Mifsud, S., Lanfranco, E., Fiorentino, J., and Mifsud, S. D. (2016). *Xjenza Online*, 4:142–159.

Xjenza Online - Journal of The Malta Chamber of Scientists
www.xjenza.org
DOI: 10.7423/XJENZA.2016.2.05

Research Article

An Updated Flora of Selmunett (St. Paul's Island) including Mosses and Lichens

Stephen Mifsud*[1], Edwin Lanfranco[2], Jennifer Fiorentino[3] and Stephan D. Mifsud[4]
[1]*Independent Taxonomist and Researcher*
[2]*Department of Biology and Institute of Earth Systems, University of Malta*
[3]*Department of Biology, University Junior College, Msida, Malta*
[4]*Independent Moss Researcher*

Abstract. A survey of four visits in Selmunett (Gżejjer ta' San Pawl) resulted in a number of new records comprising 23 lichens, 2 mosses and 20 higher plants. Five of these species are protected, amongst which *Plocama calabrica* is very rare whereas *Parietaria cretica*, a critical species only recorded from Selmunett in the Maltese islands, has been rediscovered after not being sighted for about 15 years and was suspected of having become extinct. Records resulting from this survey are compared with those from previous records or surveys between 1927 and 2012. These are examined critically, identifying possible misidentifications as well as establishing their status, thus producing a final update of the florula of Selmunett.

Keywords: Selmunett, St. Paul's Island, Flora of Malta, *Parietaria cretica*

1 Introduction

Selmunett, also known as Saint Paul's Island, il-Gżejjer ta' San Pawl and, in the distant past, as Ta' Barba Marku, is situated in the north east of mainland Malta, isolated by about 100 m of shallow water. The recent name is derived from the belief that the shipwreck of Saint Paul took place in the whereabouts of this islet (Farrugia Randon, 1995).

At its central part, the islet has a shallow isthmus about 100 m long which, in stormy weather, may become momentarily submerged by 'high water' and giving the inaccurate impression that it consists of two small islets. The length of the island is about 885 m and its widest part is about 200 m across. It consists of Upper Coralline Limestone, reaching up to 22–24 m above sea level at the south-western side. It has been uninhabited since the beginning of World War II. Earlier, a farmer used to live and raise crops in a number of fields. Rubble walls are still in relatively good shape, but an old farmhouse has largely collapsed.

The island features three main type of habitats: shallow littoral rocky ground exposed to sea spray, especially dominant in the eastern part and hence the smaller 'islet', which is only about 8 m above sea level; very degraded garigue turning into steppe in the abandoned agricultural areas covering much of the larger 'islet'; and low garigue remnants encircling most of the larger 'islet' and in the north and west. The island also features a small blue clay formation in the west but it does not sustain any plant communities typical of clay habitats. The cliffs are not high enough to support true chasmophytic or rupestral communities and there is no sandy shore or vegetated temporary freshwater rock pools.

Two main soil types have been reported. Terrarossa soil which is found dominating the smaller 'islet' and a mixture of Terrarossa and Xerorendzina in the larger 'islet'. As expected for a small islet, Selmunett has no surface water and its vegetation thrives only on rain water which percolates through fissures in a lower water table above the Blue clay stratum (Lanfranco, 1983).

The vegetation has to withstand harsh environment conditions, namely sea spray due its proximity to the sea and low altitude of the islet; strong winds and storms due to full exposure of the land; and a completely dry summer lasting for about four months. For this reason most of the plants are halophytes and/or xerophytes, with some more variety on the upper parts of the larger 'islet'.

**Correspondence to*: Stephen Mifsud (info@maltawildplants.com)

2 History of the flora of Selmunett

The first floristic inventory of this islet can be compiled from the records of Borg (1927); consisting of a total of 23 species. A series of excursions took place between 13th May 1973 to 30th May 1982, organised by the Natural History Society of Malta and initiated by Guido Lanfranco. Findings of these excursions were published in a dedicated issue of Potamon resulting in 80 species (Lanfranco, 1983), of which a major part were recorded previously by Lanfranco (1973). Sporadic visits took place later (e.g. Schembri & Lanfranco, 1983) but important contributions were visits, which were carried out by Lanfranco in 1990 and 1995, increasing the inventory by 30 and then 4 species respectively (Lanfranco, 1990, 1995). Farrugia Randon (1995) lists some previously recorded and rather common species on the islet. In two excursions organised by the Environment Protection Department, one in 24th March 2000 and one in 19th May 2004, 114 species, of which 20 were new records, were found in the first visits, and further three new species where recorded in the second (Stevens, 2000, 2004). The last survey was carried out by J. Sciberras, Sciberras and Pisani (2012) recorded 89 species of which 21 species were new additions and in majority were perennials (including phanerophytes and geophytes).

3 Methods & Material

Four site visits were planned to be spread once every three months (October, January, April and June) between 2014 and 2015, but due to rough seas persisting in winter, the four site visits took place on 18th October 2014, 14th March 2015, 2nd May 2015 and 19th June 2015. Stephen Mifsud [SM] and Edwin Lanfranco [EL] participated in all four visits, whereas Jennifer Fiorentino [JF] and Stephan D. Mifsud [SM2] joined in the third visit and studied lichens and mosses respectively. MEPA endorsed the required permits to visit the islet which is designated as a protected site. The species encountered were recorded and a rough frequency on the islet was estimated by visual inspection. Frequency is reported in Table 1 using a scale of 5 levels as follows:

- **4** common and abundant throughout most areas of the islet;
- **3** frequent or locally frequent in rather dense populations;
- **2** scarce or infrequent;
- **1** rare and occasional;
- + very rare, just few individual plants.

All species were photographed for future reference, while sampling of a few species (esp. lichens) for identification purposes was carried out. Specimen samples of mosses and vascular plants were discarded after their identification was carried out, while those of lichens were kept at the private herbarium of [JF]. Results are displayed in Table 1 comprising a list of species recorded in our four visits, including their frequency and current protection status. Table 2 consists of a log of all plant species recorded in previous visits from Borg (1927) to J. Sciberras et al. (2012) using the original cited taxon. Finally, species recorded or reported in previous visits and not found during the visits covered by this study are given in Table 3. The last record, and number of times it had been recorded for each species is also included in this table.

Some problematic groups of taxa are treated here in a wide sense: these are the *Plantago coronopus* complex; the *Allium ampeloprasum* group and the problematic *Daucus carota* s.l. and *D. gingidium* s.l., all of which require further investigation to determine their taxonomic status on the Maltese islands. One of us [SM], together with Owen Mifsud, are currently investigating the *Allium ampeloprasum* group. Our taxonomic treatments and further notes on the status and distribution of the flora of Selmunett are dealt in detail further below.

The nomenclature of some previously recorded taxa, mostly in Borg (1927) or/and Lanfranco (1983), has been updated to their current classification according to (The Plant List, 2013) and hence are not included in Tables 1 and 3 in order to avoid statistical confusion and duplication of taxa which refer to the same species. These taxa are: *Senecio cineraria* DC. *sensu* Borg (1927) and *Senecio bicolor* (Willd.) Tod. (*sensu* various authors) the records of which are now replaced by the recently described *Jacobaea maritima* subsp. *sicula* (Willd.) B.Nord. & Greuter; *Jasonia glutinosa* (L.) DC. *sensu* Borg (1927) is replaced by *Jasonia bocconei* (Brullo) M.Pardo & R.Morales; *Inula crithmioides* L. is replaced by *Limbarda crithmioides* (L.) Dumort; *Statice minuta* var.-*virgata* W.-St. *cordata* Desf. non L. *sensu* Borg (1927) and *Limonium oleifolium* Mill. *sensu* Lanfranco (1983) are replaced by *Limonium virgatum* (Willd.) Fourr.; *Statice minuta* var. *reticulata* Rchb. is replaced by *Limonium zeraphae* Brullo.

