engravings by Leonardo Fea on photographs taken by Captain D’Albertis in 1876 (from book’s notes not included in the final version of the book of D’Albertis, 1878). Fig. 3 (above): Lipari. Fig. 4 (center): Pantelleria. Fig. 5 (below): Lampedusa (photos courtesy of R. Poggi).

Ghiliani, 1842; Mann, 1859; Bellier, 1860; Rottemberger, 1870; Steck, 1887, ...) (Figs. 2–5).

From the first decades of the 19th century, therefore, the Sicilian scientific and naturalistic world, at every level, began a period dense of studies and discoveries, in touch with the main cultural centers of Europe; this latter continued throughout the century and that will be studied and documented in the following years (and up to our days) in various conferences and initiatives (Rossitto, 1984; Nastasi ed., 1985; Liotta ed., 1987).

All this has also occurred in the contribution that Sicilian naturalists have given to the knowledge of the biodiversity heritage of the circumsicilian islands.

These minor islands have always been the object of studies and curiosity both in the scientific and literary field with several works realized even throughout the 18th century (for example Stagno, 1759; Pignonati, 1762; Dolomieu de, 1783).

However, only during the 19th century the circumsicilian islands were systematically studied. It should be considered how most of the naturalistic studies of that time, starting with Darwin (1859), valued islands, even small ones, as laboratories of evolutionism and of important phenomena of speciation.

In the present paper are synthesized the main works of Sicilian authors concerning these islands (see also Baccetti et al., 1995). Other works on the same subject, equally useful to the knowledge of these localities, together with those realized by non-Sicilian authors, are listed below (Appendix).

The period of reference remains the whole 19th century, except for some works published in the early 20th century and reported here for continuity of study.

THE SICILIAN NATURALISTS AND THE STUDY OF THE CIRCUMSICILIAN ISLANDS

CARLO GEMMELLARO

Carlo Gemmellaro (Fig. 6) was born in Nicolosi, on November 4 (or 14), 1787 from a family of scholars, mainly dedicated to the study of volcanic phenomena of Etna, which included his uncle Raimondo Gemmellaro (1738–1792) and his brothers Giuseppe and Mario. In fact, as Fabiani

(1933) writes: “[I Gemmellaro erano] *noti nel mondo scientifico non soltanto per le descrizioni di varie eruzioni dell’Etna e per le loro vedute geniali sul meccanismo eruttivo e sulla genesi e struttura del grande vulcano, ma anche per la signorile ospitalità che esercitavano verso gli studiosi che si recavano a visitare la celebre montagna* [The Gemmellaros were known in the scientific world not only for the descriptions of various eruptions of Etna and for their ingenious views on the eruptive mechanism and on the genesis and structure of the great volcano, but also for the distinguished hospitality they exercised towards the scholars who went to visit the famous mountain]”.

Carlo will follow the scientific and naturalistic tradition of the family followed by his son Gaetano Giorgio (Catania, 25.2.1832 - Palermo, 16.3.1904), scholar of international level and one of the greatest exponents of geology and paleontology of Sicily, and his nephew Mariano (1879–1921), which was professor of Geology and also Director of the Institute and Museum of Geology of Palermo (1918).

Carlo Gemmellaro studied at the University of Catania and, as soon as he graduated in Medicine and Surgery (1808), he was hired as surgeon of the British Army stationed in Messina. He took



Figure 6. Carlo Gemmellaro.

advantage of this assignment to make numerous naturalistic visits in almost all the Mediterranean Sea, including the volcanic islands of the Aeolian Archipelago. He also knew the English scientific environment improving his studies in Medicine in London and was friends geologists and volcanologists such as James Hutton, John Playfair, Humphry Davy and James Hall or the botanist James Edward Smith.

As Carapezza M. (1988) reports “... *La quantità di cognizioni di Carlo in botanica, in zoologia, in geologia, in medicina è impressionante. E' proprio una sorta di enciclopedia, viaggiò tutta la sua vita* [The amount of Carlo's knowledge in botany, zoology, geology and medicine is impressive. It is really a kind of encyclopedia, he traveled all his life]”.

From 1813 to 1817 he is still a doctor on board of the English military vessels of the fleet serving on the Atlantic Ocean and in the Mediterranean Sea, participating also in the battle of Waterloo (18 June 1815) and improving his naturalistic knowledge in the many European places he visited.

Returned to Catania, practiced medicine and continued his naturalistic studies applied mainly to the territory of Etna and Monti Iblei succeeding in creating an important school of Geology. He was the founder in 1824 of the Academy Gioenia of Natural Sciences and was appointed professor of Natural Sciences, then of Geology and Mineralogy in 1830 and, since 1852, only of Geology. He also contributed to the realization of the University Botanical Garden, a Cabinet of Natural History and established, in 1832, the Meteorological Observatory, providing it with a rain gauge of his own invention. He was commissioned to study the phenomena related to the appearance of Ferdinandea Island in the Sicilian Channel (1831b, 1834) (Fig. 7). He became rector of the University of Catania in 1847.

Carlo Gemmellaro also created his own museum with naturalistic finds, a collection of coins, paintings, prints and an important library (Aradas, 1870).

He studied above all geology (Gemmellaro, 1833b, 1840) and volcanology of the Etna (Gemmellaro, 1858, 1859–1860) reaching important observations on this territory, like those on the Valle del Bove (together with his brother Mario) originated from the collapse of an ancient volcanic

cone (Gemmellaro, 1836, 1837). He argued that fossils could be used to distinguish and date the geological formations (Gemmellaro, 1833b) but was also a convinced creationist and anti-evolutionist (Gemmellaro, 1857).

He was engaged in various sectors of public life and wrote also on agriculture, art, literature, local history, on the Risorgimento and on the social and economic development of Catania thanks to the realization of a new port (Gemmellaro, 1835a).

Gemmellaro believed that many problems of his land were due to the bad political management of the Bourbons, thus going from a detached disinterest towards the government to progressively distancing from it to support the Revolutionary Committee of 1848 that took office in his University and supporting his sons Ferdinando and Gaetano Giorgio who fought with Garibaldi in Sicily. Gaetano Giorgio, who graduated in medicine like his father and specialized in ophthalmology in Naples, was at that time in the Canary Islands to chart the geological map of those islands on behalf of the British government. As soon as he knew that his brother Ferdinand was organizing a military militia to support Garibaldi, he left everything and returned to Catania to fight. He was full professor and rector of the Palermo university and created the first university collection of geology and paleontology by founding, in 1866, the museum which today bears his name (Agnesi, 2018).

Carlo Gemmellaro died in Catania on October 22, 1866. There are numerous biographies and various eulogies made on the life of Carlo Gemmellaro (see for example Aradas, 1870; Brancaleone, 1866; Di Franco, 1933; Ogniben, 1967; Cristofolini, 1987, 2005, 2017; Bentivegna, 1989; Cucuzza Silvestri S., 1989; Corsi, 2000). As Cristofolini (2017) summarizes very well: “*Carlo Gemmellaro visse ben inserito nel contesto sociale e culturale del suo tempo: non propugnò idee rivoluzionarie, considerando quasi con disgusto le prime intuizioni evoluzioniste ... Tuttavia non le rigettò in blocco ... Si dedicò con passione, tenacia e sacrificio (anche economico), da borghese colto e illuminato, alla ricerca.... Di lui oggi resta, oltre ad un patrimonio di osservazioni originali e di intuizioni e interpretazioni su fenomeni geologici tuttora attuali, l'esempio di un ricercatore di grande onestà intellettuale, come traspare da tutta la sua opera e in particolare dall'Addio* [Gemmellaro,

**RELAZIONE
DEI
FENOMENI DEL NUOVO VULCANO**

**SORTO DAL MARE FRA LA COSTA DI SICILIA
E L'ISOLA DI PANTELLERIA
NEL MESE DI LUGLIO 1831**

LETTA

**NELLA GRAN SALA DELLA R. UNIVERSITA'
DEGLI STUDI IN CATANIA
IL DI' 28 AGOSTO 1831**

DAL

DOTT. CARLO GEMMELLARO

**PROFESSORE DI STORIA NATURALE
NELLA STESSA UNIVERSITA'
SEGRETARIO GENERALE DELL'ACCADEMIA GIOENIA
SOCIO CORRISPONDENTE
DELL'ACCADEMIA SENKENBERGIANA DI FRANKFORT SUL MENO
DELLA REALE PELORITANA DI MESSINA
DELLA VETERAVIANA DI HANAU
E DELL'AGRARIA DI PESARO**

**CATANIA
NE' TORCHI DELLA REGIA UNIVERSITA'
CARMELO PASTORE impresse**

1831

Figure 7. Title page of Carlo Gemmellaro's paper on Ferdinandea Island (Gemmellaro, 1831b, modified).

1865: Un addio al maggior vulcano d'Europa] *che può essere considerato come il suo testamento spirituale* [Carlo Gemmellaro lived well included to the social and cultural context of his time: he didn't advocate revolutionary ideas, considering almost with disgust the first evolutionist intuitions... However, he didn't reject them as a whole... He devoted himself with passion, tenacity and sacrifice (also economical), as a cultured and enlightened bourgeois, to the research.... Of him today remains, in addition to many of his original observations, insights and interpretations of geological phenomena still relevant, the example of a researcher of great intellectual honesty, as reflected in all his work and in particular by the Farewell (Gemmellaro, 1865: A farewell to the largest volcano in Europe) that can be considered as his spiritual testament]”.

Sopra l'isola vulcanica di Pantelleria e sopra le osservazioni ivi fatte dal socio corrispondente Conte F. Beffa Negrini (1831a)

[Above the volcanic island of Pantelleria and above the observations made there by the corresponding partner Count F. Beffa Negrini (1831a)]

In this work, Carlo Gemmellaro, in the session of the Gioenia Academy of Natural Sciences in Catania on 23 April 1829, reports some geological and volcanological observations made by Count F. Beffa Negrini on the island of Pantelleria (Gemmellaro, 1831a). Gemmellaro, after a general introduction on the scientific value of volcanic islands and a summary of the main circum-sicilian islands of volcanic nature, reports the rocks collected on the island of Pantelleria by Count F. Beffa Negrini and illustrates their main morphological and chemical characteristics.

Relazione dei fenomeni del nuovo vulcano sorto dal mare fra la costa di Sicilia e l'isola di Pantelleria nel mese di luglio 1831 (1831b, 1834)
[Report of the phenomena of the new volcano risen from the sea between the coast of Sicily and the island of Pantelleria in July 1831 (1831b, 1834)]

In 1831, the island Ferdinandea, preceded by intense seismic activity, appeared on July 19 above the surface of the sea in the Channel of

Sicily. It reached an area of about 4 km² and 65 m in height. With the end of the initial underwater eruptive episode, and due to being composed mainly of tephrite, an eruptive rock sensitive to waves, the Ferdinandea island suffered a rapid erosion and disappeared on December 16 of that year.

The interest of the scientific world for this phenomenon was considerable in those years (see also Prévost, 1831). However, with the disappearance of the Ferdinandea Island (Graham Island in English and île Julia in French) waned the international disputes and political controversies caused by the appearance of these new territories.

Currently, a volcanic platform remains located 16 nautical miles (30 km) from the coast of Sciacca and 29 nautical miles (55 km) from the island of Pantelleria (37°10' N 12° 43' E) and 6–7 meters below sea level.

Carlo Gemmellaro, by direct will of the Bourbon government, was tasked with going to such places to verify and study this phenomenon (Figs. 8–10). In the detailed report that he compiled, Gemmellaro (1831b, 1834) carries out an extensive introduction on the phenomenon of marine volcanic eruptions citing numerous similar cases that occurred in the Mediterranean Sea and since antiquity (Pliny, Aristotle, Seneca) as well as in other parts of the world and in more recent times. Then, Gemmellaro summarizes the information received from citizens and fishermen of Sciacca about this event. He talks about the experiences of other witnesses such as Mr. Swinburne, captain of the English bastion the Rapid, and Captain Senhouse of the English cutter Hind. He reports what he saw at the place of the phenomenon by his “*amico e collega*” [friend and colleague]” Prof. Hoffmann of Halle, who was by chance in Palermo and went immediately to the place and met Gemmellaro in Agrigento on August 8.

On the base of these testimonies, the beginning of all the volcanic activities that have given place to the birth of this island was established in the day 28 June 1831 at 21:15 hours.

The night of August 10, Gemmellaro with his brother Antonino and the Dominican Father Gallo went with a sailing boat to the Secca del Corallo, 55 miles from Sciacca. On the place of the eruption (“*Finalmente questa isoletta...* [Finally this little island]), Gemmellaro begins all the technical



Original drawings by C. Gemmellaro (1831b) showing the activity (Fig. 8) and the morphology (Fig. 9) of the Ferdinandea Island. Figure 10 drawing by Constant Prévost.

observations of the case, observing how the topography of the new island is destined to change in relation to the scoriae that accumulate and naming it “Island of Ferdinand II”.

Gemmellaro also cited in the work other testimonies of people who saw the island after his trip and the work of Prevost (1831) who, in October, found the island of different shape from the initial one. At the end of the work, in the appendix, he reports letters, documents and various news about the formation of the new island.

Successively, Gemmellaro (1834) indicates in December 16, 1831 the date of the final disappearance of the island Ferdinandeia of which will remain only a “*secca pericolosa a poche braccia sotto il livello del mare* [dangerous shoal a few fathoms below sea level]”.

Sul basalto decomposto dell'isola dei Ciclopi (1845)
[On the decomposed basalt of the island of Cyclopes (1845)]

In this publication, Gemmellaro examines the volcanic soils that forms the island of Ciclopi. He gives the name of cyclopite to this type of decomposed basalt (see also Ferrara, 1813).

The protected marine area of “Isole dei Ciclopi” (Acitrezza, Catania) is a small archipelago consisting of three bigger islands (Lachea, Faraglione Grande e Faraglione Piccolo) and four rocks. According to the legend, the cyclops Polyphemus threw these rocks during the escape of Ulysses.

PIETRO CALCARA

Pietro Calcara (Fig. 11), was born in Palermo on February 16, 1819 and got, very young, a degree in Medicine. In 1838, he was appointed substitute conservator of the “Cabinet of Natural History of Palermo” devoting himself to the reorganization and expansion of geological collections university.

He also occupied numerous administrative positions as Secretary of the Commission of Agriculture and Livestock, “Guardia Generale Sopranumero di Acque e Foreste” (1844), Director of the first class of the Institute of Encouragement and Director of the Schools of Mutual Teaching (1850). In 1842 he was appointed Professor of Zoology and Mineralogy, and in 1854, the year of

his death, he was appointed Director of the Cabinet of Natural History.

He made multiples studies in zoology, botany, geology, paleontology and mineralogy, exploring vast areas of Sicily, such as the Madonie, the coast between Marsala and Trapani, the surroundings of Nicosia, the mountains of Palermo. He also made study trips to almost all the circumsicilian islands such as Ustica, Aeolian Islands, Lampedusa, Linosa and Pantelleria, at that time almost unknown from the naturalistic point of view, providing the first scientific basis for a better knowledge of them (Figs. 12–22).

Calcara was one of the first and major representatives of the so-called “Sicilian encyclopedism” which characterized the whole 19th century and which found in Francesco Minà Palumbo of Castelbuono, his friend and colleague, another of its greatest representatives.

Pietro Calcara died in Villabate, near Palermo, on August 24, 1854 at the age of thirty-five years. Lancia (1854), in his excellent biography, describes Calcara, in the last year of his life, as having grave pulmonary problems (from the description it would seem tuberculosis). While he was convalescing in the countryside, a cholera epidemic broke out and “*in lui fu sì rapido e atroce, non trovando virtù di reazione, da spegnerlo in poche ore la sera del dì 24 agosto, in che ben altri 230 perivano* [in him it was so rapid and atrocious, finding no virtue of reaction, to extinguish him in a few hours on the evening of August 24, when 230 others perished]”.

Descrizione dell'isola di Ustica (1842)
[Description of the island of Ustica (1842)]

Calcara, already from this first work, sets as complete as possible the description of “his” circumsicilian islands. The study (Figs. 12, 13) is divided into six main chapters, in which is minutely described the topography, geognosy, geology, vegetation, animals and anthropology. In particular, a list of fossil species and the physical description of all the rocks with their places of discovery is provided.

In the chapter on the flora of Ustica is provided a list of about 224 vascular plants with their topographic indications.

For the fauna, Calcara reports a long list of terrestrial and marine molluscs, several insects (26



Figure 11. Pietro Calcara.

species), crustaceans (18 species), fish (20 species) and birds (18 species). For crustaceans, fish and birds, in addition to the scientific name, the ones in dialect are also provided. For marine molluscs, Calcara specifies they were collected on the beaches of Cala S. Maria, of the Spalmatore and in that of the “scaro di barca”.

Talking about the inhabitants of Ustica (three thousand inhabitants) Calcara describes the main anatomical and medical characteristics; he reports the main cultivations that they carry out for the alimentary uses that are the wheat, beads, beans, peas, lentils, broad beans, grapes and prickly pears. Moreover, he reports how in Ustica the inhabitants are dedicated to the extraction of the soda after combustion of the plants of *Salsola soda* (family Chenopodiaceae, sub *Salsola sativa*) and use the resinous gum obtained from the lentisk as oil for illumination.

Calcara found in Ustica some new species reported below.

Ranunculus calcarae Tineo ex Guss.

In a note in the margin of the work, Calcara writes how this new species would be described later by V. Tineo (Gussone, 1844). The locality of discovery was

indicated as “*presso mezzogiorno nella strada che porta all'Oleastrolo* [near noon in the road leading to Oleastrolo]”. This taxon is currently considered synonymous with *R. trilobus* Desf. (Ranunculaceae) (Conti et al., 2005; Pignatti et al., 2017–2019).

Helix Usticensis Calcara, 1842

This species (Figs. 17, 19) is believed to be endemic to the island of Ustica and is currently known as *Cernuella (Xeroamanda) usticensis* (Calcara, 1842) (Gastropoda Geomitridae) (Bodon et al., 2021). The morphological study demonstrates (Manganelli et al., 2001) that *C. usticensis* can be distinguished from all the other *Cernuella* species (and similar genera) by the presence of a dart sac complex with basal vaginal outgrowth, inner sac with thin walls and large lumen, and a less-developed “dart-gun”. These authors, although they believe further study is needed, place it in the genus *Ichnusomunda* Giusti et Manganelli, 1998 (Welter-Schultes, 2012; Bank & Neubert, 2017; MolluscaBase, 2021). Populations morphologically similar to those of Ustica are reported for archipelago of La Galita off the northern coast of Tunisia (Pavon & Abbes, 2014).

Helix Nortoni Calcara, 1843

Endemic species of Ustica (Figs. 16, 18), described by Calcara (1843) after his trip to Ustica, locus typicus: Ustica (“*presso il mulino a vento* [near the windmill]) and Boschi di Calatafimi. In the latter locality actually lives a related species: *Oxychilus (Hyalocornea) canini* (Benoit, 1857). Current systematic position: *Oxychilus (Hyalocornea) nortoni* (Calcara, 1843) (Gastropoda Oxychilidae) (Riedel, 1973, 1980; Bank & Neubert, 2017; Bodon et al., 2021).

Buccinum granulatum Calcara, 1839

Calcara (1839) had previously described this species of marine mollusk as *Fusus granulatum*, which is currently considered synonym with *Chauvetia lefebvreii* (Maravigna, 1840) (Gastropoda Chauvetiidae) (WoRMS, 2021).

Osservazioni critiche al catalogo ornitologico del Gruppo di Malta, ed al quadro geografico ornitologico di Ant. Schembri, stampato nel 1843 in Malta (1844)

[Critical observations to the ornithological catalog of the Malta Group, and to the geographic ornithological framework of Ant. Schembri, printed in 1843 in Malta (1844)]

Critical observations to the ornithological catalog of the Malta (Schembri, 1843). This work (Calcara, 1844) is also cited by Doderlein (1869–1874).

Rapporto del viaggio scientifico eseguito nelle isole di Lampedusa, Linosa e Pantelleria ed in altri punti della Sicilia (1846a)

[Report of the scientific journey made in the islands of Lampedusa, Linosa and Pantelleria and in other points of Sicily (1846a)]

In this work, published in the journal “Il Contemporaneo”, Calcara reports on his long journey that took him to the islands of the Sicily Channel.

He left from Palermo with the Brigantine “Gandolfo” on May 24, 1846 and after “118” hours of favorable journey he reached Lampedusa. The 8th of June he went to Linosa with a small boat (“*leuto*”) whose sole purpose was to transport the correspondence. He returned to Lampedusa, with a sailing boat (“*sciabbecco Pantellaresco*”), the 15th of June at 21:00 p.m. He would leave for, and reach, Pantelleria due to tailwind about 24 hours later. In Pantelleria he stayed until the 8th of July when, with the boat used for the correspondence, he goes to Trapani. Here, he would go on excursions in the outskirts of the city, to Erice and Marsala, returning in Palermo the 20th of July.

Calcara describes the main anthropologic, geologic and botanical characteristics. At the end of the paper, he specifies that these descriptions are a brief summary, promising to provide in further detailed papers his observations, as he would do with the three monographs dedicated to each island visited.

Notizie sul Catalogo manoscritto dei Molluschi terrestri e fluviatili della Sicilia e descrizione di Helix Frivaldsky, Helix Linosae, Clausilia Lopedusae Calcara (1846b)

[News about the manuscript Catalogue of the terrestrial and fluviatile mollusks of Sicily and description of Helix Frivaldsky, Helix Linosae, Clausilia Lopedusae Calcara (1846b)]

This work was presented by Calcara (1846b) on the occasion of the 8th Meeting of Italian Scientists held in Genoa from September 14 to 29, 1846. In addition to some brief and generic information about the Catalogue itself, three new taxa collected by Calcara during his trip to the islands of Lampedusa, Linosa and Pantelleria are described (Calcara, 1846a).

Helix Frivaldsky Calcara, 1846

After the description in Latin, Calcara (1846b) notes: “*Abita nell’isola di Pantelleria. - Ho voluto dedicare questa specie al chiar. sig. dott. Emerico Frivaldsky distinto zoologo, e direttore del gabinetto di storia naturale in Ungheria* [It lives in the island of Pantelleria. - I wanted to dedicate this species to the distinguished zoologist Dr. Emeric Frivaldsky, and director of the cabinet of natural history in Hungary]” (Fig. 20). Current systematic position: *Marmorana (Murella) muralis frivaldskyi* (Calcara, 1846) (Gastropoda Helicidae) (Alzona, 1971; Beckmann, 1992; Bank & Neubert, 2017; Molluscabase, 2021) or *Murella muralis* (Bodon et al., 2021).

Helix linosae Calcara, 1846

Calcara (1846b) cites this new species for the volcanic cliffs of Linosa and Pantelleria (Fig. 23). Currently, in the absence of recent studies, this taxon is considered synonym with *Eobania vermiculata* (Müller, 1774) (Gastropoda Helicidae) (Beckmann, 1992; Cianfanelli, 2002; Bank & Neubert, 2017; Bodon et al., 2021) although it has also been considered its subspecies (Alzona, 1971).

Clausilia lopadusae Calcara, 1846

Discovered in the first voyage performed in the islands of the Sicilian Channel (Calcara, 1846a), *Clausilia lopadusae* was described in this work by Calcara (1846b) who notes: “*Questa distintissima specie abita in abbondanza nell’isola di Lampedusa* [This very distinct species lives in abundance in the island of Lampedusa]”. Calcara (1846b) correctly and intentionally uses the term “*distintissima*” to highlight the peculiar morphological characteristics of this new insular endemism (Fig. 21).

Clausilia lopadusae is type species of the genus *Lampedusa* Boettger, 1877 (Gastropoda Clausiliidae) endemic to the Pelagian and Maltese



Figure 12 (above). Calcara, 1842: title page of the work on Ustica Island (modified).

Figure 13 (below). Map of Ustica Island from Calcara (1842).

Islands with *L. lopadusae nodulosa* (Monterosato, 1892) endemic subspecies from Lampione Island, *L. imitatrix* (O. Boettger, 1879) from Filfla and Malta and *L. melitensis* (Caruana Gatto, 1892) from Malta. Recent molecular studies reaffirm the taxonomic and biogeographic value of this interesting group of species (Colomba et al., 2019).

Descrizione dell'isola di Lampedusa (1847a)
[Description of the island of Lampedusa (1847a)]

The description of the island of Lampedusa made by Calcara (1847a, b) is quite complete and detailed, divided into 15 chapters: Physical Geography, Meteorology, Hydrology, Oryctology, Paleontology, Geognosy, Geogony, Florula, Botanical Geography, Woods, Agriculture, Invertebrate Animals, Vertebrate Animals, Dominant Diseases, Civil History. The work concludes with a map of Lampedusa where drawings of *Helix cumiae*, *Clausilia lopadusae* and *Stapelia europaea* Guss are included (Fig. 14). In addition to the main information on Lampedusa reported in the various chapters, Calcara (1847a) describes the production of lime for local use (Oryctology: applications and uses of the minerals of Lampedusa), provides a list of six fossil marine molluscs (Paleontology), reports on the use of plants of Lampedusa, especially for medical purposes, of which he would later produce another work (Calcara, 1848b).

The vegetation of Lampedusa (Florula Lopadusana) is one of the most extensive chapters, which provides a list of about 280 species. With an asterisk are highlighted the species reported by Gussone in his previous works (Gussone, 1832–1834; 1839; 1844), while without an asterisk the plants found only by Calcara and with two asterisks those found by both authors. In the following chapter (Botanical Geography), Calcara makes an analysis of the biogeographical affinities of the flora of Lampedusa, citing *Diplotaxis scaposa* DC. (Brassicaceae) one of the first plants reported for Lampedusa (La Billardière, 1791–1812) present in Malta and Gozo according to Bartolucci et al. (2018), endemic to Lampedusa according to Pignatti et al. (2017–2019) and Brullo C. & Brullo S. (2020), *Crucianella rupestris* Guss. typical of maritime calcareous rocks, rare, with SE-Mediterranean distribution, Sicily, Lampedusa,

Malta and Libya (Pignatti et al., 2017–2019; Bartolucci et al., 2018), and many other plants including *Limonium intermedium* Guss. halophyte currently extinct in nature due to urbanization (Pasta, 2001; Bartolucci et al., 2018), surviving only in cultivation in the botanical gardens of Catania (Domina et al., 2015; Pignatti et al., 2017–2019).

Calcara also reports the characteristics of *Stapelia europaea* described by Gussone (1839), currently known as *Caralluma europaea* (Guss.) N.E.Br. subsp. *europaea* (Asclepiadaceae). This plant is a low perennial stem succulent forming mats by means of long stolons running underground distributed in South-eastern Spain, southern Italy (Linosa?, Lampedusa), Morocco, Tunisia, Libya, Egypt to Jordan. Bartolucci et al. (2018) consider it a valid species and also Pignatti et al. (2017–2019) but with a SW-Mediterranean range, in Italy limited only to Lampedusa. For this species, the most updated name would be *Apteranthes europaea* (Guss.) Plowes (Murbeck, 1898).

Also in the two following chapters (Boschi, Agricoltura), Calcara describes Lampedusa as a rather green island, covered with “*bassa e densa boscaglia ... più folta nella regione di ponente, e nei valloni* [low and dense brushwood ... thicker in the western region, and in the valleys]”.

For Invertebrates, he mentions 9 species of marine Crustaceans and 16 species of very common Insects. He provides a catalog of living marine and terrestrial mollusks among which he describes *Helix cumiae* and redescribes *Clausilia lopadusae*. Calcara put the drawing of these shells in the margin of the topographic map of Lampedusa.

Helix cumiae Calcara, 1847

Species endemic to Lampedusa where it is quite widespread (see also Giusti et al., 1995 and Cianfanelli, 2002). Calcara (1847a) gives a detailed description of the shell, describing the main morphological differences with related species and explaining the dedication of the name to “*Marcello Fardella Duca di Cumia Regio delegato per la colonizzazione delle isole di Lampedusa e Linosa*” (Fig. 22).

Current systematic position: *Trochoidea cumiae* (Calcara, 1847) (Gastropoda Geomitridae) (Cianfanelli, 2002; Bank & Neubert, 2017; Bodon et al., 2021).

