

## FLORA AND VEGETATION LANDSCAPE OF MOLARA ISLAND (NORTH-EASTERN SARDINIA)<sup>1</sup>

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**Resumen.** En un programa de investigación sobre cabos y pequeñas islas, nuestra atención se ha centrado en la Isla de Molara, situada en la Cerdeña norte oriental, de substrato silíceo, con una superficie de 3,498 km<sup>2</sup> y una extensión de la costa de 10 km. La flora de la isla ha sido estudiada por varios botánicos que han identificado 402 entidades florísticas de las cuales 360 ya fueron determinadas por Picci. Los estudios actuales han permitido encontrar 384 especies englobadas en 83 familias y 252 géneros. Comparando la flora actual con la de hace tres décadas, 86 taxones son nuevos para la isla, 285 han sido confirmados y 104 no se han observado. Las variaciones dependen de los diferentes usos del territorio en los últimos 40 años, durante los cuales ha desaparecido la actividad agrícola y se ha reducido al mínimo la actividad ganadera. Por lo que se refiere a las modificaciones del paisaje vegetal, éstas se hacen más evidentes en las zonas antes cultivadas y explotadas por la ganadería, donde son frecuentes plántulas y formas arbustivas de *Olea europaea* L. var. *sylvestris* Brot., *Rhamnus alaternus* L., *Phillyrea angustifolia* L. y numerosos arbustos que indican como la fitocenosis está dando lugar a formaciones más evolucionadas.

**Summary.** In the framework of a research program involving headlands and small islands, our attention was drawn to the island of Molara, situated in north eastern Sardinia. It is a granite outcrop, covering 3,498 km<sup>2</sup> and with a coastline extension of some 10 km. Its flora has been the subject of study by various botanists who overall listed a floristic contingent of 402 taxa, 360 of which were identified by Picci. Our studies have recorded 384 taxa belonging to 83 families and 252 genera. Comparison of the present-day and previous data shows that 86 taxa are new, 285 are confirmed and 104 have not been rediscovered. The variations depends on the different uses to which the island has been put over the last 40 years, a period during which farming activity came to a halt and stock rearing was reduced to a minimum. As regards modifications of the vegetation landscape, these are most evident in areas at one time cultivated or used for grazing, where we find numerous bushes and bush forms of *Olea europaea* L. var. *sylvestris* Brot., *Rhamnus alaternus* L., *Phillyrea angustifolia* L., indicating that phytocoenoses are developing in the direction of more evolved formations.

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1. A research project carried out in the framework of INTERREG III.

## INTRODUCTION

The area of Sardinia stretching between the towns of Olbia, Palau and Tempio Pausania constitutes the geographical region known as Gallura. Its coastal waters have the greatest number of small islands in Sardinia, mostly belonging to the archipelagos of La Maddalena and Tavolara. The archipelago of La Maddalena consists of 7 larger islands and some 50 islets, with an overall coastline of more than 177 km (BOCCHIERI, 1996). The Tavolara archipelago, set between Capo Figari and Capo Coda Cavallo, has fewer islands, the largest being Tavolara and Molara. Some of the travellers who visited Sardinia during the 19<sup>th</sup> century were struck by the large number of islands in the north-eastern area, although their attention was drawn in the main to the Archipelago of La Maddalena and the island of Tavolara, as reported by VALERY (1835), who described the arresting aspect of this island with its high, sheer cliffs dropping down into the sea. On the other hand, LA MARMORA (1860) analysed the various islands of the Archipelago, making only a few short comments on Molara.

In the framework of an ongoing research programme focused on changes in flora and vegetation cover on various islands in Sardinia (BOCCHIERI, 1990, 1992, BOCCHIERI & IIRITI, 2000, 2002, 2003), our attention was drawn to Molara. We were able to establish present floristic composition through accurate bibliographical research and numerous field surveys. Our project was made possible thanks to the collaboration of the Tamponi family, owners of the island for some generations. Being well aware of the importance of botanical research, they kindly allowed us to visit the site as needed for research purposes from late 2001 to the early months of 2004.

## THE TERRITORY

The island of Molara is situated in north-eastern Sardinia. The local authorities governing it are the Municipality of Olbia and the Province of Sassari. The island's territory is shown on Sheet No. 445, section III, of the topographical map of Italy and covers an area of 3,498 km<sup>2</sup> with a coastal perimeter of 10 km (Fig. 1). Its distance from the coast of Sardinia is 2,280 km and its geographical coordinates, based on the Gauss-Boaga grid system are as follows: x=1561362; y=4524488.

The island's geology consists of rock formations belonging to the Granite pluton of Gallura which emerged during the Hercynian orogeny in the late Palaeozoic. These are pink, medium grain granites, surrounded by pink-grey biotite granites in haplite seams, pegmatite and micro-pegmatite seams and masses, at times with two micas. The coasts are rugged with very advanced



most interesting areas in the Marine Park of Tavolara – Capo Coda Cavallo set up by Decree of the Ministry of the Environment of 22 September 1997. The Park extends over some 15 thousand hectares and includes many islets such as Proratora, Ruja and Molarotto.

The island of Molarà has been inhabited since ancient times as is shown by the ruins of a castle, a Medieval village and an old Romanesque church. A major factor which permitted colonization of the island was a spring which provided freshwater year round and thus made permanent settlement feasible. It furthermore offered the possibility of grazing and farming, necessary conditions for permanent settlement in this type of locality, also in view of the fact that in the past there was little if any possibility of rapid, frequent connections to the mother island by ship or boat, above all for an island such as Molarà where mooring was certainly not easy and was limited to two localities only. The island of Molarà was known to the Romans as “Isola Buccina”, which derives from the word *Buccinum*, a type of gastropod present in the surrounding waters. Another ancient local name used to identify the island was “Sarzai”.

On the top of Monte Castello we find the ruins of a fortress the date of whose construction is still uncertain. It does not appear to belong to the period of the “Giudicati” but rather to the Early Middle Ages, between the 7<sup>th</sup> and 10<sup>th</sup> centuries AD, when Arab raids posed a constant threat to Sardinia. The castle was probably also linked to the mysterious village of Gurguray, a very ancient Medieval settlement situated between Monte Castello and Cala di Chiesa. The present status of these ruins, covered to a large extent by vegetation, makes it impossible to assess the original ground plan of the buildings without extensive excavation. In the area to the rear of Cala di Chiesa we find the ruins of an old Romanesque church dedicated to Pope San Ponziano who lived on the island during his exile in 235 AD, as ordered by Emperor Maximus the Thracian (PANEDDA 1959, 1978, 1989).

The island’s recent history is linked to the Tamponi family, its owners for several generations. Between the end of the 19<sup>th</sup> and the beginning of the 20<sup>th</sup> centuries they set up a livestock rearing and agricultural enterprise on the island. Vegetables and fruit (beans, tomatoes and water melons) were grown in those areas where water was plentiful, such as the Orto valley along which vast terraces were created in the vicinity of the springs. On the other hand, cereal crops, above all wheat were grown in the soft slopes of the interior, which were drier but had sufficient soil depth. In the localities between Pumpija and Pedraglione the visitor will still today find heaps of stones removed from the areas destined for sowing. In the area of Pumpija there was an orchard in which persimmons (*Diospyros kaki* L.) were grown, while near the church ruins there was a small vineyard. On the greater part of the island, subsoil being prevalently rocky, the only productive activity was the raising of goats, sheep and cattle. This dual

activity of farming and stock raising was made possible by the construction of a network of dry stone walls, constructed from granite stone, which regulated livestock movements. For some fifty years farming activity has been suspended on the island while stock rearing is limited to a few cows and goats managed by the family of Salvatore Piredda, who have acted as caretakers of the island for the past thirty years.

## CLIMATE

Analysis of the climate of the territory included in this research project is based on temperature and rainfall data recorded at Obia, since there is no weather monitoring station on the island itself and the data from the Monte Perdosu station, located closer to the island under study, on the coast facing it, were incomplete. Rainfall data cover the period 1921-2001, whereas temperature data are limited to the period 1951-2001. Data assessment shows that mean annual rainfall is 600 mm, mainly concentrated in the Autumn and Winter seasons. Alternation of years with high rainfall and others of drought is typical of the climate of Sardinia and indeed of the Western Mediterranean as a whole, as is shown by values listed which indicate that in 1946 the Olbia station recorded no less than 1177 mm, whereas in 1992 this figure dropped to only 200 mm (Fig. 2). If we analyse rainfall trends in terms of decades we find that the most abundant was that from 1951 to 1960, during which mean rainfall was 712 mm; the decade showing least rainfall was 1981 to 1990 with 419 mm of rain. Overall, during the last eighty years rainfall follows a trend towards reduction, starting from the 1960s.

Mean annual temperature is 16.4°C with mean minimum 12.1°C and mean maximum 20.6°C. The coldest month is January, the hottest July. The same months record maximum and minimum rainfall respectively. This information is illustrated in the shade and temperature diagram shown in Fig. 3 which shows a period of drought from mid-May to about the 20<sup>th</sup> of September and considerable water surplus during the winter months.

The dominant winds on the island during the Autumn and Winter months come from the north whereas during the summer months they blow from the south, the most frequent being 'levante' (east wind) (PINNA, 1954). ARRIGONI (1968) too in his phytoclimatic analysis of Sardinia highlighted the fact that western winds are prevalent for the greater part of the year, with the exception of the Summer season in which breezes prevail. The movement of air masses in the geographical sector of Molara, as indicated by PICCI (1972), is influenced by the island of Tavolara, which, since it is a huge limestone rock more than 550 m in height, acts as a barrier influencing their movement. Thus the colder

and damper northern winds, are obstructed, creating in all probability more accentuated aridity than in the nearby inland areas.

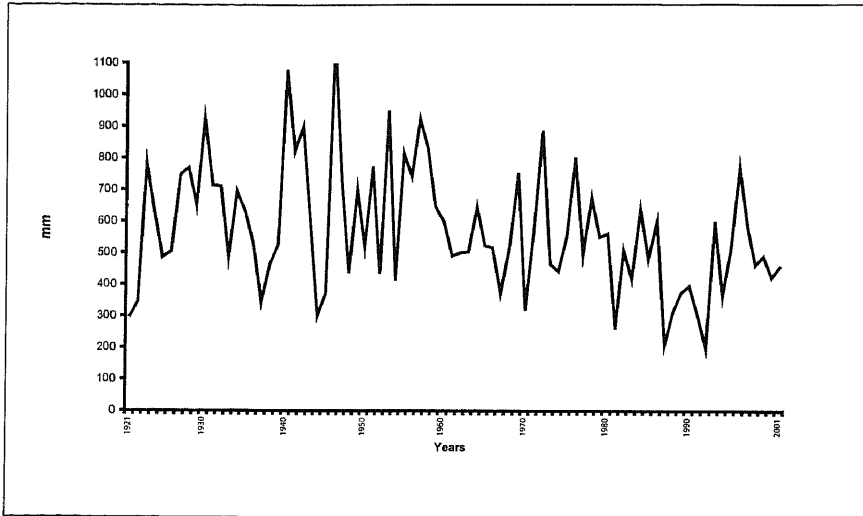


Fig. 2. Rainfall trends, shown in mm, registered at Olbia in the period between 1921 and 2001.

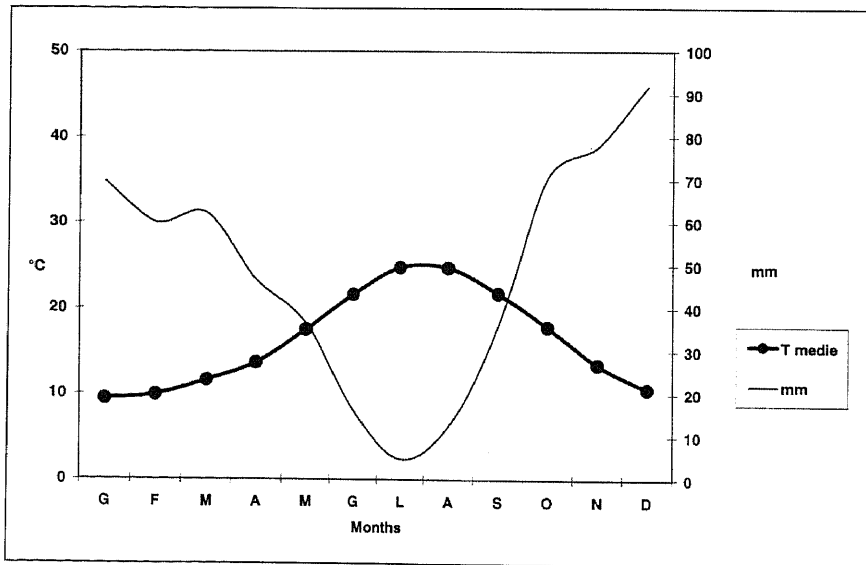


Fig. 3. Temperature and shade diagram based on data from the Olbia temperature and rainfall station.

## FLORA

The first known botanical information on Molara is attributed to MORIS (1837-1859) who in his *Flora Sardo* noted the presence of *Salix cinerea* L. Subsequently, contributions were made by BÉGUINOT (1929), PICCI (1972), LORENZONI (1970), LORENZONI & CHIESURA LORENZONI (1973) and BOCCHIERI (1995). Only as regards mention of endemic entities, we also find data in some information sheets on "The endemic plants of Sardinia" (ARRIGONI & al., 1977-1991).

Our investigations, at times hampered by adverse sea state, were carried out systematically with regular visits between December 2001 and January 2004. For the identification of the samples collected and taxonomic nomenclature we used the following publications: "Nuova Flora Analitica d'Italia" (FIORI, 1923-1927), "Flora d'Italia" (PIGNATTI, 1982), "*Flora Europaea*" (TUTIN & al., 1964-1980; 1993), "Med-Checklist" (GREUTER & al., 1984-89), "*Atlas Florae Europaeae*" (JALAS & SUOMINEN, 1972-1994; JALAS & al., 1996), "Flora Iberica" (CASTROVIEJO & al., 1986-2002), "Flora dels Països Catalans" (DE BOLOS & VIGO, 1984-2001); as regards Pteridophytes we consulted PICCHI SERMOLLI (1977, 1979) and FERRARINI & al. (1986), for endemic species "Le piante endemiche della Sardegna" (ARRIGONI & al., 1977-1991) and, when available, monographs and the more recent taxonomic studies addressing specific systematic groups.

