

Flora of some of the satellite islets of Sicily, Pantelleria, Lampedusa and Ustica (Italy)

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ABSTRACT

During the last decade, the authors visited several stacks (Faraglione) which are satellite islets around the main circum-sicilian islands. Most of these stacks are inaccessible to the general public due to their geographical and topographical positions/inclinations. Literature is often scarce or non-existent. The current work provides a preliminary data on the floral diversity recorded during the brief expeditions between the years 2008–2018. All of these islets were observed once, so this study does not reflect all of the possibly existing species of these islets. The current study caters the Faraglione di Colombara of Ustica, Isola dei Conigli, Scoglio del Sacramento and Scoglio di Faraglione of Lampedusa, Faraglione di Tracino and Faraglione di Ficaria/indietro l'isola of Pantelleria. Another islet is the Scoglio dello Zio Gennaro, Taormina, Sicily.

KEY WORDS

Vegetation; satellites islets; circum-sicilian islands.

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INTRODUCTION

Satellite islets offer a unique opportunities in order to record new sites for species outside their normal range, as well possible new species or sub-species/populations to science. Moreover, they hold valuable untouched ecosystems which could have existed on the main islands nearby, but might have been greatly altered due to disturbance by human intervention. In shorter terms, they can be relic ecosystems. At the same time the micro-habitat of the latter offer to the biodiversity of the site to modify itself according to the harsh conditions provided, usually resulting in the only species endemic in the *situ*. Through such studies these islets can attain more levels of protection as their ecological importance would be noticed.

All of the islets have been physically visited.

The chances of accessing these islets and stacks proved crucial, as their flora has been thoroughly observed. Flat islets were easy to climb and to walk around their perimeters, but the stacks were mostly difficult, as most parts of the stack are vertical. Unfortunately some part of the stacks proved to be inaccessible. Further observations of such stacks, and even the flat islets, were also done telescopically, from the shores and cliffs of their main islands, respectively. The camera was the biggest tool at hand in-situ, and each different species observed was photographed.

Identification of the species was done both in-situ and ex-situ.

Table 1 has the list of all species observed and is similar to one of our previous works (Sciberras & Sciberras, 2010, 2012; Sciberras et al., 2012a, b).

RESULTS

ISLETS OF LAMPEDUSA

Scoglio del Sacramento (A)

31°31'43"N - 12°31'41"E, Observed in May 2010

Located along the north-western cliff of Lampedusa, roughly 25 m away from the cliff, this 40–50 m high stack is roughly 47–50 m long from north to south and 30 m wide from east to west. It is very sheer, almost entirely vertical on the west side, with a small slope on the east side where all of the vegetation occurs, however it is still sheer. The vegetation seems very monoculturous and occurs from the top of the stack until near the coast estimating roughly 5 to 3 meters above sea level. Most likely only two species occur there, *Anthrocnemum macrostachyum* and *Limonium lapodusanum*, as observed from afar.

Scoglio di Faraglione (B)

31°31'44"N - 12°32'39"E, Observed in May 2010

Located along the northern cliffs of Lampedusa, some 20 m away from the cliff, this 10 m high stack is roughly 40 m long from north to south and 20 m wide from east to west, is smaller than Scoglio del Sacramento, but surprisingly has more species on it than the other, such as *Daucus ginegoidium*, *Anthrocnemum macrostachyum*, *Rumex bucephalaris* and possibly *Limonium lapodusanum*. However vegetation seems more sparse here and only occurs on the very top of the stack.

Isola dei Conigli (C)

31°30'36"N - 12°33'29"E, Observed in May 2010

Located on the south side of the main island, 50 m away, very close to Spiaggia dei Conigli, this islet is the fourth largest island of the archipelago, after Lampione. It is roughly 267 m long east to west, 128 m wide from north to south, highest point on the islet is 12 m. Small cliffs surround most of the perimeter of the islet. The islet is temporarily connected to Lampedusa through a sandbar, especially during low tide in summer, making it a sandbar island, the only example in the archipelago. The islet is home to *Psammodromus algericus*, which occurs only on this islet in the entire archipelago.