Among the vertebrates, Calcara (1847a) reports several interesting presences in Lampedusa such as the sea turtle *Caretta caretta* (Linnaeus, 1758) and the terrestrial *Testudo graeca* “la quale mangia le foglie della Scilla maritima con sorprendente avidità [which eats the leaves of the *Scilla maritima* with surprising greed]”, but it is almost certainly *Testudo hermanni* Gmelin, 1789 (Corti et al., 1998; Masseti, 2002a). In addition, he reports as resident on the island the Crane (sub *Grux cinerea*), but it is almost certainly the Demoiselle Cranes, *Anthropoides virgo* (Linnaeus, 1758) (see La Mantia, 2001; Masseti, 2002b, 2016a, b), and, among mammals, the Deer, *Cervus elaphus* (probably introduced by humans, see Masseti & Zava, 2002) and the Monk Seal, *Monachus monachus* Hermann, 1779 (sub *Phoca vitulina*).

Applicazioni ed usi delle piante spontanee di Lampedusa (1848a)

[Applications and uses of the spontaneous plants of Lampedusa (1848a)]

Observations on the use of the spontaneous plants of Lampedusa.

Sulle condizioni geognostiche dell'isola di Ustica (1848b)

[On the geognostic conditions of the island of Ustica (1848b)]

Brief observations on the geognostic conditions of the island of Ustica.

Descrizione dell'isola di Linosa (1851a)

[Description of the island of Linosa (1851a)]

The description of Linosa (Calcara, 1851a, b) is divided into 11 main chapters, described in detail:

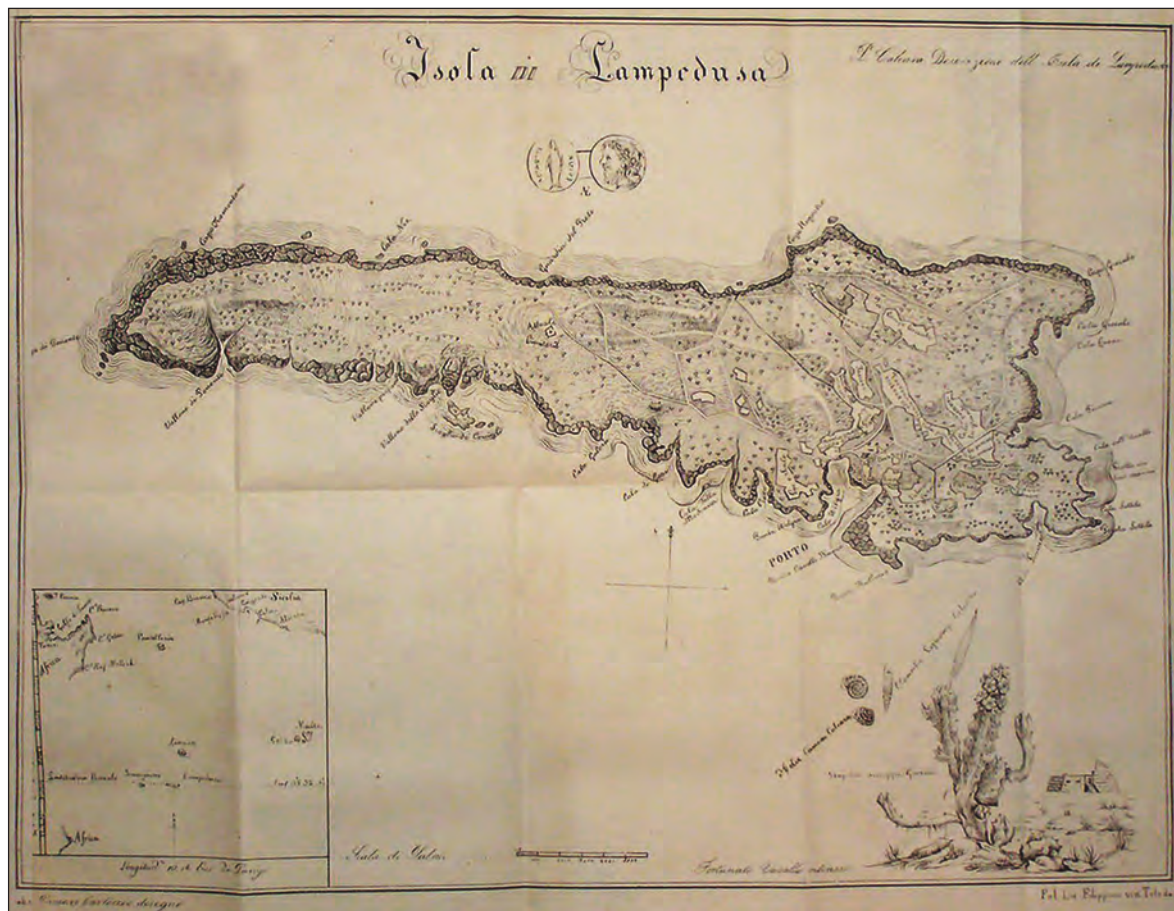


Figure 14. Lampedusa Island map from Calcara (1847a).

Physical Geography, Meteorology, Hydrology, Oryctology, Catalogue of rocks, Geognosy, Geogony, Florula of Linosa, Woods and Agriculture, Zoology and Civil History.

In particular, in the description of the flora of Linosa, Calcara provides a list of 101 species. As already done for Lampedusa (Calcara, 1847a), also in this list with an asterisk are highlighted the species reported only by Gussone (1832–1834; 1839; 1844), without an asterisk the plants found only by Calcara, with two asterisks those found by both authors.

In the map at the end of the work (Fig. 15), Calcara shows also *Castellia tuberculata* Tineo (Poaceae). This taxon is a synonym of *C. tuberosa* (Moris) Bor, species of the genus *Castellia* described by Tineo (1846) and widespread in African and Eurasian region. Bartolucci et al. (2018) and Pignatti et al. (2017–2019) consider it a valid species.

For zoology, he reports a few species of marine mollusks, crabs, reptiles, 3 species of beetles, 26 species of birds, of which he also reports the vernacular names, three species of mammals including the presence of a hundred wild goats.

Calcara (1851a sub *Procellaria cinerea*) devotes more observations also to the presence and nesting on the island of the Cory's shearwater, *Calonectris diomedea* (Scopoli, 1769), actually occurring in Linosa with one of the largest colonies of the Mediterranean area (Ientile & Massa, 2008).

For terrestrial mollusks he reports the description of his *Helix linusae*, which was discovered in his first trip to Linosa (Calcara, 1846a) and described soon after (Calcara, 1846b). Calcara reiterates that this is a well-differentiated population and not simply a variety of *Eobania vermiculata* (O.F. Müller, 1774) and depicts it on the geological map of the island attached to this paper.

Breve cenno sulla geognosia ed agricoltura dell'isola di Pantelleria (1853–1854)
[Brief mention of geognosy and agriculture of the island of Pantelleria (1853–1854)]

Calcara (1853–54) in the first lines clarifies how this work was written when he visited Pantelleria in 1846 (Calcara, 1846a). It is divided into 4 initial chapters on the main characteristics of Pantelleria on Physical Geography, Hydrology,

Geognosy, and Spontaneous Vegetation (with the list of plants found and the corresponding vernacular names used on the island). In the second part, the main agrarian characteristics of Pantelleria are examined. It describes the lands used for agriculture, the pastures, the main cultivations such as cereals, legumes, cotton, olive trees, vines. As for viticulture, Calcara (1853–54) provides a list of the different varieties of grapes cultivated in the island both for the production of wine and for alimentary use. He describes how harvesting takes place in the island, the diseases of these plants and the production of wine and raisins. He also examines the cultivation and use of the main varieties of figs (*Ficus carica*), prickly pears (*Opuntia ficus-indica*) and capers (*Capparis spinosa*). Lastly, Calcara (1853–1854) describes the woods of Pantelleria, with the list of the trees and the shrubs found, and of the sheep farming in the island (“*fanno uso degli asini la cui razza per sveltezza, forza e movimento è la migliore di quante se ne conoscano in Sicilia* [they make use of the donkeys whose race is the best for speed, strength and movement in Sicily]”).

Breve cenno sulla Geognosia ed Agricoltura delle Isole Lipari e Vulcano (1853 con A. Prestandrea)
[Short note on Geognosy and Agriculture of Lipari and Vulcano Islands (1853 with A. Prestandrea)]

The Authors make a detailed description of the main geographical and geological characteristics of the islands of Lipari and Vulcano.

For Lipari, they listed six species of fossil plants and, in the list of rocks and minerals, they highlight the characteristics of the “liparite”, a light-coloured, igneous rock made of quartz. The main characteristics of vegetation and agriculture are reported in the final chapter for both islands. The first with a list of plants found by them (of particular importance is the presence of *Cytisus aeolicus* Guss. in Lipari, which was not confirmed later) and the latter with the description of the main crops of these islands such as capers, grapes (wine production and raisins), and olive trees.

Descrizione dell'isola di Pantelleria (1853)
[Description of the island of Pantelleria (1853)]

As Calcara himself (1853) explains in the

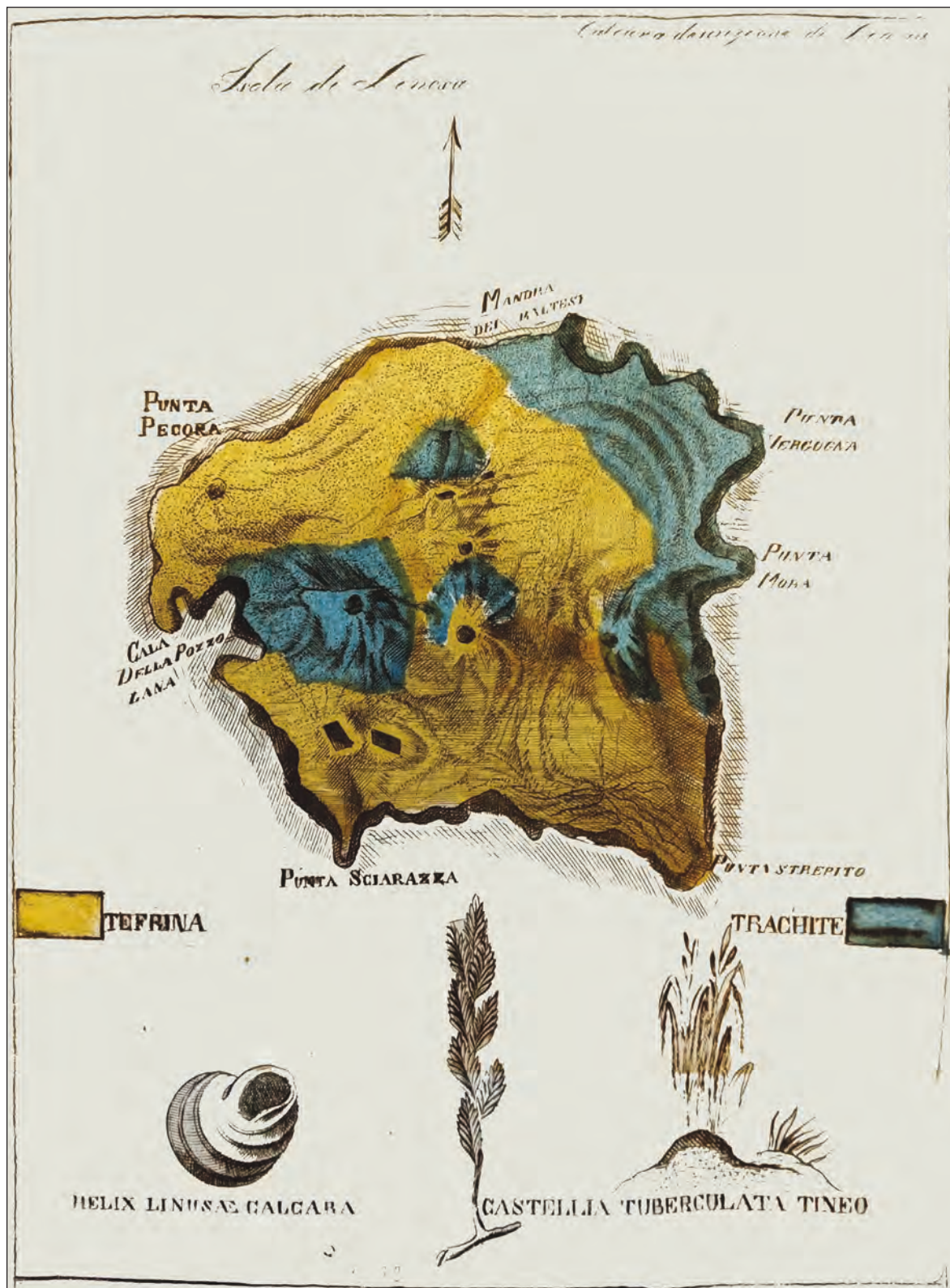
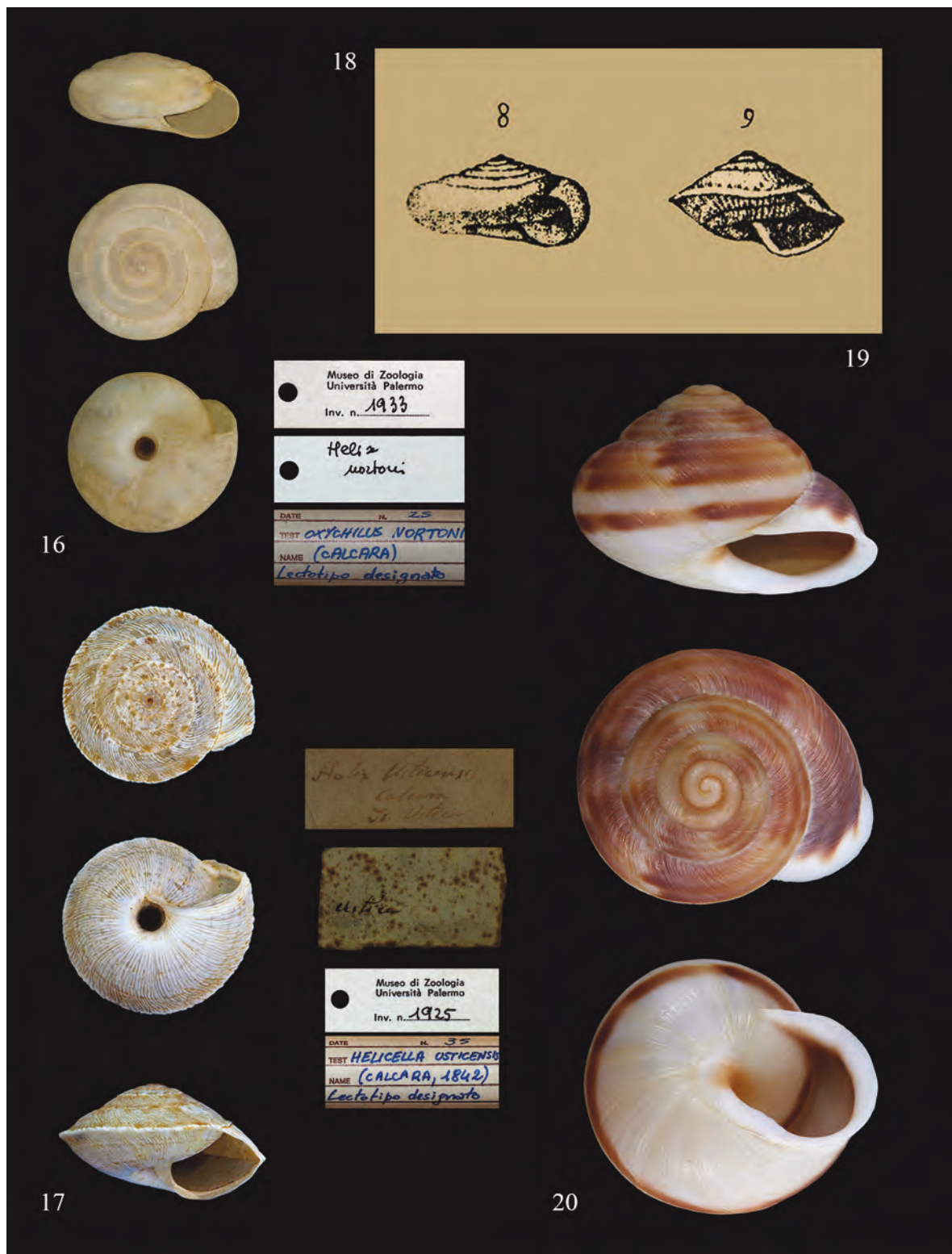


Figure 15. Linosa Island map from Calcara (1851a).



Figures 16, 17, 20. Type material of the P. Calcara collection (Museum of Zoology "Pietro Doderlein" of Palermo, Italy). Fig. 16: *Oxychilus (Hyalocornea) nortoni* (Ustica Island). Fig. 17: *Cerneuella (Xeroamanda) usticensis* (Ustica Island). Fig. 20: *Marmorana (Murella) muralis frivaldszkyi* (Pantelleria Island). Figures 18, 19. *Oxychilus (H.) nortoni*, to the left (Fig. 18), and *Cerneuella (X.) usticensis*, to the right (Fig. 19), from Ustica Island (Calcara, 1845, modified).



Figures 21–23. Type material of the P. Calcara collection (Museum of Zoology “Pietro Doderlein” of Palermo, Italy). Fig. 21: *Lampedusa lopadusae lopadusae* (Lampedusa Island). Fig. 22: *Trochoidea cumiae* (Lampedusa Island). Fig. 23: *Eobania vermiculata* “linosae” (Linosa Island).

introduction, the method he used to describe Pantelleria was similar to that used for the other circumsicilian islands. The work was then divided into nine chapters: Physical Geography, Hydrology, Oryctology, Geognosy, Geogeny, Botany, Zoology, Agriculture, and Civil History of the island to be followed by the topographical map of the island. With the usual educated and detailed style, however, Calcara would write only the first part of this work with the description of the first five chapters.

In this volume of the Acts of the Academy of Sciences, Letters and Arts of Palermo, a few articles after this first contribution on Pantelleria, his obituary, written by Federico Lancia (1854), would appear instead of the second part.

FRANCESCO MINA' PALUMBO

He was born, lived and died in Castelbuono (14.3.1814–12.3.1899). He graduated in Medicine in Palermo and he specialized for other two years in Naples. After returning permanently to Castelbuono, he was both doctor and naturalist, working in all fields of human and scientific culture that the Madonie territory made available to him:

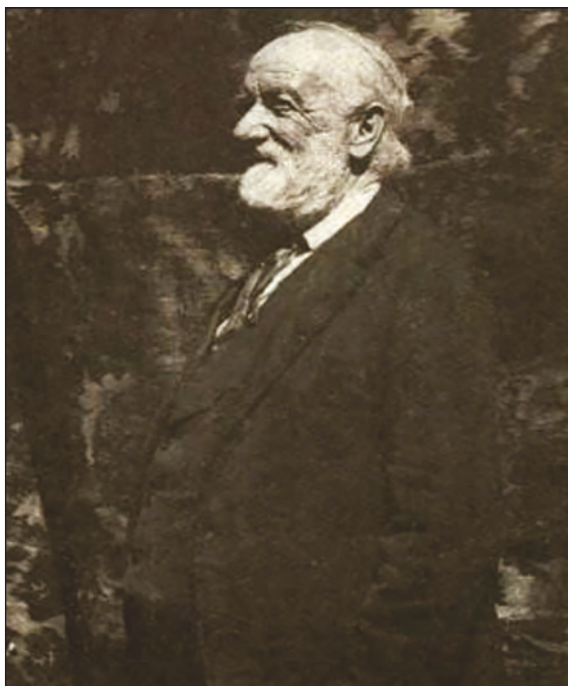


Figure 24. Francesco Minà Palumbo.

veterinary, agricultural, anthropology, archaeology, paleontology, botany.

There are several biographies about this great and illustrious Sicilian naturalist (Alfonso, 1899; Aloï, 1899; Caruso, 1899; Failla Tedaldi, 1899; Mazzola, 1997) while the publications made are more than a thousand (Genchi, 2012). Minà Palumbo (Fig. 24) was able to reconcile and enhance, without any apparent effort, his territorial and regional vocation with a more national and international dimension, his studies of simple citizen with those of academic level. He managed to put, in a few words, his territory and Castelbuono at the center of the world and of his human and cultural vision.

Among his numerous works, he also managed to publish one about the circumsicilian islands.

Cenno topografico delle isole adiacenti alla Sicilia (1851)

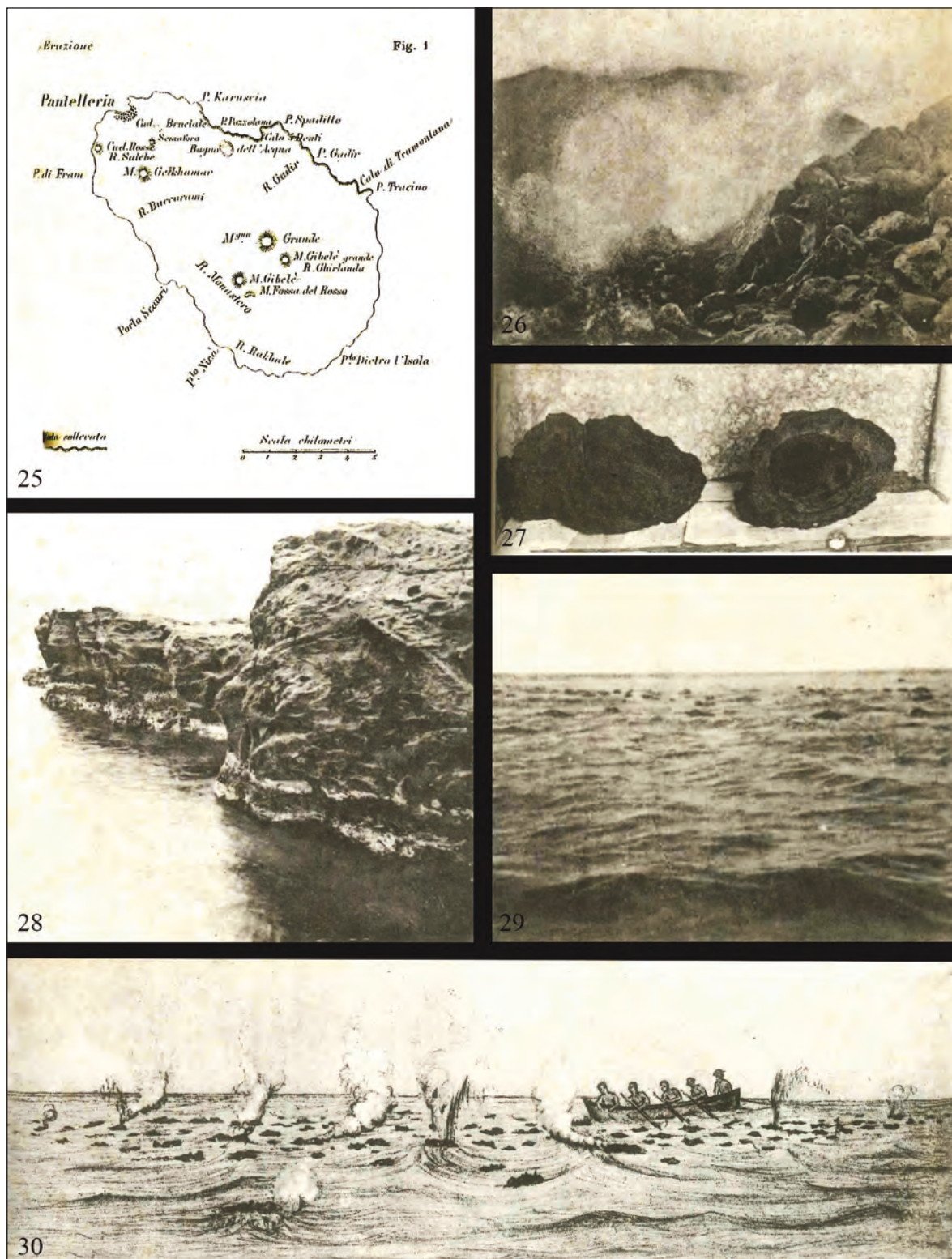
[*Topographical outline of the islands adjacent to Sicily (1851)*]

Since the beginning, Minà Palumbo clarified what sources have been used in the description of each island, reporting the exhaustive literature. The bibliography consulted is, therefore, cited immediately at the beginning of each island. For Ustica, Pantelleria, Lampedusa, Lampione and Linosa, Minà Palumbo mainly makes a summary of Calcara's works (1842, 1846a, 1847a, 1851a) which is supplemented by the botanical observations of Gussone (1832–1834; 1839; 1844) and other general works such as that of Power (1842). Calcara, to whom Minà was bound by respect and friendship, is then praised for these studies in a long note at the end of the first part of the work. For the Aegadian Islands are reported mainly historical news and only little information about fauna and flora. On the contrary, the Aeolian Islands are treated more extensively, also thanks to a larger bibliography consulted.

However, Minà Palumbo does not stop only at the main islands, but in his own style, provides information on many small satellite islands.

VIII. Isola Ferdinanda [Ferdinandea]

Minà Palumbo reports on the appearance of this volcanic island emerged from the sea between Pantelleria and Sciacca, mainly on the basis of the memory of Gemmellaro (1831b, 1834) and Scinà (1832).



Figures 25–30. Volcanic phenomena in Pantelleria Island (Riccò, 1892). Fig. 25: Pantelleria Island map. Fig. 26: Favara Grande. Fig. 27: volcanic bombs. Fig. 28: the double lifting of the coast at the “Balate”. Figs. 29, 30: photos and drawing of an underwater eruption.

The submarine volcanic phenomena that were the basis of the emersion and destruction of the Ferdinanda Island (Mazzarella, 1984) were quite frequent in those years.

Some years later, for example, between May 24, 1890 and the end of November 1891, Pantelleria was again affected by intense seismic and volcanic activity. All the phenomena were studied by Annibale Riccò, geophysicist of Modenese origins but transplanted in Catania where he also held the position of Rector of the University. The most striking finding of all these new phenomena was the uplift of a section of the northeastern coast of Pantelleria by 75 centimeters (Riccò, 1891, 1892; Mattia et al., 2007; Spampinato et al., 2017; Marafon Pecoraro, 2019) (Figs. 25–30).

Riccò also studied volcanic phenomena in the Aeolian Islands, especially Stromboli (Riccò & Mercalli, 1892).

IX. Isola Longa - X. Isola Burrone

The Isola Lunga (or Isola Grande) today is a protected natural area as “Riserva Naturale Orientata Isole dello Stagnone di Marsala”. The reserve, of great historical, naturalistic and landscape interest, extends off the western coast of Sicily, between Capo San Teodoro and Capo Boeo or Lilibeo, and includes the four islands of San Pantaleo (Mozia), Isola Grande, La Scuola and Santa Maria, the coastal salt pans San Teodoro, Genna and Ettore Infera and the “Stagnone” a lagoon characterized by low water. The island Burrone was located to north of the previous one.

For a complete historical account of the transformations and historical vicissitudes of these islets over the centuries, see Donato (2013) (Figs. 31, 32).

XI. Li Porcelli - XII. Li Asinelli - XIII. Le Formiche - XIV. Isola del Ronciglio - XV. Isola della Colombara

Small islets or rocks situated in the sea in front of Trapani today known as Scogli Porcelli, Isola Asinelli, Isola Formica, Isola della Colombara. The island of the Ronciglio today is connected to the mainland from the salt pans and falls within the boundaries of the “Riserva Naturale Orientata Saline di Trapani e Paceco”. It is one of the classic localities of the endemic plant *Calendula maritima* Guss.

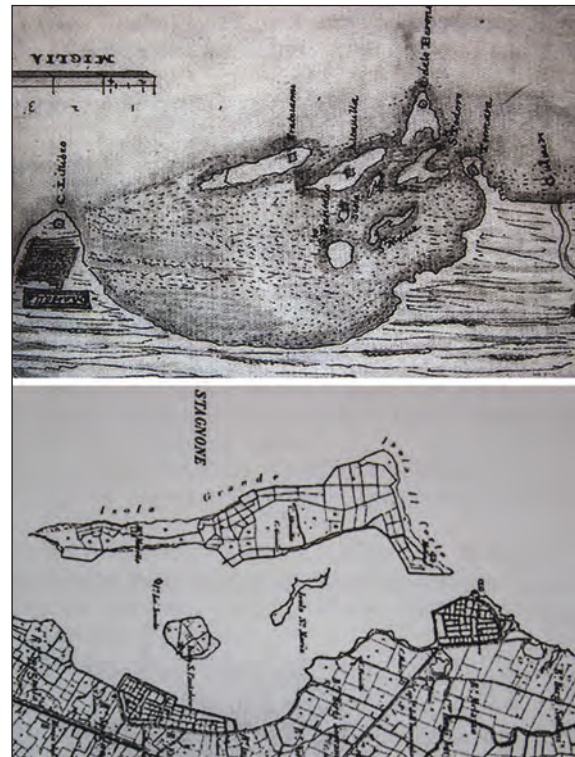
XVI. Isole delle Femine

Islet in front of the town of Isola delle Femmine, near Palermo, also known as Isola di Fuori. Minà Palumbo reports how it abounds in game and serves as a refuge for waterfowl.