For each entity of the floristic list, listed by family as per *Flora Europaea*, we have shown the specific binomial as well as any sub-species (only when different from the typical), variety, and biological and chorological form, using the abbreviations by PIGNATTI (1982). Moreover, again for each entity, we show information covering the locality in which the taxon was observed and subsequently identified, in square brackets the reference number of the locality shown on the map of the area under study (Fig. 4), the date of herborization and/or field observation, habitat and distribution in the area under study.

Floristic families and/or entities new to the island's flora are marked by an asterisk (\*), whereas those no longer found are marked (+). This list also includes the main species introduced and cultivated for ornamental or farming and livestock rearing purposes, shown by an (i) preceding the specific binomial; for these we provide the same information as for the native species although they were not included in the count for the assessment of biological and chorological spectra.

For each endemic taxon we have shown a reference abbreviation indicating the distribution area as follows: AT = Tuscan Archipelago; BI = Balearic Islands; Cal = Calabria; Co = Corsica; Cr = Crete; H = Hyères Islands; Itm = Southern Italy; Sa = Sardinia.



Fig. 4. Localities of the island of Morala indicated in the floristic list.

## PTERIDOPHYTAE

### SELAGINELLACEAE

*Selaginella denticulata* (L.) Link Ch rept Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Between La Casetta [9] and Monte Cariato [12] – 4.XII.2001 – Damp, shady environments; common.

### \* SINOPTERIDACEAE

\* *Cheilanthes maderensis* Lowe H ros W-Medit.-Macarones.

Punta La Guardia [21] – 24.IV.2002 – Rock crevices exposed to sunlight; common.

### GYMNOGRAMMACEAE

*Anogramma leptophylla* (L.) Link T caesp Cosmop.-Subtrop.

BÉGUINOT (1929) *sub* *Gymnogramme leptophylla* Desv.

L'Orto [8] – 17.V.2002 – Damp, shady environments in rock crevices; sporadic.



## HYPOLEPIDACEAE

*Pteridium aquilinum* (L.) Kuhn G rhiz Cosmop.

PICCI (1972).

La Casetta [9] and L'Orto [8] – 4.XII.2001 – Pastureland clearings in damp areas; common.

## ASPLENIACEAE

+ *Asplenium Adiantum-nigrum* L.  $\alpha$  *vulgare* Guss.

BÉGUINOT (1929); PICCI (1972) - Not observed.

*Asplenium obovatum* Viv. H ros Steno-Medit.

PICCI (1972).

Punta La Guardia [21] – 4.XII.2001 – Rock crevices; diffuse.

\* *Asplenium onopteris* L. H ros Subtrop.-Nesicola

L'Orto [8] – 17.V.2002 – Rocky crevices at the foot of brush growth and trees; common.

\* *Asplenium trichomanes* L. H ros Cosmop.-Temp.

Between Monte Castello [13] and Punta Leoneddu [22] – 24.IV.2002 – Damp, shady rock crevices; very rare.

## POLYPODIACEAE

*Polypodium cambricum* L. ssp. *serrulatum* (Schultz ex Arc.) Picchi-Sermolli H ros Euri-Medit.

BÉGUINOT (1929) sub *Polypodium vulgare* L.; PICCI (1972) sub *Polypodium vulgare* L.

La Vallata [10] – 4.XII.2001 – Shady cliff environments with stony soil; common.

## SPERMATOPHYTA - GYMNOSPERMAE

## Pinacea

<sup>1</sup> *Pinus pinea* L. P scap Euri-Medit.

PICCI (1972).

Villa Tamponi [26] – 4.XII.2001 – Some exemplars in the flat open space in front of the houses.

## CUPRESSACEAE

*Juniperus turbinata* Guss. P scap Euri-Medit.

PICCI (1972) sub *Juniperus phoenicea* L.

La Casetta [9] – 4.XII.2001 – Woods along the coast; common.

Note: entity indicated as such as reported by RIVAS-MARTINEZ & al. (1993).

## ANGIOSPERMAE DICOTYLEDONES

## SALICACEAE

*Salix cinerea* L. P caesp Paleotemp.

MORIS (1859); BÉGUINOT (1929); PICCI (1972).

L'Orto [8] – 17.V.2002 – A stand in the vicinity of the spring and individual isolated exemplars along the valley; rare.

## + JUGLANDACEAE

+ *Juglans regia* L.

PICCI (1972) mentions one exemplar of this entity in the vicinity of the spring of the Orto valley. Mr. S. Piredda, the present caretaker, remembers that there was at one time a large felled tree trunk in the vicinity of the triangular water tank in the Orto valley, which might refer to this entity. Not observed.

## FAGACEAE

\* <sup>i</sup> *Castanea sativa* Miller P scap SE-Europ.

L'Orto [8] – 17.V.2002 – One exemplar only near the spring in the Orto valley.

*Quercus ilex* L. P scap Steno-Medit.

PICCI (1972).

L'Orto [8] – 17.V.2002 – Stands and isolated exemplars in areas facing to the north; rare.

*Quercus suber* L. P scap W-Medit.

PICCI (1972).

Punta La Guardia [21] and Punta Leoneddu [22] – 24.IV.2002 and 17.V.2002 – A stand in the northern sector and individual isolated exemplars in the territory between the two localities; rare.

## MORACEAE

*Ficus carica* L. P scap   Medit.-Turan.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – At the base and in the crevices of the rocks; rare.

## URTICACEAE

*Parietaria lusitanica* L. T rept   Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Villa Tamponi [26] – 17.V.2002 – Cliffs, damp shady walls in the vicinity of the houses; common.

*Parietaria judaica* L. H scap   Euri-Medit. Macarones.

PICCI (1972) sub *Parietaria officinalis* L.

Pedraglione [23] – 17.V.2002 – Cliffs and stony soils; sporadic.

*Urtica membranacea* Poiret T scap   S-Medit.

BÉGUINOT (1929) sub *Urtica caudata* Vahl.

La Casetta [9] – 24.IV.2002 – Degraded pastureland environments; common.

*Urtica pilulifera* L. T scap   S-Medit.

BÉGUINOT (1929) sub *Urtica pilulifera* L. v. *balearica* (L.); PICCI (1972).

La Casetta [9] – 24.IV.2002 – Nitrophilous pastureland meadows; common.

*Urtica urens* L. T scap   Subcosmop.

BÉGUINOT (1929).

Villa Tamponi [26] – 21.V.2002 – In the vicinity of the ruins; common.

## SANTALACEAE

*Osyris alba* L. NP   Euri-Medit.

PICCI (1972).

Casa Vecchia [1] – 4.XII.2001 – Brush growth along the edges of the pathways; sporadic.

## ARISTOLOCHIACEA

*Aristolochia insularis* Nardi et Arrigoni G bulb Endem. Sa-Co

PICCI (1972) sub *Aristolochia rotunda* L.; BOCCHIERI (1995).

Falconara [6] – 21.V.2002 – On soils with high stone content and amongst the brush growth; rare.

*Aristolochia navicularis* Nardi G bulb Steno-Medit.

PICCI (1972) sub *Aristolochia pallida* Willd.

La Casetta [9] – 24.IV.2002 – Amongst the brush growth and at the base of the rocks; sporadic.

## RAFFLESIACEAE

*Cytinus hypocistis* (L.) L. G rad Medit.-Macarones.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 17.V.2002 – Brush growth with *Cistus* sp. pl.; sporadic.

## POLYGONACEAE

*Polygonum maritimum* L. H rept Subcosmop.

PICCI (1972).

Cala di Chiesa [3] – 28.VI /1.VII.2002 – Amongst the pebbles of the bay; rare.

+ *Rumex acetosella* L.

PICCI (1972) - Not observed.

*Rumex bucephalophorus* L. T scap Medit.-Macarones.

PICCI (1972) sub *Rumex bucephalophorus* L. ssp. *graecus* (Steinh.) Rech.

La Casetta [9] – 24.IV.2002 – Small meadows alongside the pathways; diffuse.

\* *Rumex conglomeratus* Murray H scap Euras. Centro-occid.

L'Orto [8] – 17.V.2002 – Damp areas downstream from the spring; rare.

\* *Rumex obtusifolius* L. ssp. *obtusifolius* H scap Subcosmop.

L'Orto [8] – 28.VI/1.VII.2002 – Damp areas along the streams; rare.

+ *Rumex obtusifolius* L. ssp. *sylvestris* (Wallr.) Rech.

PICCI (1972) - Not observed.

+ *Rumex pulcher* L. ssp. *pulcher*

PICCI (1972) - Not observed.

\* *Rumex sanguineus* L. H scap Europeo-Caucas.

La Casetta [9] – 17.VI.2002 – Clearings, damp environments; rare.

*Rumex scutatus* L. ssp. *glaucescens* (Guss.) Brullo, Scelsi et Spampinato

H scap Endem. Sa-Si-Cal

PICCI (1972) sub *Rumex scutatus* L.; LORENZONI (1970) sub *Rumex scutatus* L. var. *glaucus* Gaud.

Punta Leoneddu [22] – 21.V.2002 – Soils with high stone content in areas exposed to the sun; sporadic.

*Rumex thyrsoides* Desf. H scap W-Medit.

PICCI (1972).

L'Orto [8] – 17.V.2002 – Damp meadows along the spring; rare.

## CHENOPODIACEAE

\* *Atriplex prostrata* Boucher ex DC. T scap Circumbor.

La Casetta [9] – 17.V.2002 – Halonitrophilous environments along the coastal strip; sporadic.

\* *Beta vulgaris* L. ssp. *maritima* (L.) Arcang. H scap Euri-Medit.

Costa dell'Aia [5] – 28.VI/1.VII.2002 – Subsaline meadows along the coast; rare.

\* *Chenopodium album* L. T scap Subcosmop.

La Casetta [9] – 24.IV.2002 – Degraded clearings; common.

\* *Chenopodium murale* L. T scap Subcosmop.

La Casetta [9] – 24.IV.2002 – Nitrophilous degraded clearings; common.

\* *Salsola kali* L. T scap Paleotemp.

Between Punta dei Porri [16] and Cala dell'Attacco [2] – 17.VI.2002 – In sporadic sandy deposits; rare.

\* *Salsola soda* L. T scap Paleotemp.

Cala di Chiesa [3] – 28.VI/1.VII.2002 – Amongst the pebbles of the bay; rare.

*Sarcocornia fruticosa* (L.) A. J. Scott Ch succ Euri-Medit-Sudafr.

PICCI (1972) sub *Aithrocneum fruticosum* (L.) Moq.

Cala di Chiesa [3] – 28.VI/1.VII.2002 – Halophilic environments along the coast; very rare.

\*<sup>i</sup> NYCTAGINACEAE

\*<sup>i</sup> *Bougainvillea spectabilis* Willd. P lian Sudamer.

Villa Tamponi [26] – 4.XII.2001 – Some exemplars in the flower beds round the houses.

\* PORTULACACEAE

\* *Portulaca oleracea* L. T scap Subcomop.

Pedraglione [23] – 19.IX.2002 – Small meadows among the rocks and along the pathways; sporadic.

CARYOPHYLLACEAE

\* *Arenaria balearica* L. Ch suffr Endem. Sa-Co-BI

Punta La Guardia [21] – 24.IV.2002 – Damp and shaded rocky crevices; rare.

*Cerastium glomeratum* Thuill. T scap Subcosmop.

BÉGUINOT (1929); PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – In the meadows and along the pathways; common.

+ *Cerastium manticum* L. var. *erectum* (Coss. et Germ.)

BÉGUINOT (1929) - Not observed.

*Illecebrum verticillatum* L. T scap Subatl.

PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – Small meadows among the rocks; sporadic.

\* *Minuartia hybrida* (Vill.) Schischkin T scap Paleotemp.

Falconara [6] – 9/11.VI.2003 – Meadows and rocky areas; rare.

*Paronychia echinulata* Chater T scap Steno-Medit.

BÉGUINOT (1929) sub *Paronychia echinata* Lam.; PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – In arid meadows; rare.

+ *Petrorhagia saxifraga* (L.) Link

PICCI (1972) - Not observed.

*Petrorhagia velutina* (Guss.) P. W. Ball & Heywood T scap S-Medit.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Clearings, amongst the brush growth and alongside the pathways; common.

*Polycarpon alsinifolium* (Biv.) DC. T scap S-Medit.

PICCI (1972).

La Casetta [9] – 17.V.2002 – Damp environments along the coast; common.

*Polycarpon tetraphyllum* L. T scap Euri-Medit.

BÉGUINOT (1929).

Pumpija [24] – 9/11.VI.2003 – In the meadows and along the pathways; sporadic.

*Silene gallica* L. T scap Subcosmop.

BÉGUINOT (1929); PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Clearings, pastureland meadows and cliffs; common.

*Silene giraldii* Guss. T scap Endem. Sa-Itm

PICCI (1972).

Between Punta La Guardia [21] and Punta Leoneddu [22] – 24.IV.2002 – Rock crevices; very rare.

*Silene laeta* (Aiton) Godron T scap SW-Medit.

PICCI (1972).

Cala di Chiesa [3] – 28.VI /1.VII.2002 – Damp rocky outcrops along the coast; rare.

+ *Spergula arvensis* L.

BÉGUINOT (1929) - Not observed.

*Spergularia macrorrhiza* (Req.) Heynh. Ch suffr Endem. Sa-Co

PICCI (1972); BOCCHIERI (1995).

Cala Spagnola [4] – 11.III.2003 – Clearings and on paths along the coast; sporadic.

***Spergularia rubra*** (L.) J. & C. Presl Ch suffr Subcosmop.

BÉGUINOT (1929) sub *Spergularia rubra* Pers. var. *Bocconei* (Steud.).

Cala Spagnola [4] – 17.V.2002 – Arid meadows with earthy and/or sandy soils; common.

***Stellaria media*** (L.) Vill. T rept Cosmop.

BÉGUINOT (1929).

La Casetta [9] – 24.IV.2002 – Meadows and clearings along the pathways; common.

\* ***Stellaria neglecta*** Weihe

PICCI (1972) - Not observed.

#### RANUNCULACEAE

***Anemone hortensis*** L. G bulb N-Medit.

PICCI (1972).

Punta Leoneddu [22] – 21.V.2002 – Clearings and amongst the brush growth in damp cool places; rare.