4 Results

A total of 140 species of vascular flora were recorded by [SM] and [EL] in the four visits. 27 lichens were identified by [JF] and 3 moss species by [SM2] from the visit in May 2015 (refer to Table 1). About 200 higher plants have been recorded during the last 90 years (refer to Table 2) but, as mentioned above, the identity of few species is questionable, others, namely those which were reported once, may be considered as short-lived casuals or accidental introductions, while those species that have not been observed for several decades can now be presumed extinct from Selmunett (refer to Table 3).

Our visits resulted in 20 new records of vascular plants, of which some are protected or listed in the red

data book for the Maltese islands (Lanfranco, 1989). First visit: *Adiantum capillus-veneris* L., *Prospero autumnalis* (L.) Speta, *Hyparrhenia hirta* (L.) Stapf, ***Plocama calabrica*** (L.f.) M. Backlund & Thulin (RDB, strictly protected; Fig. 1), *Pistacia lentiscus* L. (protected); second visit: *Hippocrepis biflora* Spreng., *Lotus tetragonolobus* L., *Medicago lupulina* L., *Gladiolus* sp., *Ophrys bombyliflora* Link, *Galium murale* (L.) All.; third visit: *Ornithogalum narbonense* L., *Carlina gummifera* (L.) Less., *Sagina maritima* G.Don, *Spergularia diandra* (Guss.) Heldr., ***Sedum litoreum*** Guss. (RDB, strictly protected; Fig. 1), ***Orobanche cernua*** Loefl. (RDB; Fig. 1), *Orobanche* cf. *minor* Sm., *Orobanche pubescens* d'Urv; fourth visit: *Heliotropium europaeum* L.

About 55 species, which have been recorded previously, were not observed in our four visits (Table 3). Several explanations can be postulated for many of these species. Some small or inconspicuous plants may have been overlooked (e.g. *Senecio pygmaeus* DC., *Frankenia pulverulenta* L., *Geranium molle* L., *Avena hirtula* Lag. and *Catapodium rigidum* (L.) C.E.Hubb.); others with a short flowering period may have been missed because of the timing of the visits, e.g. small plants which flower between December and March, during which we couldn't visit the islet due to rough seas (e.g. flowering *Romulea* spp., *Orchis collina* Banks & Sol. ex Russell and *Bellis annua* L.); other old records were likely short-lived casuals (e.g. *Fumaria officinalis* L., possibly disappeared following the abandonment of agriculture, *Trifolium tomentosum* L. and *Hyoscyamus albus* L.), whereas some reported taxa are likely cases of misidentification (*Sagina apetala* Ard. may have been a misidentification for *S. maritima* G.Don; *Parapholis filiformis* (Roth) C.E.Hubb. certainly mixed up with *P. invurva* (L.) C.E.Hubb. since this species is tied to saline marshes, a habitat which does not exist at Selmunett; *Geranium rotundifolium* L. confused with *G. molle* L. and *Salsola melitensis* Botsch. [= *Darniella melitensis* (Botsch.) Brullo] might have actually been *Arthrocnemum macrostachyum* (Moric.) K.Koch, if its previous identity was based on observations from a distance. However, some native species might have become extinct (refer to Table 3) such as *Thymbra capitata* (L.) Cav., recorded by Borg (1927) and never substantiated again or *Centaurea melitensis* L. and *Tordylium apulum* L. only recorded by Lanfranco (1973) and Mario Gauci (Haslam, Sell & Wolseley, 1977) respectively.

It is curious that a number of conspicuous native species, especially geophytes or phanerophytes, were not observed in our thourough surveys. Most important being *Pancratium maritimum* L., *Chamaerops humilis* L., *Scilla sicula* Tineo ex Guss., *Matthiola incana* subsp. *melitensis* Brullo, Lanfranco, Pavone & Ronsisvalle, *Halimione portulacoides* (L.) Aellen, *Iris sicula* Tod., *Anacamptis urvilleana* Sommier & Caruana, *Olea europaea* L. (J. Sciberras et al., 2012); *Orchis coriophora* L. [= *O. fragrans* Pollini] (Lanfranco, 1973; Stevens, 2000) and *Stipa capensis* Thunb. (Lanfranco, 1990; Stevens, 2000, 2004), the latter being recorded thrice.

It is strange that a number of perennials, including geophytes (see Table 3), which were recorded by J. Sciberras et al. (2012) only two years before our visits, were not found by us. The confirmation of their continued existence on Selmunett is important since some of them are protected or/and have RDB status, mostly for their rarity on the Maltese islands. Correspondence with one of the authors in J. Sciberras et al. (2012) was made to shed some light. The answer given was that most of the afore-mentioned species were found as seedlings and plantlets, which probably did not survive the following Summer. When asked for photographs, only seedlings of two *Matthiola incana* (L.) R.Br. s.l. (identified as subsp. *melitensis* by these authors) and a single juvenile plant of *Hyoseris frutescens* Brullo & Pavone was available from their end. The status of these species on Selmunett is currently uncertain and their establishment would be important because most of them has a threatened status for the Malta.

Flora Melitensis Nova (Sommier & Caruana Gatto, 1915) is the first publication which has a section and a short inventory on the local records of lichens. None of the lichens listed in this publication have Selmunett as locality, and the first records of lichens from Selmunett are only four species given by Lanfranco (1983). Consequently 23 lichens found during a brief survey in May 2015 and being listed in Table 1, may well be considered as first records for Selmunett. The detailed study of Maltese lichens has not been seriously undertaken until recent years.

Moss species recorded on Selmunett previous to this study were *Barbula unguiculata* Hedw. and *Tortella flavovirens* (Bruch) Broth. (S. D. Mifsud, 2012). Three species of mosses identified by one of us [SM2] during the present study are *Tortella flavovirens* (Bruch) Broth., *Entosthodon pulchellus* (H. Philib.) Brugués, and *Trichostomum brachydontium* Bruch, hence the latter two are new records for the islet. The search for mosses, scheduled on April 2015, was delayed by a few weeks due to rough weather, when Selmunett was dry and not favourable to study mosses.

Figure 1: Some important vascular plants from Selmunett: A. *Parietaria cretica* (14-Mar-2015); B. *Orobanche cernua* (2-May-2015); C. *Linaria pseudolaxiflora* (14-Mar-2015); D. *Plocama (=Putoria) calabrica* (14-Mar-2015); E. *Sedum litoreum* (2-May-2015); F. Inaccessible ledge at the western coast of the islet dominated by shrubs of *Arthrocnemum macrostachyum*. Salsola *(=Darniella) melitensis* was not observed in this area or any part of Selmunett. Photographs by Stephen Mifsud.

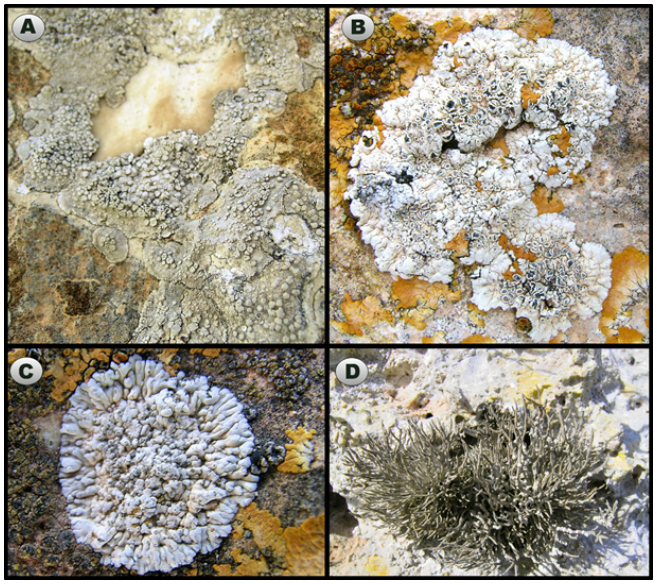

Figure 2: Some lichens from Selmunett: A. *Dirina massiliensis* (Schreb.) Norman; B. *Protoparmeliopsis (=Lecanora) muralis* (Schreb.) M. Choisy; C. *Lecanora lisbonensis* Samp.; D. *Roccella phycopsis* Ach. Photographs by Jennifer Fiorentino (2-May-2015).