Today, it is managed as “Riserva Naturale Orientata Isole delle Femmine” and “Area naturale marina protetta Capo Gallo - Isola delle Femmine”, and it is subject of botanical and faunal studies (Caldarella et al., 2010; Di Dio, 2011; Sparacio et al., 2021).

XXIII. Vulcanello - XXV. Bottaro - XXVI. Lisca Bianca - XXVII. Dattolo - XXVIII. Basiluzzo - XXIX. Lisca Nera - XXXI. Strombolicchio

All these small islands are satellites of the Aeolian Islands of which the Minà Palumbo supplies mainly historical news. Vulcanello even then was connected to Vulcano, Dattolo is now called Dattilo (see also Lo Cascio, 2017).



Figures 31, 32. The islands (above) that formed the Isola Lunga of Marsala (below): “the island that was not there” according to Donato (2013; see also Spannocchi, 1596 and Dufour, 1992).

XXXII. Isola dei Ciclopi - XXXIII. Faraglioni

Minà Palumbo provides historical informations even on these islands (Islands of the Cyclops, Acitrezza, Catania) dwelling, for example, on the myth of the Cyclops and Polyphemus. The more scientific part is deduced from works mainly geological like those of Gemmellaro (1835b) or Maravigna (1837).

ANDREA ARADAS

He was born in Catania in 1810 and died in Viagrande on 10.11.1882 (Fig. 33).

He followed the studies of his father Ferdinand, head physician at the Santa Marta Hospital in Catania, and graduated in Medicine at a very young age. He devoted himself to the study of Zoology and, in 1852, he was appointed first professor of Zoology and, immediately after, also of Comparative Anatomy at the University of Catania. He was director of the “Accademia Gioenia of Catania” and of the “Museum of Natural History of the University” to which he donated his naturalistic collections (Necrologio, 1882–1883; Alberghina, 2005). Some parts of this collection are also preserved in that of the Marquis of Monterosato (Zoological Museum of Rome) and in that of O. Priolo (Civic Museum of Natural History of Milan).

In his naturalistic studies, he dealt mainly with the conchiferous Molluscs and Echinoderms, living and fossil, of which he published fifty works including the “*Catalogo ragionato delle conchiglie viventi e fossili di Sicilia*” (1839–1843 with G. Maggiore) and the “*Monografia degli Echinidi viventi e fossili della Sicilia*” (1850–1853). He also compiled a useful and interesting “*Prospetto della storia zoologica della Sicilia nel secolo XIX*” (1844–50), where are reported in detail the works of all those, often unknown, who studied the Sicilian fauna until then, and other malacological works as the description of *Charonia seguenzae* Aradas et Benoit, 1872 (Aradas & Benoit, 1871; Russo et al., 1990; WoRMS, 2021).

Aradas’ contribution on the circumsicilian islands is mainly due to his work on Living Marine Molluscs (Aradas & Benoit, 1872–1876), which is also an important contribution on various topics of marine biology (Cattaneo-Vietti & Russo, 2019).

Conchigliologia vivente marina della Sicilia e delle isole che la circondano (con L. Benoit 1872–1876) [Living marine shells of Sicily and its surrounding islands (with L. Benoit 1872–1876)]

In this catalog (Figs. 34, 35), the Authors provide the systematic part, reporting and description of several new species such as *Coralliophila sofiae* (Aradas et Benoit, 1876) (Gastropoda Coralliophidae), *Setia sciutiana* (Aradas et Benoit, 1874) and *Alvania peloritana* (Aradas et Benoit, 1874) (Gastropoda Rissoidae), etc. In addition, they provide numerous indications on the biology and distribution of the mentioned species, including those common.

In the introductory pages of this catalog, the Authors start from the observation of the remarkable progresses reached until then by the malacological studies, showing the necessity to provide for each cited species further biological and geonemical data, which can contribute to realize “*più esatti confronti tra le specie conosciute in rapporto ai luoghi in cui vivono, e alle condizioni varie sotto le quali la loro vivenza si manifesta, svolgesi e conservasi* [more exact comparisons among the known species in relation to the places where they live, and to the various conditions under which their living is manifested, carried out and preserved]”.



Figure 33. Andrea Aradas.

CONCHIGLIOLOGIA
VIVENTE MARINA
DELLA SICILIA
E DELLE ISOLE CHE LA CIRCONDANO
OPERA

LETTA IN PIÙ SEDUTE ALL'ACCADEMIA GIOENIA DI SCIENZE NATURALI

DAL 1.^o DIRETTORE DI ESSA

PROF. CAV. ANDREA ARADAS

E DAL SOCIO CORRISPONDENTE

CAV. LUIGI BENOIT



CATANIA
STABILIMENTO TIPOGRAFICO DI C. GALATOLA
NEL R.^o OSPIZIO DI BENEFICENZA

—
1870

Figure 34. Title page of Aradas & Benoit (1872–1876 “1870”).

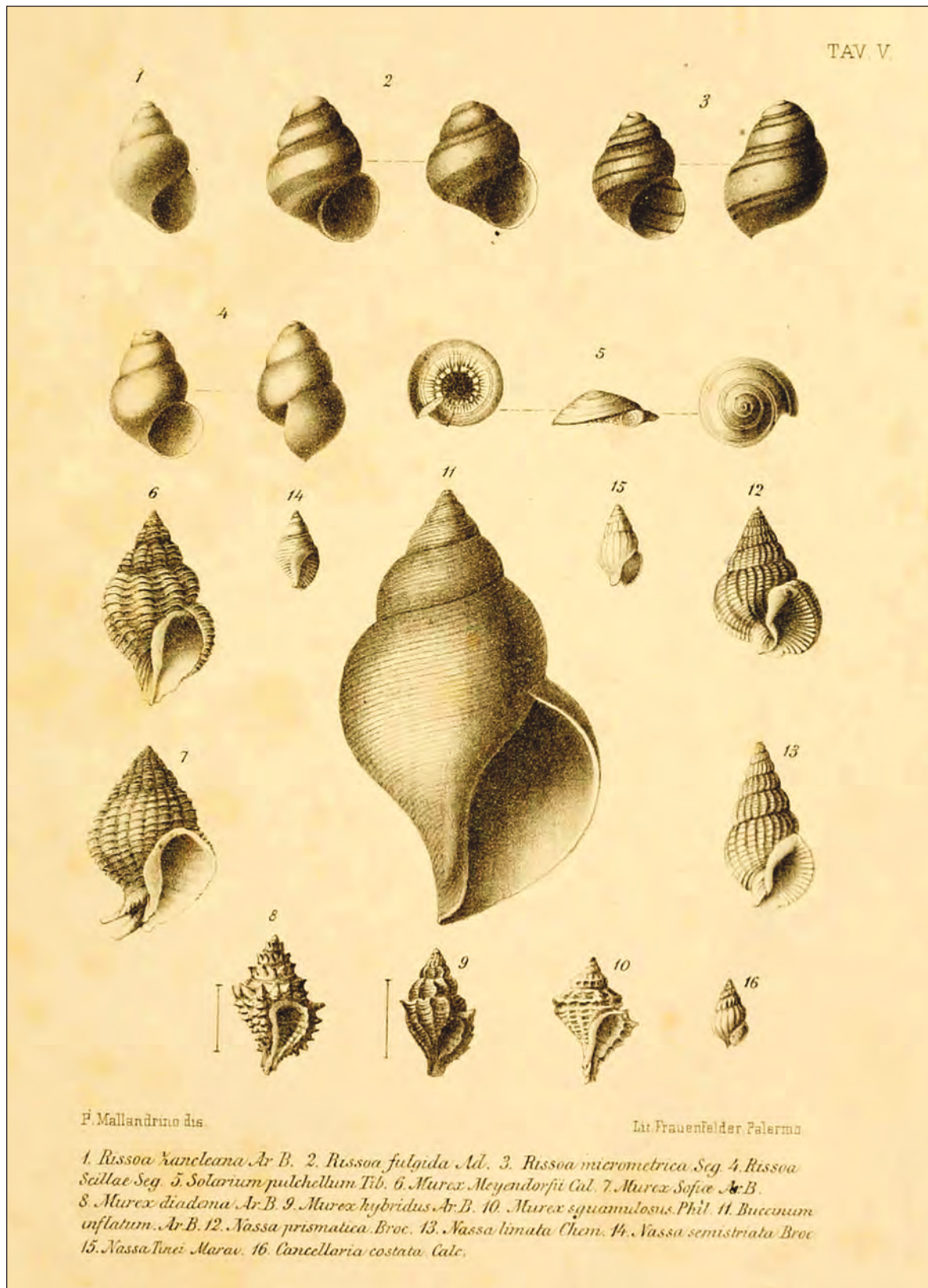


Figure 35. Aradas & Benoit (1872–1876) plates 5: some living marine shell from Sicily and circumsicilian islands.

In this context, they also give great prominence to the reports of species living in the circumsicilian islands. They basically follow two indications: the first one is general, referring mainly to the most common species or to those with a wide distribution, pointing out how they are widespread in “*Sicilia e isole adiacenti* [Sicily and adjacent islands]”; the other one, more specific, where they mention the species with reference to the island or islands where they have been found.

The most cited islands are Pantelleria, the Aeolian Islands, especially Lipari, Ustica and, to a lesser extent, Lampedusa. There are also several citations for the island of Malta.

The Authors add, also, an “Appendix to the Work” of 10 pages with new reports just published by the Marquis of Monterosato, “*nostro diligente e solerte amico* [our diligent and industrious friend] (Monterosato, 1874a, b, 1875), with some mentions also for the circumsicilian islands such as *Gibbula drepanensis* (Brugnone, 1873) (Gastropoda Trochidae) for Pantelleria and *Mathilda retusa* Brugnone, 1873 (Gastropoda Mathildidae) found “*tra Palermo ed Ustica 60 m* [between Palermo and Ustica at 60 m]”.

Some of the species mentioned for the circumsicilian islands by Aradas & Benoit (1872–1876) are reported below.

Globivenus effossa (Philippi, 1836) (Bivalvia Veneridae). “126. Venus effossa”. Reported for Palermo and Lampedusa collected by Calcara. It is considered rare.

Arca tetragona Poli, 1795 (Bivalvia Arcidae). “166. Arca tetragona”. Palermo, Catania, Pantelleria, Malta in the holes and crevices of rocks and among groups of *Balanus*, *Vermetus*, etc.

Limea crassa (Forbes, 1844) (Bivalvia Limidae). “213. Lima Sarsii (*Limea*), Lovèn”. The authors report how this shell from the North Seas was found by Abbot Brignoni on the island of Alicudi and in the beaches of Palermo.

Similipecten similis (Laskey, 1811) (Bivalvia Propeamussiidae). “227. Pecten similis, *Lashey*”. Rare in Sicily, found by Monterosato in Palermo, but also present in Malta and Pantelleria.

Cadulus subfusiformis (M. Sars, 1865) (Scaphopoda Gadilidae). “294. Cadulus subfusiformis, *Sars*”. It is considered a very rare

species, dredged in the seas of Syracuse, found by Monterosato in Ustica and Palermo and by General Destefanis in the Gulf of Naples.

Patella ferruginea Gmelin, 1791 (Gastropoda Patellidae). “295. Patella ferruginea *Gmelin*. *Frequente su tutte le coste della Sicilia, e delle Isole circostanti*”. Common species in Sicily and surrounding islands according to Aradas & Benoit (1872–1876), *Patella ferruginea* is, today, at serious risk of extinction in the western Mediterranean Sea. The species is extinct on mainland Italy and Sicily but isolated individuals can be found on Aegadian Islands and Pantelleria Island. Populations on Corsica and Sardinia have declined dramatically during the last years (Espinosa et al., 2014; La Mesa & Tunesi, 2019).

Steromphala divaricata (Linnaeus, 1758) (Gastropoda Trochidae). “441. Trochus divaricatus, *Linnèo*. *Tav. 3 Fig. 7*”. Frequent in the littoral of Palermo, southern Sicily, Catania, and adjacent islands.

Danilia tinei (Calcara, 1839) (Gastropoda Chilodontidae). “462. Trochus Tinei (Monodonta)”. Cited for Catania, Palermo and Pantelleria, rare.

Eatonina fulgida (J. Adams, 1797) (Gastropoda Cingulopsidae). “549. Rissoa fulgida (*Helix*), *Adams*. *Tav. 5 Fig. 2*”. The Authors report it for Palermo, Trapani, Mondello, Ognina di Catania, Penisola Magnisi, Island of Pantelleria, common in the port of Messina on marine plants attached to the rocks near the Lanterna.

Seila trilineata (Philippi, 1836) (Gastropoda Cerithiopsidae). “643. Cerithium trilineatum, *Philippi*”. Ognina in Catania and Pantelleria. Considered very rare, it is always found with a broken shell.

Metaxia metaxa (Delle Chiaje, 1828) (Gastropoda Triphoriidae). “636. Cerithium angustissimum *Forbes*”. Trapani and Pantelleria, rare.

Leufroyia leufroyi (Michaud, 1828) (Gastropoda Raphitomidae). “665. Pleurotoma Leufroy, *Michaud*”. Common in Aci Trezza, Palermo, Messina, Ustica and Malta Islands.

Bivetiella cancellata (Linnaeus, 1767) (Gastropoda Cancellariidae). “687. Cancellaria cancellata, *Lamarck*”. Species considered rare in the

seas of Aci-Trezza and Ustica. Reported for Taranto, Corsica, Spain, France, Algeria, and the Atlantic Ocean, on the coasts of Africa.

Hirtomurex squamosus (Bivona et Bernardi, 1838) (Gastropoda Muricidae). “711. Murex squamulosus (Fusus), *Philippi. Tav. 5 Fig. 10*”. Rare species found in Palermo, Aci-Trezza and Ustica.

LUIGI BENOIT

He was born in Avola (Siracusa) the 8.2.1804 from Gaetano and Marianna Tirone, barons of the Tipo, died in Messina the 19.12.1890 at the age of 86 years. After having attended very young the military school “Nunziatella” in Naples, Benoit moved to Messina where he worked in the Customs Agency and married the Duchess of Belviso. In 1828 he was arrested and sentenced to 18 years of imprisonment in Palermo for allegedly belonging to the political sect “Veri Patriotti” against Francesco I of Bourbon. Successively, Ferdinand II reviewed this process and released him in 1832.

He returned to live in Messina, where he was respected and sought after. In his biography, Amenta (1894) writes: “...esercitò per moltissimi anni le sue funzioni di Amministratore del Gran Priorato Gerosolimitano di Messina ...venne nominato Consigliere del Consiglio generale degli Ospizii di Messina; fu deputato per molti istituti di beneficenza...esercitò anche l'ufficio di Assessore e finse da Sindaco... Il Ministro Giuseppe Natoli che lo conosceva e apprezzava, lo fece nominare Cavaliere dell'Ordine dei Santi Maurizio e Lazzaro. Amato da tutta Messina [he exercised for many years his functions of Administrator of the Gran Priorato Gerosolimitano of Messina... he was appointed Counsellor of the General Council of the Hospices of Messina; he was deputy for many charitable institutes... he also exercised the office of Counsellor and acted as Mayor... The Minister Giuseppe Natoli who knew and appreciated him, had him appointed Knight of the Order of Saints Maurizio and Lazzaro. Beloved by all of Messina]”.

In addition, on a personal level: “*si diletto anche di musica; gradito pel canto, ed amò la pittura... Fu socio di molte accademie italiane, in moltissime altre francesi; conoscitissimo in Russia* [he also dabbled in music, liked by his singing, and loved

painting... He was a member of many Italian and many French academies, well known in Russia]”.

The naturalistic life saw an initial and prevailing interest for the study of the birds that culminated with the publication of the “*Ornitologia siciliana*” in 1840. This work constitutes the first reliable study on avifauna of the island recording 270 species.

With Andrea Aradas he published instead the catalog on marine mollusks: “*Conchiologia vivente marina della Sicilia e delle isole che la circondano*” (Aradas & Benoit, 1870).

He also was interested in entomology, although in his later years (Amenta, 1894; Vitale, 1908) but his important collection, kept at to the Botanical Garden of Messina, was destroyed.

Only those sectors that were given to other entomologists were saved (Romano, 2006). The Coleoptera Cerambycidae (Ragusa, 1924), for example, joined the collection of the French coleopterologist Henri Tournier (1834–1904), later acquired by Maurice Pic (1866–1857), whose collection is now kept at the National Museum of Natural History in Paris.

Benoit mainly studied the land and fresh water molluscs of Sicily publishing three catalogs in which he described many new species (Benoit, 1857–1862; 1875; 1882). The captions of the beautiful plates, with drawings of these mollusks included in the catalog of 1857–1862 (Figs. 36, 37), were later published by De Gregorio (1895). These works are fundamental for the study of land and fresh-water molluscs of Sicily and surrounding islands in which Benoit tried to bring together all the knowledge known until then providing for each species numerous synonymous, taxonomic, geographical and biological indications, starting or promoting the exploration of many little known Sicilian localities.

In his three catalogs devoted to the land and fresh water molluscs of Sicily, Benoit gave particular importance to the study of the circumsicilian islands, since they appear directly in the title of these works, as well as in the catalog on marine molluscs (Aradas & Benoit, 1872–1876). In many of these islands, Benoit became active by commissioning other naturalists or collectors on his own account, including Domenico Reina, a great connoisseur of Sicilian localities and expert collector to whom we owe the merit of having found several new species (see below).

The following is a list of the species described for the circumsicilian islands by Benoit and their current taxonomic position. The list also includes the many species that Benoit identified as new and sent to other scholars who, by publishing them earlier, became the authors, as reported by Benoit himself (1875): “qualche autore però che ha ricevute direttamente da noi, o da altri, tali specie, le ha descritte, cambiandone il nome, ed attribuendosene il vanto della scoperta [some authors, however, who have received such species directly from us, or from others, have described them, changing their name, and claiming the credit of their discovery].

Illustrazione sistematica critica iconografica de' testacei estramarini della Sicilia Ulteriore e delle isole circostanti (1857–1862)

[Iconographic systematic critical illustration of testacei estramarine of Ulterior Sicily and surrounding islands (1857–1862)]

In this first work, Benoit (1857–1862) begins with a preface in which summarizes the historical knowledge on Sicilian malacology and indicates how his catalog would come to be. He continues with two chapters dedicated to the scientific terms of shell morphology and on the characters that distinguish the species from each other. These two chapters were translated and adapted from the work of Rossmäslar (1835–1844).

These chapters are followed by the catalog with the list of species. Unfortunately, the delay in publication will nullify some discoveries, as mentioned above. Benoit (1875) said that this was due to the political and social upheavals of southern Italy and to other causes beyond his control.

Helix vermiculata var. *Linusiana* Benoit, 1857

Island of Linosa. Benoit (1857: 82, Pl. 1, Fig. 17) reports the species described by Calcara (1846a) for this island and confirms, overall, the morphological peculiarities of this population. However, he describes this new taxon to highlight its systematic position as a simple variety.

Synonym of *Eobania vermiculata* (Müller, 1774) (Gastropoda Helicidae) (Cianfanelli, 2002; Bank & Neubert, 2017; Bodon et al., 2021) or its insular subspecies as in Alzona (1971).

Helix alicurensis Benoit, 1857

Found by Domenico Reina (Benoit, 1857: 99, Pl. 3, Fig. 15), it is an endemic species of Alicudi (Aeolian Islands) as *Oxychilus (Hyalocornea) alicurensis* (Benoit, 1857) (Gastropoda Oxychilidae) (Giusti, 1973; Riedel, 1973, 1980; Bank & Neubert, 2017; Bodon et al., 2021).

Helix De Natale Benoit, 1857

Found by Domenico Reina (Benoit, 1857: 100, Pl. 4, Fig. 17), it is an endemic species of Marettimo Island as *Oxychilus (Hyalofusca) denatale* (L. Pfeiffer, 1856) (Gastropoda Oxychilidae) (Riedel, 1973, 1980; Fiorentino et al., 2004; Bank & Neubert, 2017; Bodon et al., 2021).

Helix serpentina var. *insularis* Benoit, 1857

An endemic species to the island of Marettimo (Benoit, 1857: 109) reported as *Marmorana insularis* (Benoit, 1857) (Gastropoda Helicidae) by Fiorentino et al. (2004). Thanks to molecular genetic studies carried out by Fiorentino et al. (2008a, b; 2010), the genus *Murella* Pfeiffer, 1877 has been confirmed as a polytypic group, originally endemic to Sicily. Bank & Neubert (2017) accept, however, the genus *Marmorana* W. Hartmann, 1844 with *Murella* considered as a subgenus: *Marmorana (Murella) muralis insularis* (Benoit, 1857). Bodon et al. (2021) reported this species as *Marmorana (Ambigua) insularis*.

Helix provincialis var. *unicolor* Benoit, 1857

Taxon described for Levanzo Island (Benoit, 1857: 118, Pl. 2, Fig. 14). It disappeared from the later malacological bibliography (see Pfeiffer, 1931) and could be considered an insular subspecies. *Helix provincialis* (Benoit, 1842) is considered a subspecies of *Marmorana (Murella) muralis* by Alzona (1971), Bank & Neubert (2017) and MolluscaBase (2021).

Helix globularis var. *cosurensis* Benoit, 1859

Benoit himself (1859: 122) recalled that the populations of this taxon from Pantelleria had already been distinguished by Calcara (1846: sub *H. Frivaldskyi*) (see also Benoit, 1875, 1882).

As reported also for *Helix vermiculata* var. *Linusiana*, Benoit redescribes as varieties these

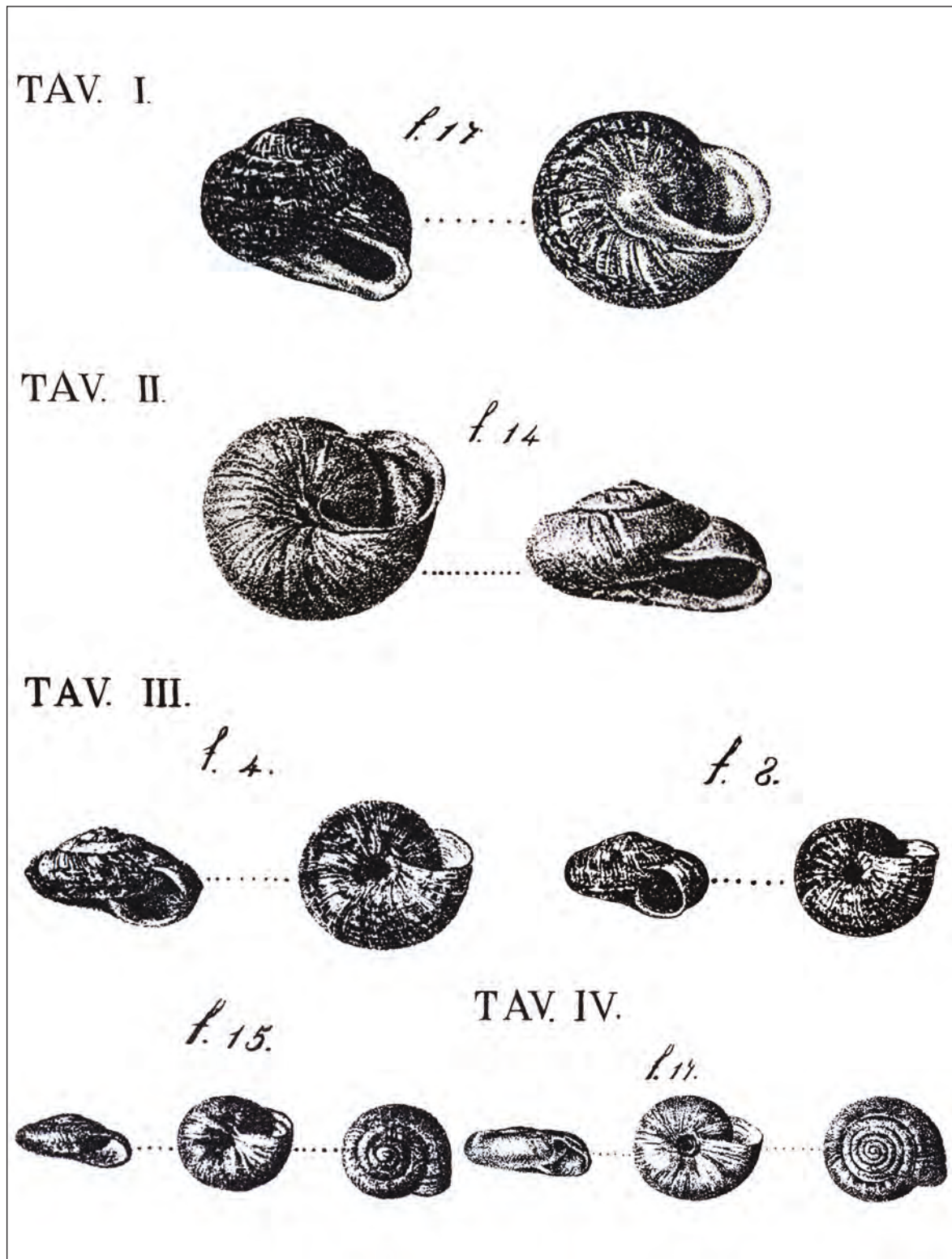


Figure 36. Illustrations of some new taxa described by Benoit (1857–1862) from the circumsicilian islands (for explanations see the text): *Helix vermiculata* var. *Linusiana* (Tav. I f. 17), *Helix provincialis* var. *unicolor* (Tav. II f. 14), *Helix dormiens* (Tav. III f. 4), *Helix striata* var. *depressior* (Tav. III f. 8), *Helix alicurensis* (Tav. III f. 15), *Helix De Natale* (Tav. IV f. 17).

insular populations “*in opposizione* [in opposition]” to the taxonomic considerations of Calcara (1846a). Taxon endemic to Pantelleria synonym with *Marmorana* (*Murella*) *muralis frivaldskyi* (Calcara, 1846) (Gastropoda Helicidae) (Alzona, 1971; Bank & Neubert, 2017; MolluscaBase, 2021).

Helix striata var. *depressior* Benoit, 1859

Benoit (1859: 133, Pl. 3, Fig. 8) describes it for Marettimo Island. Alzona (1971: 172) considers it a valid species as *Helicella* (*Xerotranga*) *depressior* Benoit, 1857 (Gastropoda Geomitridae) (Sicily). Fiorentino et al. (2004) report it as *Cernuella depressior* for Favignana and Levanzo and, as allochthonous, also for Marettimo (see Bodon et al., 2021: sugenus *Xeroamanda* Monterosato, 1892).

Helix dormiens Benoit, 1859 - “var. *unicolor*” and “*rugosula*”.

Taxon found by Domenico Reina in Marettimo (Benoit, 1859: 137, Pl. 3, Fig. 4), of uncertain systematic collocation and of which recent contributions are lacking. Reported by Alzona (1971) as *Helicella* (*Xeromaesta*) *dormiens*, it is not mentioned by Fiorentino et al. (2004) for the Aegadian Islands. Beckmann (1987) reported this taxon for the Maltese Islands.

Clausilia confinata Benoit, 1859

Endemic species of Marettimo in the Aegadian Islands (Benoit, 1859: Pl. 6, Fig. 6) as *Siciliaria scarificata* (L. Pfeiffer, 1856) (Gastropoda Clausiliidae) (Nordsieck, 2007; Fiorentino et al., 2004; Liberto et al., 2015).

Luis Pfeiffer (1856) published this species (“*Habitat in Sicilia*”) on shells received from Benoit. Successively, L. Pfeiffer (1859) specified the distribution as “*In insula Maretima Siciliae*”. Benoit (1875) renamed it as “*sacrificata*”, then (1882) resigns it with its original name “*confinata*”.

Helix calcarata Benoit, 1862

Described only for the island of Malta (Benoit, 1862: 203, Pl. 5, Fig. 11), it is mentioned for the Maltese Islands by Beckmann (1987), considered synonym with *Trochoidea* (*Trochoidea*) *spratti* (Pfeiffer, 1846) (Gastropoda Geomitridae) by Giusti et al. (1995) and reported as *Trochoidea*

(*Trochoidea*) *spratti calcarata* (Benoit, 1862) by Bank & Neubert (2017).