***Clematis cirrhosa*** L. P lian Steno-Medit.-Turan.

BÉGUINOT (1929); PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Wood and bush Phytocoenoses on very stony soils; common.

Note: Picci also reported the variety *balearica* (Rich. et Juss.) Fiori.

***Ranunculus cordiger*** Viv. ssp. *diffusus* (Moris) Arrigoni H scap Endem. Sa-Co

PICCI (1972); BOCCHIERI (1995).

Punta La Guardia [21] – 24.IV.2002 – Damp soils, stagnant waters; rare.

***Ranunculus muricatus*** L. T scap Euri-Medit.

BÉGUINOT (1929); PICCI (1972).

L'Orto [8] – 17.V.2002 – Damp environments in the vicinity of the spring; sporadic.

***Ranunculus ophioglossifolius*** Vill. T scap Euri-Medit.

PICCI (1972).

L'Orto [8] – 17.V.2002 – Along the streams in areas of stagnant water; rare.



***Ranunculus parviflorus*** L. T scap   Medit.-Atl.

PICCI (1972).

L'Orto [8] – 17.V.2002 – Muddy soils along the stream; rare.

***Ranunculus trilobus*** Desf. T scap   W-Medit.-Macarones.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Damp soils in woodland and brush glades; sporadic.

\* † LAURACEAE

\* † ***Laurus nobilis*** L. P caesp   Steno-Medit.

Villa Tamponi [26] – 4.XII.2001 – One exemplar only in the courtyard of the houses.

PAPAVERACEAE

+ ***Fumaria agraria*** Lag.

BÉGUINOT (1929) - Not observed.

\* ***Fumaria bastardii*** Boreau T scap   Subatl.

Punta La Guardia [21] – 24.IV.2002 – Pastureland meadows, along the pathways and among the rocks; rare.

***Fumaria capreolata*** L. T scap   Euri-Medit.

BÉGUINOT (1929); PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Pastureland meadows, alongside the pathways; diffuse.

+ ***Fumaria muralis*** Sonder *ex* Koch

PICCI (1972) - Not observed.

***Fumaria officinalis*** L. T scap   Subcosmop.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Small meadows among the rocks; rare.

***Papaver rhoeas*** L. T scap   E-Medit.

PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – In the vicinity of the ruins; rare.

## BRASSICACEAE

\* *Arabis collina* Ten. H scap Orof. Medit.

Between La Casetta [9] and L'Orto [8] – 11.III.2003 – On cliffs and pebbly soils; rare.

*Bunias erucago* L. T scap N-Medit.

BÉGUINOT (1929).

Monte Castello [13] – 9/11.VI.2003 – In the vicinity of the ruins; rare.

\* *Cakile maritima* Scop. ssp. *aegyptiaca* (Willd.) Nyman T scap Medit.-Atl.

Punta dell'Aia [17] – 24.IV.2002 – On heaps of sand and pebbles along the coast; common.

*Capsella bursa-pastoris* (L.) Medicus H bienn Cosmop.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 24.IV.2002 – Pastureland meadows; common.

*Cardamine hirsuta* L. T scap Cosmop.

BÉGUINOT (1929); PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – In the vicinity of the ruins; rare.

+ *Cardamine pratensis* L.

PICCI (1972) - Not observed.

*Clypeola jonthlaspi* L. T scap Steno-Medit.

PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – Arid meadows among the rocks; rare.

\* *Hirschfeldia incana* (L.) Lagrèze-Fossat H scap Medit.-Macarones.

La Casetta [9] – 24.IV.2002 – Arid meadows alongside the pathways; common.

*Lobularia maritima* (L.) Desv. H scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 4.XII.2001 – Meadows amongst the brush growth and alongside the pathways; common.

\* *Matthiola triscupidata* (L.) R. Br. T scap Steno-Medit.  
Punta Falcone [20] – 9/11.VI.2003 – Earthy and sandy clearings amongst  
the rocks; rare.

*Nasturtium officinale* R. Br. H scap Cosmop.  
PICCI (1972).  
L'Orto [8] – 17.V.2002 – Damp environments in the vicinity of the spring;  
very rare.

*Raphanus raphanistrum* L. T scap Circumbor.  
PICCI (1972).  
L'Orto [8] – 17.V.2002 – Meadows in formerly cultivated terraces; rare.

+ *Sinapis alba* L.  
PICCI (1972) - Not observed.

+ *Sinapis pubescens* L.  
PICCI (1972) - Not observed.

+ *Sisymbrium officinale* Scop.  
BÉGUINOT (1929) - Not observed.

*Succowia balearica* (L.) Medicus T scap SW-Medit.-Macarones.  
PICCI (1972).  
Punta La Guardia [21] – 24.IV.2002 – Damp, shady environments amongst  
brush growth; common.

+ *Teesdalia coronopifolia* (J.P. Bergeret) Thell.  
PICCI (1972) - Not observed.

#### RESEDACEAE

*Reseda alba* L. T scap Steno-Medit.  
BÉGUINOT (1929); PICCI (1972).  
Villa Tamponi [26] – 24.IV.2002 – Nitrophilous meadows in areas modified  
by man; sporadic.

#### CRASSULACEAE

*Crassula tillaea* Lester-Garland T scap Submedit.-Subatl.  
BÉGUINOT (1929) sub *Tillaea muscosa* L.

La Casetta [9] – 11.III.2003 – Small meadows on sandy and earthy soils; rare.

*Sedum caeruleum* L. T scap SW-Medit.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Cliffs and soils with high stone content; common.

\* *Sedum caespitosum* DC.

BÉGUINOT (1929) - Not observed.

*Sedum rubens* L. T scap Euri-Medit.-Subatl.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Ruderal environments, cliffs exposed to the sun; rare.

*Sedum stellatum* L. T scap Steno-Medit.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Along the pathways, among the rocks and meadow areas in stony soil; common.

*Umbilicus rupestris* (Salisb.) Dandy G bulb Medit.-Atl.

BÉGUINOT (1929) sub *Cotyledon Umbelicus-Veneris* L.; PICCI (1972).

La Casetta [9] – 24.IV.2002 – Cliffs, damp and shady fissures in the rocks; common.

#### ROSACEAE

\* *Prunus dulcis* (Miller) D. A. Webb P scap S-Medit.

Villa Tamponi [26] – 4.XII.2001 – Some isolated exemplars in the courtyard of the houses.

*Rosa canina* L. NP Paleotemp.

PICCI (1972).

L'Orto [8] – 9/11.VI.2003 – Along the stream, among trees and brush; rare.

\* *Rubus fruticosus* L. var. *tomentosus* (Borkh.) Fiori

PICCI (1972) - Not observed.

\* *Rubus ulmifolius* Schott NP Euri-Medit.

L'Orto [8] – 24.IV.2002 – Along the valley in the vicinity of the spring; common.

FABACEAE

*Anthyllis vulneraria* L. ssp. *praepropera* (Kerner) Bornm. H scap Euri-Medit.

PICCI (1972) sub *Anthyllis vulneraria* L.

Pumpija [24] – 9/11.VI.2003 – Arid meadows, rocks and alongside the pathways; rare.

*Astragalus hamosus* L. T scap Medit.-Turan.

PICCI (1972).

Punta Leoneddu [22] – 21.V.2002 – Pasturelands, arid meadows; sporadic.

*Biserrula pelecinus* L. T scap Steno-Medit.

BÉGUINOT (1929).

Punta La Guardia [21] – 24.IV.2002 – Pastureland meadows, amongst the rocks; rare.

*Bituminaria bituminosa* L. H scap Euri-Medit.

PICCI (1972) sub *Psoralea bituminosa* L.

Casa Vecchia [1] – 28.VI/1.VII.2002 – Clearings alongside the pathways; sporadic.

*Calicotome villosa* (Poiret) Link P caesp Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Between Punta La Guardia [21] and L'Orto [8] – 4.XII.2001 – Brush growth; sporadic.

+ *Genista aspalathoides* Lam.

PICCI (1972) - Not observed.

*Genista corsica* (Loisel.) DC. NP Endem. Sa-Co

PICCI (1972); BOCCHIERI (1995).

Punta La Guardia [21] – 4.XII.2001 – Amongst the brush growth and in the rock formations; common.

*Lathyrus aphaca* L. T scap Euri-Medit.

PICCI (1972).

Punta Leoneddu [22] – 21.V.2002 – Meadows on stony soils, amongst the rocks; sporadic.

*Lathyrus cicera* L. T scap Euri-Medit.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Meadows and among the rocks; rare.

+ *Lathyrus sphaericus* Retz.

BÉGUINOT (1929); PICCI (1972) - Not observed.

*Lotus angustissimus* L. T scap Euri-Medit.

PICCI (1972).

Pumpija [24] – 9/11.VI.2003 – Arid pastureland meadows; rare.

+ *Lotus corniculatus* L. var. *decumbens* (Poir.) Rouy

PICCI (1972) - Not observed.

*Lotus cytisoides* L. Ch suffr Steno-Medit.

PICCI (1972) *sub Lotus creticus* L.

Cala Spagnola [4] – 17.V.2002 – Cliffs and pebbly soils along the coastal strip; common.

*Lotus edulis* L. T scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Cala Spagnola [4] – 24/04/02 – Sandy, arid meadows alongside the pathways; common.

+ *Medicago arabica* (L.) Hudson

PICCI (1972) - Not observed.

*Medicago litoralis* Rohde T scap Euri-Medit.

BÉGUINOT (1929).

Cala Spagnola [4] – 17.V.2002 – Arid environments on sandy, stony soils; common.

\* *Medicago minima* (L.) Bartal. T scap Euri-Medit.-Centroasiat.

Cala Spagnola [4] – 21.V.2002 – Pastureland clearings; common.

\* *Medicago orbicularis* (L.) Bartal. T scap Euri-Medit.  
Punta Leoneddu [22] – 21.V.2002 – Arid pastureland meadows; sporadic.

*Medicago polymorpha* L. T scap Subcosmop.  
PICCI (1972).  
Cala di Chiesa [3] – 28.VI/1.VII.2002 – Arid meadows among the rocks;  
common.

+ *Medicago praecox* DC.  
BÉGUINOT (1929) - Not observed.

*Medicago truncatula* Gaertner T scap Steno-Medit.  
PICCI (1972) *sub Medicago trunculata* Gaertner  
La Casetta [9] – 17.VI.2002 – Clearings, alongside the pathways; com-  
mon.

\* *Melilotus elegans* Salzm. T scap S-Medit.  
L'Orto [8] – 17.V.2002 – Arid environments, amongst brush growth; rare.

*Ononis reclinata* L. T scap S-Medit.-Turan.  
PICCI (1972).  
Punta La Guardia [21] – 24.IV.2002 – Meadows on stony soils; rare.

*Ornithopus compressus* L. T scap Euri-Medit.  
BÉGUINOT (1929); PICCI (1972).  
Cala di Chiesa [3] – 28.VI/1.VII.2002 – Pastureland meadows, alongside  
the pathways; common.

*Ornithopus pinnatus* (Miller) Druce T scap Medit.-Atl.  
PICCI (1972).  
Cala Spagnola [4] – 17.V.2002 – Clearings on stony soils; common.

*Trifolium angustifolium* L. T scap Euri-Medit.  
PICCI (1972).  
La Casetta [9] – 19.IX.2002 – Meadows alongside the pathways; com-  
mon.

*Trifolium arvense* L. T scap Paleotemp.  
BÉGUINOT (1929); PICCI (1972).  
Cala Spagnola [4] – 17.V.2002 – Clearings alongside the pathways; com-  
mon.

*Trifolium campestre* Schreber T scap W-Paleotemp.

PICCI (1972).

La Casetta [9] – 24.IV.2002 – Small meadows and clearings; common.

*Trifolium cherleri* L. T scap Euri-Medit.

BÉGUINOT (1929).

Punta La Guardia [21] – 24.IV.2002 – Meadows and clearings among the rocks; common.

*Trifolium glomeratum* L. T scap Euri-Medit.

BÉGUINOT (1929); PICCI (1972).

Casa Vecchia [1] – 28.VI/1.VII.2002 – Meadows in an arid environment; sporadic.

+ *Trifolium incarnatum* L.

PICCI (1972) - Not observed.

+ *Trifolium incarnatum* L. ssp. *molineri* (Balbis ex Hornem.) Syme

PICCI (1972) - Not observed.

*Trifolium lappaceum* L. T scap Euri-Medit.

PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – Small meadows on stony soil; rare.

+ *Trifolium ligusticum* Balbis ex Loisel.

PICCI (1972) - Not observed.

+ *Trifolium micranthum* Viv.

PICCI (1972) - Not observed.

*Trifolium nigrescens* Viv. T scap Euri-Medit.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Small meadows alongside the pathways; common.

*Trifolium resupinatum* L. T rept Paleotemp.

BÉGUINOT (1929).

Punta Leoneddu [22] – 21.V.2002 – Meadows in damp dells; common.

*Trifolium scabrum* L. T rept Euri-Medit.

PICCI (1972).



Monte Castello [13] – 9/11.VI.2003 – Meadows of the southern sector; sporadic.

+ *Trifolium squarrosum* L.

PICCI (1972) - Not observed.

*Trifolium stellatum* L. T scap Euri-Medit.

BÉGUINOT (1929); PICCI (1972).

Villa Tamponi [26] – 17.V.2002 – Clearings alongside the pathways; common.

*Trifolium subterraneum* L. T rept Euri-Medit.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 28.VI/1.VII.2002 – Clearings alongside the pathways; common.

*Trifolium suffocatum* L. T scap Steno-Medit.

BÉGUINOT (1929).

Punta Leoneddu [22] – 21.V.2002 – Clearings amongst the rocks; common.

*Trifolium tomentosum* L. T rept Paleotemp.

BÉGUINOT (1929); PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Meadows alongside the pathways; common.

+ *Vicia altissima* Desf. var. *polysperma* (Ten.) Fiori

PICCI (1972) - Not observed.

+ *Vicia benghalensis* L.

PICCI (1972) - Not observed.

*Vicia cracca* L. H scap Circumbor.

PICCI (1972).

La Vallata [10] – 21.V.2002 – Meadows in the upper portion of the valley; rare.

*Vicia dasycarpa* Ten. T scap Euri-Medit.