4.1 Notes on some species, taxonomic updates and doubtful records

1. *Mesembryanthemum nodiflorum* L. is reported in old accounts to be dominant (Lanfranco, 1983), but in our visits we have found this halophyte to be scarce, almost absent, except for a large patch near the derelict farmhouse, at the larger 'islet', and infrequent to locally frequent in small pockets on the smaller 'islet'.
2. The shrubby endemic *Salsola melitensis* Botsch (= *Darniella melitensis*) (Botsch.) Brullo has been reported a few times from the islet (ref). This species was not found in our four visits. In order to carry out a thorough check, a boat trip around the entire islet and as close as possible to its shore was carried out during the fourth visit in an attempt to locate the species in inaccessible sites, especially at the northern and western cliffs. Powerful binoculars were used. All dominating vegetation sighted corresponded to *Arthrocnemum macrostachyum* (Moric.) K.Koch and *Limbarda crithmoides* (L.) Dumort. (refer to Fig. 1F), both large succulent shrubs, the former with inconspicuous flowers, the latter without flowers in late winter and spring, hence from a distance such as over the cliff top, may superficially look like *Salsola melitensis*. The status of this shrub on the islet is now uncertain from our observations, but it is reasonably possible that it was mistaken with large shrubs of *A. macrostachyum* located at an inaccessible ledge on the west.
3. The records of *Pancratium maritimum* L. and *Halimione portulacoides* (L.) Aellen are interesting because no sand dune or saline marshes occur in Selmunett. They were only recorded once (J. Sciberras et al., 2012) and after personal communication with the main author (*op. cit.*), we learnt that these and first records of other perennial plants were observed as seedling or young plants. Hence, these can be considered as cases of accidental germination or misidentification due to their young, immature state.
4. The *Allium ampeloprasum* L. complex in Malta is currently being studied by one of us [SM] and Owen Mifsud. Traditionally, *A. commutatum*, *A. ampeloprasum* and *A. melitense* (endemic) have been reported.
5. *Daucus rupestis* Guss. was previously recorded from Selmunett when little knowledge on this taxon was available. Its status in the Maltese islands needs further investigation, mainly from the fact that the description of the protologue makes reference to a much smaller holotype. As a result we could only discriminate between typical *D. carota* L. and *D. gingidium* L. s.l. in our survey.
6. The opinion of one of us (Lanfranco, 1983) was that *Ridolfia segetum* (L.) Moris was misidentified by Borg (1927) perhaps with stunted specimens of *Foeniculum vulgare* Mill. While this can be the case, one also has to consider that this species may have occurred in agricultural land, and since agriculture has been abandoned before the Second World War II (Farrugia Randon, 1995), it is possible that this species has disappeared due to habitat loss.
7. While SPI offers suitable habitats for *Aetheorhiza bulbosa* (L.) Cass., when not in flower it can easily be confused with the common *Scorpiurus muricatus* L., which has similar leaves and can grow in similar habitats; thus a misidentification cannot be ruled out.
8. *Atractyllis cancellata* L. still exists on the South part of the larger half, but from the comment "a good population" (Stevens, 2004), lack of sighting by J. Sciberras et al. (2012) and a very small population observed in our records, indicates that the population may be on the decline. However, since this is an annual, its populations are liable to fluctuate from year to year.
9. *Centaurea melitensis* L. was first confirmed by [EL] in early 1970's and Mario Gauci (in Haslam et al., 1977). The continuous lack of its sightings since, may suggest its extinction from the 'islet', but as it has been mentioned above, annuals tend to show population fluctuations from year to year.

10. *Hyoseris frutescens* Brullo & Pavone was first reported by J. Sciberras and Sciberras (2010), but was not observed in our surveys. Contact with one of the authors revealed that they saw a single young plant, which, from the photographs supplied, it must have been a recent introduction owing to the small size and lack of a woody stock. Establishment of this is therefore uncertain.

Table 1: List of plant species, including mosses and lichens recorded during four site visits (Oct-2014, Mar-2015, May-2015, Jun-2015) at Selmunett, including their approximate frequency on the islet (4=common; 3=frequent; 2=scarce; 1=rare, + = casual/very rare) and their current protection status. Species in bold type are first records from Selmunett.

Sp. Index Number	Taxa (Higher Plants)	Est. Frequency Oct-14	Mar-15	May-15	Jun-15	RDB	Protection by L.N.311	L.N.200
001	***Adiantum capillus-veneris***	+	+	+	+			
002	*Agave americana*	1	1	1	1			
003	*Agave sisalana*				+			
004	*Ajuga iva subsp. pseudo-iva*				1			
005	*Allium ampeloprasum complex*	3	2	3	2			
006	*Allium lojaconoi*				2	✓	✓	
007	*Aloe vera*	+	+	+	+	✓		
008	*Anacamptis pyramidalis*			2				
009	*Anagallis arvensis*		2	+				
010	*Anthemis urvilleana*	2	2	2				
011	*Arisarum vulgare*	2	2					
012	*Arthrocnemum macrostachyum*	4	4	4	4			
013	*Asparagus aphyllus*	2	2	2	2			
014	*Asphodelus aestivus*		+					
015	*Asteriscus aquaticus*	1	1	2	1			
016	*Astragalus hamosus*		3	2				
017	*Astragalus sesameus*		1	1				
018	*Atractylis cancellata*	1		1		✓	✓	
019	*Avena barbata*		+	+				
020	*Beta maritima*		1	1				
021	*Bituminaria bituminosa*	2	2	1				
022	*Borago officinalis*		1	+				
023	*Bromus hordaceus*				+			
024	*Bromus madritensis*		4	3	1			
025	*Capparis orientalis*	3	3	3	3			
026	***Carlina gummifera***			1	1			
027	*Carlina involucrata*	2	2	2	2	✓		
028	*Catapodium marinum*		1	1				
029	*Centaurium pulchellum*	1		1				
030	*Ceratonia siliqua*	1	1	1	1	✓		✓
031	*Cerinthe major*		1					
032	*Chenopodiastrum murale*		+	+				
033	*Chiliadenus bocconei*	3	2	2	3			
034	*Convolvulus elegantissimus*				+			
035	*Convolvulus oleifolius*	2	2	2	2	✓	✓	
036	*Coronilla scorpioides*		+					
037	*Cuscuta epithymum*		+					
038	*Cynara cardunculus*	3	3	3	1			