Achatina emiliana Benoit, 1862

Described by Benoit (1862: 234, Pl. 5, Fig. 29) for the island of Favignana “*nella grotta ivi detta del Consiglio* [in the cave there called the Consiglio]”, this species is an endemic species of the Aegadian Islands (Favignana and Marettimo) as *Gomphroa emiliana* (Bourguignat, 1859) (Gastropoda Azecidae) (Fiorentino et al., 2004). The genus *Gomphroa* Westerlund, 1903 (of great biogeographical interest: see Giusti & Manganelli, 1984) in Sicily is represented by three endemic species: *G. emiliana* from the Aegadian Islands, *G. incerta* (Bourguignat, 1859) from the Aeolian Islands and *G. cylindracea* (Calcara, 1840) from N-W Sicily.

Achatina incerta Benoit, 1862

New species identified by Benoit (1862: 232, Pl. 5, Fig. 31) for the island of Lipari (Aegadian Islands): “*contrada Renella o monte della fossa*”. It is endemic to the Aeolian Islands (Lipari, Salina, Stromboli, Filicudi, Panarea) as *Gomphroa incerta* (Bourguignat, 1859) (Gastropoda Azecidae) (Giusti, 1973; Bank & Neubert, 2017).

Catalogo delle conchiglie terrestri e fluviatili della Sicilia e delle Isole circostanti (1875)
[***Catalog of the terrestrial and fluviatile shells of Sicily and the surrounding islands (1875)***]

Clausilia Adelina Benoit, 1859

Küster (1847–1862) described *Clausilia adelina* on specimens received by Benoit (type locality “*Inseln Sicilien*”). This taxon “*trovasi nell’isola di Favignana e nella montagna di Bonagio presso Calatafimi* [found on the island of Favignana and in the mountain of Bonagio near Calatafimi] (Benoit: 1859: Pl. 6, Fig. 16, Pl. 12, Fig. 9). Synonym of *Siciliaria calcarae calcarae* (Philippi, 1844) (Gastropoda Clausiliidae) (Bank & Neubert, 2017) or its insular subspecies as in Alzona (1971).

Pomatias pirayni Benoit, 1859

Taxon first depicted by Benoit (1859: Pl. 6, Fig. 26) and then mentioned as a distinct species in this work (1875). This population (locus typicus: “*Isola*

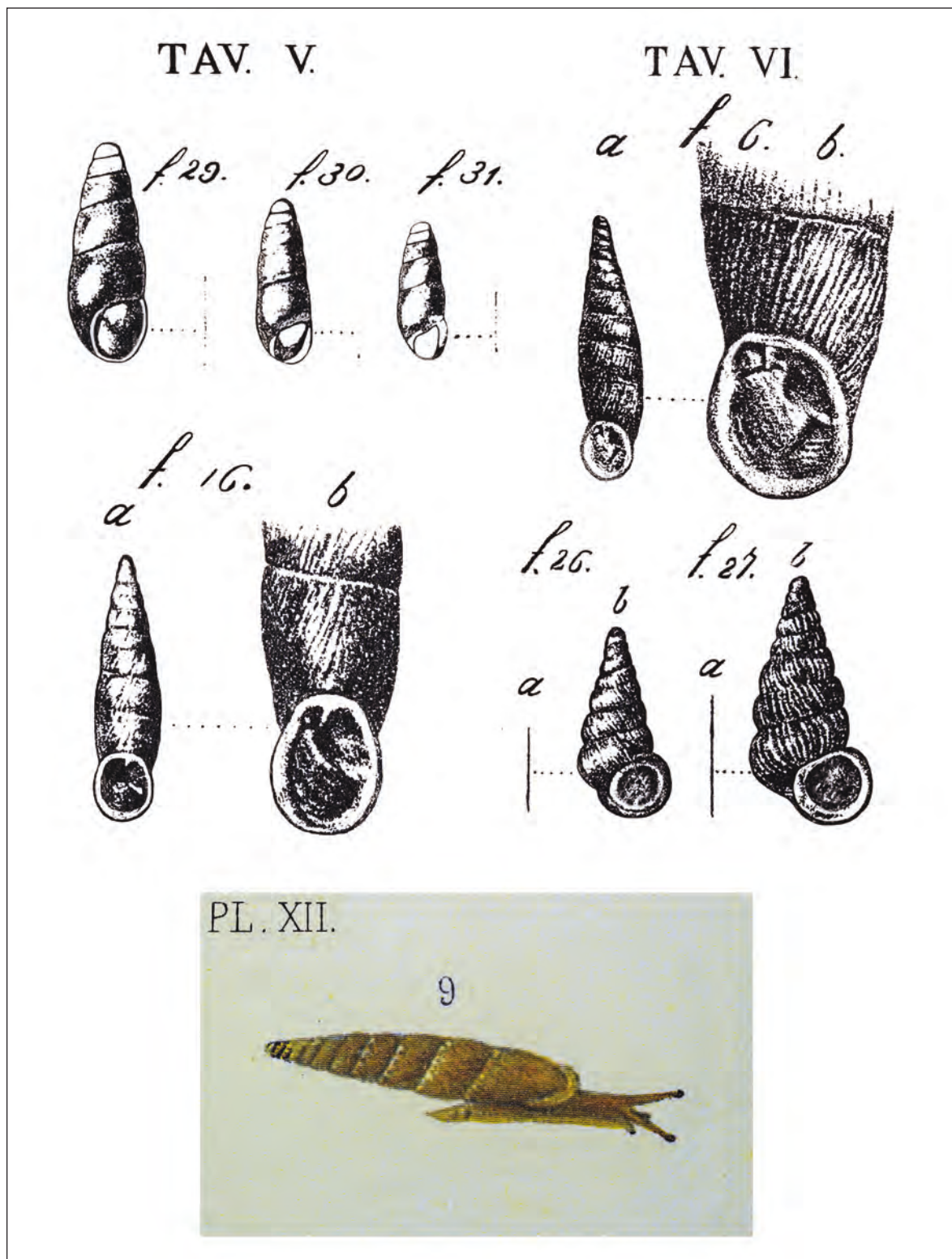


Figure 23. Illustrations of some new taxa described by Benoit (1857–1862) for the circumsicilian islands (for explanations see the text): *Achatina Emiliana* (Tav. V f. 29), *Achatina cylindracea* Calcara (Tav. V f. 30), *Achatina incerta* (Tav. V f. 31), *Clausilia confinata* (Tav. VI f. 6), *Clausilia adelina* Kuster, 1847 from Favignana e Calatafimi (Tav. VI f. 16, Tav. XII f. 9), *Pomatias pirayni* (Tav. VI f. 26), *Pomatias Paladilhianum* Saint-Simon (Tav. VI f. 27).

di Favignana... presso il Castello di S. Caterina”) is considered an insular subspecies by Alzona (1971, sub *Cochlostoma turriculatum pirajnoi*) and attributed to *C. cf. paladilhianum* St. Simon, 1869 (Gastropoda Megalomastomatidae) by Fiorentino et al. (2004). Bank & Neubert (2017) and MolluscaBase (2021) attribute this taxon to Paulucci (1879) who gives a description on material and name indication that Benoit sent her.

Nuovo catalogo delle conchiglie terrestri e fluviatili della Sicilia o continuazione alla illustrazione sistematica critica iconografica de' testacei estramarini della Sicilia Ulteriore e delle isole circostanti (1882)

[*New catalog of the terrestrial and fluviatile shells of Sicily or continuation of the systematic critical iconographic illustration of Mollusca extramarina of Ulterior Sicily and surrounding islands (1882)*]

Caecilianella maretima Benoit, 1882

Taxon endemic to the island of Marettimo (Benoit, 1882: 91), synonym of *Hohenwarthiana hohenwarthi* Rossmässler, 1839 (Gastropoda Ferussaciidae) (Alzona, 1971).

Fauna Maltese. Indice dei molluschi terrestri ed acquatici (con Gulia G. 1872)

[*Maltese Fauna. Index of terrestrial and aquatic mollusks (with Gulia G. 1872)*]

This is a list of marine, terrestrial and freshwater molluscs of the Island of Malta. Brief faunal information and Maltese vernacular names are given. For marine molluscs, mainly common species found along the coast or at shallow depths are reported. Among these, it is mentioned the *Pinna nobilis* Linnaeus, 1758 (Bivalvia Pinnidae) common in the port of Malta. Among terrestrial species, *Helix calcarata* Benoit, 1862 is synonymized with *Trochoidea (Trochoidea) spratti* (Pfeiffer, 1846) (see above) and *Helix melitensis* A. Férussac, 1821, common on the roofs of old houses and fortifications, is considered a valid species as *Marmorana (Murella) melitensis* (Marmorana Helicidae) (Giusti et al., 1995; Bank & Neubert, 2017; MolluscaBase, 2021).

Among the fresh water species, a *Physa melitensis* is reported for the Fontana del Maglio, attributed to *Physa (Physella) acuta* (Draparnaud,

1805) (Gastropoda Physidae) by Beckmann (1987) and Giusti et al. (1995). Currently, it is cited as *Physella (Acutiana) acuta* by Bodon et al. (2021).

DOMENICO REINA

Domenico Reina (Fig. 37) lived in Boccadifalco, a hamlet on the southern outskirts of Palermo in 1800, a “villaggio [village]” defined by Benoit (1857), a district of the city in our days. He was janitor at the Zoological Museum of Palermo, at least since 1862, under the direction of Pietro Doderlein (Massa et al., 2018). He did not write works, but was a great expert of Sicily and collected specimens for numerous authors, including foreigners, who cited him repeatedly in their works. His findings led to the description of several new Sicilian species. News of his life and his activities are reported by Benoit, especially in his first two catalogs (1857–1862, 1875).

In the first catalog, Benoit (1857) speaks of Reina, especially on the occasion of the dedication that the author makes to him of a new species he discovered: *Helix reinae* Benoit, 1857 (Fig. 38). Despite the fact that Reina was of humble origins, Benoit recognizes his great ability as a naturalist and an excellent researcher, admits that he is responsible for their best discoveries, not only malacological, recommends him to all foreign naturalists with words of great respect: “guida diligente, onorata, e discreta [diligent guide, honorable, and discreet]”.

Helix reinae, found in the woods of Calatafimi, is a Sicilian endemic species, inserted in the genus *Schileykiella* Manganelli, Sparacio et Giusti, 1989 (Manganelli et al., 1989) and attributed, as author, paradoxically, to L. Pfeiffer. In fact, as unfortunately happened other times (see above), Pfeiffer, having received the species already named by Benoit, included it in a work that was published before (Pfeiffer, 1856) the actual description of Benoit (1857). This genus includes another classic species of Sicilian malacology, *Helix parlatoris* Bivona, 1839 endemic to Sicily and Malta, and two other recently described endemic species from Sicily: *S. bodoni* Cianfanelli, Manganelli et Giusti, 2004 from Marettimo and *S. mariarosariae* Viviano R., Viviano A., Liberto, Reitano et Sparacio, 2019 from NW-Sicily.

In his second catalog, in the preface, Benoit (1875) confirms the task given to Reina to seek, on his behalf, land molluscs (“*Fummo secondati in tali ricerche dal solerte e diligente Domenico Reina, peritissimo nel raccogliere oggetti di storia naturale* [We were helped in such research by the diligent and meticulous Domenico Reina, expert in collecting objects of natural history]”) and expands on all the places he visited, in practice all of Sicily, from the surroundings of Palermo, the Aegadian Islands, Agrigento, Syracuse and surroundings, Catania, Etna, Messina; besides the Caronie and the Madonie that Reina “*visitò replicata volte, ed in differenti stagioni* [visited multiple times, and in different seasons]”.

For the Aeolian Islands, Benoit (1875) says that ... “*breve dimora vi fece però il Reina, perché in una di tali isole, gli abitanti sospettando che fosse propagatore di veleno, con pronta fuga dovette abbandonare quelle inospite contrade* [Reina didn't stay long there, however, because in one of these islands, the inhabitants suspected that he was a spreader of venom, and he promptly had to abandon those inhospitable districts]”.

A misunderstanding in the behavior of Reina, dedicated to his research in the countryside, was probably at the basis of what Benoit said about this single episode. Giusti (1973), many years later, would confirm, fortunately, that those islands are not inhospitable as said but the positive judgment of Lojacono Pojero (1878), who visited the Aeolian Islands in those same years, appears more exhaustive.

For the circumsicilian islands, in addition to the Aeolian and Aegadian Islands, where he found several new species of land molluscs described by Benoit (see above), Reina was also in Ustica as reported by Riggio (1885) who considers him a “*coscienziosa ed intelligente ...nel 1883 vi fece una escursione di alcuni giorni per espresso desiderio del nostro Direttore Prof. Doderlein* [conscientious and intelligent ... in 1883 he made an excursion of a few days following the wishes of our Director Prof. Doderlein]”.

Among the quotations of foreign authors, the Swiss entomologist Delaharpe (1860) published a contribution on the lepidopterological fauna of Sicily in which 168 species are reported, some of which were new to science. The study was possible because two of his friends, who stayed in Sicily

from the winter of 1857 to the beginning of 1858, bought these insects from Domenico Reina, whom Delaharpe himself defines “*zélé et intelligent collecteur d'histoire naturelle* [zealous and intelligent collector of natural history]”.

Another foreign author, Seidlitz (1896), describes a new species of Melandryidae (Coleoptera) from Sicily, *Phloiorthrya granicollis*, discovered “*in Sicilien bei Palermo vom verstorbenen Domenico Reina gesammelt* [in Sicily near Palermo, collected by the late Domenico Reina]”.

The following year Enrico Ragusa (1897), dealing with this species in his “*Catalogo ragionato*



Figure 24. Domenico Reina
(by Massa et al., 2018, modified).

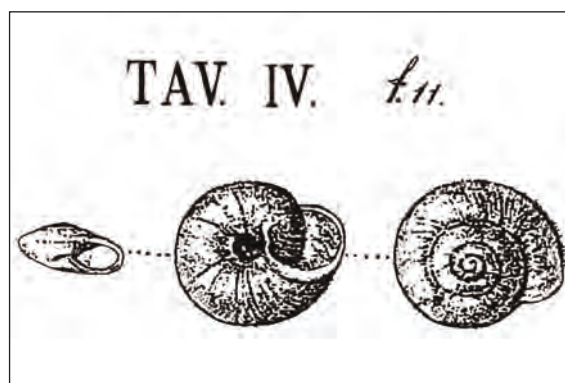


Figure 25. *Helix reinae* Benoit, 1857: 96,
tav. IV, f. 11 (for explanations see the text).

dei Coleotteri di Sicilia”, pointed out: “*specie descritta sopra esemplari raccolti da Domenico Reina, il compagno di escursioni di Ghiliani e di quanti vennero da noi per iscopo entomologico. Egli gode perfetta salute e non è morto, per come lo crede il signor Seidlitz...* [species described on specimens collected by Domenico Reina, the hiking companion of Ghiliani and of those who came to us for entomological purposes. He enjoys perfect health and is not dead, as Mr. Seidlitz believes]”.

AGOSTINO TODARO

He was born in Palermo on 14.1.1818 where he lived, worked and died on 18.4.1892 (Fig. 39). He graduated in Law in 1841 and he devoted himself as a lawyer. He also cultivated a passion for botany as an assistant at the Botanical Garden of Palermo in 1848. He graduated in Physics and Mathematics in 1856 and, in the same year, he became Director of the Botanical Garden, a position he held until his death.



Figure 39. Agostino Todaro (photo courtesy of R. Poggi).

Todaro succeeded Vincenzo Tineo (1791–1856). They were different in culture, character and education, but both had a fundamental role in the contribution they gave to the knowledge of Sicilian botany and in the development, expansion and prestige of the Botanical Garden that they directed from 1813 to 1892. This was possible thanks to the positive synergy and succession of events, unique in its kind, that the two naturalists were able to realize along almost all the 19th century (Ottonello, 1987).

Todaro participated as an administrator in the public life of Palermo, but this did not prevent him from defending the integrity of the lands annexed to the Botanical Garden from the new zoning plan that threatened its integrity. Skilled jurist and politician, he managed to solve this problem (Todaro, 1887: “*Reclamo del Real Orto Botanico a S.E. il Ministro dell’Interno contro il Piano Regolatore della Città di Palermo* [Complaint of the Royal Botanical Garden to H.E. the Minister of the Interior against the Master Plan of the City of Palermo]”) and lay the groundwork for a lasting expansion of the Garden itself. He was appointed senator of the Kingdom of Italy in 1879.

His botanical studies concerned mainly orchids (Todaro, 1842), the description of about 200 new taxa (Ottonello, 1987), the catalog of new plants of the “*Hortus Botanicus Panormitanus*” (1876–1892). He promoted the cultivation of cotton in Sicily and, like Tineo, of other food plants or, as alternative, of economic interest.

Todaro was preparing with Pirajno of Mandalisca a book on rare plants of the Aeolian Islands which was never published (Lo Cascio, 2014).

His contribution to the study of the circumsicilian islands is the following.

Synopsis plantarum acotyledonearum vascularium sponte provenientium in Sicilia insulisque adjacentibus (1866)

In this monograph (Fig. 40), Todaro (1866) draws up a very detailed list of the ferns present in Sicily and in the surrounding islands. For each species it is reported bibliography, systematics, morphology, biology, various observations and locations of discovery.



Figure 40. Paper on circumsicilian islands by Todaro (1866).

For example, the common maidenhair fern *Adiantum capillus-veneris* L. is found: “*Ad muros humidos, vel in rupibus humidis umbrosis ubique in Sicilia, et in insulis minoribus Filicuri, Lipari, Saline, Stromboli, Vulcano, Ustica, Maretimo, Pantelleria, Lampedusa. Fructificat ab Aprile in Junium*”.

From the systematic point of view, a new genus is described, *Cosentinia* Tod. (Pteridaceae), still considered valid species today, which also includes the species *C. vellea* (Aiton) Tod. present in Pantelleria. The new genus is dedicated to Ferdinando Cosentini (1769–1840), professor of Botany in Catania, and is found in Sicily: “*Ad rupes vulcanicas vel calcareas meridiem spectantes Catania (Cosentini, Tineo) Caltanissetta, S. Giuseppe (Tin.); Castellammare a Fraginisi, Palermo a Monte Pellegrino, a Caltano, alla Rocca, ac etiam in insula minore Pantelleria. Fructificat a Novembri ad Majum*”.

Also the new genus *Matteuccia* is an accepted genus name, dedicated to the famous physicist professor Carlo Matteucci, while a new species described in this work is *Isoetes sicula* Tod. currently synonym with *Isoetes subinermis* (Durieu) Cesca & Peruzzi (Rizzo, 2021).

LUIGI FAILLA TEDALDI

Luigi Failla Tedaldi is one of the most emblematic and representative figures among the Sicilian naturalists of 1800. He was born in Castelbuono on 8.11.1853, and was a fellow citizen and pupil of Francesco Minà Palumbo (Mogavero Fina, 1968; Carapezza, 1987; Sparacio et al., 2011). However, compared to the great cultural and moral

stature of his master, which had an “encyclopedic” vision of almost all the medical, naturalistic and anthropological activities he undertook, Failla Tedaldi was mainly an entomologist. They belonged to two distinct cultural generations but in direct continuity (Carapezza, 1987) and of equal dignity.

He wrote about twenty works between 1877 and 1890, almost all on Sicilian Lepidoptera of which, with F. Minà Palumbo, he published in the *Naturalista Siciliano* the “*Materiali per una fauna lepidotterologica della Sicilia*” one of the most important works on this subject (Minà Palumbo & Failla Tedaldi, 1887–1889).

He also wrote on edible, sacred, medicinal, industrial, ornamental and luminous insects (Failla Tedaldi, 1882; 1891a), on Neolithic necropolis in the Grotte del Fico (Failla-Tedaldi, 1891b) and of the Chiusilla near Isnello (Failla Tedaldi, 1896). Moreover, he wrote an emotional and respectful obituary for F. Minà Palumbo (1899) and an important “*Glossario di Entomologia*” (Failla Tedaldi, 1900), for many years a reference point for all Italian entomologists. This work was “...la prima opera del genere ad apparire in Italia e la sua concezione dovette certamente avere un sapore di sfida, proponendo all’intera cultura scientifica italiana una così importante codificazione nomenclatoriale formulata da un oscuro dilettante in un remoto paese dell’interno della Sicilia [the first work of its kind to appear in Italy and its conception certainly had to have the taste of challenge, proposing to the entire Italian scientific culture such an important nomenclatorial codification formulated by an obscure amateur in a remote town in the interior of Sicily]” (Fig. 41) (Carapezza, 1987).

Failla Tedaldi had a wide knowledge of the places where he lived and was a great observer and collector, which he also carried out as a profession. He was in direct contact with almost all the greatest naturalists of the time, both Italian and European, who asked him for material and advice. He was also a friend of Enrico Ragusa and Teodosio De Stefani with whom he shared, with commitment and enthusiasm, the long “spring” of Sicilian naturalists of the nineteenth century.

The last period of his life was, however, particularly difficult. As Carapezza (1987) writes: “*Ragusa subisce un grave rovescio finanziario e nel ‘13 scrive addirittura di volere abbondare*

l'entomologia. Nello stesso anno Failla, a seguito di un lungo periodo di crisi, prende la decisione di emigrare in America, e a prenderla è un uomo che ha già superato i sessanta anni. La decisione non verrà attuata e Failla continuerà ad occuparsi di entomologia, ma a farlo è un anziano disilluso e senza entusiasmo, che ha visto mutarsi in indifferenza il fervore che circondava le ricerche in cui aveva creduto [Ragusa underwent a serious financial setback and in '13 he even wrote that he wanted to give up on entomology. In the same year Failla, following a long period of crisis, takes the decision to emigrate to America, a decision taken when he was over sixty years old. However, he would not follow through with it and Failla would continue to concern himself with entomology, but it is a disillusioned and unenthusiastic old man who has seen the fervor that surrounded the research in which he had believed change into indifference].

Failla Tedaldi died on 21.6.1933 one year after the publication of the last issue of "*Il Naturalista siciliano*" on whose pages he had been one of the main protagonists.

Escursione entomologica all'isola di Lampedusa (1887)

[Entomological excursion to the island of Lampedusa (1887)]

Failla Tedaldi (1887) talks about his entomological excursion (Fig. 42), starting from the departure from Castelbuono, the trip by train Cerda-Agrigento-Porto Empedocle and, from there, the departure for Lampedusa by steamboat, after waiting 4 days for the sea to calm down.

He tells of the "*ajuti morali e materiali* [moral and material support]" of his "*amico sig. Enrico Ragusa* [friend Mr. Enrico Ragusa]" for making this journey happen and describes physically of the island of Lampedusa, also adding information on its recent history and several references to Calcara's work on this island (Calcara, 1847a). This is followed by a description of the entomological collections and a list of the species surveyed for Coleoptera, Lepidoptera, Hymenoptera, Hemiptera and Arachnida.

Failla Tedaldi, as an expert naturalist, immediately understood that in Lampedusa "*la fauna non è relativamente povera, come a prima*



Figure 41. Landscape of Castelbuono and the Madonie Mountains (late 1800s), where Luigi Failla Tedaldi was born and lived.

giunta potrebbe credersi [the fauna is not relatively scarce, as at first sight one might believe]”, collecting and reporting for the first time on the island many new and interesting species. Among these, he discovered some North African species that have in Lampedusa their only Italian and, sometimes, European station, such as the buprestid beetle *Julodis onopordi lampedusanus* Tassi, 1966 (Sparacio & Ratti, 1995; not synonymous of *J. onopordi splichali* Obenberger, 1917 sensu Kuban, 2006), the mutillid hymenopteran *Dasylabris atrata* (Linnaeus, 1767), sub *Mutilla arenaria*, widespread in North Africa, Spain, and Portugal (Petersen, 1988; Arnone & Romano, 1995), the cicindelid beetle *Lophiridia lunulata* (Fabricius, 1781): sub *Cicindela littoralis* v. *Ragusae*, “comune al Porto [common in the Port]”, the carabid beetle *Dixus interruptus* (Fabricius, 1775), sub *Aristus opacus*, a species with N-African range extended to the Canary Islands with doubtful presence in the Iberian Peninsula (Vigna Taglianti, 1995 sub *Ditomus opacus*), already reported for Lampedusa by Ragusa (1885) on specimens had just by Failla Tedaldi.

While *Julodis onopordi lampedusanus* and *Dasylabris atrata* are still present, *L. lunulata*, widespread also in nearby Tunisia (Korell & Cassola, 1987) must currently be considered extinct from the island (see Vigna Taglianti, 1995), the only Italian and European known locality.

Failla-Tedaldi also found and described local populations of the tenebrionid beetle “*Erodius* v. *Destefani*” (Fig. 43) dedicating them to his “amico [friend] Teodosio De Stefani. This taxon is considered a valid subspecies as *Erodius* (*Erodius*) *audouini destefanii* endemic to Lampedusa. *Erodius audouini* Solier, 1834 is a North African species (locus typicus: Algeria) present also in Sardinia with the ssp. *peiroleri* Solier, 1834 (Aliquò & Soldati, 2010).

Failla Tedaldi reported for the first time on the island also the large beetle Histeridae *Pactolinus major* (Linnaeus, 1767), sub *Hister major* (Vienna, 1995), several species of spiders, such as *Nemesia caementaria* (Latreille, 1799), *Argiope lobata* (Pallas, 1772), *Hogna radiata* (Latreille, 1817) (Pesarini, 1995) and hemipterans (Carapezza, 1995).

In the same article, Desbrochers described the *Sitones Faillae* collected by Failla Tedaldi in Lampedusa, now considered synonymous of *Sitona*



Figure 42 (above). Il Naturalista siciliano, title of the paper on Lampedusa (Failla Tedaldi, 1887). Figure 43 (below). Type material of the L. Failla Tedaldi collection (Museum of Zoology “Pietro Doderlein” of Palermo, Italy): *Erodius* (*E.*) *audouini destefanii* endemic to Lampedusa.

(*Sitona*) *virgatus* (Fåhræus, 1840) a species of the western Mediterranean (Osella & Riti, 1995).

ENRICO RAGUSA

Enrico Ragusa (Fig. 44) was born in Palermo on 28.8.1849 where he died on 19.12.1924 (Liotta, 1985, 1987b; Romano, 2004, 2006). He began to cultivate his passion for entomology since he was a boy in Berlin, where he studied. Returning to Sicily in 1869, he continued and improved his entomological studies becoming one of the greatest figures in this field. He produced numerous publications where he described new taxa and reported many new species for Sicily. Ragusa studied Coleoptera (Figs. 45–47), Lepidoptera and Hemiptera as testified by his main works: *Catalogo*

ragionato dei Coleotteri di Sicilia (1883–1912), *Catalogo dei Lepidotteri esistenti nella collezione di Enrico Ragusa* (1905), *Emitteri di Sicilia* (1907).

Deeply linked to his city of Palermo, he lived with his family at the “Grand Hotel et des Palmes” one of the hotels he owned whose management represented his main work activity (Fig. 48).

Friend to almost all the Sicilian naturalists of his time, he was very close in particular to Luigi Failla Tedaldi and Teodosio De Stefani. He was also in contact with many Italian and European scholars. In this positive environment of intense intellectual work for the whole Sicilian scientific environment, he founded in 1881 the scientific journal “*Il Naturalista siciliano*” (Fig. 49).

His kind personality, his ability to collect and study insects, his capacity to be a proudly “regional” entomologist while at the same time giving his studies an international dimension, the social commitment that he put in all his initiatives, made Enrico Ragusa, between the end of 1800 and the beginning of 1900, the best and most representative link between civil society and the university world and, more generally, between the Sicilian scientific environment, Palermo in particular, and the Italian and the European.

Among his works, two are dedicated to the circumsicilian islands of Pantelleria and Lampedusa. Riggio (1885) also speaks of a brief trip of Ragusa in Ustica of which there are no other records.

Gita entomologica all’Isola di Pantelleria (1875) [*Entomological trip to the island of Pantelleria* (1875)]

As in almost all of his major works, it is written as a long story and the places visited are admired, explored and described not only from an entomological point of view but also cultural and affective (Ragusa, 1871, 1873, 1874, 1908). In the account of his voyage on the work on Pantelleria (Fig. 44) he talks about his emotions (and fears) felt at sea during the navigation, the description of the landscapes visited, in particular when he climbed the Montagna Grande, and the various collections made.

It begins with a great act of sincerity: “*Uno dei miei sogni più grandi era visitare Pantelleria ...ed ogni anni mi promettevo di andarvi* [One of my greatest dreams was to visit Pantelleria ... and every



Figure 44 (above). Enrico Ragusa, 1849–1924 (by Carapezza, 2020 modified). Figure 45 (below). The paper on Pantelleria (Ragusa, 1875) with the author’s dedication.