BÉGUINOT (1929) sub *Vicia villosa* L. ssp. *dasycarpa* Ten.

Pumpija [24] – 9/11.VI.2003 – Brush growth; sporadic.

*Vicia disperma* DC. T scap W-Medit.

PICCI (1972) sub *Vicia disperma* DC. var. *corsica* Ces. P. et Gibell.

Cala di Chiesa [3] – 28.VI/1.VII.2002 – Clearings amongst the brush growth; common.

+ *Vicia hirsuta* (L.) S.F. Gray

BÉGUINOT (1929); PICCI (1972) - Not observed.

+ *Vicia lutea* L.

PICCI (1972) - Not observed.

+ *Vicia onobrychioides* L.

PICCI (1972) - Not observed.

+ *Vicia pubescens* (DC.) Link

PICCI (1972) - Not observed.

*Vicia sativa* L. ssp. *sativa* T scap Subcosmop.

PICCI (1972).

La Casetta [9] – 28.VI/1.VII.2002 – Amongst the brush growth; sporadic.

+ *Vicia sativa* L. ssp. *nigra* (L.) Ehrh.

PICCI (1972) - Not observed.

\* *Vicia villosa* Roth T scap Euri-Medit.

Punta La Guardia [21] – 24.IV.2002 – Arid cliffs; common.

#### OXALIDACEAE

*Oxalis pes-caprae* L. G bulb Sudafr.

PICCI (1972).

Villa Tamponi [26] – 24.IV.2002 – Clearings round the houses; common.

#### GERANIACEAE

\* *Erodium botrys* (Cav.) Bertol. T scap Steno-Medit.

Cala di Chiesa [3] – 28.VI/1.VII.2002 – Clearings alongside the pathways; common.

*Erodium cicutarium* (L.) L'Hér T scap Subcosmop.

BÉGUINOT (1929); PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Clearings and pastureland meadows; sporadic.

+ *Erodium malachoides* W.

BÉGUINOT (1929) - Not observed.

+ *Erodium moschatum* L'Hér

BÉGUINOT (1929) - Not observed.

\* *Erodium chium* (L.) Willd. H scap Euri-Medit.

Between Villa Tamponi [26] and Pumpija [24] – 17.V.2002 – Meadows alongside the pathways; sporadic.

*Geranium columbinum* L. T scap Europeo-Sudsiber.

PICCI (1972).

La Casetta [9] – 17.V.2002 – Cliffs and pastureland meadows; common.

*Geranium molle* L. T scap Subcosmop.

PICCI (1972).

La Casetta [9] – 11.III.2003 – Meadows in environments modified by man; common.

*Geranium purpureum* Vill. T scap Euri-Medit.

PICCI (1972).

L'Orto [8] – 17.V.2002 – Meadows in formerly cultivated terraces; common.

+ *Geranium pusillum* L.

PICCI (1972) - Not observed.

*Geranium robertianum* L. T scap Subcosmop.

BÉGUINOT (1929); PICCI (1972).

L'Orto [8] – 17.V.2002 – Shady environments, amongst brush growth; common.

\* *Geranium rotundifolium* L. T scap Paleotemp.

La Casetta [9] – 17.VI.2002 – Arid, degraded clearings; common.

## LINACEAE

***Linum bienne*** Miller H bienn Euri-Medit.-Subatl.

BÉGUINOT (1929) sub *Linum angustifolium* Huds.; PICCI (1972).

Costa dell'Aia [5] – 21.V.2002 – Amongst low brush growth and in the clearings; common.

***Linum strictum*** L. T scap Steno-Medit.

PICCI (1972).

Pumpija [24] – 9/11.VI.2003 – Clearings, amongst the brush growth and alongside the pathways; common.

***Linum trigynum*** L. T scap Euri-Medit.

PICCI (1972).

Punta Leoneddu [22] – 28.VI/1.VII.2002 – Cliffs, amongst the brush growth; common.

## EUPHORBIACEAE

***Euphorbia characias*** L. NP Steno-Medit.

PICCI (1972).

La Casetta [9] – 4.XII.2001 – Amongst the brush growth, rocky crevices and clearings; common.

***Euphorbia cupanii*** Guss. G rhiz Endem. Sa-Co-Si

PICCI (1972) sub *Euphorbia pithyusa* L.; BOCCHIERI (1995).

Cala Spagnola [4] – 17.V.2002 - Beaches and coastal cliffs; common.

Note: Picci also reported *Euphorbia pithyusa* L. ssp *pithyusa* which should represent the same entity.

***Euphorbia dendroides*** L. NP Steno-Medit.-Macarones.

BÉGUINOT (1929); PICCI (1972).

Between La Vedetta [11] and Costa dell'Aia [5] – 4.XII.2001 – Cliffs exposed to the sun in areas with a southern exposure; common.

Note: Béguinot reported it as doubtful, indicating, in the text of his publication: "...it would seem to be absent, or at least very rare...".

***Euphorbia helioscopia*** L. T scap Cosmop.

BÉGUINOT (1929).

Punta Leoneddu [22] – 21.V.2002 – Arid pastureland meadows; common.

\* *Euphorbia maculata* L. T rept Nordamer.

Cala di Chiesa [3] – 9/11.VI.2003 – Amongst the pebbles of the bay; very rare.

*Euphorbia paralias* L. Ch frut Euri-Medit.-Atl.

BÉGUINOT (1929); PICCI (1972).

Cala Spagnola [4] – 17.V.2002 – Sandy soils and cliffs along the coast; common.

\* *Euphorbia peplis* L. T rept Euri-Medit.

Cala di Chiesa [3] – 19.IX.2002 – Heaps of sand and pebbles along the coast; sporadic.

*Euphorbia peplus* L. T scap Cosmop.

PICCI (1972).

Villa Tamponi [26] – 21.V.2002 – Highly nitrophilous pastureland meadows; common.

Note: Picci also reported *Euphorbia peploides* Gouan which at the present time is considered as var. *peploides* (Gouan) Vis. During our field investigations we observed no exemplars belonging to this entity.

+ *Euphorbia segetalis* L.

PICCI (1972) - Not observed.

\* *Mercurialis corsica* Cosson Ch suffr Endem. Sa-Co

L'Orto [8] – 9/11.VI.2003 – In the vicinity of the dry stone walls, in damp shady areas; very rare.

\* <sup>i</sup> *Ricinus communis* L. P scap Paleotrop.

Villa Tamponi [26] – 4.XII.2001 – Some isolated exemplars in the courtyard of the houses.

#### RUTACEAE

*Ruta chalepensis* L. Ch suffr S-Medit.

PICCI (1972).

Ruderi di Ponziano [25] – 28.VI/1.VII.2002 – In the vicinity of the ruins, amongst the brush; sporadic.

## ANACARDIACEAE

*Pistacia lentiscus* L. P caesp Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 4.XII.2001 – Brush and wood growth; diffuse.

Note: Picci also mentioned two varieties: *latifolia* Coss. and *massiliensis* (Mill.) Fiori.

## ACERACEAE

*Acer monspessulanum* L. P scap Euri-Medit.

PICCI (1972); BOCCHIERI (1995).

Punta La Guardia [21] – 19.IX.2002 – A stand of exemplars in the northern sector; rare.

## RHAMNACEAE

*Rhamnus alaternus* L. P caesp Steno-Medit.

PICCI (1972).

La Casetta [9] – 4.XII.2001 – Brush areas and bush growth; common.

## MALVACEAE

*Malva parviflora* L. T scap Euri-Medit.

PICCI (1972).

Villa Tamponi [26] – 17.V.2002 – Meadows in the vicinity of the houses; common.

\* *Lavatera cretica* L. T scap Steno-Medit.

Villa Tamponi [26] – 17.V.2002 – Arid meadows, uncultivated, in the vicinity of the houses; common.

## THYMELAEACEAE

*Daphne gnidium* L. P caesp Steno-Medit.-Macarones.

BÉGUINOT (1929); PICCI (1972).

Pumpija [24] – 24.IV.2002 – Degraded brush growth and clearings subjected to brush fires; common.

*Thymelaea hirsuta* (L.) Endl. NP S-Medit.-W-Asiat.

PICCI (1972).

Between Cala dell'Attacco [2] and Punta di Scirocco [19] – 21.V.2002 – Clearings along the coast; rare.

## GUTTIFERAE

*Hypericum hircinum* L. NP Endem. Sa-Co-AT

PICCI (1972); BOCCHIERI (1995).

L'Orto [8] – 9/11.VI.2003 – Riparian environment along the stream; common.

\* *Hypericum perforatum* L. H scap Steno-Medit.

Monte Castello [13] – 9/11.VI.2003 – Clearings along the coast; sporadic.

## CISTACEAE

*Cistus monspeliensis* L. NP Steno-Medit.-Macarones.

BÉGUINOT (1929); PICCI (1972).

Between Punta di Scirocco [19] and Casa Vecchia [1] – 4.XII.2001 – Brush growth; diffuse.

Note: the formations with prevailing *Cistus Monspeliensis* are particularly widespread in the south eastern sector where at the end of the 1980s there was an extensive brush fire.

*Cistus salvifolius* L. NP Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 4.XII.2001 – Low brush growth; common.

*Tuberaria guttata* (L.) Fourr. T scap Euri-Medit.

BÉGUINOT (1929) sub *Helianthemum guttatum* Mill.; PICCI (1972).

La Casetta [9] – 4.XII.2001 – Pastureland, small arid and sandy meadows alongside the pathways; diffuse.

## TAMARICACEAE

*Tamarix africana* Poiret P scap W-Medit.

PICCI (1972).

Cala dell'Attacco [2] – 9/11.VI.2003 – A stand of exemplars to the rear of the beach; rare.

## FRANKENIACEAE

\* *Frankenia hirsuta* L. Ch suffr Steno-Medit.  
Cala Spagnola [4] – 4.XII.2001 – Beaches and cliffs; common.

+ *Frankenia laevis* L.  
PICCI (1972) - Not observed.

<sup>i</sup> CACTACEAE

<sup>i</sup> *Opuntia maxima* Miller P succ Neotrop.  
PICCI (1972) sub *Opuntia ficus-indica* (L.) Miller  
Villa Tamponi [26] – 4.XII.2001 – A stand of exemplars in the courtyard  
of the houses.

## LYTHRACEAE

*Lythrum hyssopifolia* L. T scap Subcosmop.  
PICCI (1972).  
L'Orto [8] – 9/11.VI.2003 – Damp environments; common.

## Myrtaceae

*Myrtus communis* L. P caesp Steno-Medit.  
PICCI (1972).  
Between Punta La Guardia [21] and Punta Leoneddu [22] – 24.IV.2002 –  
Brush growth in relatively damp areas; rare.  
Note: we observed some exemplars of height exceeding 4 m and trunk  
diameter of 12 cm.

\* <sup>i</sup> PUNICACEAE

\* <sup>i</sup> *Punica granatum* L. P scap SW-Asiat.  
Villa Tamponi [26] – 9/11.VI.2003 – One exemplar in the courtyard of the  
houses.

## THELIGONACEAE

*Theligonum cynocrambe* L. T scap Steno-Medit.  
PICCI (1972) sub *Cynocrambe prostrata* Gaertn.  
Punta di Scirocco [8] – 21.V.2002 – Rock crevices, in the small meadows;  
sporadic.



## APIACEAE

*Apium nodiflorum* (L.) Lag. H scap Euri-Medit.

PICCI (1972).

L'Orto [8] – 17.V.2002 – Damp environments, pools of stagnant water; rare.

*Bupleurum fontanesii* Guss. T scap SE-Medit.

PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – Degraded clearings; very rare.

*Crithmum maritimum* L. Ch suffr Euri-Medit.

PICCI (1972).

Cala Spagnola [4] – 17.V.2002 – Coastal cliffs; common.

*Daucus carota* L. ssp. *carota* H bienn Subcosmop.

PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – Arid meadows, rocky crevices; common.

\* *Daucus carota* L. ssp. *maritimus* (Lam.) Batt H bienn W-Medit.

Cala Spagnola [4] – 17.V.2002 – Arid meadows, rocky crevices along the coast; common.

\* *Eryngium campestre* L. H scap Euri-Medit.

La Vallata [10] – 9/11.VI.2003 – Arid pastureland meadows; rare.

\* *Eryngium maritimum* L. G rhiz Medit.-Atl.

La Vallata [10] – 9/11.VI.2003 – Amongst the pebbles of the bay; rare.

*Ferula communis* L. H scap S-Medit.

BÉGUINOT (1929) sub *Ferula Comm.-nodiflora* (L.).

Punta La Guardia [21] – 24.IV.2002 – Pastureland clearings and clumps of brush; diffuse.

+ *Oenanthe fistulosa* L.

PICCI (1967) - Not observed.

\* *Oenanthe pimpinelloides* L. H scap Medit.-Atl.

L'Orto [8] – 9/11.VI.2003 – Damp environments in the vicinity of the spring; sporadic.

\* *Petroselinum sativum* Hoffm. H bienn E-Medit.

Punta Leoneddu [22] – 21.V.2002 – Cool environments of the northern sector; very rare.

*Smyrniolum olusatrum* L. H bienn Medit.-Atl.

BÉGUINOT (1929); PICCI (1972).

Villa Tamponi [26] – 4.XII.2001 – Meadows adjacent to the ruins; common.

*Thapsia garganica* L. H scap S-Medit.

PICCI (1972).

Cala Spagnola [4] – 17.V.2002 – Arid, stony pastureland meadows; common.

*Torilis arvensis* (Hudson) Link ssp. *arvensis* T scap Subcosmop.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Amongst the brush growth, in shady areas; common.

*Torilis arvensis* (Hudson) Link ssp. *purpurea* (Ten.) Hayek T scap Subcosmop.

PICCI (1972).

Ruderi di Ponziano [25] – 24.IV.2002 – Woods growth; sporadic.

*Torilis nodosa* (L.) Gaertner T scap Euri-Medit.-Turan.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Brush growth and clearings; common.

#### ERICACEAE

*Arbutus unedo* L. P caesp Steno-Medit.

PICCI (1972).

Punta La Guardia [21] – 28.VI/1.VII.2002 – Some exemplars in the brush growth of the northern area; very rare.

*Erica arborea* L. P caesp Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Punta La Guardia [21] – 4.XII.2001 – Brush growth of the northern sector; sporadic.

+ *Erica scoparia* L.