The islet has the most varied floral community of those that surround Lampedusa, which is dominated by large shrubby species such as *Pistacia lentiscus*, *Periploca angustifolia*, *Atriplex halimus* and *Salsoda oppositifolia*. These large shrubby species cover the island almost entirely, leaving little room to other species. In fact the rest of the herbaceous species seem to be annual or perennial, only to grow in the exposed spaces. The only other shrub which grows only along the perimeter of the islet is *Limonium lapodusanum*.

ISLETS OF PANTELLERIA

Faraglione di Tracino (D)

36°47'56"N - 12°03'07"E, Observed in May 2018

Located in the north-eastern coast of the main island, near a peninsula of Tracino, some 27 m offshore, the islet is 68 m long from north to south while 40 m wide from east to west. Most probably it is 20 m high above sea-level, the highest point is closest to the shore, and it gently inclines downwards towards the north-east. The flora of the island is highly varied, but practically almost identical to the garigue of the nearby coast. Most common species seem to be *Matthiola incana* subsp. *pulchella*, *Helichrysum rupestre* var. *errariae*, *Limonium cossyrense*, and *Malva dendromorpha*. The last species seemed almost absent from the nearby coast. *Malva dendromorpha* is a typical species to coasts and islets.

Faraglione indietro l'isola-Faraglione di Ficaria (E)

36°45'25"N - 12°03'10"E, Observed in May 2018

The largest of the offshore stacks around Pantelleria, is roughly 68 m far from the coastal cliffs, is 46 m wide from east to west and 54 m long from south to north. Its highest point must be between 60 m to 70 m. It has a conical shape with striking geomorphological large cuboid slabs protruding out in every upward direction which cover most of the surface of the stack, creating several sheltered crevices and patches with flat surfaces for ruprestal species to thrive. The stack is steep in every direction. The islet is well known for a large cluster of *Opuntia ficus-indica* on a top part of the stack facing south, hence the name. A mix

Main island	Lampedusa			Pantelleria		Ustica	Sicily
	A	B	C	D	E	F	G
Satellite islet							
Species							
<i>Anthemis</i> sp.						X	
<i>Antrocnenum macrostachyum</i> (Moric.) C, Koch	X	X					
<i>Allium</i> sp.				X			
<i>Asparagus albus</i> L.					X		
<i>Asparagus aphyllus</i> L.			X				
<i>Atriplex halimus</i> L.			X				
<i>Avena</i> sp.				X			
<i>Brassica insularis</i> Moris				X			
<i>Capparis orientalis</i> Veillard			X	X	X		
<i>Carduus</i> sp.						X	
<i>Chenopodium</i> sp.			X				
<i>Critimum maritimum</i> L.						X	
<i>Daucus carota</i> subsp. <i>depranensis</i> (Archang.) Henwood	X	X		X	X		
<i>Echium parviflorum</i> Monech			X				
<i>Euphorbia dendroides</i> L.				X			
<i>Euphorbia pinea</i> L.				X	X		
<i>Ficus carica</i> L.				X			
<i>Malva arborea</i> (L.) Webb & Berthel					X		
<i>Mesembrythemum nodiflorum</i> L.		X	X				
<i>Matthiola incana</i> subsp. <i>pulchella</i> (Conti) Greuter & Burdet				X	X		
<i>Misopates</i> sp.				X			
<i>Leontodon</i> sp.				X			
<i>Limbardia crithmoides</i> (L.) Dumort							X
<i>Limonium cossyrense</i> (Guss.) Kuntze				X	X		
<i>Limonium lopadusanum</i> Brullo	X	X	X				
<i>Lobularia maritima</i> (L.) Devs			X				
<i>Helichrysum rupestre</i> var. <i>errariae</i> (Tin.) Pign.				X	X		
<i>Hyoscomus albus</i> L.				X			
<i>Ononis natrix</i> subsp. <i>ramossissima</i> (Desf.) Batt.	X	X	X				
<i>Olea europaea</i> subsp. <i>sylvestris</i> (Miller) Lehr				X			
<i>Opuntia ficus-indica</i> (L.) Mill.				X			
<i>Orobanche cernua</i> Loefl.			X	X			
<i>Parietaria cretica</i> L.				X	X		
<i>Periploca angustifolia</i> Labill.			X	X			
<i>Pharalis</i> sp.				X			
<i>Pistacia lentiscus</i> L.			X		X		
<i>Reseda alba</i> L.	X			X			
<i>Roccella</i> sp.					X		
<i>Rubia peregrina</i> L.	X	X	X	X			
<i>Rumex bucephalarus</i> L.							
<i>Sonchus olearaceus</i> L.				X	X		
<i>Salsoda oppositifolia</i> Desf.			X				
<i>Sedum album</i> L.				X			
<i>Senecio leuncanthifolius</i> Poir.			X				
<i>Thapsia garganica</i> L.			X				
<i>Umbilicis</i> sp.				X			
<i>Valantia muralis</i> L.					X		