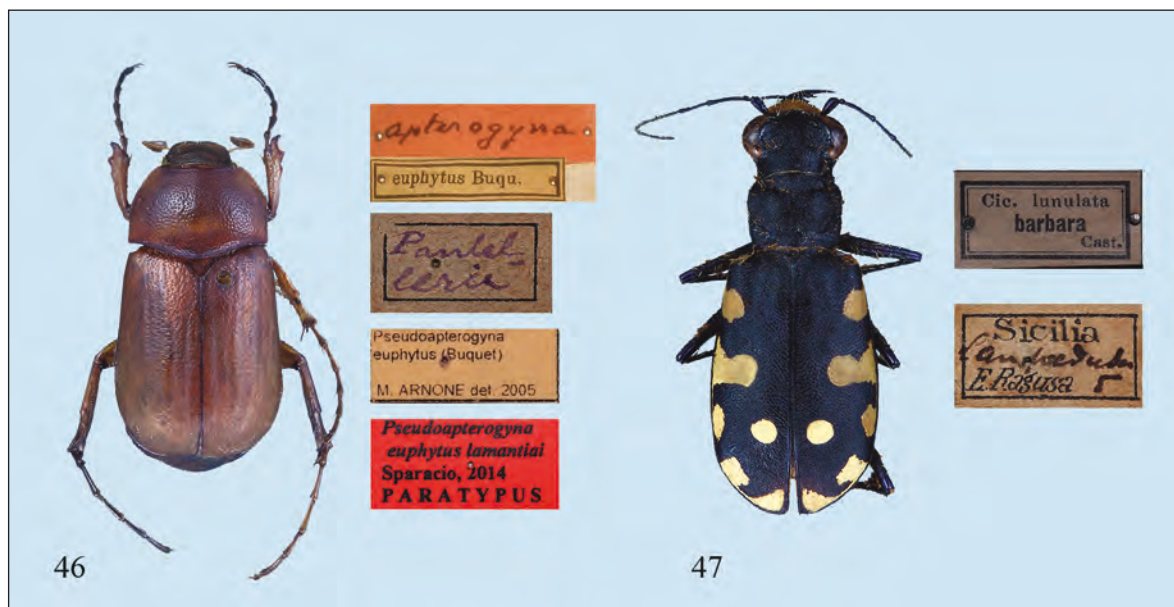
year I promised myself to go there]”. However, only the news that Giacomo Doria of the Museum of Genoa wanted to send one of his explorers to the island convinced him to leave. Ragusa writes: “Essere tanto vicino a quest’isola e vedere che altri dovesse in vece mia attuare un disegno da me per lo innanzi vagheggiato (dirollo franco) m’ispirava tal gelosia e dispiacenza [Being so close to this island and see that others, instead of me, realized such a plan that I did organize (let’s be frank) brought forth such jealousy and sorrow]”.

So, on May 1, 1875 Ragusa left for Pantelleria. He arrived in the island on May 3 and would leave on May 11. After the vicissitudes of the journey, Ragusa speaks briefly about the history of Pantelleria and its geographical and environmental peculiarities, describes the places visited and provides information on the collections made, creating the basis for all future entomological catalogs of the island.

Among these, there are many new species collected in Pantelleria for the first time, especially Coleoptera Carabidae and Curculionidae (Vigna Taglianti, 1995; Osella & Riti, 1995), Lepidoptera (Romano & Romano, 1995), Homoptera (D’Urso & Guglielmino, 1995; Rapisarda, 1995), Heteroptera (Carapezza, 1995). Ragusa speaks at length of the *Rhizotrogus Gerardi* (Coleoptera Melolonthidae),

common in Pantelleria and well known to the local inhabitants as “*Tarterucheddi di la vigna*” who considered them harmful to the vineyards (Fig. 45). This species is now considered an endemic subspecies of the island, *Pseudoapterogyna euphytus lamantiai* Sparacio, 2014, with the nominal subspecies widespread in Algeria and Tunisia (Sparacio, 2014a).

Ragusa also describes very well the entomofauna of the pond the Bagno dell’Acqua or Venus Lake, reporting two species of Odonata as *Sympetrum fonscolombei* (Sélys, 1840) (sub *Diplax fonscolombi*) and *Orthetrum cancellatum* (Linnaeus, 1758) (sub *Libellula cancellata*) (Pavesi & Utzeri, 1995), numerous species of riparian and hygrophilous beetles such as Carabidae (Vigna Taglianti, 1995) and the Pselafidae *Batrissodes oculatus* (Aubé, 1833), *Brachygluta simplex hipponensis* (Saulcy, 1876) and *B. globulicollis aubei* (Tournier, 1867) (Poggi, 1995), the ditiscids *Hydroglyphus signatellus* (Klug, 1834) (sub *Hydroporus thermalis*) and *Nebrioporus (Zimmermannius) cerisyi* (Aubé, 1836) (so later determined in Ragusa, 1882: sub *Hydroporus baeticus* and var. *acuminatellus*) characteristic of the thermal waters of this pond (Sparacio, 1995), and the palpicorns *Coelostoma hispanicum* (Kuster 1848), *Paracymus aeneus* (Germar 1824),



Figures 46, 47. Entomological collection of E. Ragusa (Museo di Zoologia University of Catania, Italy): *Pseudoapterogyna euphytus lamantiai* from Pantelleria (Fig. 46) and *Lophiridia lunulata* from Lampedusa (for explanation see text).

Enochrus politus (Küster 1849) and *Berosus affinis* (Brullé 1835) (Ferro, 1995).

At the end of the work, Ragusa provides a list of Coleoptera (120 species), Lepidoptera (21 species) and Hemiptera (30 species) collected with the description of 5 new species of which two described by Ragusa himself and three by other authors to whom he had sent the material collected.

Pachychile cossyrensis Ragusa, 1875

“*Questa specie tanto elegante, vive sotto le pietre in compagnia della Tentyria grossa fra le aride lave fino al mare, ove la rinvenni in tre soli esemplari* [This elegant species, lives under the stones in company of the *Tentyria grossa* among the arid lavas up to the sea, where I found only three specimens]”.

Taxon valid as *Pachychila* (*P.*) *crassicolis cossyrensis* (Ragusa, 1875) (Coleoptera Tenebrionidae) (Aliquò & Soldati, 2010). *Pachychila* (*P.*) *crassicolis crassicolis* (Kraatz, 1865) lives in eastern Algeria while ssp. *cossyrensis* lives in Tunisia and Pantelleria.

Tachys insularis Ragusa, 1875

“*Trovai questa graziosa specie in quattro solo esemplari, sotto pietre, sulla riva del lago* [I found only four specimens of this pretty species, under stones, on the shore of the lake]”.

Taxon believed to be a synonym of *Paratachys bistriatus* (Duftschmid, 1812) (Coleoptera Carabidae), a species widely distributed in the W-Palearctic. Ragusa (1887) synonymizes his species with *T. bistriatus* var. *elongatus* Dej. but notes that the specimens of Pantelleria differ from the others for “*il suo colorito ferruginoso, invece di bruno o nero-bruno* [its ferruginous coloration, instead of brown or black-brown]”.

Vigna Taglianti (1995) states that *P. bistriatus* is a highly variable species, worthy of further taxonomic research and reiterates that, indeed, the populations of Pantelleria are recognizable from the others by their color.

Eupithecia pantellata Millière, 1875

Valid taxon as *Eupithecia pantellata pantellata* Millière, 1875 (Lepidoptera Geometridae).

It is widespread in Western Mediterranean area (Spain, Portugal, Sicily, North Africa and the Canary Islands) with two subspecies: *E. pantellata*



Figure 48. Ingham-Whitaker house bought by Enrico Ragusa and later transformed into the “Grande Albergo delle Palme” in Palermo.

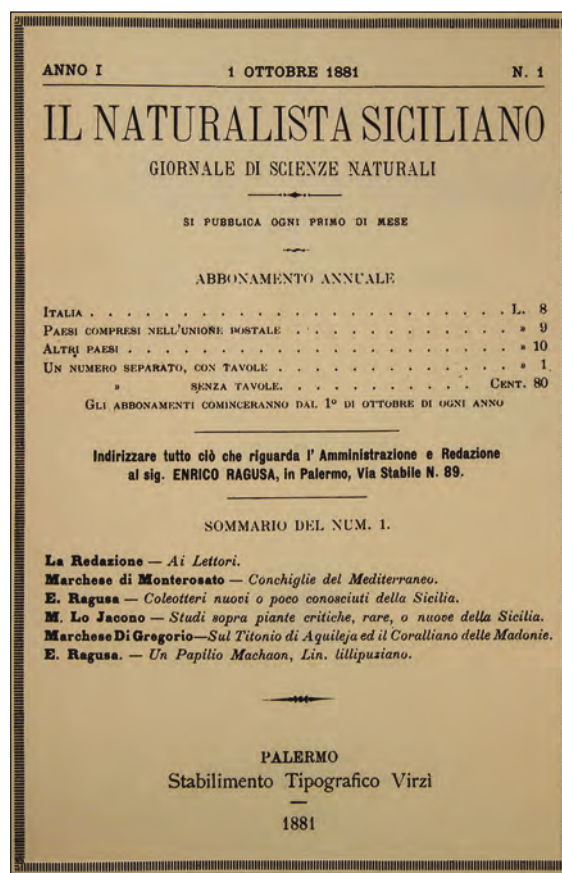


Figure 49. *Il Naturalista siciliano*, first issue (1881) of the magazine created by Enrico Ragusa.

andalusica Wehrli, 1926 and *E. pantellata canariata* Pinker, 1965.

Eupithecia cossurata Millière, 1875

Taxon considered synonymous with *Idaea seriata* (Schränk, 1802) (Lepidoptera Geometridae) according to Okyar & Mironov (2008).

Dieuches ragusae Puton, 1875

Taxon considered synonymous with *Dieuchesus armatipes* (Walker, 1872) (Heteroptera Lygaeidae), a species with a wide Afrotropical-Mediterranean distribution (Carapezza, 1995).

Breve gita entomologica all'Isola di Lampedusa (1892)

[Short entomological trip to the island of Lampedusa (1892)]

“*Quattro o cinque specie interessanti trovate dal Failla a Lampedusa nel maggio 1886, mi avevano fatto nascere vivissimo il desiderio di visitarla pure* [Four or five interesting species, found by Failla in Lampedusa in May 1886, had given me a very vivid desire to visit it as well”. Thus, Ragusa also undertook a journey to Lampedusa but, as he was already in the surroundings of Porto Empedocle, he began to collect beetles while waiting to leave for the island.

In Lampedusa, Ragusa arrived at nine o'clock in the morning of the 5th of July 1892 but the late season, the excessive heat and the few species collected, prompted him to make a quick return with the same steamer, Gorgona, returning to Sicily on the 6th of July: “*essendo impossibile ... restare otto interi giorni a Lampedusa* “[being impossible ... to stay eight whole days in Lampedusa].

In the work on this short excursion, a list of the collected species of 10 Lepidoptera and 43 Coleoptera is provided.

Among the Coleoptera, 30 are new to the island. It is also confirmed again the presence of *Lophiridia lunulata* at Wilgia (Fig. 46) and *Julodis onopordi lampedusanus* found by Failla-Tedaldi (1887).

Among the Lepidoptera, 5 are new for the island including a specimen of *Argyresthia* (Ypomeutidae) that Ragusa sent for description to M.F. Wocke but of which there were no further news (Romano & Romano, 1995).

MICHELE LOJACONO POJERO

Born in Palermo in 1853 (Fig. 50), he formed at the botanical school of Agostino Todaro of which he became assistant and student at the “*Regio Orto Botanico*” of his own city. In 1881, he is part of the editorial staff of “*Il Naturalista siciliano*” and became director of “*Il Giornale del Comizio Agrario di Palermo*”. In 1883, he obtains the free teaching at the Faculty of Physical and Mathematical Sciences at the University of Palermo, course of Cryptogamy and Taxonomy.

Lojacono Pojero carried out numerous travels and explorations in all Sicily and in the adjacent islands, combining the taxonomic aspect with numerous observations on the environmental and ecological characteristics of the species collected; he also made the drawings of the plants shown in his work. As reported by Domina et al. (2014a), Lojacono Pojero, for Sicily alone published 579 new names of higher



Figure 50. Lojacono Pojero from Domina et al. (2014) (photo by Library of the Botanical Garden of Padua, Italy).

plants, corresponding to 306 species, 267 varieties and 6 forms (Lojacono Pojero, 1878a; 1878b, 1878c, 1881–1883, 1882, 1883, 1883–1884, 1886–1887, 1888–1909, 1906a, b) (Figs. 51–53).

He dedicated himself to the study of cryptogamic flora (mosses and lichens) but also described numerous taxa of phanerogams such as the endemic *Abies nebrodensis* (Lojac.) Mattei. Lojacono Pojero was the only Sicilian botanist who published a regional catalog of the Sicilian flora: the “*Flora Sicula*” (Lojacono Pojero, 1888–1909). In this catalogue he adds his knowledge to the study of the material kept at the Herbarium Siculum, constituted mainly with the collections of Vincenzo Tineo and Agostino Todaro.

Towards the end of 1800, relations with Agostino Todaro soured (Aghababayan et al., 2012) and his studies slowed down, only to resume in full swing with Antonino Borzì, who succeeded in the direction of the Garden upon Todaro’s death in 1892; these studies were interrupted again around 1913 when he left Palermo definitely.

All these events had a negative impact on his collection, partly sold at modest prices to major European herbaria (Aghababayan et al., 2012) then, probably, lost (Domina et al., 2014a).

He died in Messina in 1919 where he had moved to teach Natural Sciences at the Regio Istituto Tecnico (Dörfler, 1909; Dia, 1987).

Numerous biographies and obituaries are dedicated to Lojacono Pojero (De Gregorio, 1923; Stafleu & Cowan, 1981; Dia, 1987; Nardi, 1988; Troia & Raimondo, 2007) and all his scientific production is the subject of numerous and continuous works (Domina & Mazzola, 2007; Aghababayan et al., 2008; Domina et al., 2014a, b). For contributions to the knowledge of the circumsicilian islands, Aeolian Islands in particular, see also Lo Cascio & Navarra (2003) and Lo Cascio (2014).

Le isole Eolie e la loro vegetazione con enumerazione delle piante spontanee vascolari (1878)

[*The Aeolian Islands and their vegetation with enumeration of spontaneous vascular plants (1878)*]

In this work, Lojacono Pojero studies, from a botanical point of view, the Aeolian islands on behalf

of his “*maestro*” Agostino Todaro. He went on multiple excursions in all of these islands and several smaller islands, except Alicudi and Filicudi that, as he said, are more distant and difficult to reach.

In the long introduction, he describes all these islands, often following the work of Salino (1874). He emphasizes, among other things, as the basis of the economy of these populations is the cultivation of vineyards, with the production of “Passolina” and “Malvasia”, and of the caper. He also talks about the difficulties of these populations due to the bad connections between the islands and with Sicily in terms of services and health care. Words of praise are reserved to the people, and especially to the women of these communities, able to work the land and to fish like men and to show a greater emancipation than Sicilian women.

He examines in detail Lipari, Vulcano, Salina, Panarea (“*Panaria*”), Basiluzzo, Dattolo (Dattilo), Lisca nera, Lisca bianca, Bottaro and Stromboli.

The whole catalogue of collected plants included 499 species. Among these, he mentions *Kleinia mandraliscae* Tin. species described by Tineo (1855) and dedicated to Pirajno of Mandralisca who collected it in Vulcano (see below). Lojacono Pojero did not find this plant in Vulcano but he got some specimens from the Reverend Canon Vincenzo Amendola who cultivated it in a garden in Piano Conte in Lipari.

He reports several interesting species, some already known, such as *Prasium majus* Lin. Var. *villosus* = *Stachys major* (L.) Bartolucci & Peruzzi, which had been called *P. liparitanum* by Mandralisca and Todaro. He also provides useful indications on the occurrence of some plants such as the dwarf palm, *Cytisus aeolicus* and the strawberry tree that is becoming less and less frequent due to the deforestation that they were already suffering at that time, and on the holm oak and chestnut groves. Regarding the changed environmental conditions, it appears that in the 19th century the Aeolian Islands were richer in water springs, water points and humid areas, nowadays lost, that harboured unique flora and fauna (Lo Cascio, 2014).

In this first work on the Aeolian Islands, the young Lojacono Pojero does not describe any new species but many of the collections and observations made will be developed later with the



Figures 51, 52. *Anthemis aeolica* Lojac. and *A. lopadusana* Lojac.; lithography by A. Fecarotta (Lojacono Pojero, 1888–1909).

description of new Aeolian taxa starting with *Orobanche todari* Lojac. (Lojacono Pojero, 1881–1883). Many of them would be included in his “*Flora Sicula*” (Lojacono Pojero, 1888–1909) but, often, they have been ignored by other Authors. Lojacono Pojero was aware of his choice, writing that it is better to point out the morphological differences found in the various populations in nature rather than “*fondere tutto in un unico fascio senza alcuna logica naturale, e poi senza alcun vantaggio reale per la scienza* [merge everything together without any natural logic, and thus without any true advantage for science]”. For example, comparing the brooms of Vulcano with those of Sicily, Lojacono Pojero (1906) noticed some morphological differences between the two populations and placed those of Vulcano in the variety “*spartioides*”. After many years (Valsecchi, 1986), these brooms would actually be attributed to a new species, *Genista thyrrrena* Vals.



Figure 53. *Onopordon “mandraliscae”* Lojac.
(Lojacono Pojero, 1888–1909).

Lo Cascio & Navarra (2003) report a table showing the taxa described by Lojacono Pojero on specimens from the Aeolian Islands or from these islands and other localities in Sicily are marked.

Una escursione botanica in Lampedusa (1883–1884)

[A botanical excursion in Lampedusa (1883–1884)]

Lojacono Pojero left Palermo, in the company of his zoologist friend Baron F. von Zwierlein of Wiesbaden, at dawn on April 5 with the train that would take him to Porto Empedocle continuing then by boat to Lampedusa.

In the first part of the work, Lo Jacono-Pojero describes the different landscapes he observed along the train journey. He tells how he managed to retrieve some papers for the herbariums (which had not arrived from Palermo) just before he left at 6 p.m. on the boat Tortoli, which made weekly trips to Lampedusa. After passing quickly through Linosa, whose landscape observed from the boat impressed Lo Jacono favorably, they arrived in Lampedusa the following morning, welcomed by the local authorities but also by a multitude of prisoners serving their sentences on the island, who crowded the quays of the port.

For the general description of Lampedusa, Lo Jacono refers to the works of Calcara (1846a, 1847a) whose first observations on the island are not positive. Lo Jacono, emphasizing the North African affinities of Lampedusa, comes to the conclusion that the island is “*brutta, sterile e improduttiva*” [ugly, sterile and unproductive]” and that, for this reason, the name derives from “*Lapidosa*” in reference to the generally stony ground.

Probably the almost forty years of difference from the first observations of Calcara (1846a) have been determinant for an overall worsening of the Lampedusa landscape.

The same Lojacono Pojero, in fact, would personally realize how this territory has been intensely deforested: “... *i coloni in cerca di una merce rarissima in Lampedusa, quale si è la legna da ardere, l’hanno sin da lungo tempo denudato* [the settlers in search of a very rare commodity in Lampedusa, such as firewood, have been stripping the island for a long time]. On the other hand, he emphasized with greater emphasis how, during his

stay, Lampedusa hosted more than 50 boats and numerous people dedicated to fishing and salting sardines and “*alaccia*”.

Lo Jacono-Pojero's journey to Lampedusa lasted 10 days, three more than expected, because the Tortoli boat, which had just left, was forced to return to port due to bad weather conditions. This delay forced Lo Jacono to return directly to Palermo and “*a sacrificare Linosa ai sentimenti di marito e di padre* [to sacrifice Linosa to the feelings of husband and father]” that he could study thanks to the samplings of von Zwielerlein who, instead, stayed there.

In the list of vascular plants that he provides, Lo Jacono marks with an asterisk the plants observed for the first time by him in Lampedusa or by von Zwielerlein in Linosa. He left unmarked those surveyed by Gussone (Gussone, 1832–1834; 1839; 1844) and by Calcara (1847a). Others, marked with an “o” are those mentioned only by other authors.

The catalog would include, according to the calculations of Lo Jacono himself, 390 species (368 in Lampedusa and 22 in Linosa). For those of Lampedusa, he calculated that about 290 were already reported by Gussone and Calcara (who added 22). In total, including those recorded in Linosa, Lo Jacono-Pojero reported about a hundred new species. Among these, 5 species are described for the first time.

Cistus skanbergii Lojac.

Very common species according to Lo Jacono Pojero, collected in the eastern part of the island of Lampedusa, now practically extinct (Domina et al., 2015). This plant (Fig. 54) was originally described as a species but it is now considered to be a natural hybrid (*Cistus* x *skanbergii* Lojac.) between *Cistus parviflorus* and *C. monspeliensis* (Pignatti et al. 2017–2019). Lo Jacono-Pojero himself speculated that this taxon, already reported by Gussone (1839) as *C. incanus* β., might be a hybrid.

Carduus pseudo-syriacus Lojac.

Collected on small trails and uncultivated places near the town of Lampedusa.

Synonymous with *Carduus pycnocephalus* subsp. *marmoratus* (Boiss. & Heldr.) P.H. Davis (Conti et al., 2005; Pignatti et al., 2017–2019).

Amberboa lippii var. *subdiscolor* Lojac.

Found at Linosa in grassy places by von Zwielerlein. It is a synonym of *Volutaria tubiflora* (Murb.) Sennen (Conti et al., 2005). Pignatti et al. (2017–2019) report it as a synonym of *Volutaria tubiflora*, a species with a large South-Mediterranean-Saharan range, but in Italy it is present only in Linosa.

Linaria pseudolaxiflora Lojac.

This species also comes from Linosa and was found by von Zwielerlein.

Endemic species of Sicily and Malta (Conti et al., 2005; Pignatti et al., 2017–2019; Brullo C. & Brullo S., 2020). Taxon also considered valid by Bartolucci et al. (2018).

Sclerochloa zwielerleini Lojac.

Species collected in Linosa by von Zwielerlein. Also considered a synonym of *Catapodium rigidum* (L.) C.E. Hubb., this taxon is considered a valid



Figure 54. *Cistus skanbergii* (Lojacono Pojero, 1888–1909).

species as *Catapodium zwierleinii* (Lojac.) Brullo (Pignatti, 2017–2019; Bartolucci et al., 2018).

Ancora sull'Isola di Lampedusa (1885a)
[Still on the Island of Lampedusa (1885a)]

This work and the following one represent an open criticism of the work of Lo Re (1885) who reported on behalf of the Ministry of Agriculture and Commerce on the agricultural development of Lampedusa. In this work, Lojacono Pojero disagrees point by point with all the optimistic forecasts of Lo Re which misled the Ministry, providing the inhabitants of Lampedusa with tools, such as ploughs and threshers, for crops which did not exist and could not have existed according to what Lojacono Pojero observed in his previous work on this island (Lojacono Pojero, 1883–1884). Lojacono Pojero reiterates that Lampedusa due to geological, pedological and botanical characteristics can never become like Pantelleria or the Aeolian Islands where agriculture is flourishing just by virtue of different soils and conditions (La Mantia, 2015). In the second part, Lojacono Pojero criticizes Lo Re on everything from a botanical point of view. He declares that his list of plants is wrong, and badly copied from that of Calcara, praising it again. He also reveals how the botanical work of Calcara has been viewed by Vincenzo Tineo, qualified proudly by Lojacono Pojero himself as “*Prof. di Botanica del nostro Ateneo*”. With the same pride he defines all the taxonomists as “*aspiranti seguaci di Papà Linneo* [aspiring followers of Father Linneo] and blames Lo Re for having not cited Calcara.

In the final lines, anticipating future times, he reveals all his aversion to the encroachments between similar sectors of the scientific world by quoting Aesop's fable about vanity: “*La Cornacchia e le piume del pavone*”. If you are a crow, it is not enough to put on beautiful feathers to become a peacock.

Un'ultima parola su Lampedusa (1885b)
[A final word on Lampedusa (1885b)]

An article of only two pages in which Lojacono Pojero notes that the Ministry gave credit to the report of Lo Re (1885) and sent all the necessary equipment for crops and livestock that were not

there or that if implanted would have been destined to failure, as the following years have shown.

Lojacono Pojero, ironizing on the fact that a stallion was also sent to Lampedusa to procreate in the total absence of the other sex, closes his criticism on this episode of mismanagement of public money, without any benefit for the local populations and destined to be repeated in the years to come.

Otto giorni alle Eolie (1904)
[Eight days in the Aeolian Islands (1904)]

In the month of August 1902, Lojacono Pojero, encouraged by a Russian friend who wanted to photograph the Aeolian Islands, organized a new trip to these islands in the company of Mr. Oro (secretary of the Club Alpino Siciliano), his son, and Francesco Damiani, student in Geology.

Once in Milazzo, they reached Lipari by steamer and, after a brief excursion to the Chirica and M. Pelato, departed the next day for Vulcano. The description of the crater of Vulcano is followed by botanical observations on this island, in particular on the *Ginestra ephedroides* (= *Genista tyrrhena*) and *Cytisus aeolicus* Guss. (on this species see also Lo Cascio, 2017).

From Vulcano, they returned to Lipari to travel to Salina and then Panarea. In Salina, Lojacono Pojero makes botanical observations, in particular on the presence of the fern *Pteris aquilina*, now known as *Pteridium aquilinum* (L.) Kuhn, on Mount Fossa delle Felci and some considerations on the effects of emigration to the Americas on the local populations.

In Panarea, the group arrived at night and landed in Caletta Dragutto, camping on the sandy beach. The next trip is to Stromboli, where they witnessed several episodes of volcanic activity, and then to Strombolicchio.

Lojacono Pojero describes in detail this islet with the lighthouse and the stairway dug in the rock to go up. Here, thanks to his son, Lojacono Pojero discovers the “*Kochia Saxicola* Guss.” (Fig. 55). This rare Chenopodiaceae had been described by Gussone (1855) for the rocks of S. Anna near Ischia and later found also on Capri (Migliorato, 1896). Lojacono communicated with particular emphasis this important report (Lojacono Pojero,



Figure 55. *Kochia saxicola* from Gussone (1855), see text.

1902) which, as it would be discovered later, had already been collected at Strombolicchio by Habsburg Lothringen (1896).

Currently, in the locus typicus of the station of Ischia, this species is considered extinct (Ricciardi et al., 2004) but, recently, it has been found also in two separate localities along the continental coast of Campania at Capo Palinuro (Santangelo, 2011). This is a relict species, currently reported as *Eokochia saxicola* (Guss.) Freitag et G. Kadereit (Santangelo et al., 2012).

Finally, Lojacono Pojero and his group returned to Stromboli where they embarked for Messina but, the ship, returning to Lipari to load pumice, took 12 hours to complete the trip.

Alicudi e Filicuri (Divagazione su temi eolici) (1906a)

[*Alicudi and Filicuri (Digression on Aeolian Issues) (1906a)*]

This trip to the Aeolian Islands too has been made by Lojacono Pojero in August, this time in 1905. The purpose is to reach Alicudi and Filicudi on which Lojacono Pojero had never visited. In the introductory part he provides brief historical notes on the exploration of these islands and dwells on the presence of *Kochia saxicola* in Strombolicchio, hoping it can also be found in these two islands.

The journey, started from Palermo, at night, aboard the torpedo boat N. 126S made available by the Ministry of the Navy and in excellent weather conditions, would bring Lojacono Pojero to Alicudi in the early hours of the next day. After, he did some research on this island and then departed for Filicudi, but not before noticing the lack of a doctor in Alicudi. From Filicudi he returned to Palermo after a brief stay in Vulcano and some digressions on the history of the Nunziante family that for many years has managed the island, which hosted a colony of prisoners on behalf of the Bourbons.

GIUSEPPE RIGGIO

Giuseppe Riggio (1848–1.11.1914) was assistant at the Institute of Zoology and Comparative Anatomy of the University of Palermo from 1875 to 1895 under the direction of Prof. Pietro Doderlein (Fig. 56). He was also a teacher of Science at the Technical Institute Filippo Parlatore and Vittorio Emanuele High School of Palermo. He contributed to the formation of the University Museum of Zoology, together with T. De Stefani-Perez who succeeded him (Riggio, 1889). Riggio prepared almost all the anatomical apparatuses, both skeletal and digestive (De Stefani-Perez, 1918; Massa et al., 2018).