PICCI (1972) - Not observed.

#### PRIMULACEAE

*Anagallis arvensis* L. T rept Subcosmop.

PICCI (1972) sub *Anagallis arvensis* L. ssp. *phoenicea* (Scop.).

La Casetta [9] – 24.IV.2002 – Meadows and along the pathways; diffuse.

*Anagallis foemina* Miller T rept Subcosmop.

PICCI (1972) sub *Anagallis arvensis* L. ssp. *coerulea* Schreber.

Falconara [6] – 9/11.VI.2003 – Clearings, small meadows amongst the rocks; sporadic.

+ *Anagallis arvensis* L. ssp. *micrantha* (Gr. et Godr.) Rouy

PICCI (1972) - Not observed.

*Asterolinon linum-stellatum* (L.) Duby T scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 24.IV.2002 – Small meadows among the cliffs; common.

*Samolus valerandi* L. H scap Subcosmop.

PICCI (1972).

L'Orto [8] – 28.VI/1.VII.2002 – Damp environments, pools of stagnant water in the vicinity of the springs; common.

#### PLUMBAGINACEAE

*Limonium articulatum* (Loisel.) O. Kuntze Ch suffr Endem. Sa

PICCI (1972); BOCCHIERI (1995).

Cala Spagnola [4] – 4.XII.2001 – Coastal cliffs; common.

+ *Limonium articulatum* x *oleifolium*

PICCI (1972) - Not observed.

*Limonium hermaeum* (Pignatti) Pignatti Ch suffr Endem. Sa

PICCI (1972); LORENZONI & CHIESURA LORENZONI (1973) sub *Limonium tenuiculum* (Tin) ssp. *hermaeum* Pign.; ARRIGONI & al. (1977-1991); BOCCHIERI (1995).

Falconara [6] – 9/11.VI.2003 – Coastal cliffs; common.

***Limonium protohermaeum*** Arrigoni et Diana Ch suffr Endem. Sa  
ARRIGONI & al. (1977-1991); BOCCHIERI (1995).  
Cala Spagnola [4] – 9/11.VI.2003 – Coastal cliffs; common.

***Limonium virgatum*** (Willd.) Fourr H ros Euri-Medit.  
BÉGUINOT (1929); PICCI (1972) sub *Limonium oleifolium* Miller ssp. *oleifolium* var. *majus* (Guss.) Pignatti; PICCI (1972) sub *Limonium oleifolium* Miller ssp. *oleifolium* var. *oleifolium*.  
Falconara [6] – 9/11.VI.2003 – Coastal cliffs; common.

+ ***Limonium vulgare*** Mill.  
PICCI (1972) - Not observed.

#### OLEACEAE

***Olea europaea*** L. P scap Steno-Medit.  
PICCI (1972).  
Villa Tamponi [26] – 4.XII.2001 – Some exemplars in the vicinity of the houses.

***Olea europaea*** L. var. *silvestris* Brot. P caesp Steno-Medit.  
BÉGUINOT (1929) sub *Olea europaea-Oleaster* (Hoffmgs. et LK); PICCI (1972) sub *Olea europaea* ssp. *silvestris* Mill.  
Between La Casetta [9] and Costa dell'Aia [5] – 4.XII.2001 – Woods; diffuse.

Note: Béguinot stressed the wood formations of this entity reporting “...magnificent individual trees...”, which still today can be admired.

***Phillyrea angustifolia*** L. P caesp Steno-W-Medit.  
PICCI (1972).  
La Casetta [9] – 4.XII.2001 – Woods and brush growth in arid areas; common.

***Phillyrea latifolia*** L. P caesp Steno-Medit.  
PICCI (1972).  
Punta La Guardia [21] – 24.IV.2002 – Brush and wood growth; common.

#### GENTIANACEAE

***Centaurium erythraea*** Rafn H bienn Paleotemp.  
PICCI (1972) sub *Centaurium umbellatum* Gilibert.

La Casetta [9] – 17.VI.2002 – Clearings amongst the brush growth; common.

*Centaureum maritimum* (L.) Fritsch T scap Steno-Medit.  
BÉGUINOT (1929) sub *Erythraea maritima* Pers.; PICCI (1972).

La Casetta [9] – 24.IV.2002 – Arid meadows among the brush growth; common.

#### <sup>i</sup> APOCYNACEAE

<sup>i</sup> *Nerium oleander* L. P caesp S-Medit.  
PICCI (1972).

Villa Tamponi [26] – 4.XII.2001 – A stand of exemplars in the open clearings adjacent to the houses.

#### ASCLEPIADACEAE

*Vincetoxicum hirundinaria* Medicus H scap Eurasiat.  
PICCI (1972) sub *Vincetoxicum officinale* Moench.

Cala Spagnola [4] – 17.V.2002 – Cliffs exposed to the sun and rocky crevices along the coast; common.

#### CONVOLVULACEAE

*Convolvulus althaeoides* L. H scand Steno-Medit.  
PICCI (1972).

Ruderi di Ponziano [25] – 28.VI/1.VII.2002 – Amongst the brush growth and in the clearings; sporadic.

+ *Convolvulus arvensis* L.  
PICCI (1972) - Not observed.

\* *Convolvulus siculus* L. T scap S-Medit.  
Between La Casetta [9] and Punta La Guardia [21] – 17.V.2002 – Arid meadows among the rocks; common.

\* *Cuscuta planifolia* Ten. T par Euri-Medit.  
Pedraglione [23] – 9/11.VI.2003 – Clearings and amongst the brush growth; very rare.

## BORAGINACEAE

+ *Borago officinalis* L.

PICCI (1972) sub *Borrigo officinalis* L. - Not observed.

+ *Echium arenarium* Guss.

PICCI (1972) - Not observed.

*Echium plantagineum* L. T scap Euri-Medit.

BÉGUINOT (1929); PICCI (1972) sub *Echium plantagineum* L. var. *megalanthos* (Lap.) Fiori et sub *Echium maritimum* (Willd.) Poir.

La Casetta [9] – 24.IV.2002 – Arid pastureland meadows; common.

\* *Echium sabulicola* Pomel H scap Steno-Medit.-Occid.

Between Punta Cariato [15] and Cala di Chiesa [3] – 17.V.2002 – Sandy clearings; sporadic.

\* *Heliotropium europaeum* L. T scap Euri-Medit.-Turán.

Villa Tamponi [26] – 28.VI/1.VII.2002 – Pastureland meadows round the houses; rare.

+ *Myosotis collina* Hoffm.

PICCI (1972) - Not observed.

## Verbenaceae

*Vitex agnus-castus* L. P caesp Steno-Medit.-Turán.

PICCI (1972).

Cala di Chiesa [3] – 17.VI.2002 – Along the stream in the area to the rear of the bay; rare.

## \* CALLITRICHACEAE

\* *Callitriche stagnalis* Scop. I rad Eurasiat.

L'Orto [8] – 17.VI.2002 – Pools of water along the stream; common.

## LAMIACEAE

*Lamium amplexicaule* L. T scap Paleotemp.

PICCI (1972).

Villa Tamponi [26] – 11.III.2003 – Small nitrophilous meadows; rare.

*Lavandula stoechas* L. NP Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Between La Casetta [9] and Villa Tamponi [26] – 4.XII.2001 – Low brush growth; common.

\* *Mentha requienii* Bentham H rept Endem. Sa-Co

Between Cala Spagnola [4] and La Vedetta [11] – 17.V.2002 – Damp environments in rock crevices associated with Briophyta; very rare.

*Micromeria graeca* (L.) Bentham Ch suffr Steno-Medit.

PICCI (1972) sub *Satureja graeca* L. var. *tenuifolia* (Ten.) Fiori.

La Casetta [9] – 17.V.2002 – On pebbly soils, amongst the cliffs; common.

*Prasium majus* L. Ch frut Steno-Medit.

PICCI (1972).

Pumpija [24] – 24.IV.2002 – Low brush growth in rocky crevices; common.

*Rosmarinus officinalis* L. NP Steno-Medit.

PICCI (1972).

La Vedetta [11] – 9/11.VI.2003 – Low brush growth; rare.

*Sideritis romana* L. T scap Steno-Medit.

PICCI (1972).

Punta La Guardia [21] – 9/11.VI.2003 – Pastureland meadows, amongst the rocks in arid areas; common.

*Stachys arvensis* (L.) L. T scap Subcosmop.

PICCI (1972).

Punta dell'Aia [17] – 24.IV.2002 – Arid pastureland meadows and on very stony soils; common.

*Stachys glutinosa* L. Ch frut Endem. Sa-Co-AT

BÉGUINOT (1929); PICCI (1972); BOCCHIERI (1995).

La Casetta [9] – 4.XII.2001 – Rocky outcrops throughout the area under study; common.

*Stachys ocymastrum* (L.) Briq. T scap W-Medit.

PICCI (1972) sub *Stachys hirta* L.

Pumpija [24] – 9/11.VI.2003 – Clearings amongst the rocks; sporadic.

*Teucrium marum* L. Ch frut Endem. Sa-Co-BI-AT-H  
 PICCI (1972).  
 La Vallata [10] – 17.VI.2002 – Cliffs and pebbly soils; sporadic.

## SOLANACEAE

*Solanum nigrum* L. T scap Cosmop. sinantrop.  
 PICCI (1972).  
 Villa Tamponi [26] – 17.V.2002 – Highly nitrophilous meadows in the vicinity of the houses; rare.

## SCROPHULARIACEAE

\* *Bellardia trixago* (L.) All. T scap Euri-Medit.  
 Villa Tamponi [26] – 17.V.2002 – Clearings amongst the brush growth; common.

*Cymbalaria aequitriloba* (Viv.) A. Cheval. Ch rept Endem. Sa-Co-AT-BI  
 PICCI (1972) sub *Linaria aequitriloba* (Viv.) Duby; BOCCHIERI (1995).  
 Between Cala Spagnola [4] and Monte Cariato [12] – 11.III.2003 – Damp and shaded rocky crevices; rare.

*Kickxia cirrhosa* (L.) Fritsch T scap Steno-Medit.  
 PICCI (1972) sub *Linaria cirrosa* (L.) Willd.  
 La Vallata [10] – 17.VI.2002 – Amongst the rocks along the stream bed; very rare.

*Linaria micrantha* (Cav.) Hoff. et Lk. T scap Steno-Medit.  
 PICCI (1972) sub *Linaria arvensis* (L.) Desf. ssp. *micrantha* (Cav.) Hoff. et Lk.  
 La Vedetta [11] – 9/11.VI.2003 – On gravelly soils and heaps of gravel; sporadic.

*Linaria pelisseriana* (L.) Miller T scap Medit.-Atl.  
 BÉGUINOT (1929); PICCI (1972) sub *Linaria pelisseriana* Mill. var. *gracilis* (F.G. Dietr.) Chav.  
 Punta La Guardia [21] – 24.IV.2002 – Clearings, clumps of brush; common.



+ *Linaria triphylla* (L.) Miller  
PICCI (1972) - Not observed.

*Misopates orontium* (L.) Rafin. T scap Paleotemp.  
BÉGUINOT (1929) sub *Antirrhinum orontium* L.; PICCI (1972) sub *Antirrhinum orontium* L. var. *calycinum* (Vent.) Fiori.  
Punta Leoneddu [22] – 24.IV.2002 – Arid meadows among the rocks; common.

\* *Parentucellia viscosa* (L.) Caruel T scap Medit-Atl.  
Casa Vecchia [1] – 9/11.VI.2003 – Clearings, alongside the pathways; sporadic.

*Scrophularia peregrina* L. T scap Steno-Medit.  
PICCI (1972).  
Cala Spagnola [4] – 17.V.2002 – Clearings and rocky crevices; rare.

*Scrophularia trifoliata* L. H scap Endem. Sa-Co-AT  
PICCI (1972); BOCCHIERI (1995).  
Punta La Guardia [21] – 24.IV.2002 – Shady cliff environments; sporadic.

\* *Verbascum conocarpum* Moris H bienn Endem. Sa-Co-AT  
Punta dell'Aia [17] – 9/11.VI.2003 – Rocky outcrops along the coast; very rare.

+ *Verbascum thapsus* L.  
PICCI (1972) - Not observed.

*Veronica cymbalaria* Bodard T scap Euri-Medit.  
PICCI (1972).  
Cala Spagnola [4] – 11.III.2003 – Rocks, walls and soils with high stone content; sporadic.

#### OROBANCHACEAE

\* *Orobanche minor* Sm. T par Subcosmop.  
La Casetta [9] – 4.XII.2001 – Pastureland meadows, amongst the brush growth; very rare.

+ *Orobanche schultzii* Mutel var. *stricta* (Moris) Fiori  
PICCI (1972) - Not observed.

## RUBIACEAE

*Galium aparine* L. ssp. *aparine* T scap Eurasiat.  
PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Clearings and clumps of brush;  
common.

+ *Galium aparine* L. ssp. *spurium* L.  
PICCI (1972) - Not observed.

*Galium murale* (L.) All. T scap Steno-Medit.  
BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 28.VI/1.VII.2002 – Cliffs, dry stone walls and pebbly  
soils; common.

\* *Galium parisiense* L. T scap Euri-Medit.

La Vedetta [11] – 9/11.VI.2003 – Rocky environments, clearings amongst  
the brush growth; sporadic.

+ *Galium rotundifolium* L.  
PICCI (1972) - Not observed.

\* *Galium scabrum* L. H scap W-Medit-Mont.

L'Orto [8] – 17.VI.2002 – Wood and brush stands in the northern sector;  
very rare.

+ *Galium setaceum* Lam.  
PICCI (1972) - Not observed.

*Galium verrucosum* Hudson T scap Steno-Medit.  
PICCI (1972) sub *Galium saccharatum* Allioni.

La Casetta [9] – 24.IV.2002 – rocky environments, clearings; common.

*Rubia peregrina* L. P lian Steno-Medit.-Macarones.

PICCI (1972) sub *Rubia peregrina* L. var. *anglica* Huds.

La Casetta [9] – 4.XII.2001 – Woods and brush growth; diffuse.

***Sherardia arvensis*** L. T scap Subcosmop.

BÉGUINOT (1929); PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Degraded meadows and pasturelands; very diffuse.

***Valantia muralis*** L. T scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Cala Spagnola [4] – 17.V.2002 – Rock crevices, small meadows on stony soil; common.