039	*Dactylis glomerata* subsp. *hispanica*	2	1	2				
040	*Daucus carota*	3	2	2	2			
041	*Daucus gingidium*		3	3	3			
042	*Desmazeria pignattii*			+			✓	
043	*Dittrichia viscosa*	+	1	1	1			
044	*Ecballium elaterium*	+						
045	*Echium arenarium*			1				
046	*Echium parviflorum*		1	1				
047	*Erica multiflora*		+					
048	*Erodium cicutarium*		+	+				
049	*Erodium malacoides*		3	1				
050	*Euphorbia exigua* s.l.		2	2				
051	*Euphorbia peplus* subsp. *peploides*		+	+				
052	*Euphorbia pinea*	2	2	1	1			
053	*Ferula communis*	3	3	2	1			
054	*Filago pygmeus*		1	+			✓	
055	*Frankenia hirsuta*	2	2	2	1			
056	*Galactites elegans*		2	1				
057	***Galium murale***		+					
058	***Gladiolus* sp.**		1					
059	*Hedypnois rhagadioloides*		1	+				
060	*Hedysarum coronarium*		1	1				
061	***Heliotropium europaeum***				1			
062	***Hippocrepis biflora***		1					
063	*Hyoseris scabra*		2					
064	***Hyparrhenia hirta***	1			1			
065	*Hypericum triquetrifolium*				2			
066	*Iris pseudopumila*		+			✓		
067	*Jacobaea maritima subsp. sicula*	3	3	3	3			
068	*Lagurus ovatus*	+	1		+			
069	*Limbarda crithmoides*	4	4	4	4			
070	*Limonium melitense*	3	3	3	3	✓	✓	
071	*Limonium virgatum*			2	2	✓		
072	*Limonium zeraphae*			+	2	✓	✓	
073	*Linaria pseudolaxiflora* (Fig. 1C)		+			✓	✓	
074	*Linum strictum*			+				
075	*Lobularia maritima*	1	2	1	1			
076	*Rostraria cristata*			+				
077	*Lotus cytisoides*	2	2	2	2			
078	*Lotus edulis*		4	2				
079	*Lotus ornithopodioides*		2	+				
080	***Lotus tetragonolobus***		2					
081	*Lygeum spartum*	1			1			
082	*Malva parviflora*		2	1	1			
083	*Medicago littoralis*		1	1				
084	***Medicago lupulina***		1	+				
085	*Medicago monspeliaca*		1					
086	*Medicago polymorpha*		1					
087	*Melilotus indicus*		2	1				

088	*Mercurialis annua*		1					
089	*Mesembryanthemum nodiflorum*	2	2	2	1			
090	*Micromeria microphylla*	1	1		1	✓		
091	*Muscari comosum*			+				
092	*Narcissus tazetta*		3	1				
093	***Ophrys bombyliflora***		+					
094	*Opuntia ficus-indica*	+	+					
095	*Opuntia stricta var. stricta*	3	3	3	3			
096	***Ornithogalum narbonense***			1				
097	***Orobanche cernua*** (Fig. 1B)			1		✓		
098	***Orobanche* cf. *minor***			1				
099	***Orobanche pubescens***			1				
100	*Oxalis pes-caprae*	1	1					
101	*Pallenis spinosa*			+				
102	*Parapholis incurva*		+	1				
103	*Parietaria cretica* (Fig. 1A)		1	1				
104	*Parietaria judaica*	1	1	1	1			
105	*Periploca angustifolia*	1	1	1	1	✓		
106	*Phagnalon rupestre* subsp. *graecum* var. *ginzbergeri*	2	2	2	2			
107	***Pistacia lentiscus***	+	+	+	+			✓
108	*Plantago coronopus* s.l.		3	3				
109	*Plantago lagopus*			+				
110	***Plocama (=Putoria) calabrica*** (Fig. 1D)	+	+	+	+	✓	✓	
111	*Polypogon maritimus*			+				
112	*Prasium majus*			+	+			
113	***Prospero autumnalis***	3						
114	*Reichardia picroides*	+	1					
115	*Romulea cf. ramiflora* s.l.		2	1				
116	*Rubia peregrina*	1		1				
117	*Sagina maritima*			+				
118	*Scorpiurus muricatus*		2	1				
119	*Sedum caeruleum*		2	1				
120	***Sedum litoreum*** (Fig. 1E)			1		✓		
121	*Sedum rubens*		2	2				
122	*Sedum sediforme*	+	+	+	+			
123	*Sideritis romana*	2	2	2	1			
124	*Silene sedoides*		2	3	1			
125	*Silene vulgaris*			+				
126	*Sonchus oleraceus*		1	1	1			
127	*Sonchus tenerrimus*		1	1	1			
128	***Spergularia diandra***			1				
129	*Suaeda vera*			1	1			
130	*Teucrium fruticans*	1	1	1	1			
131	*Theligonum cynocrambe*		1					
132	*Trachynia distachya*							
133	*Trifolium scabrum*		+	+				

134	*Trifolium stellatum*		+	+				
135	*Umbilicus horizontalis*	1	1	1	1			
136	*Urginea pancration*	2	2	2		✓		
137	*Urospermum picroides*		+					
138	*Valantia muralis*	2	2	2	1			
139	*Cymodocea nodosa*	2	2	2	2		✓	
140	*Posidonia oceanica*	2	2	2	2		✓	

Sp. Index Number	Taxa (Lichens)	Est. Frequency Oct-14	Mar-15	May-15	Jun-15
501	***Caloplaca alociza***			3	
502	***Caloplaca aurantia***			4	
503	***Caloplaca chalybeia***			3	
504	***Caloplaca erythrocarpa***			3	
505	***Caloplaca flavescens***			4	
506	***Caloplaca inconnexa***			3	
507	***Caloplaca lactea* var. *lactea***			2	
508	***Caloplaca marmorata***			3	
509	***Caloplaca subochracea***			3	
510	***Catillaria detractula***			2	
511	***Clauzadea metzleri***			3	
512	*Collema tenax*			3	
513	***Diploicia canescens***			2	
514	***Dirina ceratoniae***			2	
515	***Dirina massiliensis*** (Fig. 2A)			3	
516	***Lecania spadicea***			4	
517	***Lecanora lisbonensis*** (Fig. 2C)			3	
518	***Opegrapha calcarea***			4	
519	***Opegrapha rupestris***			3	
520	***Placidium tenellum***			3	
521	***Protoparmeliopsis muralis*** (Fig. 2B)			2	
522	*Psora decipiens*			3	
523	*Roccella phycopsis* (Fig. 2D)			2	
524	***Verrucaria calciseda***			4	
525	***Verrucaria nigrescens***			4	
526	***Xanthoria calcicola***			3	
527	*Xanthoria parietina*			2	

Sp. Index Number	Taxa (Mosses)	Est. Frequency Oct-14	Mar-15	May-15	Jun-15
601	***Entosthodon pulchellus***			1	
602	*Tortella flavovirens*			2	
603	***Trichostomum brachydontium***			2	

10.7423/XJENZA.2016.2.05

Table 2: List of plants recorded from Selmunett from different visits including historical records and compared to our 143 records (mauve columns). Legend used in this table is * = first record from Selmunett, ! = observed/recorded, ? = doubtful identity, x = records from previous excursions but not observed in our four visits. Further taxonomic or relevant information is given to taxa followed by a numerical superscript, where the number corresponds to the note given in the notes section further below. Species present in the smaller part of the islet are also indicated in the last row of the table. Number in square brackets correspond to additional notes discussed further below.