For the museum, on behalf of Doderlein, he also made with T. De Stefani-Perez a collection of Sicilian Coleoptera of which they published a catalog (De Stefani-Perez & Riggio, 1882), later augmented with species of other Orders (Romano, 2006). His main works are on the exploration of Ustica Island (Riggio, 1885–1889), on Lepidoptera (Riggio, 1884), but,

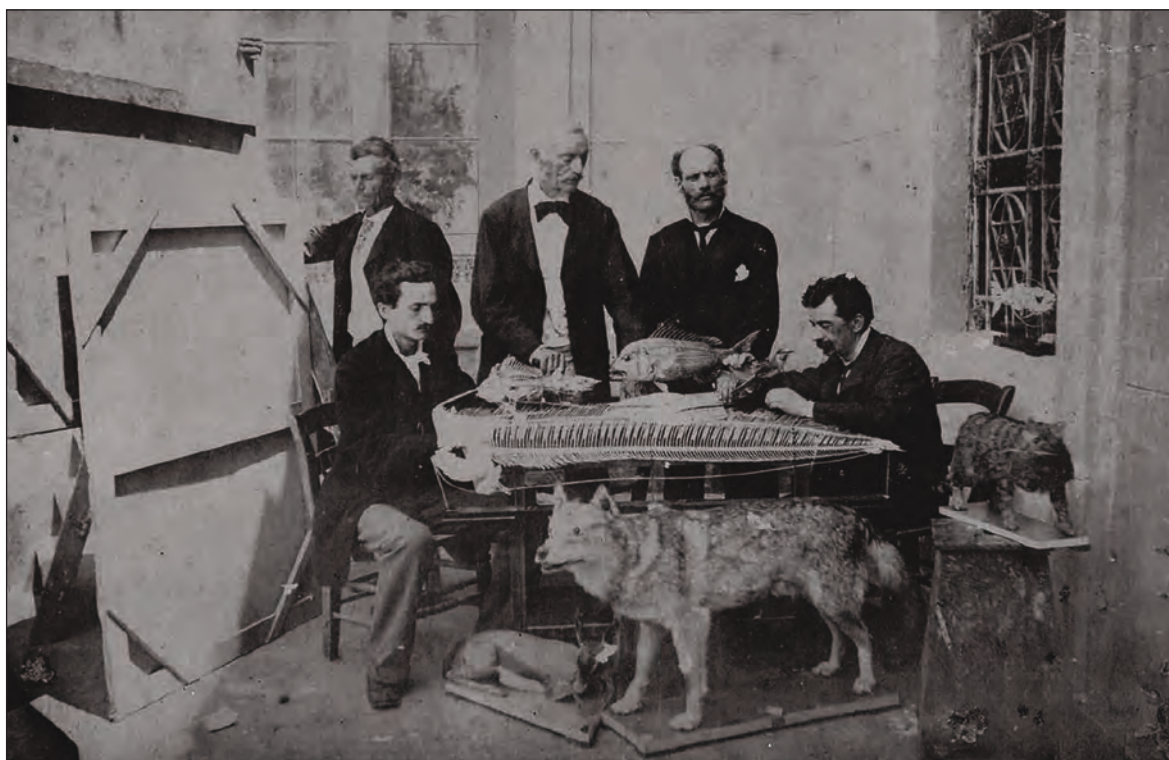


Figure 56. Photo by Museum of Zoology Doderlein in Palermo (from Massa et al., 2018): P. Doderlein standing in the middle, on the left Domenico Reina (standing) and Giuseppe Riggio (seated), on the right Raffaele Gelarda (standing) and Giuseppe Modena (seated).

above all, on Sicilian Orthoptera (Riggio, 1887–1891, 1889; Riggio & Pajno, 1886–1887).

De Stefani-Perez (1918), who edited an affectionate obituary defining him as a “*galantuomo e appassionato cultore delle Scienze naturali*” [gentleman and passionate enthusiast of natural sciences], reports a total of 26 works published by Riggio.

Materiali per una fauna entomologica dell'isola di Ustica. Prima contribuzione (1885–1886)
[Materials for an entomological fauna of the island of Ustica. First contribution (1885–1886)]

Riggio made his first trip to Ustica from August 30 to September 6, 1885, and in three papers, from 1885 to 1886, he published the list of species collected. In the first contribution, he lists 41 species of Coleoptera, to which he adds 7 species collected by Domenico Reina who went to Ustica on behalf of P. Doderlein, director of the Institute of Zoology of Palermo, and 2 species present in the Ragusa

collection. Among them he reports *Vesperus luridus* (Rossi, 1794) (Cerambycidae) living on vines and *Acalles rolleti* (Germar, 1817) (Curculionidae). In the second contribution, he lists 17 species of Hymenoptera, including *Eurytoma atra* (Walker, 1832) (Eurytomidae), harmful to the caper (*Capparis spinosa* L.), 14 species of Lepidoptera, 4 species of Diptera, 19 species of Hemiptera, 3 species of Neuroptera, and 3 species of Odonata. In the third contribution, he lists 11 species of Orthoptera and in particular provides a lot of information on *Polyphaga aegyptiaca* (Linnaeus, 1758) (sub *Heterogamia aegyptiaca*) a large cockroach with a marked sexual dimorphism: the female is larger, atherical and almost circular in shape.

In the final pages, Riggio (1886) provides an updated list of the Insects collected in Ustica by Calcara (1842) and gives a summary of two works dedicated to this island. The first by Captain A. Arietti (Arietti, 1875) with an introduction by Doderlein (1875) and, the second by the then parish priest of Ustica, Giuseppe Tranchina (Tranchina, 1885).

Materiali per una fauna entomologica dell'isola di Ustica. Seconda contribuzione (1888–1889)
[*Materials for an entomological fauna of the island of Ustica. Second contribution (1888–1889)*]

In this occasion, Riggio went to Ustica with his whole family for a longer period: from September 9 to October 14, 1886.

The Hymenoptera were studied with T. De Stefani (Riggio & De Stefani-Perez, 1888, see below), and his work was published in three parts (Riggio, 1888–1889). In the lists provided, he reports only the new species collected and not those already reported, reserving the right to make a following work, more complete and conclusive of these researches that were not, however, realized.

In the first work, there are listed 86 species of Coleoptera, in the second 57 species of Hymenoptera of which 5 are new compared to the work with de Stefani-Perez (Riggio & De Stefani-Perez, 1888) because they were found in a forgotten test tube.

In the third contribution, he adds the remaining groups with 11 species of Lepidoptera, 15 species of Diptera, 35 species of Hemiptera, 2 species of Neuroptera, 3 species of Odonates and 16 species of Orthoptera.

Appunti e note di Ortoterologia siciliana VII. Ortoteri di Lipari (1891)
[*Notes of Sicilian Orthopterology VII. Orthoptera of Lipari (1891)*]

It is a short paper where Riggio provides a list of 7 species of Orthoptera received from the naturalist Gaetano Platania of Acireale who collected them in Lipari. The most interesting find, and of which Riggio provides a longer note than the whole article, is the report of *Brachycrotaphus trixalicerus* (Fischer, 1854) (Acrididae). This is a species distributed in the Mediterranean and in Africa, south of the Sahara, but which was described based on a specimen collected in Messina by Zeller in August 1844 (Fischer, 1853). The most abundant populations of this species in the Mediterranean area are found in the Aeolian Islands (Failla et al., 1973; Massa et al., 2012). Recently, it was found in Italian Peninsula (Viglioglia et al., 2020).

TEODOSIO DE STEFANI-PEREZ

Teodosio De Stefani-Perez was born in Santa Ninfa (Trapani) on February 6, 1853 and died in Giacalone (Monreale, Palermo) on February 25, 1935 (Fig. 57).

Riggio (1987) summarized in the following way the main characteristics of this family of Sicilian scholars, De Stefani or Di Stefano, to which Teodosio belonged: “...i De Stefani non mostrano una continuità nello stesso ramo scientifico ma sono al contrario eclettici, comparendo contemporaneamente come cultori di discipline diverse ma di statura scientifica equivalente ... non sono mai diventati una dinastia universitaria, non hanno accumulato potere, ma al contrario hanno gemmato studiosi anche in condizioni di estrema difficoltà [the De Stefanis do not show continuity in the same scientific branch



Figure 57. Teodosio De Stefani-Perez
 (photo courtesy of R. Poggi).

but on the contrary they are flexible. They appear at the same time as scholars of different disciplines but of equivalent scientific stature ... they have never become a university dynasty, they have not accumulated power, but on the contrary they have generated scholars even in conditions of extreme difficulty]”.

Teodosio De Stefani-Perez (see also Mariani, 1951; Caleca & Mineo, 1985, 1988; Riggio, 1987), compared to his brothers Carlo and Giovanni, in particular, devoted himself to zoological studies as professor of Entomology at the University of Palermo, delegate of Phytopathology for Sicily (1889) but, above all, at the University Museum of Zoology and Comparative Anatomy of Palermo working with Giuseppe Riggio under the direction of Pietro Doderlein.

He devoted himself mainly to the study of Hymenoptera Chalcididae and gall makers species, parasitic insects and phytopathological interest, hymenoptera of the island of Ustica with G. Riggio (Riggio & De Stefani-Perez, 1888), but also wrote on topics of ornithology, herpetology, and zoology in general. He published over 260 works (Caleca & Mineo, 1988; Sparacio et al., 2020) in which he covered not only the systematic aspect, as he described many new taxa, but he also took care of the biological and ecological observations of the species he studied.

Eclectic, generous, layperson, evolutionist, endowed with a sense of humor and, at the same time, of great intellectual and scientific depth, Teodosio De Stefani-Perez was one of the protagonists of the Sicilian scientific culture of 1800. Friend of Enrico Ragusa and Luigi Failla-Tedaldi, he took care of the Museum of Zoology after the death of Doderlein.

After 1920, the changed cultural and political climate marginalized him progressively at the edges of the context in which he had lived as a protagonist. His advanced age, family and economic problems led to his death, almost eighty years old, in total indifference (Riggio, 1987).

Sopra alcuni imenotteri dell'Isola di Ustica (con G. Riggio, 1888)

[Above some Hymenoptera of the island of Ustica (with G. Riggio, 1888)]

The Hymenoptera collected by Riggio during

his second naturalistic trip to Ustica in 1886, after the one made previously (Riggio, 1987), are here studied.

In particular, Riggio & De Stefani-Perez (1888), in addition to providing a list of 62 species collected, describe three new species, one of which is included in a new genus (Fig. 58).

Sclerogibba Riggio et De Stefani-Perez, 1888 (Family Sclerogibbidae)

Sclerogibba crassifemorata Riggio & De Stefani-Perez, 1888

This genus includes 15 species spread almost worldwide (Olmi, 2005; van Noort, 2020). In particular, *S. crassifemorata* lives in Central African Republic, Kenya, Namibia, Niger, South Africa, Zimbabwe, Indo-Australian and Palearctic regions. In Italy, it is reported for some peninsular regions, Sicily and Sardinia. It was described on a single female specimen found on 13.IX.1886 in locality Falconiera. It is a small species (4 mm), apterous, characterized by the shape of the thorax and by very enlarged femurs and anterior tibiae. Typical material lost, neotype from Rome (Olmi, 2005).

Exochus lucidus n. sp.

The genus *Exochus* Gravenhorst, 1829 (Ichneumonidae) includes more than 270 species distributed worldwide. *Exochus lucidus* was described on a female, 5 mm long, collected in Contrada Tramontana on 5.X.1986, characterized by the shortness of the spines and the color of the black head with reddish antennae.

Reported only in Sicily but considered as uncertain species; typical material lost (Scaramozzino, 1995).

Monodontomerus usticensis Riggio et De Stefani-Perez, 1888 (Family Torymidae)

Some thirty species belong to the genus *Monodontomerus* Westwood 1833 (Torymidae), distributed mainly in North America (van Noort, 2020).

Monodontomerus usticensis was described on a specimen, length 4.6 mm, found on 27.IX.2886 on Montagna Grande.

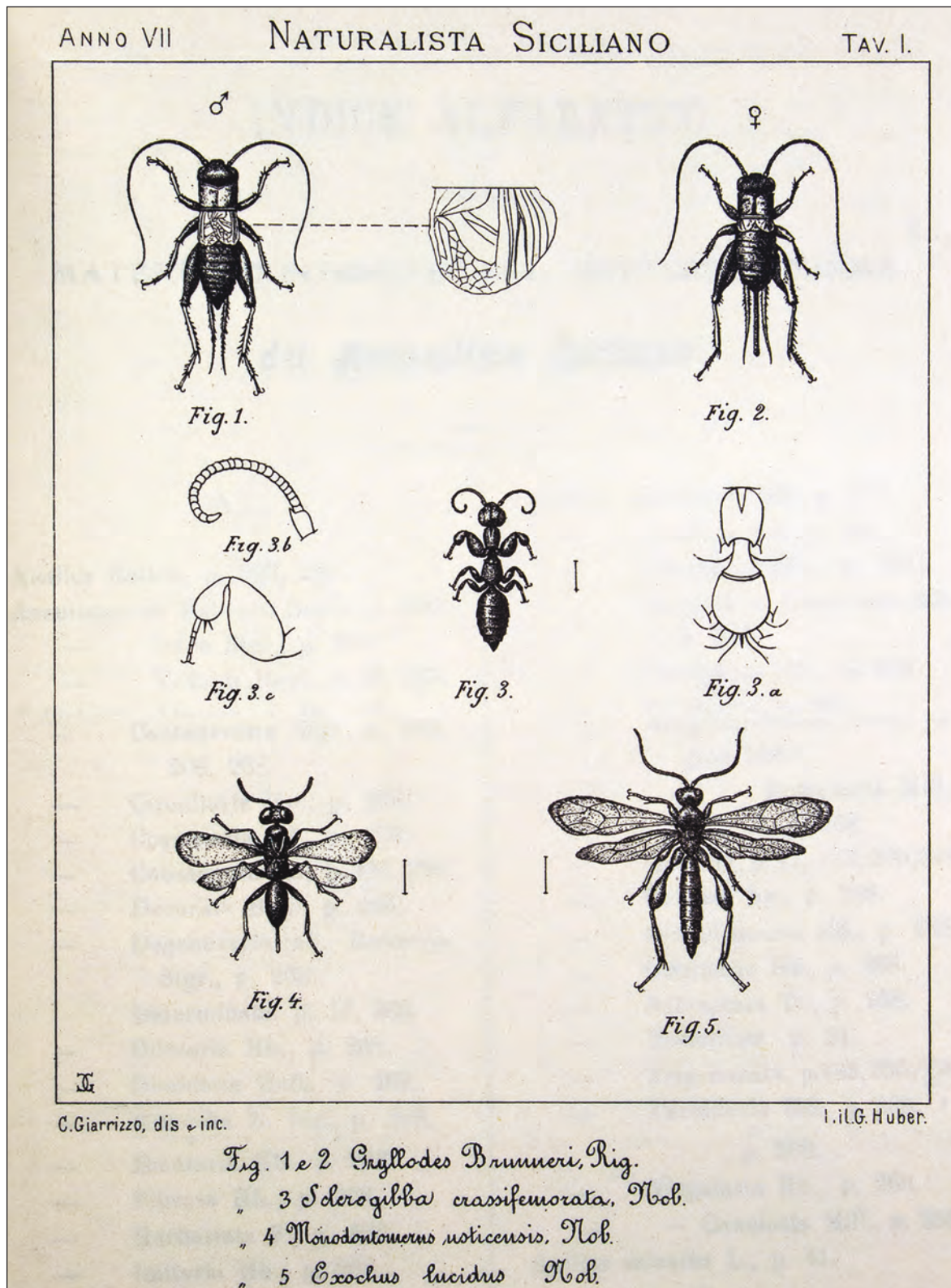


Figure 58. Some new Hymenoptera described by Riggio & De Stefani-Perez (1888) from Ustica Island (Il Naturalista siciliano, 7, Pl. 1, modified).

TOMMASO DI MARIA, MARQUIS OF MONTEROSATO

One of the greatest malacologists of all times was born in Palermo on 27.6.1841 from Casimiro di Maria, Baron of Alleri, and Carolina Natale (Figs. 59, 60). The grandfather, whose name he bears, is Tommaso Natale Marquis of Monterosato, great jurist and philosopher.

He always lived in Palermo where he carried out his studies and married first Bianca Milo of the Marquises of Campobianco, who died very young, and then with Teresa, daughter of Francesco Ferrara, politician and economist, hero of the Risorgimento and then Deputy, Senator and Minister of Finance of the Kingdom of Italy.

He was initiated to malacological studies by the abbot Brugnone and by Luigi Benoit. He had a good relationship with Aradas but had particularly bonds of esteem and friendship with Jeffreys of Ware (London) and Philippe Dautzenberg (Paris). In fact, Monterosato, while remaining deeply tied to his land, realized an



Figure 59. Tommaso di Maria Marquis of Monterosato (young) (photo courtesy of R. Poggi).

international vision of his passion for malacology, in continuous comparison with the greatest scholars of the time. He dedicated himself above all to the study of marine Molluscs and, to a lesser extent, of terrestrial and fossil Molluscs. He made numerous trips in Italy and Europe, always in the company of his wife Teresa, studying almost all the Italian and European malacological collections of the time.

His first work, completed at the age of 28 years, was published in the French journal “Journal de Conchyliologie” (Monterosato, 1869). A keen observer and skilled taxonomist, capable of correct and complex biogeographical and systematic syntheses, Monterosato described or introduced more than five hundred names as species, almost all for marine mollusks, many of which are still valid or available today (Appolloni et al., 2018).

Tomlin (1930) summarized his skills as a taxonomist thus: “*He was an extraordinarily accurate and careful observer; and it was very, very seldom that one could challenge his decision in the discrimination of a species; the smaller the shell, the more exact and reliable was his understanding of it*”.

Appolloni et al. (2018) list 82 scientific publications attributed to Monterosato based on what has also been investigated by other authors on both the total number and the actual date of printing (Fischer-Piette, 1937; Piani, 1981; Riccardo Giannuzzi-Savelli, 1982–1989; Beckmann, 2001; Manganelli and Cianfanelli, 2001; Evenhuis, 2003).

During his lifetime, Monterosato built up an impressive malacological collection, also by acquiring other collections such as Adami’s, Brugnone’s and Tiberi’s which, in turn, incorporated other collections. This large and valuable collection, where there are numerous syntypes or other published material received from numerous of his correspondents, is currently preserved at the Museum of Zoology in Rome (Appolloni et al., 2018) and, to a lesser extent, in other locations (Piani, 1984; Mienis, 2012; Reitano et al., 2019). However, Monterosato himself, in a moment of economic difficulty, was forced to sell his collection to Vito Beltrami of Palermo, around the age of 80.

He died a few years later, suddenly, in his bed, as reported by De Gregorio (1927) cared for by his

wife Teresa until the last moments of his life (see also Dautzenberg, 1928; Cipolla, 1928; Ryolo & Palazzi, 2008).

The contribution of Monterosato on the circumsicilian islands is due to a substantial work on terrestrial molluscs, paradoxically for those who, like him, dealt mainly with marine species. However, it must be underlined that almost all the Sicilian naturalists of 1800 reported new species or important signals for the minor islands also in many other works not exclusively dedicated to these territories. Thus, for example, Pantelleria is mentioned in the typical series of *Skenea catenoides* (Monterosato, 1877) and *Chauvetia affinis* (Monterosato, 1889), Lampedusa in that of *Raphitoma radula* (Monterosato, 1884), Lipari for *Raphitoma contigua* (Monterosato, 1884), *Ocenebra nicolai* (Monterosato, 1884) and *Chama circinata* (Monterosato, 1878 (Appolloni et al., 2018)).

Molluschi terrestri delle isole adiacenti alla Sicilia (1892)

[*Terrestrial mollusks of the islands adjacent to Sicily (1892)*]

In this work, Monterosato (1892) provides a brief general introduction on the circumsicilian islands confessing a certain apprehension for the subject he is about to deal with, unfamiliar to him, but comforted by the thought that the final synthesis may still be useful for subsequent malacological studies. Following is the list of taxa described or introduced by Monterosato. Many are morphological varieties but almost all are, however, valid names and available in consideration of further investigations on these island populations. Genus or sub-genera groupings are very useful. In conclusion, Monterosato is aware of having introduced an “*valanga* [avalanche]” of new names, but, far from regretting it, he will state that “*ve ne sono ancora molti da proporre* [there are still many to propose]”.

3. *Hyalina Rossmassleri*, Westerlund var. ex forma *plana*, *convexa*, *cornea* (typica), *albina*.

Abundant in Favignana.

Ridel (1973) reconstructs the synonyms of this group of species from the Aegadian Islands as follows. Monterosato (1892) acknowledges that what Westerlund (1886) reported for this species is wrong by stating that it is a species exclusive to



Figure 60. Tommaso di Maria Marchese di Monterosato (older) (photo from Giannuzzi Savelli, 1982–1989).

Favignana and not to other localities in Sicily. However, Monterosato does not assign another name to these populations but only reports morphological varieties. Thus, Riedel (1973) would describe them as *Oxychilus (Hyalocornea) egadiensis* (Gastropoda Oxychilidae).

Further in this work, Monterosato (1892) describes a “*Hyalina Aegusina*” of Favignana, but Riedel (1973), after examination of the types coming from the Benoit collection and preserved in the Monterosato collection, excludes that it could be the endemic species of Favignana or of other Aegadian Islands.

7. *Helix Aegusina*, Monts.

Favignana Island.

Oxychilus aegusinus Monterosato, 1892, Favignana, in Alzona (1971: 128). Taxon of uncertain systematic position (see above).

9. *Helix Sicula* Benoit var. *Vulcanica*, Monts.

Island of Lipari, slopes of Etna.

Taxon reported as *Oxychilus draparnaudi siculus* Westerlund, 1876 (Gastropoda Oxychilidae) by Alzona (1971) and considered synonym with *Oxychilus (Oxychilus) draparnaudi* (Beck, 1857) by Giusti (1973: *sicula* sensu Auctores not Benoit, 1857). Records from Sicily of *O. draparnaudi* belong to *O. fuscus* - *O. planellus* group (Bodon et al., 2021).

11. *Leucochroa* sp.

Monterosato observes that the populations of *Sphincterochila (Albea) candidissima* (Draparnaud, 1801) (Gastropoda Sphincterochilidae) from Favignana and other localities in Sicily are different from those of Algeria. Locus typicus of this species is France “*en Provence et dans le Comtat*” (Draparnaud, 1801).

Var. *conoidea*, Bourguignat. Favignana.

15. *Helix (Macularia) vermiculata* Mull. Var. *solidior*, Monts.

Favignana Island.

Var. *Usticensis* Adami mss., Island of Ustica. Varieties *alba* and *fasciata* for the Island of Lampedusa.

Alzona (1971) considers the taxon *solidior* synonyms with *Eobania vermiculata* (Müller, 1774) (Gastropoda Helicidae) while *usticensis* is reported as an insular subspecies: *Eobania vermiculata usticensis* Monterosato, 1892.

18. *Iberus florioi*, Monts.

Monterosato reports it as abundant on the island of Favignana and dedicates it to the memory of Ignazio Florio, member of the rich Florio economic dynasty (Fig. 61).

Alzona (1971) reports it as a subspecies, *Murella (Murella) platychela florioi* (Monterosato, 1892) (Gastropoda Helicidae) for Favignana and Levanzo, also as a fossil. Bank & Neubert (2017) and Molluscabase (2021) report it as *Marmorana (Murella) platychela florioi*.

19. *Iberus inglorius*, Monts.

Favignana and Marettimo Islands.

Reported as *Murella (Murella) muralis ingloria* (Monterosato, 1892) (Gastropoda Helicidae) in Alzona (1971) for limestone western Sicily.

Bank & Neubert (2017) and Molluscabase (2021) report it as *Marmorana (Murella) muralis ingloria*.

20. *Iberus albinosus*, Monts.

Monterosato describes this taxon without indicating the locality but stating that it comes from the Aegadian Islands with certainty. The description he gives and the reference to the work of Benoit (1857, Levanzo, Pl. 2, Fig. 14) point to the populations of Levanzo.

Alzona (1971) reports it as *Murella (Murella) muralis albinosa* (Monterosato, 1892) (Gastropoda Helicidae) for the Aegadian Islands. Bank & Neubert (2017) and Molluscabase (2021) report it as *Marmorana (Murella) muralis albinosa*. However, Benoit (1857) correctly described and illustrated populations on Levanzo (see above) so if the taxon “*albinosus*” were confirmed for this locality, as it seems, it would be a junior synonym for “*unicolor* Benoit, 1857”.

21. *Iberus indistinctus*, Monts.

Ustica Island.

Taxon reported by Alzona (1971) as *Murella (Murella) muralis indistincta* (Monterosato, 1892) (Gastropoda Helicidae) for Ustica and as *Marmorana (Murella) muralis indistincta* (Monterosato, 1892) by Bank & Neubert (2017) and Molluscabase (2021).

22. *Iberus muralis*, L. var. *propemuralis*, Monts.

Favignana Island. Also from Trapani at Mt. S. Giuliano or Erice (Fig. 62).

This taxon is reported by Alzona (1971) as *Murella (Murella) muralis propemuralis* (Monterosato, 1892) (Gastropoda Helicidae) for Favignana and as *Marmorana (Murella) muralis propemuralis* by Bank & Neubert (2017) and Molluscabase (2021).

24. *Helix (Euparypha) Pisana*, Müll.

Favignana Island.

Var. ex forma *Aegusina*, *spirolineata*, *sertum*, *rosalba*, *subconica*.

All of these varieties are considered as junior synonym with *Theba pisana pisana* (Müller, 1774) (Gastropoda Helicidae) in Alzona (1971), Giusti (1973), and Bank & Neubert (2017).

26. *Helix (Xerophila) edulis*, Monts.

Monterosato places this taxon near to *Helix rufolabris* Ben. and to *Helix variabilis* junior synonym of *Cernuella (Cernuella) virgata* (Da Costa, 1778) (Bank & Neubert, 2017) (Gastropoda Geomitridae).

It is reported for many localities in Sicily, including Ustica Island.

27. *Helix sanguinea*, Monts.

Favignana Island.

Taxon similar to previous one, belonging to the cycle of forms of *Cernuella (Cernuella) virgata*.

28. *Helix (Xerophila) metabola* West. Var. ex col. *Albina*, Monts., *subrostrata*

Lampedusa Island.

Cernuella (Xeroamanda) metabola (Westerlund, 1889) is a species endemic to the Lampedusa Island (Alzona, 1971 sub *virgata metabola*; Welter-Schultes, 2012; Bank & Neubert, 2017). It is restricted to Lampedusa Island and Pantelleria Island according to Welter-Schultes (2012) and Bodon et al. (2021).

The *subrostrata* taxon of Monterosato is considered a junior synonym of it (Beckmann, 1992; Bank & Neubert, 2017).

29. *Helix (Xerophila) rusticana*, Monts.

Lampedusa Island.

Synonym of *Cernuella (Xeroamanda) metabola* (Alzona, 1971 sub *virgata metabola*; Beckmann, 1992; Bank & Neubert, 2017).

30. *Helix (Xerophila) fraudulenta*, Monts.

Lampedusa Island, along with the previous two.

Same as the previous taxa, this one is synonym with *Cernuella (Xeroamanda) metabola* (Alzona, 1971 sub *virgata metabola*; Beckmann, 1992; Bank & Neubert, 2017).

31. *Helix (Xerophila) falsa*, Monts.

Levanzo Island (coll. Adami, sub *Helix Terverii*) (Fig. 63).

Monterosato considers the locality of Levanzo to be incorrect.

32. *Helix (Xerophila) Maretima*, Monts.

Marettimo and Favignana Islands. Monterosato reports it as a beautiful and distinct species exclusive of Marettimo.

Pollonera (1893), after examining of the type that Benoit sent to Monterosato with the name of “*Helix Terveri*” coming from the Island of Marettimo, realized that the reference to the plates of Benoit by Monterosato was not correct. Therefore, he depicted the specimen in question and described this taxon. Alzona (1971) reports this taxon as doubtful for *Helicella (Xeromagna) maretima* Pollonera, 1893 for Favignana and Marettimo.

34. *Helix (Xerophila) depressior*, Benoit var. *unicolor* and *zonata*

Favignana Island.

Color varieties of *Cernuella (Xeroamanda) depressior* (Benoit, 1857) (Gastropoda Geomitridae) (Alzona, 1971; Fiorentino et al., 2004; Bodon et al., 2021).