#### PLANTAGINACEAE

***Plantago afra*** L. T scap Steno-Medit.

PICCI (1972) sub *Plantago psyllium* L.

La Casetta [9] – 21.V.2002 – Pastureland meadows, amongst the rocks; common.

+ ***Plantago albicans*** L.

PICCI (1972) - Not observed.

***Plantago bellardii*** All. T scap S-Medit.

PICCI (1972): *Plantago bellardi* All. var. *pygmaea* (Lam.) Fiori

La Casetta [9] – 21.V.2002 – Small arid sandy meadows; common.

***Plantago coronopus*** L. ssp. *commutata* (Guss.) Pilger T scap Euri-Medit.

BÉGUINOT (1929) sub *Plantago Coronopus* L. ; PICCI (1972) sub *Plantago coronopus* L.

La Casetta [9] – 4.XII.2001 – Arid, sandy meadows at times in a brackish environment; diffuse.

+ ***Plantago crassifolia*** Forskal

PICCI (1972) - Not observed.

***Plantago lagopus*** L. T scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972) sub *Plantago lagopus* L. var. *eristachya* (Ten.) Fiori.

La Casetta [9] – 4.XII.2001 – Arid meadows alongside the pathways; common.

***Plantago lanceolata*** L. H ros Cosmop.

PICCI (1972) sub *Plantago lanceolata* L. var. *maritima* Gr. et Godr.

La Casetta [9] – 21.V.2002 – Meadows and clearings with low brush growth; sporadic.

#### CAPRIFOLIACEAE

***Lonicera implexa*** Aiton P lian Steno-Medit.

PICCI (1972).

Pedraglione [23] – 9/11.VI.2003 – Woods and brush growth; very rare.

#### VALERIANACEAE

***Centranthus calcitrapae*** (L.) Dufresne T scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972) sub *Kentranthus calcitrapa* (L.) Dufr.

Punta La Guardia [21] – 24.IV.2002 – Amongst the brush growth, alongside the pathways; common.

+ *Valerianella dentata* Pollich var. *eriocarpa* (Desv.) Fiori

PICCI (1972) - Not observed.

+ *Valerianella dentata* Pollich var. *microcarpa* Lois.

BÉGUINOT (1929) sub *Valerianella microcarpa* Lois.; PICCI (1972) - Not observed.

#### CAMPANULACEAE

***Campanula erinus*** L. T scap Steno-Medit.

PICCI (1972).

La Casetta [9] – 24.IV.2002 – Clearings, cliffs and alongside the pathways; sporadic.

***Jasione montana*** L. H bienn Europeo-Caucas.

PICCI (1972).

Casa Vecchia [1] – 9/11.VI.2003 – Arid environments along the pathways; rare.

Note: Picci also mentioned two varieties: *litoralis* Fr. and *mediterranea* (Rouy) Fiori.

***Solenopsis laurentia*** (L.) C. Presl T scap Steno-Medit. Occid.

PICCI (1972) sub *Laurentia michelii* DC.

L'Orto [8] – 9/11.VI.2003 – Small meadows downstream from the spring; rare.

ASTERACEAE

*Aetheorhiza bulbosa* (L.) Cass. G bulb Steno-Medit.

PICCI (1972).

La Vedetta [11] – 4.XII.2001 – On soils with high stone content; common.

*Andryala integrifolia* L. T scap Medit.-Occid.

BÉGUINOT (1929).

Punta La Guardia [21] – 24.IV.2002 – Amongst the brush growth, on the cliffs and pastureland areas; common.

*Anthemis arvensis* L. T scap Subcosmop.

BÉGUINOT (1929); PICCI (1972) sub *Anthemis arvensis* L. ssp. *nicaeensis* Willd.

La Casetta [9] – 17.V.2002 – Pastureland; diffuse.

+ *Anthemis maritima* L.

PICCI (1972) - Not observed.

*Bellis annua* L. T scap Steno-Medit.–Macarones.

PICCI (1972).

Falconara [6] – 9/11.VI.2003 – Damp environments, along the pathways; sporadic.

*Bellis perennis* L. H ros Circumbor.

PICCI (1972).

La Casetta [9] – 19.IX.2002 – Clearings amongst the rocks and along the pathways; common.

*Bupthalmum inuloides* Moris Ch frut Endem. Sa

PICCI (1972); ARRIGONI & al. (1977-1991); BOCCHIERI (1995).

Monte Castello [13] – 9/11.VI.2003 – Shady cliffs and soils with high stone content; very rare.

*Calendula arvensis* L. T scap Euri-Medit.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 24.IV.2002 – Pastureland meadows, alongside the pathways; very diffuse.

- Carduus cephalanthus* Viv. H bienn Steno-Medit.  
 PICCI (1972); BOCCHIERI (1995).  
 Punta di Scirocco [19] – 21.V.2002 – Arid clearings amongst the brush growth; rare.
- \* *Carduus fasciculiflorus* Viv. H bienn Endem. Sa-Co-AT  
 Punta Leoneddu [22] – 21.V.2002 – Arid environments, pastureland; rare.
- Carlina corymbosa* L. H scap Steno-Medit.  
 BÉGUINOT (1929); PICCI (1972).  
 Between Pumpija [24] and Monte Castello [13] – 4.XII.2001 – Arid meadows alongside the pathways; common.
- Chamaemelum fuscatum* (Brot.) Vasc. T scap W-Medit.  
 BÉGUINOT (1929) sub *Anthemis praecox* Lk.  
 Punta La Guardia [21] – 24.IV.2002 – Damp meadows amongst the brush growth; common.
- Chrysanthemum coronarium* L. T scap Steno-Medit.  
 BÉGUINOT (1929).  
 Villa Tamponi [26] – 17.V.2002 – Observed only in the meadows around the houses; rare.
- + *Crepis bulbosa* Tausch  
 BÉGUINOT (1929) - Not observed.
- + *Crepis bellidifolia* Lois.  
 PICCI (1972) - Not observed.
- \* *Crupina crupinastrum* (Moris) Vis. T scap Steno-Medit.  
 Punta La Guardia [21] – 24.IV.2002 – Arid meadows alongside the pathways; rare.
- Dittrichia viscosa* (L.) W. Greuter H scap Euri-Medit.  
 PICCI (1972) sub *Inula viscosa* Ait.  
 Cala Spagnola [4] – 17.V.2002 – Cliffs, clearings and along stream beds; common.
- Dittrichia graveolens* Greuter T scap Medit.-Turan.  
 PICCI (1972) sub *Inula graveolens* Desf.  
 Between Punta Falcone [20] and Punta di Levante [18] – 9/11.VI.2003 – Clearings along the coast; sporadic.

\* *Erigeron canadensis* L.

PICCI (1972) - Not observed.

*Evax pygmaea* (L.) Brot. T rept Steno-Medit.

PICCI (1972).

Casa Vecchia [1] – 9/11.VI.2003 – Clearings alongside the pathways; sporadic.

*Filago pyramidata* L. T scap Paleotemp.

PICCI (1972) sub *Filago germanica* L.

Cala Spagnola [4] – 17.V.2002 – Arid meadows, alongside the pathways; common.

Note: Picci mentioned the two varieties *eriocephala* Guss and *prostrata* (Parl.) Fiori.

*Galactites tomentosa* Moench H bienn Steno-Medit.

BÉGUINOT (1929) sub *Lupsia Galactites* O. Krze.; PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Arid pastureland meadows; common.

*Hedynois cretica* (L.) Willd. T scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Casa Vecchia [1] – 28.VI/1.VII.2002 – arid environments, among the rocks; common.

Note: Picci and Béguinot mention various entities which, according to *Flora Europaea* all belong to this species. Picci (1972): *H. cretica* (L.) Willd. ssp. *tubiformis* (Ten.) Murb., *H. rhagadioloides* (L.) Willd. ssp. *cretica* (L.) Hayek, *H. rhagadioloides* (L.) Willd.; Béguinot (1929): *H. globulifera* Lam. ssp. *cretica* (Dum. – Cours.), *H. globulifera* Lam. ssp. *coronopifolia* (Ten.).

*Helichrysum italicum* (Roth) G. Don fil. ssp. *microphyllum* (Willd.) Nyman Ch suffr Endem. Sa-Co-BI-Cr

BÉGUINOT (1929) sub *Helichrysum italicum* v. *microphyllum* (Camb.); PICCI (1972) sub *Helichrysum italicum* G. Don var. *microphyllum* Cambess.; LORENZONI & CHIESURA LORENZONI (1973) sub *Helichrysum italicum* G. Don var. *microphyllum* Cambess.

Cala Spagnola [4] – 4.XII.2001 – Woods along the coast; diffuse.

***Hypochoeris achyrophorus*** L. T scap Steno-Medit.

PICCI (1972) sub *Hypochoeris aetnensis* Ball.

Punta Falcone [20] – 9/11.VI.2003 – Amongst the cliffs, on a stony substratum; rare.

Note: Picci also reported the variety *foliosa* Arc.

+ ***Hypochoeris glabra*** L.

BÉGUINOT (1929); PICCI (1972) - Not observed.

+ ***Hypochoeris radicata*** L.

BÉGUINOT (1929) - Not observed.

+ ***Inula conyza*** DC.

BÉGUINOT (1929) - Not observed.

***Inula crithmoides*** L. Ch suffr SW-Europ.

PICCI (1972).

Between Punta Falcone [20] and Punta dei Porri [16] – 9/11.VI.2003 – Halophilic environments; sporadic.

***Leontodon tuberosus*** L. H ros Steno-Medit.

BÉGUINOT (1929).

La Casetta [9] – 4.XII.2001 – Clearings amongst the brush growth; common.

***Logfia gallica*** (L.) Cosson *et* Germ. T scap Euri- Medit.

BÉGUINOT (1929) sub *Filago gallica* L. v. *tenuifolia* Presl.; PICCI (1972) sub *Filago gallica* L.

Casa Vecchia [1] – 28.VI/1.VII.2002 – Arid meadows, alongside the pathways; common.

***Phagnalon saxatile*** (L.) Cass. Ch suffr W-Medit.

PICCI (1972).

Cala Spagnola [4] – 4.XII.2001 – Cliffs and clearings; common.

Note: Picci also mentioned the ssp. *eu-saxatile*.

***Pulicaria odora*** (L.) Reichenb. H scap Euri-Medit.

PICCI (1972).

Punta Leoneddu [22] – 21.V.2002 – Clearings, amongst the brush growth and alongside the pathways; common.



\* *Pulicaria vulgaris* Gaertn. var. *sardoa* Fiori

PICCI (1972) - Not observed.

*Reichardia picroides* (L.) Roth H scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Monte Castello [13] - 9/11.VI.2003 - Coastal cliffs, arid meadows; common.

*Rhagadiolus stellatus* (L.) Gaertner T scap Euri-Medit.

PICCI (1972).

Cala Spagnola [4] - 17.V.2002 - Clearings, alongside the pathways; sporadic.

\* *Senecio cineraria* DC. Ch suffr W-Medit.

Monte Cariato [12] - 11.III.2003 - Cliffs in the northern sector; very rare.

*Senecio leucanthemifolius* Poirer T scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Punta La Guardia [21] - 24.IV.2002 - Cliffs and rocky crevices; common.

*Senecio lividus* L. T scap Steno-Medit.

PICCI (1972).

Punta La Guardia [21] - 24.IV.2002 - Clearings amongst the rocks along the coastal strip; common.

*Senecio vulgaris* L. T scap Cosmop.

BÉGUINOT (1929).

Villa Tamponi [26] - 11.III.2003 - Meadows round the houses; sporadic.

\* *Silybum marianum* (L.) Gaertner H bienn Medit.-Turan.

Villa Tamponi [26] - 24.IV.2002 - Meadows round the houses; rare.

\* *Sonchus arvensis* L. H scap Subcosmop.

Casa Vecchia [1] - 28.VI/1.VII.2002 - Degraded clearings; rare.

*Sonchus oleraceus* L. T scap Subcosmop.

PICCI (1972).

Villa Tamponi [26] - 17.V.2002 - Pastureland meadows, alongside the pathways; common.

*Sonchus tenerrimus* L. T scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

Villa Tamponi [26] – 17.V.2002 – Cliffs and meadows in the vicinity of the houses; rare.

+ *Taraxacum officinale* Weber

PICCI (1972) - Not observed.

*Tolpis umbellata* Bertol. T scap Steno-Medit.

BÉGUINOT (1929); PICCI (1972) sub *Tolpis barbata* (L.) Gaertn. ssp. *umbellata* (Bert.) Maire

Punta La Guardia [21] – 24.IV.2002 – Meadows among the rocks, alongside the pathways; common.

+ *Tolpis virgata* (Desf.) Pers.

PICCI (1972) - Not observed.

*Urospermum dalechampii* (L.) Scop. H scap Euri-Medit.-Centro-Occid.

PICCI (1972) sub *Urospermum dalechampii* (L.) Schmidt.

Punta La Guardia [21] – 24.IV.2002 – Cliffs, clearings and alongside the pathways; common.

*Urospermum picroides* (L.) Scop. T scap Euri-Medit.

BÉGUINOT (1929); PICCI (1972) sub *Urospermum picroides* (L.) Schmidt var. *asperum* Lam. et DC.

Punta dell'Aia [17] – 24.IV.2002 – Clearings, alongside the pathways; common.

## ANGIOSPERMAE MONOCOTYLEDONES

### JUNCAGINACEAE

+ *Triglochin bulbosum* L.

PICCI (1972) - Not observed.

\* *Triglochin laxiflorum* Guss. G bulb Steno-Medit.-Occid.

Cala di Chiesa [3] – 19.IX.2002 – Small brackish-damp meadows along the coast; sporadic.

## \* POSIDONIACEAE

\* *Posidonia oceanica* (L.) Delile I rad Steno-Medit.

Between Cala Spagnola [4] and Punta Cariato [15] – 4.XII.2001 – Heaps of waste from this marine phanerogam were observed in various bays on the island.

Note: in the sea bed of the whole area between the islands of Tavolara, Molara and Molaroto there are considerable prairies of this entity as indicated, in general terms, by LORENZONI & CHIESURA LORENZONI (1973).

## LILIACEAE

*Allium ampeloprasum* L. G bulb Euri-Medit.

PICCI (1972).