Family	Species	Borg 1927	EL 1973	EL 1983	PJS/EL 1983	EL 1990	EL 1995	FR 1995	DTS+ 2000	DTS+ 2004	JS+AS 2012	EL+SM Oct-14	EL+SM Mar-15	All May-15	EL+SM Jun-15	**Comb. 2014–2015**	Sp. No.	Smaller islet
Aizoaceae	Mesembryanthemum nodiflorum [1]	*		!				!	!	!	!	!	!	!	!	**!**	1	✓
Amaranthaceae	*Arthrocnemum macrostachyum*		*	!	!			!	!	!	!	!	!	!	!	**!**	2	✓
	Beta maritima						*				!		!	!		**!**	3	
	Chenopodium murale		*	!									!	!		!	4	
	Darniella melitensis [2]					*				!	!					x	5	
	Halimione portulacoides [3]										*					x	6	
	Suaeda vera		*	!					!	!				!	!	!	7	✓
Amaryllidaceae	*Allium ampeloprasum* [4]	*		!								!	!	!	!	!	8	
	Allium commutatum [4]						*		!							x	9	
	Allium lojaconoi		*	!											!	!	10	
	Allium melitense [4]					*			!	!						-	11	
	Narcissus tazetta		*	!	!			!	!	!	!		!	!		!	12	
	Pancratium maritimum [3]										*					x	13	
Anacardiaceae	*Pistacia lentiscus*											*	!	!	!	!	14	
Apiaceae	*Daucus carota* [5]					*			!	!		!	!	!	!	!	15	
	Daucus (cf.) *rupestris* [5]		*	!	!				!		!					!	16	
	Daucus gingidium [5]									*	!		!	!	!	!	17	✓
	Crithmum maritimum										*					x	18	
	Ferula communis		*	!	!			!	!	!		!	!	!	!	!	19	✓
	Ridolfia segetum [6]	*														x	20	
	Tordylium apulum		*	!												x	21	
Araceae	*Arisarum vulgare*								*		!	!	!			!	22	✓
	Arum italicum								*		!					x	23	
Areaceae	*Chamaerops humilis*										*					x	24	
Asclepiadaceae	*Periploca angustifolia*								*	!	!	!	!	!	!	!	25	
Asparagaceae	*Agave americana*						*		!	!	!	!	!	!	!	!	26	
	Agave sisalana									*	!				!	!	27	
	Asparagus aphyllus		*	!					!	!	!	!	!	!	!	!	28	
	Muscari comosum										*			!		!	29	
	Ornithogalum arabicum		*	!							!					x	30	
	Ornithogalum narbonense													*		!	31	
	Prospero autumnalis											*				!	32	
	Scilla sicula										*					x	33	
	Urginea pancration	*		!					!	!	!	!	!	!		!	34	✓
Asteraceae	Aetheorhiza bulbosa [7]								*							x	35	
	Anthemis urvilleana	*		!					!	!		!	!	!		!	36	✓
	Atractylis cancellata [8]					*			!	!		!		!		!	37	
	Atractylis (=Carlina) gummifera													*	!	!	38	
	Asteriscus aquaticus		*	!					!	!	!	!	!	!	!	!	39	
	Bellis annua		*	!							!					x	40	

	Carduus australis subsp. marmoratus					*										x	41	
	Carlina involucrata					*			!	!	!	!	!	!	!	!	42	
	Centaurea melitensis [9]			!												x	43	
	Jasonia (=Chiliadenus) bocconei	*		!					!	!	!	!	!	!		!	44	
	Cynara cardunculus		*	!				!	!	!	!	!	!	!	!	!	45	
	Dittrichia graveolens	*														x	46	
	Dittrichia viscosa		*	!					!	!	!	!	!	!	!	!	47	
	Evax (=Filago) pygmaea	*							!	!	!		!	!		!	48	
	Galactites tomentosa (= G. elegans)		*	!					!	!	!		!	!		!	49	
	Hedypnois rhagadioloides		*	!					!	!			!	!		!	50	
	Hyoseris frutescens [10]										*					x	51	
	Hyoseris radiata								*							x	52	
	Hyoseris scabra								*				!			!	53	
	Inula (=Limbarda) crithmoides		*	!	!			!	!	!	!	!	!	!	!	!	54	✓
	Pallenis spinosa	*												!		!	55	
	Phagnalon graecum subsp. *ginzbergeri*								*	!	!	!	!	!	!	!	56	
	Reichardia picroides		*	!					!	!	!	!	!			!	57	
	Senecio bicolor (=Jacobaea maritima subsp. *sicula)*	*		!					!	!	!	!	!	!	!	!	58	
	Senecio pygmaeus								!							x	59	
	Sonchus oleraceus								!				!	!		!	60	✓
	Sonchus tenerrimus		*	!					!	!	!		!	!	!	!	61	✓
	Urospermum picroides								!				!			!	62	
Boraginaceae	*Borago officinalis*		*	!					!	!	!		!	!		!	63	
	Cerinthe major					*							!			!	64	
	Echium arenarium	*				!			!	!	!			!		!	65	✓
	Echium parviflorum	*				!			!	!			!	!		!	66	
	Heliotropium europaeum														*	!	67	
Brassicaceae	*Matthiola incana subsp. melitensis*										*					x	68	
	Lobularia maritima		*	!					!	!	!	!	!	!	!	!	69	
Cactaceae	*Opuntia ficus-indica*				*			!	!			!	!			!	70	
	Opuntia stricta var. *stricta*					*			!	!	!	!	!	!	!	!	71	
Capparidaceae	*Capparis orientalis*		*	!	!			!	!	!	!	!	!	!	!	!	72	✓
Caryophyllaceae	*Sagina apetala* [11]		*	!												x	73	
	Sagina maritima [11]													*		!	74	
	Silene sedoides		*	!					!	!	!		!	!	!	!	75	✓
	Silene vulgaris								*					!		!	76	
	Spergularia diandra [12]													*		!	77	
	Spergularia bocconei [12]		*	!						!						x	78	
	Spergularia marina		*	!					!							x	79	
Convolvulaceae	*Convolvulus elegantissimus*					*				!					!	!	80	
	Convolvulus oleifolius										*	!	!	!	!	!	81	
	Cuscuta epithymum								*				!			!	82	
Crassulaceae	*Sedum caeruleum*		*	!					!	!	!		!	!		!	83	
	Sedum litoreum [13]													*		!	84	✓

10.7423/XJENZA.2016.2.05

	Sedum rubens		*		!					!		!				!		!	85	
	Sedum sediforme												*		!	!		!	86	
	Umbilicus horizontalis		*		!					!			!		!	!		!	87	
Cucurbitaceae	*Ecballium elaterium*		*		!										!			!	88	
Dipsaceae	*Sixalix atropurpurea* subsp. *maritima* [14]									*								x	89	
Ericaceae	*Erica multiflora*									*						!		!	90	
Euphorbiaceae	*Euphorbia exigua* s.l. [15]		*		!					!			!			!		!	91	
	Euphorbia peplus subsp. *peploides*		*		!					!						!		!	92	
	Euphorbia pinea	*			!	!			!	!	!			!		!		!	93	✓
	Mercurialis annua		*		!					!						!		!	94	
Fabaceae	*Anthyllis vulneraria*												*					x	95	
	Astragalus hamosus		*		!					!		!	!			!		!	96	
	Astragalus sesameus						*									!		!	97	
	Bituminaria bituminosa		*		!					!					!	!		!	98	
	Ceratonia siliqua [16]									*		!	!		!	!		!	99	
	Coronilla scorpioides						*			!		!				!		!	100	
	Hedysarum coronarium		*		!				!	!		!				!		!	101	
	Hippocrepis biflora															*		!	102	
	Lotus cytisoides						*			!		!	!		!	!		!	103	
	Lotus edulis		*		!					!		!	!			!		!	104	
	Lotus ornithopodioides									*		!				!		!	105	
	Lotus tetragonolobus															*		!	106	
	Medicago littoralis						*			!		!				!		!	107	
	Medicago monspeliaca						*			!		!				!		!	108	
	Medicago polymorpha									*						!		!	109	
	Medicago lupulina															*		!	110	
	Melilotus indicus						*			!		!				!		!	111	✓
	Melilotus sulcatus									*								x	112	
	Ononis mitissima		*		!													x	113	
	Scorpiurus muricatus		*		!					!		!				!		!	114	
	Trifolium scabrum						*			!		!	!			!		!	115	
	Trifolium stellatum	*								!		!				!		!	116	
	Trifolium tomentosum [17]						*											x	117	
Frankeniaceae	*Frankenia hirsuta*		*		!					!		!	!		!	!		!	118	✓
	Frankenia pulverulenta		*		!								!					x	119	
Gentianaceae	*Blackstonia perfoliata*		*		!													x	120	
	Centaurium pulchellum		*		!					!		!				!		!	121	
Geraniaceae	*Erodium cicutarium*									!						!		!	122	
	Erodium malacoides		*		!					!		!				!		!	123	✓
	Geranium molle [18]									*								x	124	
	Geranium rotundifolium 18]												*					x	125	
Hypericaceae	*Hypericum triquetrifolium*		*		!							!	!				!	!	126	
	Hypericum cf. *australe* [19]						*											x	127	
Iridaceae	*Gladiolus* sp.															*		!	128	
	Iris pseudopumila [20]												*			!		!	129	
	Iris sicula												*					x	130	
	Romulea columnae [21]	*			!								!					x	131	
	Romulea ramiflora [21]									*		!				!		!	132	
	Romulea rollii [21]									!								x	133	✓
Lamiaceae	*Ajuga iva* s.l. [22]									!		!						x	134	