36. *Helix (Xerophila) dormiens*, Benoit - var. *unicolor*, var. *rugosula*, Ben.

Marettimo. Found in Favignana Island (Monts.).

Alzona (1971) considers it a valid taxon as *Helicella (Xeromaesta) dormiens* (Benoit, 1859) from Favignana and Marettimo. Fiorentino et al. (2004) do not mention it.

37. *Helix (Xerophila) amanda*, Rossm. Var. *Benoiti*, Monts.

Marettimo Island: “*Esemplari di colore piuttosto scuro e a fascie, mentre che quella di Calatafimi è costantemente sbiadita come in Algeria. Questa varietà si potrà distinguere con il nome di obscura* [Specimens rather dark-colored and banded, whereas that of Calatafimi is consistently faded as in Algeria. This variety will be able to be distinguished by the name of *obscura*]”.

Alzona (1971) mentions it as *Helicella (Xeroamanda) amanda benoiti* Monterosato, 1892 (Gastropoda Hygromiidae) for Marettimo Island. Fiorentino et al. (2004) report *Cernuella amanda* (Rossmässler, 1838) for Marettimo also as fossil.

Name available for Marettimo populations ascribed to *Cernuella (Xeroamanda) amanda*.

39. *Helix (Xerophila) Liparota*, Monts.

Lipari Island.

Alzona (1971) reports it as *Helicella (Cernuella) subprofuga liparota* (Monterosato, 1892) for the Aeolian Islands. Giusti (1973) reports it as a synonym of *Cernuella (Cernuella) subprofuga* (Stabile, 1864), Bank & Neubert (2017) sub *liparotica* (Monterosato, 1892) as a synonym of *Cernuella (Cernuella) cisalpina* (Rossmässler, 1837) (Gastropoda Geomitridae).

41. *Helix (Xerophila) pyramidata*, Drap. Var. *minor* "Small undecided form from Lipari."

Not reported by Alzona (1971) nor by Giusti (1973). Probable synonym of *Trochoidea pyramidata* (Draparnaud, 1805) (Gastropoda Geomitridae).

42. *Helix (Xerophila) Cumiae*, Calcara

Lampedusa, var. ex col: *vittata*, *punctata*, *interrupta*, *atra*, *albida*, *asteriscus*.

Morphological varieties of *Trochoidea cumiae* (Calcara, 1847) (Gastropoda Geomitridae) native species from Lampedusa Island (Cianfanelli, 2002) introduced in Calabria (Welter-Schultes, 2012) and Pantelleria Island (Bodon et al., 2021).

45. *Helix (Xerophila) acuta*, Müll.

Var. *pratensis*, Monts., Favignana and other Aegadian Islands, Ustica, Lipari, etc.

Var. *cochleaeformis*, Monts., Marettimo, Lampedusa, Agrigento, Palermo.

Var. *cochleolina*, Monts., Favignana; Malta; Candia Island; Sinope, Black Sea.

Var. *macella* Monts., Lampedusa.

Morphological varieties of *Cochlicella (Cochlicella) acuta* (Müller, 1774) (Gastropoda Geomitridae) (Alzona, 1971; Beckmann, 1992; Bank & Neubert, 2017).

On page 21 of his paper, Monterosato addresses the great variability of this group of Hygromiidae called *Xerophila* sensu lato and realizes how systematics was then inadequate. So, as briefly as possible, he says, he reorders, at the level of the entire Euro-Mediterranean range, all these species by describing 42 taxa of supra-generic level guided mainly by their geographical affinities. Many of these names are no longer used or have been

synonymized but several others are valid, at the genus or subgenus level, and of great utility in current systematics (see for example, Gittenberger, 1985; Manganelli & Giusti, 1988; Manganelli et al., 1997, 2001; Schileyko, 1991).

Valid taxa include, for example: *Xerosecta*, *Xeroplana*, *Xeroamanda*, *Xeroclausia*, *Xerotricha*, *Xerocrassa*, *Xerolenta*, *Xerocincta*, *Xeropicta*, and *Xeromunda*.

48. *Helix (Helicogena) aspersa* Mull.

Var. *putris* Monts. (= ? *minor*, auct.), Ustica, Pantelleria.

Var. *eutecta* Monts. Lampedusa, Pantelleria.

Taxa considered synonyms with *Cornu aspersum* (Müller, 1774) (Gastropoda Helicidae) (Alzona, 1971; Beckmann, 1992; Bank & Neubert, 2017).

Var. *insolida* Monts. Favignana? bought at the Trapani market from Monte S. Giuliano and Favignana.

Monterosato describes this taxon by attributing it to *Cornu aspersum*. Later (Monterosato, 1894), he realizes that it belongs to the cycle of forms of "*Helix*" *mazzullii* De Cristofori et Jan, 1832 and describes, for this group of species, a distinct section that he calls *Ercella* from the ancient name of Monte Pellegrino. As reported by Colomba et al. (2011), *Ercella* Monterosato 1894 is a genus rupicolous and saxicavous that includes three species from northwestern Sicily: *E. cephaloeditana* (Giannuzzi-Savelli, Oliva et Sparacio, 1986) from Rocca di Cefalù (Cefalù), *E. mazzullii* from the Palermo Mountains and *E. insolida* (Monterosato, 1892) from the Trapani Mountains, which is found fossilised in Favignana and Levanzo (De Gregorio, 1894; Fiorentino et al., 2004; Colomba et al., 2011).

Recently, a new species of *Ercella* endemic to the island of Crete has been described: *E. cretense* Hausdorf, Bamberger et Walther, 2020 (Hausdorf et al., 2020).

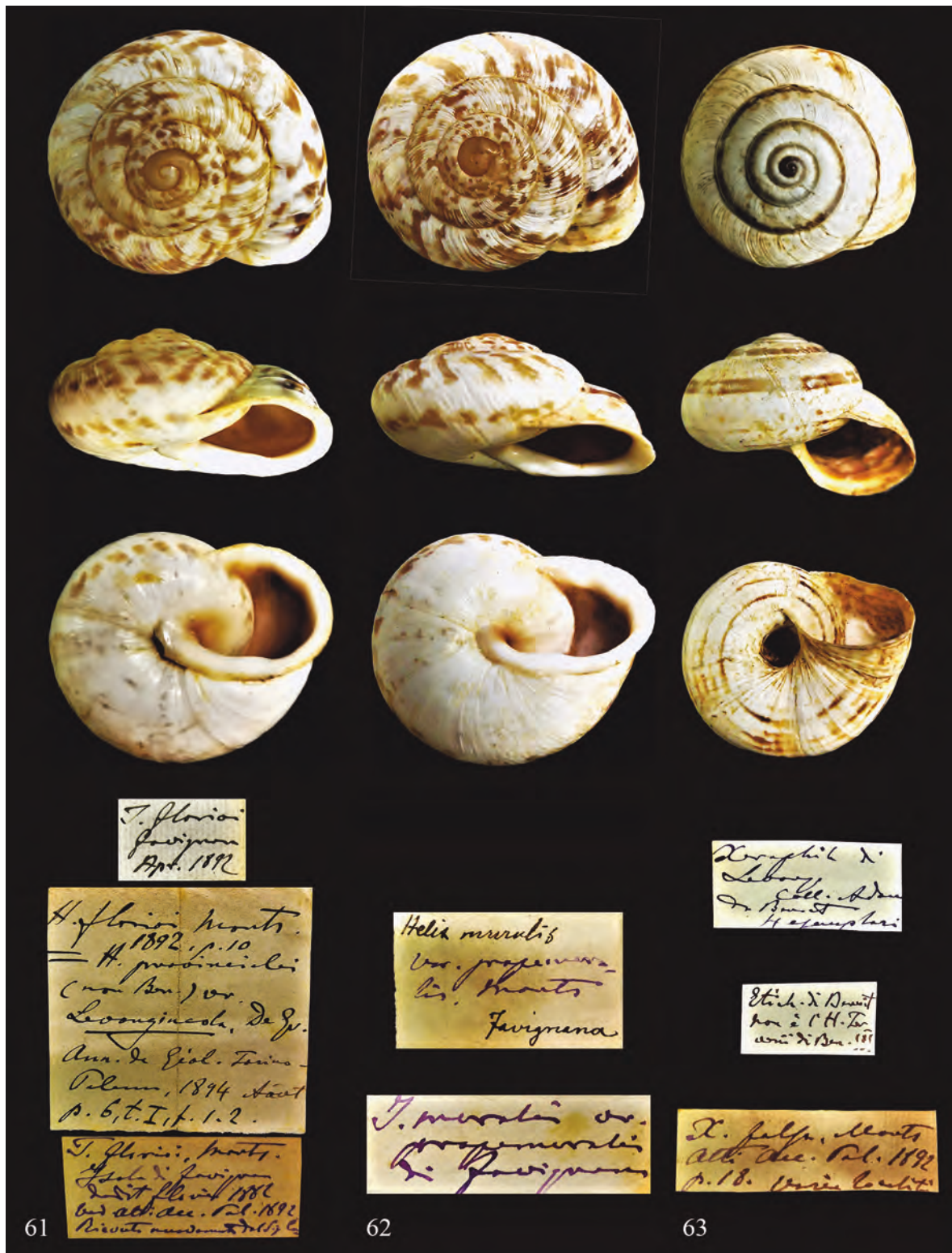
50. *Buliminus (Mastus) pupa* Brug.

Var. *regularis* Monts., Favignana.

Var. *usticensis* Monts., Ustica.

Var. *ovoidea-minor* Monts., Lipari, Etna.

Synonyms of *Mastus pupa* (Linnaeus, 1758) (Gastropoda Enidae) (Alzona, 1971; Giusti, 1973; Bank & Neubert, 2017).



Figures 61-63. Type material of the Monterosato collection (Museum of Zoology of Rome, Italy). Fig. 61: *Murella (Murella) platychela florioi* from Favignana Island. Fig. 62: *Murella (Murella) muralis propemuralis* from Favignana Island. Fig. 62: *Cernuella "falsa"* from Levanzo Island (see text). Photos courtesy of M. Appolloni and C. Smriglio.

51. *Buliminus Lopadusae*, Monts.

“*Isola di Lampedusa. Vicino al B. carneolus di Costantinopoli. Forma subulata a labbro bianco, tagliente, ben rivoltato a base non rotonda. Si può riguardare anche come varietà del precedente (B. (M.) pupa) [Lampedusa Island. Close to B. carneolus from Constantinople. Subulata form with white, sharp, reflexed peristome and non-rounded base. May also be related as a variety of the previous (B. (M.) pupa)]*”.

As with the previous taxa, this is also considered synonyms with *Mastus pupa* (Linnaeus, 1758) (Alzona, 1971; Beckmann, 1992; Bank & Neubert, 2017).

52. *Ferussacia folliculus* Gron.

Var. *elongata* Monts., Favignana.

This taxon is a synonym of *Ferussacia (Ferussacia) folliculum* (Schröter, 1784) (Gastropoda Ferussaciidae) (Alzona, 1971; Bank & Neubert, 2017).

57. *Rumina decollata* L. (Fig. 44)

Var. *cylindrica* Monts., Lampedusa: “*Forma cilindrica, allungata (alta mm. 30, larga 10); 4 a 5 anfratti; biancastra [Cylindrical form, elongate (30 mm. high, 10 wide); 4 to 5 whorls; whitish]*”.

Var. *pellucida* Monts., Isola d’Ustica: “*Pellucida, fulva, corta, conica; 4 anfratti [Pellucid, reddish, short, conical; 4 whorls]*”.

Var. *solida* Monts., Lipari: “*Solida ed opaca; scultura fortemente increspata; 5 anfratti; dimensione ordinaria [Solid and opaque; sculpture strongly rippled; 5 whorls; ordinary size]*”.

Var. *cruda* Monts., Favignana.

All of these taxa are considered synonyms of *Rumina decollata* (Linnaeus, 1758) (Gastropoda Ruminidae) (Alzona, 1971; Bank & Neubert, 2017). The var. *solida* Monts. from Lipari Island also by Giusti (1973).

58. *Pupa (Torquilla) subulata*, Bivona fil.

Monterosato, on specimens found by Adami from Lampedusa, describes “*Torquilla Lopadusae*” also with the approval of Westerlund (*in litteris*) to whom he had it examined.

Synonym of *Granopupa granum* (Draparnaud,

1801) (Gastropoda Chondrinidae) according to Beckmann (1992) and Bank & Neubert (2017).

60. *Clausilia adelina* Benoit

Var. *subsolida* Monts. “*Più solida e più fortemente striata. Delle isole Egadi*”.

Synonym of *Siciliaria calcarae adelina* Küster, 1847 (Gastropoda Clausiliidae) in Alzona (1971) or of *S. calcarae calcarae* according to Bank & Neubert (2017).

62. *Clausilia (Papillifera) familiaris* Monts.

Type locality: Palermo and surrounding mountains

Var. *peculiaris* Monts., Favignana, abundant.

Var. *capillaris* Monts., Favignana, together with *peculiaris*.

Var. *aliena* Monts., “*Lipari e ... pendici dell’Etna. Forse anche d’Ustica, come C. papillaris (Calcara) [Lipari and ... slopes of Etna. Perhaps also from Ustica, like C. papillaris (Calcara)]*”.

Var. *Aegusina* Monts., Aegadian Islands along with *peculiaris*, abundant.

Following Bank & Neubert (2017), *Clausilia familiaris* from Monterosato is thought to be synonymous with *Papillifera papillaris affinis* (Philippi, 1836) (Gastropoda Clausiliidae), and the later varieties described especially for the circumsicilian islands synonyms with *P. papillaris papillaris* (Müller, 1774).

63. *Clausilia (Lopadusaria) Lopadusae*, Calc. Var. *solidula*, Monts.

Lampedusa Island.

Synonym of *Lampedusa (Lampedusa) lopadusae lopadusae* (Calcara, 1846) (Gastropoda Clausiliidae) in Alzona (1971), Beckmann (1992), and Bank & Neubert (2017). Other *Lampedusa* species are *L. (Imitatrix) imitatrix* (Boettger, 1879) and *L. (I.) melitensis* (Caruana Gatto, 1892a) (Fig. 64) from Maltese Islands.

64. *C. (Lopadusaria) nodulosa*, Monts.

Lampione Island (Giglioli, Paulucci).

Insular subspecies as *Lampedusa (Lampedusa) lopadusae nodulosa* (Monterosato, 1892) (Liberto et al., 2012; Bank & Neubert, 2017; Fiorentino et al., 2017; Colomba et al., 2019).

Monterosato, correctly, states that the two populations of Lampedusa and Lampione are a separate group, as also indicated by Boettger (1877). He introduces the genus name *Lopadusaria* which is a junior synonym of *Lampedusa*, described by Boettger (1877).

(a) *C. oscitans*, Charp.

Var. *doliolina*, Monts. Corpulenta

Var. *torcula*, Monts. With the screw press whorls

Var. *densa*, Monts. With numerous and dense ribs

V. *distans*, Monts. With few ribs

b) *C. scabrida*, Monts. In sched. 1881

Taxa of the island of Malta, considered synonyms of *Muticaria macrostoma macrostoma* (Cantraine, 1835) or *M. macrostoma oscitans* (Charpentier, 1852) (Gastropoda Clausiliidae) by Beckmann (1992), Giusti et al. (1995) and Bank & Neubert (2017).

Again, Monterosato understands the affinities between these Maltese-Sicilian populations,

“*formano un bel gruppo distinto* [they form a nice distinct group]”, and groups them in the genus *Lamellifera*. Unfortunately, it will be invalidated and replaced with *Muticaria* Lindholm, 1925.

f) *C. (Papillifera) circinata*, Paul.

g) *C. (Papillifera) Melitensis*, Monts. Mss.

Taxa of the island of Malta (Fig. 65) considered synonyms of *Papillifera papillaris* by Beckmann (1992) and Giusti et al. (1995). Bank & Neubert (2017) attribute these populations to *Papillifera papillaris circinata* (Paulucci, 1878) from south-eastern Sicily (= *melitensis* Monterosato, 1892).

h) *C. (Albinaria) De Gregorii*, Platania.

Monterosato, specifying how the *Albinaria* Vest, 1867 are species of the eastern Mediterranean, thinks that this population does not come from Malta. He notes that the type of this new species is the same as “*C. coerulea di Syra* [= *Albinaria caerulea* (Deshayes, 1835) from Syros, a Greek island in the Cyclades]” (see also Fig. 69).



Figures 64, 65. Type material of the Monterosato collection (Museum of Zoology of Rome, Italy). Fig. 64: *Lampedusa (Imitatrix) melitensis* from Malta Island. Fig. 65: *Papillifera papillaris* “*melitensis*” from Malta Island. Photos courtesy of M. Appolloni and C. Smriglio.

ENRICO PIRAJNO

Enrico Pirajno (Fig. 46), the only surviving son of Michelangelo, baron of Mandralisca, and Maria Carmela Cipolla, was born in Cefalù on 5.12.1809. In this town, he participates to the revolts of 1848 in the Provisional Committee of Cefalù and, then, in the new Sicilian Parliament, against the Borboni. For this, he would shortly stay in prison. After several cultural and governmental positions, Pirajno was elected in 1861, after the Unification of Italy, as a representative of the college of Cefalù, in the Chamber of Deputies of the Italian Parliament in Turin.

From the naturalistic point of view, he devoted himself to the study of marine and terrestrial molluscs and to the observation of birds, producing several scientific publications. Almost all his publications were of malacology, with several taxa described. Some are still valid, like *Murella*



Figure 66. Enrico Pirajno.

nebrodensis (Pirajno, 1842) (Gastropoda Helicidae) and *Oligolimax musignani* (Pirajno, 1842) (Gastropoda Vitrinidae) (Pirajno di Mandralisca, 1840, 1842). He made an important and impressive malacological collection, fruit of personal collections and exchanges with the whole world. It is preserved in the homonymous cultural and museum foundation, still present in Cefalù and founded by him.

All biographies or works on the person of Pirajno agree on his great cultural and human qualities and his remarkable political and entrepreneurial skills (see for example Marino, 2004; Pastena et al., 2009; Orlando, 1987).

Pirajno was also very interested in botany, providing findings and useful information to almost all of his botanists contemporaries. Of these, the greatest contacts were with Vincenzo Tineo with whom there were probably plans for future and more important collaborations (Lo Cascio, 2014).

Tineo (1855) published, in particular, a controversial new species received just from Pirajno and coming from Vulcano Island: *Kleinia mandraliscae* Tin. (Asteraceae) (Pasta, 2003; Domina, 2005). Also Todaro (1861) and Lojacono Pojero (1902) dedicated to him names of new plants. In our days, a his small herbarium has been examined by Domina & Mazzola (2005) and Lo Cascio (2014) with material from Mondello, Madonie and Aeolian Islands (see also Pusateri & Giannuzzi-Savelli, 1997).

For the circumsicilian islands, Pirajno devoted himself to the study of the Aeolian Islands, the native land of his wife (married at 17) Maria Francesca Parisi dei baroni di San Bartolomeo di Lipari.

He carried out archaeological, geological, botanical and zoological researches but, probably because of the age at which he died, at 54 years old in 1864, many works remained as important projects never realized or in the form of unpublished writings, partly appreciated after many years (Lo Cascio, 2001; Lo Cascio et al., 2010). Thus, some areas of his naturalistic collections are still the subject of studies such as those on malacology (Giannuzzi Savelli et al., 1986; 2012), paleontology (Bonfiglio, 1998), botany (Domina & Mazzola, 2005) or zoology (Peri, 1994). An overview of the Pirajno studies on the Aeolian islands is reported by Lo Cascio (2014).



Figure 67. Volcanic tuffs and siliceous limestones of Lipari by Gaudin & Pirajno (1860), plate 3: the drawings show some leaves of *Hedera helix* L. figures 1–5), *Chamaerops humilis* L. (figure 6), leaves of *Quercus ilex* L. (figures 7–11) and a plant “*Robiniaeformis*”, Leguminosae (figure 12).

Contributions a la flore fossile italienne. Cinquième mémoire. Tufts volcaniques de Lipari (with Gaudin C.T., 1860)

[*Contributions to the Italian fossil flora. Fifth memoir. Volcanic tufts of Lipari (with Gaudin C.T., 1860)*]

This is the only work of botany, as far as it deals with fossil findings, published by Pirajno, who also left an unpublished manuscript of agronomic type. The fossil flora found by Pirajno in the volcanic tufts of Lipari is here listed (Fig. 67) which had partly been described before by Gaudin (1858). In the preface, the collections of the Sicilian naturalist are framed in a wider context with further contributions never made. Among the species mentioned, a new species is described: *Leguminosites robiniaeformis* Gaudin et Pirajno by Mandralisca, 1860.

A further work on the fossil plant remains of Lipari Island, preserved in the Mandralisca collections, was then carried out by Bonfiglio (1998).

Coleotteri delle isole Eolie. Manoscritto inedito custodito presso l'Archivio Storico della Fondazione Mandralisca di Cefalù, sezione 2, serie 9, 45, 10/2, 4 pp. (ante 1864)

[*Coleoptera of the Aeolian Islands. Unpublished manuscript kept in the Historical Archives of the Mandralisca Foundation of Cefalù, section 2, series 9, 45, 10/2, 4 pp. (ante 1864)*]

This holographic manuscript, described and commented by Lo Cascio et al. (2010), consists of four pages, the first three of which are dedicated to the Coleoptera of the Aeolian Islands, while the last one concerns the "Frontal Hemiptera".

In the pages dedicated to Coleoptera are listed 47 specific taxa and 4 infraspecific taxa (varieties). The place of origin is not mentioned, but many of these findings should come from Lipari, where Pirajno stayed.

The last page of the manuscript contains a short list of Heteroptera, which includes 5 specific taxa and a genus (*Tetyra* Fabricius, 1803) reported in parentheses without further information.

Catalogo degli uccelli che si trovano stazionarii o di passaggio nelle Isole Eolie. Manoscritto

inedito custodito presso la Biblioteca della Fondazione Mandralisca di Cefalù, 336, II H 25 (ante 1864)

[*Catalog of the birds that are stationary or passing through the Aeolian Islands. Unpublished manuscript kept in the Library of the Mandralisca Foundation of Cefalù, 336, II H 25 (before 1864)*]

As described by Lo Cascio (2001), the manuscript consists of 15 unnumbered pages. The title page contains only the title "*Catalogo degli uccelli che si trovano stazionarii o di passaggio nelle Isole Eolie* [Catalog of the birds that are stationary or passing through the Aeolian Islands]" while from the first to the second page there is a list of "*Uccelli che abitano in Lipari, o vi sono di passaggio* [Birds that live in Lipari, or are passing through]". For each species is reported the scientific name, the Italian name and dialectal ones used in the Aeolian Islands and Sicily. The manuscript is dated as previous to the death of Pirajno, thus composed before 1864 and lists a total of 114 species.

Numerous are the ecological indications that can be drawn from this work (see also Lo Cascio & Navarra, 2008), such as the presence of many more species now linked to wetlands more abundant in the past than they are now or faunistic as those on the presence of the Partridge, *Alectoris graeca* (Meisner, 1804), in Lipari, Vulcano and Salina and now extinct in these islands.

GAETANO PLATANIA

Born in Acireale (Fig. 68) on January 17, 1867 by Mariano and Michela Platania (for this reason, in some articles he signed as Platania-Platania), since very young Gaetano Platania focuses on naturalistic researches realizing some articles on terrestrial molluscs (Platania, 1885). He enrolled at the Faculty of Natural Sciences at the University of Catania. Still a student, he held the role of extraordinary assistant to the chair of Mineralogy and Geology, but he would leave this role for obvious incompatibility. He graduates in 1893 and he devotes himself immediately to the teaching of "Natural History" at the R. Liceo of Acireale.

In this city he holds numerous positions at the Experimental Station of Fruits and Citrus, as president of the Comizio Agrario, City Councillor. In 1908, he obtains professorship in physical geography, he works at the R. Geodynamic Observatory of Catania, becoming Director in 1909 to replace the disappeared Prof. Annibale Riccò. In 1923, he receives the assignment for the teaching of “Geografia economica e commerciale e Storia del commercio” at the R. Superior Institute of Economic and Commercial Sciences of Catania.

Educated person, capable and generally appreciated, Gaetano Platania, who died on 1.10.1938, produced a hundred publications. Ventura (2012) lists 103 of them, on topics of malacology, geology, paleontology, agriculture, volcanology. Several excellent biographies have been dedicated to him, such as those of Starrabba (1939), Eredia (1943–1950), Filetti & Bella (1995), Ventura (2012).

Contribuzione alla fauna malacologia extramarina della Sicilia e delle isole adiacenti (1886)

[Contribution to the extramarine malacology fauna of Sicily and adjacent islands (1886)]

In the opening lines of this work, Platania (1886) declares to have made several researches in various localities of Sicily and the surrounding islands collecting abundant material that, at the time of writing, he had not yet had the opportunity to study completely. Therefore, he decided to publish this work with just the little material studied, hoping to complete the work in the future.

The work describes new taxa of Sicilian terrestrial mollusks, one of which was found in Malta.

***Clausilia (Albinaria) degregorii* Platania, 1886**

This new species was collected by Platania-Platania (1886: 87) in the village of Naxaro, situated in the interior of the island of Malta. The author points out that it is easily distinguished from other populations living on the island of Malta and is uncommon (Fig. 69).

Monterosato (1892) confirms that this taxon is an *Albinaria* species (see above) but thinks it does not come from Malta. This taxon is reported by Giusti et al. (1995) as “identity uncertain”.



Figure 68. Gaetano Platania (photo from Ventura, 2012).



Figure 69. “*Clausilia (Albinaria) degregorii*” from Monterosato collection (Museum of Zoology of Rome, Italy). Photos courtesy of M. Appolloni and C. Smriglio.