Punta La Guardia [21] – 17.VI.2002 – Meadows, clearings amongst the brush growth, cliffs along the coast; common.

\* *Allium roseum* L. G bulb Steno-Medit.

Pumpija [24] – 24.IV.2002 – Arid meadows with very stony soils; rare.

*Allium subhirsutum* L. G bulb Steno-Medit.

PICCI (1972) sub *Allium subhirsutum* L. ssp. *ciliatum* (Cyr.) Cif. et Giac.

Punta La Guardia [21] – 24.IV.2002 – Cliffs, meadows and clearings amongst the brush growth; common.

\* *Allium triquetrum* L. G bulb Steno-Medit.-Occid.

Cala Spagnola [4] – 4.XII.2001 – Damp, shady environments; common.

\* <sup>i</sup> *Aloe arborescens* Miller NP Origine orientale

La Casetta [9] – 4.XII.2001 – One exemplar was noted in the flower bed near the building.

\* *Asparagus acutifolius* L. G rhiz Steno-Medit.

Punta La Guardia [21] – 24.IV.2002 – Clearings and clumps of brush; common.

*Asparagus albus* L. Ch frut Steno-Medit.-Occid.

PICCI (1972).

La Casetta [9] – 4.XII.2001 – Arid environments among the rocks and clearings; common.

+ *Asparagus aphyllus* L.

PICCI (1972) - Not observed.

+ *Asparagus officinalis* L.

PICCI (1972) - Not observed.

*Asparagus horridus* L. NP S-Medit.PICCI (1972) sub *Asparagus stipularis* Forskal.

Monte Castello [13] – 9/11.VI.2003 – Clearings and arid environments; rare.

*Asphodelus aestivus* Brot. G rhiz Steno-Medit.BÉGUINOT (1929) sub *Asphodelus microcarpus* Viv. et Salz.; PICCI (1972) sub *Asphodelus microcarpus* Viv. et Salz.

La Casetta [9] – 4.XII.2001 – Pastureland meadows, clearings among the brush growth; diffuse.

*Brimeura fastigiata* (Viv.) Chouard G bulb Endem. Sa-Co-BIPICCI (1972) sub *Brimeura fastigiata* (Bert.) Chouard.; BOCCHIERI (1995).

Monte Castello [13] – 9/11.VI.2003 – Rock crevices in the northern sector; rare.

*Muscari comosum* (L.) Miller G bulb Euri-Medit.PICCI (1972) sub *Muscari comosum* (L.) Mill. ssp. *eu-comosum*.

Monte Castello [13] – 9/11.VI.2003 – Clearings amongst the brush growth and alongside the pathways; rare.

\* *Scilla autumnalis* L. G bulb Euri-Medit.

Between Cala Spagnola [4] and Cala di Chiesa [3] and between Cala Spagnola [4] and Villa Tamponi [26] – 19.IX.2002 – Along the pathways and in the clearings; rare.

*Smilax aspera* L. NP Paleosubtrop.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 4.XII.2001 – Woods and brush growth; diffuse.

Note: Picci mentioned the subspecies *eu-aspera* and also *mauritanica* (Desf.) Asch. et Graebn.*Urginea maritima* (L.) Baker G bulb Steno-Medit.-Macarones.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 4.XII.2001 – Arid environments amongst the rocks, clearings and cliffs; very diffuse.

*Urginea undulata* (Desf.) Steinh. G bulb S-Medit.

PICCI (1972).

Costa dell'Aia [5] – 21.V.2002 – Clearings amongst the rocks, alongside the pathways; rare.

\* <sup>i</sup> AGAVACEAE

\* <sup>i</sup> *Agave americana* L. P scap Nordamer.

Between La Vallata [10] and Cala di Chiesa [3] – 9/11.VI.2003 – Some exemplars among the bushes.

AMARYLLIDACEAE

*Narcissus tazetta* L. ssp. *aureus* (Loisel.) Baker G bulb Steno-Medit.

PICCI (1972) sub *Narcissus tazetta* L. ssp. *eu-tazetta*.

Punta Cariato [15] – 11.III.2003 – Cliffs and rocky crevices along the coast; common.

\* *Pancratium illyricum* L. G bulb Endem. Sa-Co-AT

La Vallata [10] – 9/11.VI.2003 – Clearings amongst the brush growth; very rare.

DIOSCOREACEAE

*Tamus communis* L. G rad Euri-Medit.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Woods, brush growth and rocky crevices; common.

IRIDACEAE

+ *Crocus imperati* Ten.

PICCI (1972) - Not observed.

\* *Crocus minimus* DC. G bulb Endem. Sa-Co-AT

Between Punta La Guardia [21] and Ruderì di Ponziano [25] – 24.IV.2002 – Clearings amongst the brush growth; rare.

Note: BOCCHIERI (1995) mentioned the probable presence of this entity on the island.

+ *Gladiolus segetum* Ker.-Gawl.

PICCI (1972) - Not observed.

+ *Iris foetidissima* L.

PICCI (1972) - Not observed.

\* <sup>i</sup> *Iris germanica* L. G rhiz Of doubtful provenance.

Villa Tamponi [26] – 24.IV.2002 – Meadows in the vicinity of the houses.

*Romulea bulbocodium* (L.) Sebastiani & Mauri G bulb Steno-Medit.

PICCI (1972).

Villa Tamponi [26] – 24.IV.2002 – Clearings and alongside the pathways; rare.

+ *Romulea columnae* S. et M.

BÉGUINOT (1929) - Not observed.

*Romulea ligustica* Parl. G bulb Steno-Medit. Sudoccid.

PICCI (1972).

Villa Tamponi [26] – 11.III.2003 – Small meadows alongside the pathways; sporadic.

\* *Romulea rollii* Parl. G bulb Steno-Medit.-Occid.

Villa Tamponi [26] – 11.III.2003 – Small meadows alongside the pathways; rare.

#### JUNCACEAE

*Juncus acutus* L. H caesp Euri-Medit.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 4.XII.2001 – Damp environments in the vicinity of the bays; common.

+ *Juncus acutus* Lam. ssp. *tommasini* (Parl.) Cif.-Giac.

PICCI (1972) - Not observed.

*Juncus articulatus* L. G rhiz Circumbor.

PICCI (1972) sub *Juncus foliosus* Desf.

L'Orto [8] – 9/11.VI.2003 – Damp environments; sporadic.

\* *Juncus bufonius* L. T caesp Cosmop.  
L'Orto [8] – 9/11.VI.2003 – Damp environments; rare.

+ *Juncus bufonius* L. ssp. *ambiguus* (Guss.) Schintz. et Kell.  
PICCI (1972) - Not observed.

*Juncus capitatus* Weig. T scap Euri-Medit.-Atl.  
PICCI (1972).  
Between Punta Arresto [14] and Falconara [6] – 9/11.VI.2003 – Damp, subsaline environments; rare.

\* *Juncus maritimus* Lam. G rhiz Subcosmop.  
Cala Spagnola [4] – 4.XII.2001 – Damp, subsaline environments; common.

+ *Juncus pygmaeus* L.C. Rich. ssp. *sardous* Bég.  
PICCI (1972) - Not observed.

#### POACEAE

*Agropyron junceum* (L.) Beauv. G rhiz Euri-Medit.  
PICCI (1972).  
Cala Spagnola [4] – 21.V.2002 – On sandy soil; rare.

+ *Agropyron repens* (L.) P. Beauv.  
PICCI (1972) - Not observed.

+ *Agrostis pallida* DC.  
PICCI (1972) - Not observed.

*Agrostis stolonifera* L. H rept Circumbor.  
PICCI (1972) sub *Agrostis alba* L. var. *maritima* (Lam.) Meyer.  
Monte Castello [13] – 9/11.VI.2003 – Damp environments; rare.

*Aira caryophyllea* L. T scap Paleosubtrop.  
PICCI (1972).  
Monte Castello [13] – 9/11.VI.2003 – Arid pastureland environments; sporadic.

+ *Aira cupaniana* Guss.  
BÉGUINOT (1929) - Not observed.

***Ammophila arenaria*** (L.) Link G rhiz Euri-Medit.  
 PICCI (1972); LORENZONI & CHIESURA LORENZONI (1973) sub *Ammophila arenaria* Lk ssp. *arundinacea* Host.

Cala Spagnola [4] – 21.V.2002 – On sandy soil; rare.

***Anthoxanthum odoratum*** L. H caesp Eurasiat.  
 PICCI (1972).  
 Monte Castello [13] – 9/11.VI.2003 – Pastureland meadows, clearings; sporadic.

Note: Picci also reported the variety *glabrescens* Celak.

\* ***Anthoxanthum ovatum*** Lag.

PICCI (1972) - Not observed.

\* ***Avellina michelii*** (Savi) Parl.

PICCI (1972) - Not observed.

***Avena barbata*** Potter T scap Euri-Medit.-Turan.  
 BÉGUINOT (1929) sub *Avena hirsuta* Moench; PICCI (1972) sub *Avena alba* Vahl. ssp. *eu-barbata* Maire.

La Casetta [9] – 24.IV.2002 – Clearings amongst the brush growth, pastureland meadows; common.

\* ***Avena sterilis*** L. ssp. *eu-sterilis*

PICCI (1972) - Not observed.

***Brachypodium distachyon*** (L.) Beauv. T scap Steno-Medit.-Turan.  
 PICCI (1972).

La Casetta [9] – 17.V.2002 – Pastureland meadows, clearings; common.

***Brachypodium pinnatum*** (L.) Beauv. H caesp Eurasiat.

PICCI (1972).

La Casetta [9] – 17.V.2002 – Arid meadows among the rocks; common.

***Brachypodium retusum*** (Pers.) Beauv. H caesp Steno-Medit.-Occid.

BÉGUINOT (1929) sub *Brachypodium ramosum* R. et S.; PICCI (1972) sub *Brachypodium ramosum* (L.) R. et S.

La Casetta [9] – 4.XII.2001 – Cliffs, clearings and amongst the brush growth; common.



- Briza maxima*** L. T scap Paleo-Subtrop.  
BÉGUINOT (1929); PICCI (1972).  
Villa Tamponi [26] – 4.XII.2001 – Clearings, amongst the brush growth;  
common.
- + ***Briza media*** L.  
PICCI (1972) - Not observed.
- Briza minor*** L. T scap Subcosmop.  
PICCI (1972).  
Between Cala Spagnola [4] and Punta Cariato [15] – 17.V.2002 – Damp  
meadows; sporadic.
- \* ***Bromus fasciculatus*** C. Presl T scap S-Medit.  
Punta La Guardia [21] – 24.IV.2002 – Clearings and alongside the pathways;  
rare.
- Bromus hordeaceus*** L. T scap Subcosmop.  
PICCI (1972) sub *Bromus mollis* L.  
Cala Spagnola [4] – 21.V.2002 – Arid meadows and clearings; sporadic.
- Bromus rubens*** L. T scap S-Medit.-Turan.  
PICCI (1972).  
Punta La Guardia [21] – 24.IV.2002 – Clearings and alongside the path-  
ways; sporadic.
- + ***Bromus secalinus*** L. ssp. *vulgaris* (Roch.) Denin  
PICCI (1972) - Not observed.
- Bromus sterilis*** L. T scap Euri-Medit.-Turan.  
PICCI (1972).  
Punta La Guardia [21] – 24.IV.2002 – Arid environments among the rocks;  
rare.
- Cynodon dactylon*** (L.) Pers. G rhiz Termo-Cosmop.  
PICCI (1972).  
Punta La Guardia [21] – 17.VI.2002 – Pastureland meadows; common.
- Cynosurus elegans*** Desf. T scap Steno-Medit.  
PICCI (1972) sub *Cynosurus elegans* Desf. ssp. *eu-elegans*.  
Cala Spagnola [4] – 17.V.2002 – Arid environments among the rocks;  
common.

***Dactylis glomerata*** L. H scap Paleotemp.

PICCI (1972).

Cala Spagnola [4] – 24.IV.2002 – Clearings and cliffs; common.

Note: Picci also mentioned *Dactylis glomerata* L. ssp *hispanica* (Roth) Nyman. Since we did not observe substantial differences between exemplars of this entity we consider as included also *Dactylis hispanica* Roth.

***Desmazeria marina*** (L.) Druce T scap Medit.-Atl.

BÉGUINOT (1929) sub *Catapodium loliaceum* Lk.; PICCI (1972) sub *Catapodium loliaceum* (Huds.) Link.

Cala Spagnola [4] – 24.IV.2002 – Small meadows near the sea, sandy; common.

***Desmazeria rigida*** (L.) Tutin T scap Euri-Medit.

PICCI (1972) sub *Scleropoa rigida* (L.) Griseb.

Cala Spagnola [4] – 24.IV.2002 – Arid meadows among the rocks; rare.

***Gastridium ventricosum*** (Gouan) Schinz & Thell. T scap Medit.-Atl.

PICCI (1972) sub *Gastridium lendigerum* (L.) Gaud.

Casa Vecchia [1] – 28.VI /1.VII.2002 – Arid meadows alongside the pathways; common.

+ ***Gaudinia fragilis*** (L.) P. Beauv.

PICCI (1972) - Not observed.

+ ***Holcus lanatus*** L.

PICCI (1972) - Not observed.

***Hordeum murinum*** L. ssp. ***leporinum*** (Link) Arcangeli T scap Euri-Medit.

BÉGUINOT (1929) sub *Hordeum murinum - leporinum* Lk.; PICCI (1972). La Casetta [9] – 24.IV.2002 – Degraded clearings; common.

Note: Picci also reported *Hordeum murinum* L. which is included in this entity.

***Hyparrhenia hirta*** (L.) Stapf H caesp Paleotrop.

PICCI (1972).

Casa Vecchia [1] – 28.VI/1.VII.2002 – Clearings amongst the brush growth; common.

***Lagurus ovatus*** L. ssp. *ovatus* T scap Euri-Medit.

BÉGUINOT (1929); PICCI (1972).

Villa Tamponi [26] – 4.XII.2001 – Meadows and along the pathways; common.

\* ***Lagurus ovatus*** L. ssp. *nanus* Messeri

PICCI (1972) - Not observed.

***Lamarckia aurea*** (L.) Moench T scap Steno-Medit.-Turan.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 24.IV.2002 – Small meadows on arid soil alongside the pathways; common.

\* ***Lepturus cylindricus*** (Willd.) Trin.