	Ajuga iva subsp. *pseudoiva* [21]		*	!											!	!	135		
	Micromeria microphylla				*			!	!	!	!	!			!	!	136		
	Prasium majus						*			!			!			!	137		
	Sideritis romana [23]		*	!				!	!	!	!	!	!	!	!	!	138		
	Teucrium fruticans		*	!				!	!		!	!	!	!	!	!	139		
	Thymus capitatus	*														x	140		
Linaceae	*Linum strictum*				*			!	!	!			!			!	141		
Malvaceae	*Malva parviflora*		*	!				!	!	!		!	!	!		!	142		
Moraceae	*Ficus carica* var. *caprificus*		*	!				!		!						x	143		
Oleaceae	*Olea europaea*									*						x	144		
Orchidaceae	*Anacamptis pyramidalis*		*	!						!			!			!	145		
	Anacamptis urvilleana									*						x	146		
	Ophrys bombyliflora											*				!	147		
	Orchis collina									*						x	148		
	Orchis coriophora subsp. *fragrans*		*	!				!								x	149		
Orobanchaceae	*Orobanche mutelii*		*	!				!	!							x	150		
	Orobanche cernua												*			!	151		
	Orobanche cf. *minor*												*			!	152		
	Orobanche pubescens												*			!	153		
Oxalidaceae	*Oxalis pes-caprae*		*	!			!	!		!	!	!				!	154		
Papaveraceae	*Fumaria officinalis*									*						x	155		
Plantaginaceae	*Linaria pseudolaxiflora* [24]				*							!				!	156		
	Plantago commutata [25]							!	!							x	157		
	Plantago coronopus [25]	*		!						!	!	!	!			!	158		
	Plantago crypsoides [25]				*			!	!							-	159		
	Plantago lagopus	*								!			!			!	160		
	Plantago weldenii [25]							!								x	161		
Plumbaginaceae	*Limonium melitense* [26]							!	!	!	!	!	!	!		!	162	✓	
	Limonium virgatum [26]	*							!	!			!	!		!	163		
	Limonium zeraphae [26]	*		!				!					!	!		!	164	✓	
Poaceae	*Avena barbata*				*			!				!	!	!		!	165	✓	✓
	Avena hirtula								*							x	166	✓	
	Avena ludoviciana				*				!							x	167		
	Bromus fasciculatus				*			!	!							x	168		
	Bromus hordaceus				*			!						!		!	169		
	Bromus madritensis		*	!				!	!	!		!	!			!	170		
	Bromus rigidus							*								x	171	✓	
	Catapodium marinum		*	!				!				!	!			!	172	✓	✓
	Catapodium rigidum		*	!				!								x	173	✓	
	Cutandia maritima [27]		*	!												x	174		
	Dactylis glomerata subsp. *hispanica*				*			!	!	!	!	!	!			!	175		
	Desmazeria pignattii							!	!				!			!	176	✓	
	Hyparrhenia hirta										*	!		!		!	177		
	Lagurus ovatus				*			!	!	!	!	!				!	178		
	Lygeum spartum							*	!		!			!		!	179		
	Lophochloa cristata		*	!				!	!				!			!	180		
	Parapholis filiformis [18]									*						x	181		

10.7423/XJENZA.2016.2.05

	Parapholis incurva [18]		*	!					!	!			!	!		!	182	✓
	Polypogon maritimus													!		!	183	
	Polypogon subspathaceus		*	!												x	184	
	Stipa capensis					*			!	!						x	185	
	Trachynia distachya					*			!	!			!	!		!	186	
Primulaceae	*Anagallis arvensis*		*	!					!	!	!		!	!		!	187	
Pteridaceae	*Adiantum capillus-veneris*											*	!	!	!	!	188	
Resedaceae	*Reseda lutea* [28]	*														x	189	
Rubiaceae	*Galium muralis*												*			!	190	
	Putoria (=Plocama) calabrica											*	!	!	!	!	191	
	Rubia peregrina						*			!		!		!		!	192	
	Sherardia arvensis	*														x	193	
	Theligonum cynocrambe		*	!					!				!			!	194	
	Valantia muralis	*		!					!	!	!	!	!	!	!	!	195	
Rutaceae	*Ruta chalepensis*										*					x	196	
Solanaceae	*Hyoscyamus albus*		*	!							!					x	197	
Urticaceae	*Parietaria cretica* [29]		*	!	!								!	!		!	198	
	Parietaria judaica										*	!	!	!	!	!	199	
Xantorrhoeaceae	*Aloe vera*				*			!				!	!	!	!	!	200	
	Asphodelus aestivus		*	!					!		!	!	!			!	201	
Cymodoceaceae	*Cymodocea nodosa*		*	!								!	!	!	!	!	202	✓
Posidoniaceae	*Posidonia oceanica*		*	!					!	!		!	!	!	!	!	203	✓
Totals	203	23	68	80	10	32	4	12	115	83	89	55	107	107	55	143		31