Stromboli e Vulcano nel settembre del 1889 (1889a)

[*Stromboli and Vulcano in September 1889 (1889a)*]

Sui proiettili squarciati di Vulcano (isole Eolie) nell'eruzione del 1888–1890 (1889b)

[*On the pyroclasts of Vulcano (Aeolian Islands) in the eruption of 1888–1890 (1889b)*]

Le interruzioni del cavo telegrafico Milazzo-Lipari e i fenomeni vulcanici sottomarini nel 1888–92 (1894)

[*The interruptions of the Milazzo-Lipari telegraph cable and the submarine volcanic phenomena in 1888–92 (1894)*]

Effetti magnetici del fulmine sulle lave di Stromboli (1905–1906a)

[*Magnetic effects of lightning on Stromboli lavas (1905–1906a)*]

Il terremoto calabrese dell'8 settembre 1905 a Stromboli (1905–1906b)

[*The Calabrian earthquake of 8 September 1905 in Stromboli (1905–1906b)*]

Stromboli (1906)

[*Stromboli (1906)*]

I fenomeni eruttivi dello Stromboli nella primavera del 1907 (1908)

[*The eruptive phenomena of Stromboli in the spring of 1907 (1908)*]

Fenomeni eruttivi dello Stromboli nel novembre 1915 (1916)

[*Eruptive phenomena of Stromboli in November 1915 (1916)*]

Attività dello Stromboli nel primo semestre del 1920 (1920)

[*Stromboli activities in the first half of 1920 (1920)*]

Fenomeni vulcanologici dello Stromboli durante il 1921 (1921)

[*Volcanological phenomena of Stromboli during 1921 (1921)*]

L'esplosione dello Stromboli del maggio 1919 (1922a)

[*The Stromboli explosion of May 1919 (1922a)*]

Fenomeni vulcanologici dello Stromboli (1922b)

[*Volcanological phenomena of Stromboli (1922b)*]

Per un rilievo a grande scala delle isole di Stromboli e Vulcano (1925)

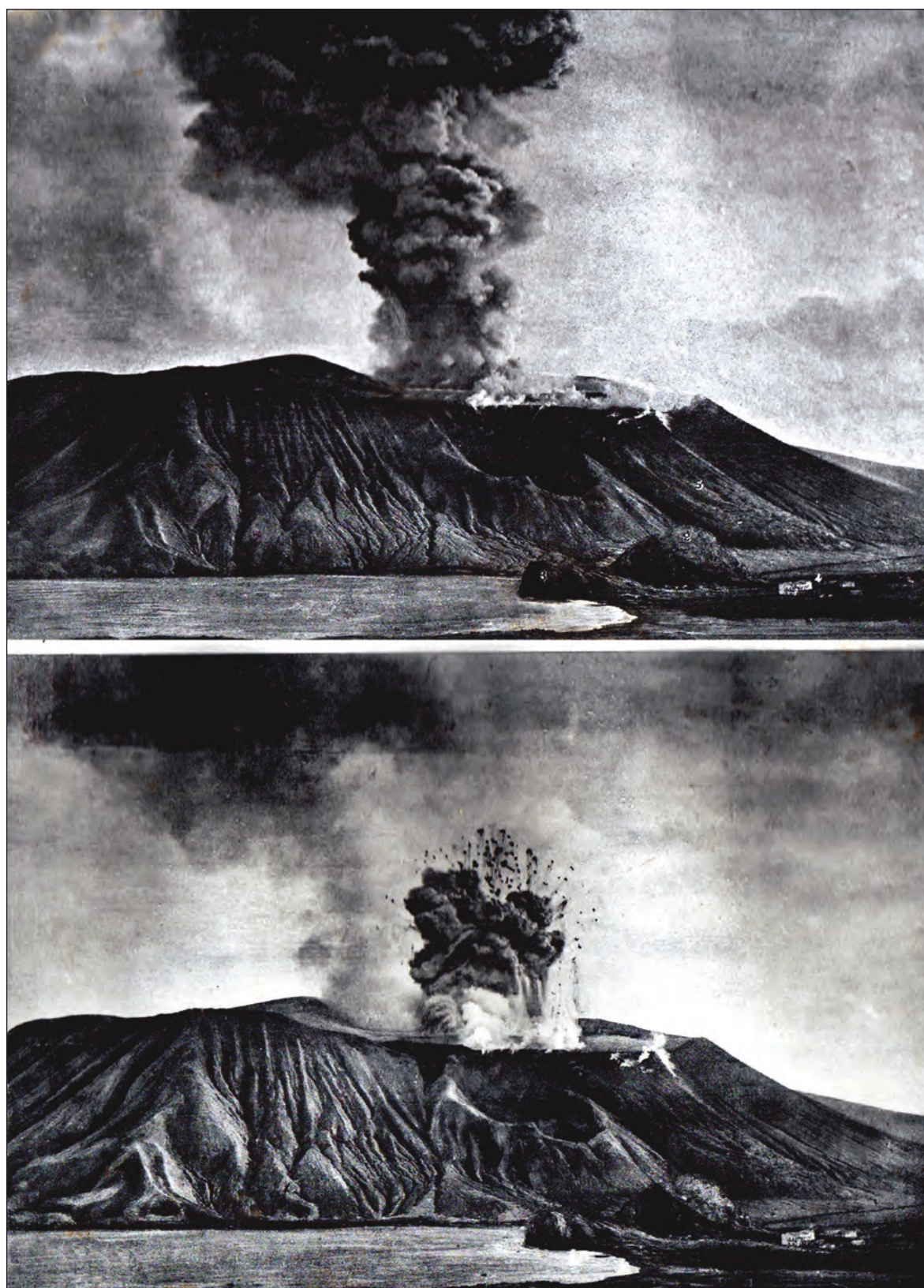
[*For a large-scale survey of the islands of Stromboli and Vulcano (1925)*]

In the nineteenth century volcanic activity in Sicily and immediate surroundings area was intense (Figs. 70, 71). In the Aeolian islands, for example, in this period are reported several eruptive episodes, seismic and volcanic activity in general, especially for Stromboli and Vulcano, to which were devoted numerous studies such as those of Palmieri (1876), Mallet (1876), Tacchini (1889), Silvestri (1874, 1888, 1889a, b, 1890), Mercalli (1879a, b, 1881, 1886, 1888, 1889, 1891a, b, c), Mercalli & Picone (1882), Riccò & Mercalli (1892), Matteucci (1899–1900).

The most striking and long-lasting episode was the eruption occurred at Vulcano from 3 to 5 August 1888 which was followed by a second eruption on the 18th of the same month that ended on March 22, 1890 described above all by Mercalli & Silvestri (1891).

In this work, Orazio Silvestri (Professor of Geology and Mineralogy at the University of Catania) also made a detailed photographic documentation and Giuseppe Mercalli (at that time Professor of Volcanology and Seismology at the University of Naples) provided other photos and original drawings. Another photographic service was also realized by Chaix (1891). For a detailed summary of eruptions at Vulcano and the Aeolian Islands see Barbano et al. (2017).

Platania also studied these phenomena at Vulcano and Stromboli (Platania, 1889a, b) and continued to observe and study them in the Aeolian Islands with the above mentioned works until 1925. More generally, he will study the seismic activity in the territory of the Strait of Messina including the 1908 Messina seaquake–earthquake (Platania, 1908–1909).



Figures 70, 71. Vulcano Island, 4.II.1889 at 16.00 (Fig. 70) and 16.14 (Fig. 71). Photos by Silvestri (Mercalli & Silvestri, 1891).

ANTONIO DE GREGORIO

He was born in Messina on June 27, 1855 from Camillo, marquis of Parco Reale and Litteria Brunaccini princess of San Teodoro; he died in Palermo on 15.12.1930 (Fig. 72). He graduated in 1880 in Natural Sciences at the University of Palermo and for two years he was assistant of G. Pisati in the Physics cabinet, then of A. Todaro at the Botanical Garden and finally of G. Gemellaro in Geology for three years. After these experiences, De Gregorio left the university career but continued to study and publish on topics like paleontology, anthropology, geology, alpinism, agriculture, physics, zoology and meteorology. The works concerned mainly the Sicilian territory but he also studied the Tertiary lands of Malta and North Italy. Other important works included the discovery of a deposit of fossil vertebrates in Monte Pellegrino (De Gregorio, 1886) and the explanation of the illustrated plates of the work of Benoit (De Gregorio, 1895).



Figure 72. Antonio De Gregorio (photo courtesy of R. Poggi).

A man of vast culture, he also studied music, knew several languages, wrote carmi in Latin, books of verses in Italian, works in French and English, and made an addition to the Sicilian lexicons (Cipolla, 1931; Fatta Martinez Tagliavia, 2014). Member of numerous journals and cultural associations, De Gregorio also published works on the cultivation of grapefruit in Sicily - that in 1900 he was the first to introduce from America and of which he was a producer in the island - and on the action of ultraviolet light in the treatment of consumption. He realized a large paleontological collection with findings from all over the world that he donated to the Geological Museum of Palermo for testamentary disposition. Most of the scientific works, mainly paleontological, were published in a magazine he created and funded "Annales de Géologie et de Paleontologie" from 1886 to 1930. In the first volume, De Gregorio began with a stratigraphic study of the pre-Alpine region stretching from Lake Garda to the plateau of the Sette Comuni of Vicenza, with a comparative table of all the species of the Ghelpha fauna (Jan. 15, 1886, pp. 1-24). In 1909 he also took ownership of the journal "Il Naturalista siciliano" (Year XXI - new series, Vol. I) and formed the "Società Siciliana di Scienze Naturali". This experience ended in 1932, two years after the death of De Gregorio, with the failed attempt, by his son, Camillo, to publish the XXVIII Volume (Vol. VIII of the New Series) (Romano, 2004).

De Gregorio was one of the protagonists of the Sicilian scientific culture between the two centuries, witness of all the events and changes (not always pleasant) both of the society of that time (economic crisis and Great War: his second son, Francesco, died on the Carso Triestino and is buried in the military shrine of Redipuglia) and of the scientific world. His death officially ends many important initiatives that had animated the entire 1800 and the first decades of 1900, in the context of a changed and worsened social and cultural climate.

Appunti zoologici e Geologici sull'isola di Levanzo (Conchiglie terrestri viventi e fossili e avanzi paleontologici) (1894)

[Zoological and Geological notes on the island of Levanzo (Living land shells and fossils and leftovers paleoethnological) (1894)]

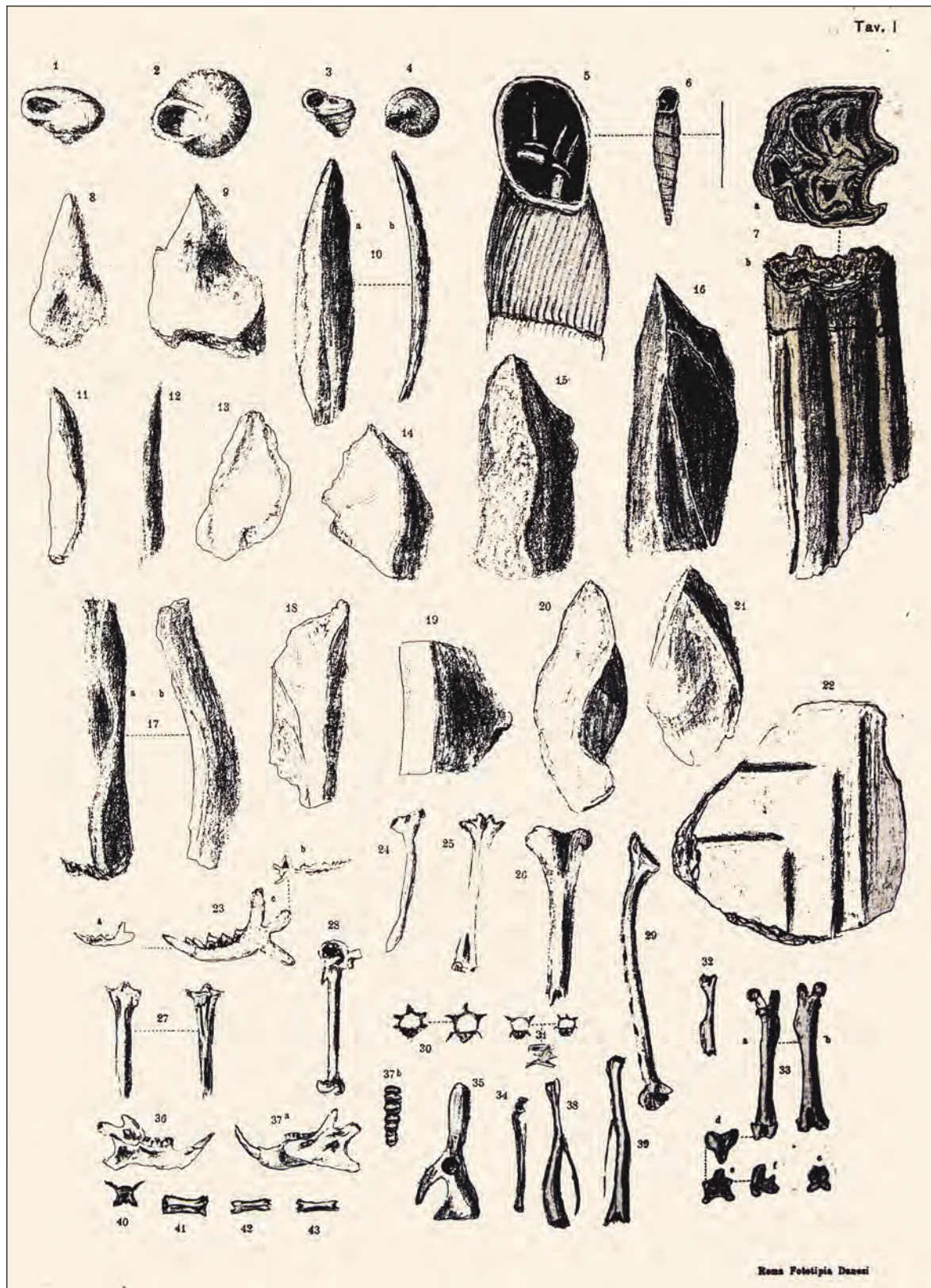


Figure 73. De Gregorio (1894): illustration of living land shells, fossils and paleoethnological findings from Levanzo Island.

De Gregorio, on the advice of Giglioli (1891), who had also visited Levanzo, sent to the island his technician Vittorio Meneguzzo to “*raccogliere tutto ciò che di interessante avesse potuto rinvenire* [collect everything interesting that he could find]”.

This work is based on the study of the material received and is divided into: 1) general considerations, 2) living terrestrial shells of the island of Levanzo, 3) fossil shells of the quaternary land of Levanzo (cave of Caciucavaddu), 4) quaternary leftovers of the cave of Caciucavaddu, 5) subfossil ossicles in the cave of Caciucavaddu, 6) secondary rocks of Levanzo (Fig. 73).

De Gregorio reports on all these topics in his own style, cultured and eclectic, describing and cataloging the fossil and subfossil bones, anthropological remains and rocks found.

He also provides a list of five fossil gastropods found in the cave of Caciucavaddu, including the “*Helix*” *mazzullii* (*Ercella insolida* Monterosato, 1892: Colomba et al., 2011) and a longer and more detailed list of 13 terrestrial molluscs living in Levanzo, after mentioning all the species until then reported for the Aegadian Islands by Benoit (1857–1862, 1875, 1882) and Monterosato (1892).

On this material, De Gregorio describes three new “varieties”:

Helix pyramidata var. *Varzica* (p. 6, Pl. 1, Figs. 3, 4).

Helix provincialis var. *Levanzicola* (p. 6, Pl. 1, Figs. 1, 2).

Clausilia proxima var. *Levanzensis* (p. 7, Pl. 1, Figs. 5, 6).

Taxa little known in the current malacological bibliography. They could be synonyms or valid names for the insular subspecies of *Trochoidea pyramidata* (Draparnaud, 1805) and *Siciliaria calcarae* (Philippi, 1844). *Helix provincialis* var. *levanzicola* is synonym with “*unicolor* Benoit 1857” (see before).

GIUSEPPE ZODDA

Giuseppe Zodda (Fig. 74) was born in Merì, in the province of Messina, from Giovanni and Angela

Gumina on March 9, 1877. He graduated in Natural Sciences at the University of Messina on November 23, 1899 with a thesis on the vegetation of Messina, which was later published.

Immediately after, on February 1, 1900, he was appointed assistant to the chair of Botany at the University of Messina and remained there until December 28, 1908, the day of the earthquake that destroyed the area of the Strait. Zodda, miraculously saved, continued his work in the Botanical Institute of the University of Catania, for a few months. In October 1909 he returned to Messina leaving the University and continuing to teach as a professor at the Technical School and Technical Institute.

He briefly studied entomology (Zodda, 1902) but was, above all, a botanist. In the study of the circumsicilian islands he devoted himself mainly to the Aeolian Islands (Zodda, 1903a, b, 1904; Bottini, 1903) but he also collected materials in the islands of the Strait of Sicily (Zodda, 1908).

The last phase of his scholarly activity was carried out in Teramo, where he concluded teaching in 1947. He died in May 1968.

Sulla flora di Lipari (1903)

[*On the flora of Lipari (1903)*]

This is the lecture held at the National Botanical Congress held in Palermo in 1902 of the journey made by Zodda in the Aeolian Islands. These studies would later become their own work (Zodda, 1904).

Una visita al cratere di Vulcano nell'aprile 1902 (1903)

[*A visit to the crater of Vulcano in April 1902 (1903)*]

Referring to the trip made in the Aeolian Islands, Zodda reports his excursion to the crater of Vulcano.

Una gita alle isole Eolie (1904)

[*A trip to the Aeolian islands (1904)*]

The trip to the Aeolian Islands was made in the spring of 1902 and lasted for twenty-two days. After a brief introduction, follows the list of cryptogams divided into “liverworts”,



Figure 74. Giuseppe Zodda (photo courtesy of R. Poggi).

determined by C. Massalongo and lichens, determined by A. Jatta (Merlo, 1995). The mosses collected by Zodda will instead be published by Bottini (1903).

He follows the list of phanerogams in which he makes continuous references and comparisons with the work of Lojacono Pojero (1878a, b, c). He finds quite common the Myrtle (*Myrtus communis* L.) considered rare by Lojacono Pojero, reports *Cytisus aeolicus* and the dwarf palm, does not find the *Isoëtes durieui* Bory reported by Lojacono Pojero.

The discovery in Lipari in the Pliocene underwater tuffs of leaves that can be attributed to different arboreal plants, including needle-like leaves of conifers, allows Zodda to observe how the Aeolian Islands were characterized in the past by a tree cover greater than the current one, that disappeared due to the action of man.

The work continues with a detailed list of all the cryptogams collected in the different islands and of the phanerogams limited to the 83 new reports.

CONCLUSIONS

As stated above, the great contribution of the Sicilian naturalists of 1800 to the knowledge of the circumsicilian islands is evident.

They provided the most useful information for all the further studies on these islands by reporting on their main geological, botanical and zoological characteristics and by describing numerous new species, including some of the most representative island endemics.

On the other hand, as said at the beginning of this work, the Sicilian scientific environment of 1800 already had the preparation and the fundamental knowledge to conduct any kind of study, succeeding in realizing a cultural movement which involved the Sicilian society at every level for about a century.

All this began to slow down in the last decades of 1800 until it disappeared in the first decades of 1900.

Various hypotheses have been reported, such as the diminished interest in taxonomic studies, to try to understand what happened but the reasons are, most likely, of a more general nature and external to the scientific environment.

The reunification of the Kingdom of Italy, for example, which failed to respond adequately to the real social needs of the southern regions, with long-awaited reforms never realized, and the heavy contribution in human lives, especially among young people, that these populations paid during the First World War, helped to promote this decline.

Almost all the Sicilian naturalists of 1800 lived in extreme difficulty, social or economic, the last years of their life, as told.

Ragusa and many others, after a wealthy life, had economic problems. Failla Tedaldi, at sixty years, wanted to emigrate to America. Monterosato who had bought malacological collections all his life was forced to sell his, at 80 years, etc. De Gregorio, who maintained a certain economic well-being, lost his first-born son during World War I in the Karst of Trieste.

Many Sicilian naturalistic collections went to Italian or European museums, but others were destroyed.

When the carelessness and indifference of man was lacking, nature took over, with the tidal wave-

earthquake of Messina of 1908 that, besides destroying the city and causing serious human losses, caused the disappearance of important naturalistic collections like those of Francesco Vitale, Luigi Benoit and Seguenza.

Thus, the cultural vacuum that was created in those years continued, with few exceptions, throughout the 20th century, aggravated, after the end of World War II, by the lack of adequate regional policies, as well as national, in terms of protection and conservation of nature, museum activities, environmental education, causing a general impoverishment of scientific and naturalistic culture in Sicily.

Only towards the end of the 20th century has there been a consistent resumption of naturalistic studies, consolidated and increased in recent years.

There has also been an important recovery of the existing Sicilian collections with numerous museum initiatives in various Sicilian municipalities, at university level and by private citizens (for example, the intense museum activity of V.E. Orlando: Massa, 2014; Sparacio, 2014b; Di Simone, 2016).

However, there is still a lack of greater awareness of civil society and, above all, a valid naturalistic and regional museum policy that allows to give a perspective of continuity and stability to all existing museum activities and to promote others. We risk losing what has been achieved so far and not being able to adequately preserve the huge naturalistic collections that have been created in recent decades.

Unfortunately, this our historical period also appears to be characterized by a deep ethical and cultural crisis of the current model of modern society even outside the regional and national borders, all over the world.

If it were possible, in Sicily, to achieve this last and most difficult step - linking the new humanistic and scientific knowledge to the cultural renewal and civil growth of our entire society - it would be necessary to hope that this time too, Sicily could truly be the (positive) metaphor of the world (Sciascia, 1979).

APPENDIX. OTHER WORKS ON THE CIRCUM-SICILIAN ISLANDS DURING THE 19TH CENTURY

Below are other works on the circumsicilian islands equally useful to the knowledge of these localities and also made by non-Sicilian authors.

The period of reference remains the whole 1800, except for some works published in the early 1900 and reported here for continuity of study.

Anderson J. & Johnston-Lavis H.J., 1888. Notes on the late eruption in the Island of Vulcano.

Amari E., 1843. Un progetto di colonizzazione che meglio potrebbe convenire nella isola di Lampedusa e sue adiacenze.

Arcidiacono S. & Silvestri O., 1890. Etna, Sicilia ed isole vulcaniche adiacenti sotto il punto di vista dei fenomeni eruttivi e geodinamici avvenuti durante l'anno 1889.

Arietti A., 1875. Memoria sull'isola di Ustica scritta da Michele Russo e preceduta da una introduzione.

Avogadro Vigliano de E., 1880. Lampedusa. Appunti di un comandante di distaccamento.

Bäckström H., 1896. Ueber leucitführende Gesteine von den liparischen Inseln.

Baratta M., 1892a. Sulle bombe ardenti dell'eruzione sottomarina di Pantelleria.

Baratta M., 1892b. Gli odierni fenomeni endogeni di Pantelleria.

Baroni E., 1902. A proposito della scoperta della *Kochia saxicola* a Strombolicchio.

Barsali 1908. Epatiche di Sicilia, isole Eolie e Pelagie.

Bergeat A., 1896. Der Stromboli als Wetterprophet.

Bergeat A., 1897. Mineralogische Mittheilungen über den Stromboli.

- Bergeat A., 1899. Die äolischen Inseln (Stromboli, Panaria, Salina, Lipari, Vulcano, Filicudi und Alicudi).
- Bertarelli L.V., 1909. Escursione alle Isole Eolie.
- Boeris G., 1889. Di alcuni Ragni d'Ustica.
- Boid E., 1827. Travels Through Sicily and the Lipari Islands, in the Month of December, 1824: By a Naval Officer.
- Borzi A., 1888. *Filago eriocephala* Guss. in Lipari.
- Bottini A. 1903. I primi muschi delle Isole Eolie.
- Bourquelot F. & Reclus E., 1873. La Sicilia con prefazione e note al T. Navarro della Miraglia illustrato da 43 incisioni 2 carte geografiche e le piante dell'Etna e di Vulcano.
- Bucca L., 1885. Le Andesiti dell'Isola di Lipari.
- Butler G.W., 1892. The Eruptions of Vulcano (August, 3, 1888, to March 22, 1890).
- Butler G.W. & Perry G.H., 1891. On the matter thrown up during the submarine eruption north-west of Pantelleria.
- Calcagno M., 1879. Dell'Agricoltura dell'isola di Lampedusa.
- Chaix É., 1888. The past History of Vulcano.
- Chaix É., 1891. Album de 19 phot., été 1890 sur l'Etna et à l'île Vulcano (îles Lipari)
- Cockburn J.P., 1815. A voyage to Cadiz and Gibraltar, up the Mediterranean to Sicily and Malta, in 1810 & II, including a description of Sicily and the Lipari Islands, and an excursion in Portugal.
- Cole G.A.J. & Butler G.W., 1892. On the lithophyses in the obsidian of the Rocche Rosse, Lipari.
- Colomba L., 1900. Sui deposito d'una fumarola silicea alla fossa delle Roche Rosse (Lipari).
- Colucci S., 1823. Delle isole Pelagie ed in particolare di quella nominata Lampedusa, relativamente al progetto di convertirla per luogo di deportazione.
- Cortese C., 1888. Appunto sull'eruzione dell'isola di Vulcano veduta nel settembre 1888.
- Cortese E. & Sabbadini V., 1892. Descrizione geologico petrografica delle isole Eolie.
- Cossa A., 1898. Sulla presenza del tellurio nei prodotti del cratere dell'isola Vulcano (Lipari).
- Costa O.G., 1829. Osservazioni zoologiche intorno ai Testacei dell'isola di Pantelleria.
- D'Albertis E., 1878. Crociera del Violante comandato dal Capitano-Armatore Enrico D'Albertis durante l'anno 1876. I. Parte narrativa (con prefazione di Arturo Issel).
- De Quatrefages J.L.A., 1857. Souvenirs d'un naturaliste (les côtes de la Sicilie).
- De Rossi M.S., 1882a. Corrispondenza, Cronaca dei vulcani delle Isole Eolie.
- De Rossi M.S., 1882b. Fatti di Stromboli, Vulcano e Panaria.
- De Rossi M.S., 1882c. Stromboli 19 novembre 1882.
- Derselbe, 1888. The Islands of Volcano and Stromboli.
- Derselbe, 1890. The Eruption of Volcano Island.
- De Stefani C., 1900. Le acque atmosferiche nelle fumarole: a proposito di Vulcano e di Stromboli.
- Doderlein P., 1872. Sul passaggio autunnale di alcune specie nordiche di Uccelli per l'isola d'Ustica.
- Doderlein P., 1875a. Osservazioni geologiche, zoologiche ed industriali sull'Isola di Pantelleria.
- Doderlein P., 1875b. Cenni sulla costituzione geologica dell'isola di Ustica.
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- Escherich K., 1893. Eine Excursion auf die Insel Linosa.
- Ferrara F., 1810. I Campi Flegrei della Sicilia e delle isole che le sono intorno e descrizione fisica e mineralogica di queste isole. Messina, 424 pp.
- Ferrara A.F., 1845. Vulcanologia geologica della Sicilia e delle isole che le sono intorno.
- Ferrari P.M., 1884. Materiali per lo studio della fauna tunisina raccolti da G. e L. Doria. V. Rincoti.
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- Foerstner H., 1881b. Über Natronorthoklas von Pantelleria.
- Foerstner H., 1883. Das Gestein der Insel Ferdinanda (1831) und seine Beziehungen zu den jüngsten Laven Pantellerias und des Aetnas.
- Foerstner H., 1884a. IX. Ueber die Feldspäthe von Pantelleria.
- Foerstner H., 1884b. XIX. Ueber künstliche physikalische Veränderungen der Feldspäthe von Pantelleria
- Foerstner H., 1891a. XXXIX. Ueber die Feldspäthe von Pantelleria.
- Foerstner H., 1891b. Das Gestein der 1891 bei Pantelleria entstandenen Vulkaninsel und seine Beziehungen zu den jüngsten Eruptivgesteinen der Nachbarschaft.
- Fulcher L.W., 1890. Vulcano and Stromboli.
- Furia B., 1863. Memorie sulla posizione agraria, silvana e commerciale dell'isola di Pantelleria e sulla possibilità di costruirsi un porto.
- Genovesi F., 1879. Notizie sulle acque termo-minerali e sulla grotta o stufa di S. Calogero in Lipari.
- Giglioli H.E., 1884. 2° Campagna del piroscampo Washington.
- Giglioli H.E., 1891. Relazione sulla pesca delle spugne a Lampedusa.
- Giglioli H.E., 1891. Intorno ad una caverna abitata da gente preistorica nell'isola di Levanzo, Egadi, Sicilia.
- Giusti A., 1883. Le ultime crociere del Violante comandato dal Capitano-Armatore Enrico D'Albertis.
- Gregorio R. (de), 1840. Descrizione delle principali isole adjacenti alla Sicilia del canonico.
- Gregorio R. (de), 1853. Descrizione di Ustica.
- Gussone G., 1832–1834. Supplementum ad Florae Siculae Prodromum, quod et specimen florae insularum Siciliae ulteriori adjacentium. Fasciculus secundus.
- Gussone J., 1839. Notizie sulle isole di Linosa, Lampedusa e Lampedusa e descrizione di una nuova specie di "*Stapelia*" che trovasi in questa ultima.
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- Habsburg Lothringen L.S., 1898. Ustica. H. Mercy, Praha, 132 pp., 2 Pls.
- Hoffmann F., 1832. Ueber die geognostische Beschaffenheit der Liparischen Inseln.
- Houël J.P.L., 1782–1787. Voyage pittoresque des

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- Iddings J.P. & Penfield S.L., 1890. Fayalite in the obsidian of Lipari.
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- Johnston-Lavis H.J., 1888b. Further notes on the late eruption at Vulcano Island.
- Johnston-Lavis H.J., 1890. The Eruption of Vulcano Island.
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- La Rosa G., 1784. Pyrologia Topostoriografica dell'isola di Lipari seu Lipari sacro. Parte quarta.
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- Lo Re A., 1885. Le condizioni economiche agrarie delle isole di Lampedusa, Linosa e le proposte per migliorarle.
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- Mallet Robert M.A., F.R.S., 1876. Il meccanismo del vulcano attivo Stromboli.
- Maravigna C., 1837. Sulla Jalite del Basalte della Motta, e sulla tremolite dell'isola dei Ciclopi, sullo idroclorato di Ammoniaca della eruzione di Bronte anno 1832.
- Marzolla B., 1831. Descrizione dell'Isola Ferdinanda al mezzogiorno della Sicilia.
- Matteucci R.V., 1899–1900. Sull'attività dei vulcani Vesuvio, Etna, Vulcano, Stromboli e Santorino nell'autunno 1898.
- Mercalli G., 1879a. Recenti eruzioni dello Stromboli.
- Mercalli G., 1879b. Contribuzioni alla geologia delle Isole Lipari.
- Mercalli G., 1881. Natura nelle eruzioni dello Stromboli ed in generale dell'attività sismo-vulcanica delle Isole Eolie.
- Mercalli G., 1886. La Fossa di Vulcano e lo Stromboli dal 1884 al 1886.
- Mercalli G., 1888. L'isola di Vulcano e lo Stromboli dal 1886 al 1888.
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