Table 1. Flora of some of the satellite islets of Sicily, Pantelleria, Lampedusa and Ustica.

of rupestral and ruderal species occur. The highest part is dominated by *Periploca angustifolia*. Other species that occur here are common around in entire island of Pantelleria, such as those mentioned in Faraglione di Trachino, except for one species, *Brassica insularis*, which seemed dominant on the islet, especially on the north side, but absent on nearby cliffs of the main island. However, this species has been recorded from five stations around Pantelleria, but not on the islet, where the majority of the population resides.

ISLET OF USTICA

Faraglione - Scoglio di Colombara (F)

38°43'11"N - 13°10'58"E, Observed in October 2011

Situated in the north of the island of Ustica, 36 m offshore. It is 25 m long north to south, same east to west, with a probable height of 15 to 18 m above sealevel, so it has a cuboid shape overall. It has a flat plateau, slightly dome-like. Very few species occur on the plateau, mainly *Crithmum maritimum* as the dominant perennial.

ISLET OF SICILY (TAORMINA)

Scoglio dello Zio Gennaro (G)

37°51'34"N - 15°18'07"E, Observed in October 2011

This islet is situated near the city of Taormina, close to the bay of Isola Bella. It is 112 m away from the shore, 47 m from north to south and 27 m from east to west. The islet is 10 m high at sea level. The sea around the islet seems very deep, since that part of Sicily has a very deep coast. The only species to reside on the islet is *Limbarda crithmoides*, which is very adapted for halophytic environs, however the size of the islet can support more species, but, unexplainably, this is not the case.

DISCUSSION AND CONCLUSIONS

Apart from wind, birds must play an important role in carrying seeds to these islets, and have a profound effect to the density and richness of other

fauna species (see Cilia et al., 2012). The authors have observed a few gull species such as *Laurus argentatus* Pontoppidan, 1763 Spanish Sparrows, *Passer hispaniolensis* (Temminck, 1820), and the Blue Rock Thrush, *Monticola solitarius solitarius* (Linnaeus, 1758). Field cockroach, *Loboptera depictans* (Germar, 1817), was observed on Faraglione di Ficaria, while an unidentified species of cricket and silverfish were observed on Faraglione di Colombaro of Ustica. Living specimens of *Ectobius* sp., and evidence of sounds of a colony of *Tadarida teniotis* (Rafinesque, 1814), including skull and wing fragments, were found in Scoglio dello Zio Gennaro. Individuals of *Podarcis* sp. were observed on Faraglione di Ficaria and Scoglio di Faraglione. Regarding Lepidoptera, during the visit to Faraglione di Ficaria, a fair amount of *Pieris brassicae* (Linnaeus, 1758) and one *Vanessa atalanta* (Linnaeus, 1758). At Isola dei Conigli *Colias croceus* (Geoffroy, 1785) and three *Papilion machaon* Linnaeus, 1758 have been observed. Two *Vanessa atalanta* and three *Pieris rapae* (Linnaeus, 1758) were observed on Scoglio dello Zio Gennaro. Another two *Pieris rapae* were also found on Scoglio di Colombara.

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