11. *Sagina apetala* Ard./*Sagina maritima* G.Don; Both species are very closely related and easy to confuse with each other. Selmunett offers the habitat for both, but our latest observations confirmed only the presence of *S. maritima* putting doubt in the previous records of *S. apetala*.
12. *Spergularia diandra* (Guss.) Heldr. is recorded for the first time, but previous records of *S. bocconei* might also be referable to this species, though it is possible that both species exist since both are frequent in the same type of habitat and are often difficult to tell apart in the field.
13. A few small clumps of *Sedum litoreum* Guss. (Fig. 1E), each with numerous specimens, were found only on the smaller part of the 'islet'.
14. *Scabiosa atropurpurea* L. (Stevens, 2000) was a tentative identification on a plant found in leaves. Later it was mooted to be instead *S. romana* L. (Stevens, 2004). Given that no *Scabiosa* spp. was recorded, we concur to reject this species from the florula of Selmunett.
15. *Euphorbia exigua* is here treated in a wide sense. Most of the plants we have seen are referable to the var. *pycnophylla* K.U. Kramer & Westra, although some specimens intermediate between this and the var. *exigua* were also encountered. The validity of the var. *pycnophylla*, originally described from Malta and subsequently also found on the island of Lampedusa, needs to be established since it may only be an ecological variant.
16. According to Stevens (2004) the carob trees (*Ceratonia siliqua* L.) are introduced due to their *"unnatural distribution"*. We concur with this observation, also because the islet does not offer any true maquis habitat and it was common practice for farmers to plant this tree for fodder and shade. On the other hand, since the islet was once cultivated agriculturally, it is reasonable to suppose that the farmer(s) would also have planted carobs, especially close to the farmhouse and around the agricultural land; hence relicts might have survived.
17. *Trifolium tomentosum* L. used to be frequent in the Maltese Islands, but it has now become quite rare and thus might have disappeared from the islet as part of its general rapid decline.
18. We are confident that *Geranium rotundifolium* L. was misidentified with the closely related *G. molle*, and similarly *Parapholis incurva* (L.) C.E.Hubb. with *P. filiformis* (Roth) C.E.Hubb. since Selmunett does not offer the habitat for either species.
19. A single sighting of what appeared to be a *Hypericum* species (Lanfranco, 1990) was doubtfully identified as *H. australe* Ten. Its identity could not be confirmed since it was not yet in flower during that visit. Moreover, since only one small specimen was seen, no material was collected for examination in the lab. It has not been observed again during subsequent visits and, considering that the habitat of this species (humid woodland) is not present at Selmunett, we now suggest to remove this doubtful species from the *florula* of the islet.
20. Two plants of *Iris pseudopumila* Tineo were found in the middle of an abandoned field dominated by recent formations of degraded steppic vegetation based on thistles and agrospecies. Considering this native species has a low seed production, and the very small population (2 plants), suggests that this is a very recent introduction.
21. All specimens of *Romulea* spp. observed during the second visit corresponded to the new taxon *R. variicolor* S. Mifsud s.l., following a recent revision of the genus for the Maltese islands (S. Mifsud, 2015). The additional presence of *R. columnae*, also recorded in some previous surveys, is not excluded since the islet does offer its habitat. On the other hand, *Romulea rollii*, which typically occurs in sand dunes, does not occur on the Maltese islands (S. Mifsud, 2015) and should similarly be removed from the florula of Selmunett.
22. All 10–12 specimens of *Ajuga iva* (L.) Schreb. observed during the fourth visit had yellow flowers, and hence correspond to *Ajuga iva* subsp. *pseudo*-iva (Labill. & Castagne ex DC.) Holmboe, thus concurring with observations made by Lanfranco (1973, 1983).
23. Some specimens of *Sideritis romana* L. were very large when compared to typical plants as they normally grow in Malta. These had long and foliose ascending stems reaching over 30 cm.
24. Only two plants of *Linaria pseudolaxiflora* Lojac. (Fig. 1C) in the same locus were observed. This annual species may be facing local extinction from Selmunett, although, as noted above, annuals tend to fluctuate from year to year.
25. *Plantago commutata* Guss, *P. crypsoides* Boiss., *P. bombycina* Sommier & Caruana Gatto and *P. weldenii* Rchb. are closely related taxa within the *Plantago coronopus* L. aggregate, and all of which, have been reported from Malta. Due to the complexity of this aggregate, we are provisionally treating these taxa as *P. coronopus* s.l.
26. In our surveys *Limonium zeraphae* Brullo, *L. melitense* Brullo and *L. virgatum* (Willd.) Fourr. have been confirmed together for the first time. Some specimens with intermediate characters, especially between *L. virgatum* and *L. melitense* have been observed concurring with previous ob-

servations.

27. The old record of *Cutandia maritima* (L.) Benth. (Lanfranco, 1973), was based on a tiny specimen with just two or three reduced spikelets which, at the time, seemed to be to some extent comparable with *Cutandia maritima*. Since in the last 30 years, typical specimens were not reported again, we now believe that it might have been confused with a decrepit *Catapodium rigidum* (L.) C.E.Hubb. or *Catapodium marinum* (L.) C.E.Hubb., and at present, it safe to exclude *C. maritima* from the florula of Selmunett.
28. Lanfranco (1983) included *Reseda lutea* L. as a record by Borg (1927), but Stevens (2004), pointed out that this was not listed by Borg (1927) and should be rejected from the florula of Selmunett, which we concur.
29. *Parietaria cretica* L. was last seen in 2000 and had apparently disappeared from sight on subsequent excursions and surveys. Stevens (2004) commented: "Although thoroughly searched for in the area from where it was formerly recorded, this plant was not observed." J. Sciberras et al. (2012) did not observe it either and shared worries with Stevens (2004) and Lanfranco (2014) (pers. comm.) of its possible extinction since Selmunett is the only site in the Maltese islands where *P. cretica* is known to occur (Lanfranco, 1989). Similarly, in a statement by the Nature Trust on the occasion of World Biodiversity Day, the NGO said: "biodiversity officers had not seen any specimens of the endemic [sic] plant *Parietaria cretica* or the endemic subspecies of the Maltese wall lizard (*kieselbachi*) in site visits over the last two years." (Times of Malta, 2006, May 23). During this survey [SM] rediscovered scattered specimens (Fig. 1A) close to its original station on the 14th March 2015, as well as other small clumps to the south and the east of the larger 'islet'. Identity was confirmed by [EL] *in situ*. Hence, our study confirms that the species is still extant on Selmunett, and even has a wider distribution then what previous reports suggest, with at least three separate stations. As stated in the Red Data Book (Lanfranco, 1989), the status of this species is endangered and a restricted species for the Mediterranean and Maltese Islands.

Table 3: Plant species recorded from Selmunett prior our visit and not found in our surveys. The species' life cycle, its last record, and total number of times it has been recorded from Selmunett (1927 to 2012) is given. Species flagged with # are in our opinion past misidentifications; those with † are most likely casual or accidental records, while those with †† are presumably genuine cases of extinction from Selmunett - based on the fact that they are old records of perennial plants and mostly recorded once.

Family	Species	Life Cycle	Last record	Number of records
Amaranthaceae	*Salsola melitensis* #	Perennial	Lanfranco (1990)	3
	Halimione portulacoides †(#)	Perennial	J. Sciberras et al. (2012)	1
Amaryllidaceae	*Pancratium maritimum* †(#)	Perennial	J. Sciberras et al. (2012)	1
Apiaceae	*Crithmum maritimum* †	Perennial	J. Sciberras et al. (2012)	1
	Ridolfia segetum ††	Annual	Borg (1927)	1
	Tordylium apulum	Annual	Lanfranco (1973)	1
Araceae	*Arum italicum*	Perennial	Stevens (2000)	2
Areaceae	*Chamaerops humilis* †	Perennial	J. Sciberras et al. (2012)	1
Asparagaceae	*Allium commutatum*	Perennial	Lanfranco (1995)	2
	Ornithogalum arabicum ††	Perennial	Lanfranco (1973)	2
	Scilla sicula †	Perennial	J. Sciberras et al. (2012)	1
Asteraceae	*Aetheorhiza bulbosa* #	Perennial	Stevens (2000)	1
	Bellis annua	Annual	Lanfranco (1973)	2
	Carduus australis subsp. *marmoratus* †	Annual	Lanfranco (1990)	1
	Centaurea melitensis ††	Annual	Haslam et al. (1977)	1
	Dittrichia graveolens ††	Annual	Borg (1927)	1
	Hyoseris frutescens †	Perennial	J. Sciberras et al. (2012)	1
	Hyoseris radiata	Perennial	Stevens (2000)	1
	Senecio pygmaeus	Annual	Stevens (2000)	1

Brassicaceae	*Matthiola incana* subsp. *melitensis* †	Biennnial/Peren.	J. Sciberras et al. (2012)	1
Caryophyllaceae	*Sagina maritima*	Annual	Lanfranco (1973)	1
	Spergularia bocconei	Annual/Biennial	Lanfranco (1973)	2
	Spergularia marina	Annual	Lanfranco (1973)	2
Hypericaceae	*Hypericum cf. australe* ††(#)	Perennial	Lanfranco (1990)	1
Fabaceae	Anthyllis vulneraria †	Perennial	J. Sciberras et al. (2012)	1
	Melilotus sulcatus	Annual	Stevens (2000)	1
	Ononis mitissima	Annual	Stevens (2000)	1
	Trifolium tomentosum ††	Annual	Lanfranco (1990)	1
Frankeniaceae	*Frankenia pulverulenta*	Annual	Lanfranco (1973)	2
Gentianaceae	*Blackstonia perfoliata* ††	Annual	Lanfranco (1973)	1
Geraniaceae	*Geranium molle*	Annual	Stevens (2000)	1
	Geranium rotundifolium #	Annual	J. Sciberras et al. (2012)	1
Iridaceae	*Iris sicula* †	Perennial	J. Sciberras et al. (2012)	1
	Romulea columnae	Perennial	Borg (1927)	3
	Romulea rollii #	Perennial	Stevens (2000)	1
Lamiaceae	*Ajuga iva* s.l.	Perennial	Stevens (2000)	2
	Thymbra capitata †	Perennial	Borg (1927)	1
Moraceae	*Ficus carica var. caprificus*	Perennial	Lanfranco (1973)	3
Oleaceae	*Olea europaea* †	Perennial	J. Sciberras et al. (2012)	1
Orchidaceae	*Anacamptis urvilleana*	Perennial	J. Sciberras et al. (2012)	1
	Orchis coriophora subsp. *fragrans*	Perennial	Stevens (2000)	2
Orobanchaceae	*Orobanche mutelii*	Perennial	Lanfranco (1973)	3
Papaveraceae	*Fumaria officinalis* †	Annual	J. Sciberras et al. (2012)	1
Plantaginaceae	*Plantago commutata*	Annual/Peren.	Stevens (2000)	2
	Plantago weldenii	Annual/Peren.	Stevens (2000)	1
Poaceae	*Avena hirtula*	Annual	Stevens (2004)	1
	Avena ludoviciana	Annual	Lanfranco (1990)	2
	Bromus fasciculatus	Annual	Lanfranco (1990)	3
	Bromus rigidus	Annual	Stevens (2000)	1
	Catapodium rigidum	Annual	Lanfranco (1973)	2
	Parapholis filiformis #	Annual	J. Sciberras et al. (2012)	1
	Polypogon subspathaceus	Annual	Lanfranco (1973)	2
	Stipa capensis	Annual	Lanfranco (1990)	3
Resedaceae	*Reseda lutea* #	Biennial	Borg (1927)	1
Rubiaceae	*Sherardia arvensis* ††	Annual	Borg (1927)	1
Rutaceae	*Ruta chalepensis* †	Perennial	J. Sciberras et al. (2012)	1
Solanaceae	*Hyoscyamus albus* †	Annual/Biennial	Lanfranco (1973)	2

Species recorded once by Borg (1927)	5 (3 ann + 2 per)
Species recorded once by Lanfranco (1973) incl. *Centaurea melitensis* and by Gauci in Haslam et al. (1977)	4 (annuals)
Species recorded once by Lanfranco (1990)	3 (annuals)
Species recorded once by Stevens (2000)	9 (7 ann + 2 per)
Species recorded once by Stevens (2004)	1 (annual)
Species recorded once by J. Sciberras et al. (2012)	16 (5 ann + 11 per)

5 Discussion

One of us [EL] has been visiting Selmunett over several decades, starting in the early 1970s. At that time the islet was infested with rabbits. Eventually the rabbits died out, apparently due to a disease. Since the large rabbit population exerted considerable pressure on the vegetation, following their disappearance the number of species shot up. In addition, whereas many of the plants used to be smaller than the mainland counterparts, following the extinction of the rabbits, the plants started to grow normally. A case in point are the grasses. When there were still rabbits only a very few species were recorded and they were largely stunted but, following the rabbit extinction, many more species were found and the majority were of normal size.

On a different note, during our 25–30 hours on the islets, we have not sighted any single reptile; reference here being made especially to the Selmunett lizard *Podarcis filfolensis kieselbachi* (Bedriaga, 1876), while several rat burrows have been encountered, especially at the southern part of the main 'islet'. Rat poison boxes were all abandoned. A few people wandering on the garigue were observed in three of the visits.

6 Conclusion

These four visits spread over one year have yielded some important results, namely 23 first records of lichens, 2 mosses and 20 higher plants, of which five vascular plants are strictly protected and one of them (*Parietaria cretica* L.) is a species confined only to Selmunett in the Maltese islands, had not been seen for some 15 years and was being doubted to have gone extinct. These visits have also shed light upon few taxa of uncertain status and an overall current update of the florula of the islet in order to help in the conservations of this Natura 2000 site and its plant species of ecological sensitivity. Given this update, we would encourage a much better protection of Selmunett, namely by frequent monitoring and better control of rats.

Acknowledgements

We thank the Environment Protection Directorate (EPD) within MEPA (Malta Environment and Planning Authority) [now the Environment and Resources Authority (ERA)] for issuing us with the requisite permissions allowing us to visit and sample on Selmunett.

References

Borg, J. (1927). *Descriptive flora of the Maltese Islands: including the ferns and flowering plants.* Malta Government Printing Office.

Farrugia Randon, S. (1995). *Comino, Filfla and St. Paul's Island.* J.Debono Printing Press.

Haslam, S. M., Sell, P. D. & Wolseley, P. A. (1977). *A flora of the Maltese islands.* Malta University Press.

Lanfranco, E. (1973). *Vascular flora of Selmunett.* Unpublished.

Lanfranco, E. (1983). The Flora of St. Paul's Island in The Natural History of St. Paul's Islands. Potamon. *Mag. Soc. study Conserv. Nat.*

Lanfranco, E. (1989). The Flora. In P. J. Schembri & J. Sultana (Eds.), *Red Data Book for the Maltese Islands* (pp. 5–70). Malta: Ministry of Education.

Lanfranco, E. (1990). *Checklist of Selmunett Flora.* Unpublished.

Lanfranco, E. (1995). *Updated checklist of Selmunett Flora.* Unpublished.

Lanfranco, E. (2014). Personal Communications.

Mifsud, S. (2015). A review of Romulea Maratti (Iridaceae) in the Maltese Islands. *Webbia, J. Plant Taxon. Geogr. 70*(2), 41.

Mifsud, S. D. (2012). An update of the moss flora of the Maltese Islands. *Cryptogam. Bryol. 33*(4), 405–418.

Schembri, P. J. & Lanfranco, E. (1983). Ecology [of St. Paul's Island]. *Potamon*, *11*, 9–11.

Sciberras, J. & Sciberras, A. (2010). Topography and Flora of the Satellite islets surrounding the Maltese Archipelago. *Cent. Mediterr. Nat. 5*(2), 31–42.

Sciberras, J., Sciberras, A. & Pisani, L. (2012). Updated checklist of flora of the satellite islets surrounding the Maltese Archipelago. *Biodiversity Journal*, *3*(4), 385–396.

Sommier, S. & Caruana Gatto, A. (1915). *Flora Melitensis nova.* Bollettino. Tip. E. Priulla.

Stevens, D. T. (2000). *Vascular Flora of Selmunett, first version based on observation made by E. Lanfranco, D.T. Stevens, J. Borg, M.T. Gambin and C. Mifsud on the 24th March 2000.* Unpublished.

Stevens, D. T. (2004). *Vascular Flora of Selmunett, second version based on observation made by E. Lanfranco, D.T. Stevens, J. Borg, M.T. Gambin and C. Mifsud on the 19th March 2004.* Unpublished.

The Plant List. (2013). The Plant List: A working list of all plant species (Version 1.1). Retrieved July 8, 2015, from http://www.theplantlist.org/

Times of Malta. (2006, May 23). Selmunett 'needs protection'. *The Times of Malta.*