PICCI (1972) - Not observed.

\* ***Lolium perenne*** L.

PICCI (1972) - Not observed.

***Lophochloa cristata*** (L.) Hyl. T scap Subcosmop.

BÉGUINOT (1929) sub *Koeleria phleoides* Pers.

Casa Vecchia [1] – 28.VI/1.VII.2002 – Clearings, amongst the rocks; sporadic.

***Lophochloa pubescens*** (Lam.) Scholz T scap Steno-Medit.

PICCI (1972) sub *Koeleria pubescens* (Lam.) P. Beauv.

Pumpija [24] – 9/11.VI.2003 – Cliffs and pastureland meadows; sporadic.

\* ***Melica ciliata*** L. H caesp Euri-Medit.-Turan.

Casa Vecchia [1] – 28.VI/1.VII.2002 – Cliffs; rare.

***Melica minuta*** L. H caesp Steno-Medit.

PICCI (1972) sub *Melica arrecta* Kuntze.

Pumpija [24] – 28.VI/1.VII.2002 – Rock crevices; rare.

\* ***Parapholis incurva*** (L.) C. E. Hubbard T scap Medit.-Atl.

Cala Spagnola [4] – 21.V.2002 – Subsaline environments, on sand; common.

\* ***Phleum arenarium*** L.

PICCI (1972) - Not observed.

+ *Pholiurus filiformis* (Roth) Schinz. et Thell.

PICCI (1972) - Not observed.

*Piptatherum miliaceum* (L.) Cosson H caesp Steno-Medit.-Turan.

PICCI (1972) sub *Oryzopsis miliacea* (L.) Asch. et Schw.

Cala di Chiesa [3] – 11.III.2003 – Amongst the brush growth and in clearings in damp shady areas; rare.

*Poa annua* L. T caesp Cosmop.

BÉGUINOT (1929).

La Casetta [9] – 24.IV.2002 – Small meadows alongside the pathways; common.

*Poa bulbosa* L. H caesp Paleotemp.

PICCI (1972).

Cala di Chiesa [3] – 11.III.2003 – Meadows alongside the pathways; common.

+ *Poa trivialis* L.

PICCI (1972) - Not observed.

*Polypogon maritimus* Willd. T scap Steno-Medit.-Macarones.

PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – Damp environments, on sand; rare.

*Polypogon viridis* (Gouan) Breistr. H caesp Paleosubtrop.

PICCI (1972) sub *Agrostis semiverticillata* Forskal.

L'Orto [8] – 17.V.2002 – Damp environments, clearings; rare.

\* *Sporobolus pungens* (Schreber) Kunth G rhiz Subtrop.

Cala Spagnola [4] – 21.V.2002 – Coastal cliffs, sandy soils; common.

*Stipa capensis* Thunb. T scap Steno-Medit.

PICCI (1972) sub *Stipa retorta* Cav.

Monte Castello [13] – 9/11.VI.2003 – Clearings amongst the brush growth, alongside the pathways; common.

+ *Trisetum aureum* Ten.

PICCI (1972) - Not observed.

\* *Trisetum flavescens* (L.) Beauv. H caesp Eurasiat.

Punta La Guardia [21] – 24.IV.2002 – Arid environments along the pathways; rare.

*Vulpia ciliata* Dumort. T caesp Euri-Medit.

BÉGUINOT (1929); PICCI (1972) sub *Vulpia ciliata* (Danth.) Link.

Monte Castello [13] – 9/11.VI.2003 – Clearings and meadows; sporadic.

+ *Vulpia fasciculata* (Forsk.) Fritsch

PICCI (1972) - Not observed.

*Vulpia geniculata* (L.) Link T caesp Steno-Medit.-Occid.

PICCI (1972).

Punta La Guardia [21] – 24.IV.2002 – Clearings amongst the brush growth; common.

+ *Vulpia incrassata* (Lam.) Parl.

PICCI (1972) - Not observed.

Note: this entity is presently of dubious taxonomic value. Probably to be referred to *Vulpia geniculata* (L.) Link.

*Vulpia ligustica* (All.) Link T caesp Steno-Medit.

PICCI (1972).

Cala Spagnola [4] – 17.V.2002 – Clearings amongst the brush growth; rare.

*Vulpia myuros* (L.) C. C. Gmelin T caesp Subcosmop.

BÉGUINOT (1929); PICCI (1972).

Monte Castello [13] – 9/11.VI.2003 – Clearings, pastureland meadows; diffuse.

Note: Picci also mentioned *Vulpa myuros* (L.) Gmel. ssp. *pseudo-myuros* (Soy-Will.) Bég.

+ *Vulpia myuros* (L.) Gmel. ssp. *longearistata* (Willk.) Hayek

PICCI (1972) - Not observed.

+ *Vulpia tenuis* (Tin.) Parl.

PICCI (1972) - Not observed.

Note: this entity is presently of dubious taxonomic value. Probably to be referred to *Vulpia geniculata* (L.) Link.

## ARACEAE

\* *Ambrosinia bassii* L. G rhiz Steno-Medit. Occid.

Costa dell'Aia [5] – 28.VI/1.VII.2002 – Clearings amongst the brush growth; rare.

*Arisarum vulgare* Targ.-Tozz. G rhiz Steno-Medit.

BÉGUINOT (1929); PICCI (1972).

La Casetta [9] – 4.XII.2001 – Amongst the brush growth and alongs the pathways; common.

*Arum pictum* L. fil. G rhiz Endem. Sa-Co

BÉGUINOT (1929); PICCI (1972).

Cala Spagnola [4] – 4.XII.2001 – Clearings, amongst the brush growth; common.

*Dracunculus muscivorus* (L. fil.) Parl. G rhiz Endem. Sa-Co-BI

PICCI (1972) sub *Helicodiceros muscivorus* (L. f.) Engl.; BOCCHIERI (1995).

Punta Cariato [15] – 11.III.2003 – Rocky crevices, amongst the brush growth; sporadic.

## LEMNACEAE

*Lemna minor* L. I nat Subcosmop.

PICCI (1972).

L'Orto [8] – 17.V.2002 – Damp environments with stagnant waters, artificial water tanks; sporadic.

## TYPHACEAE

*Typha latifolia* L. G rhiz Cosmopol.

PICCI (1972).

La Vallata [10] – 9/11.VI.2003 – Area to the rear of the bay; sporadic.

## CYPERACEAE

+ *Carex contigus* Hoppe

PICCI (1972) - Not observed.

*Carex distachya* Desf. H caesp Steno-Medit.

BÉGUINOT (1929).

L'Orto [8] – 28.VI/1.VII.2002 – Brush and wood growth; common.

*Carex divisa* Hudson G rhiz Euri-Medit.-Atl.

BÉGUINOT (1929) sub *Carex divisa* Huds. var. *stenophylla* Whlb.

Punta La Guardia [21] – 24.IV.2002 – Damp environments in the western sectors; sporadic.

*Carex divulsa* Stokes H caesp Euri-Medit.

PICCI (1972) sub *Carex divulsa* Stokes ssp. *eu-divulsa*.

Punta La Guardia [21] – 24.IV.2002 – Brush growth in the northern sectors; sporadic.

+ *Carex elata* All.

PICCI (1972) - Not observed.

*Carex flacca* Schreber ssp. *serrulata* (Biv.) Greuter G rhiz Cosmo-pol.

PICCI (1972) sub *Carex cuspidata* Host.

Cala di Chiesa [3] – 11.III.2003 – Subsaline clearings; sporadic.

*Carex microcarpa* Bertol. G rhiz Endem. Sa-Co-AT

PICCI (1972); BOCCHIERI (1995).

L'Orto [8] – 9/11.VI.2003 – damp environments, in the vicinity of the spring; rare.

+ *Carex pairaei* F. Schultz.

PICCI (1972) - Not observed.

*Carex punctata* Gaudin H caesp Euri-Medit.-Subatl.

PICCI (1972).

L'Orto [8] – 17.V.2002 – Damp meadows in the vicinity of the spring; rare.

*Cyperus longus* L. ssp. *badius* (Desf.) Asch. et Gr. G rhiz Paleo-temp.

PICCI (1972).

L'Orto [8] – 17.V.2002 – Damp meadows in the vicinity of the spring; rare.

***Isolepis cernua*** (Vahl) R. et S. T scap Subcosmop.  
 PICCI (1972) sub *Scirpus cernuus* (Vahl.) Hayek.  
 L'Orto [8] – 28.VI/1.VII.2002 – Along the edges of the wells of stagnant water; sporadic.

***Holoschoenus australis*** (L.) Rchb. G rhiz Euri-Medit.  
 PICCI (1972) sub *Scirpus holoschoenus* L. ssp. *eu-holoschoenus*.  
 Fosso dei Morti [7] – 9/11.VI.2003 – Damp, brackish environments; common.

***Bolboschoenus maritimus*** (L.) Palla G rhiz Cosmopol.  
 PICCI (1972) sub *Scirpus maritimus* L.  
 Cala dell' Attacco [2] – 9/11.VI.2003 – Damp areas to the rear of the beach; sporadic.

#### ORCHIDACEAE

\* ***Limodorum abortivum*** (L.) Swartz G rhiz Euri-Medit.  
 Punta La Guardia [21] – 24.IV.2002 – Stand of *Quercus suber*; very rare.

\* ***Ophrys conradiae*** Melki et Deschartres G bulb Endem. Sa-Co  
 L'Orto [8] – 17.V.2002 – Damp environment in the vicinity of the triangular water tank; very rare.

***Orchis papilionacea*** L. G bulb Euri-Medit.  
 BÉGUINOT (1929).  
 Punta La Guardia [21] – 24.IV.2002 – Clearings and alongside the pathways; rare.

+ ***Orchis saccata*** Ten.  
 PICCI (1972) - Not observed.

\* ***Serapias cordigera*** L. G bulb Steno-Medit.  
 Punta La Guardia [21] – 24.IV.2002 – Clearings amongst the brush growth; rare.

***Serapias parviflora*** Parl. G bulb Steno-Medit.  
 PICCI (1972) sub *Serapias parviflora* Parl. ssp. *eu-parviflora*.  
 Punta La Guardia [21] – 24.IV.2002 – Clearings and meadows amongst the brush growth; rare.



*Spiranthes spiralis* (L.) Chevall. G rhiz Europeo-Caucas.  
PICCI (1972).

L'Orto [8] – 4.XII.2001 – Damp meadows along the stream banks; very rare.

## REMARKS ON THE FLORA

Our researches led to the identification of 384 entities of which 371 were spontaneous and 13 introduced. The 384 entities are included in 83 families and 252 genera, values which vary considerably if we leave out non-spontaneous *taxa* as can be noted from perusal of Table 1. The most numerous families identified were *Poaceae* with 42 entities, followed by *Asteraceae* (39), *Fabaceae* (38), *Apiaceae* (15) and *Liliaceae* (15). The floristic characteristics of the area under consideration are summarized in Table 2, listing plants by systematic groups. The floristic contingent identified in the past, taken overall, numbered 402 entities of which 360 were catalogued by PICCI (1972) and the remainder by some botanists mentioned previously.

	SPONTANEOUS ENTITIES	INTRODUCED ENTITIES	TOTAL
FAMILIES	76	7	83
GENERA	240	12	252
SPECIES	349	13	362
SUBSPECIES	21	-	21
VARIETIES	1	-	1

Table 1. Number of floristic families, genera and entities of the island of Molara.

	FAMILIES	GENERA	TAXA
PTERIDOPHYTA	6	6	8
GYMNOSPERMAE	2	2	2
DICOTYLEDONES	61	181	279
MONOCOTYLEDONES	14	63	95
TOTAL	83	252	384

Table 2. Taxa of the flora of Molara island.

Comparison of the flora found by us and that already listed showed that overall, 86 *taxa* were new to the island, 285 were confirmed and 104 were no longer found.

The biological spectrum shows a clear dominance of Therophytes (49.1%) followed by Hemicryptophytes (19.9%), Geophytes (14.8%), Phanerophytes and Nanophanerophytes (9.5%), Camephytes (5.9%) and Hydrophytes (0.8%). Comparing these data with the biological spectrum identified by PICCI (1972), the only author who made an important contribution to floristic knowledge of the island, we note a 2.6% decrease in Therophytes, 1.2% in Phanerophytes and 0.1% in Hemicryptophytes, whereas Camephytes increased by 0.9%, Geophytes by 2.8% and Hydrophytes by 0.4% (Fig 5).

The high percentage of Therophytes is linked to the typical climatic conditions of the Mediterranean basin, an area marked by summer draught which lasts from the end of May to September. The high rate of Hemicryptophytes and the presence of Hydrophytes indicate the presence of a cool, temperate micro-climate and good availability of water. The decrease in Therophytes and the increase in Camephytes is linked to changes in land use over the past forty years, namely the almost total disappearance of farming activity and the reduction of livestock rearing to a minimum.

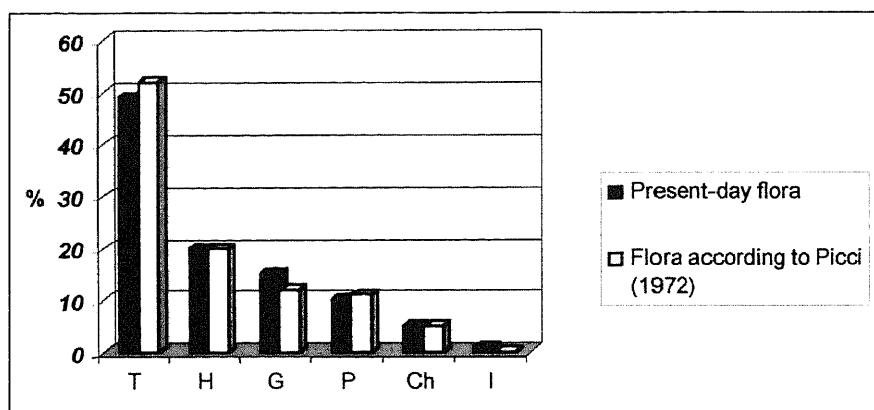


Fig. 5. Comparison of biological spectra.

The same differences are also shown in Grime's strategy, where we note an increase in *taxa* marked by ruderal (R) and competitive (C) strategies whereas there is greater stability of entities with stress-tolerant strategy (S) as is highlighted in Fig. 6.

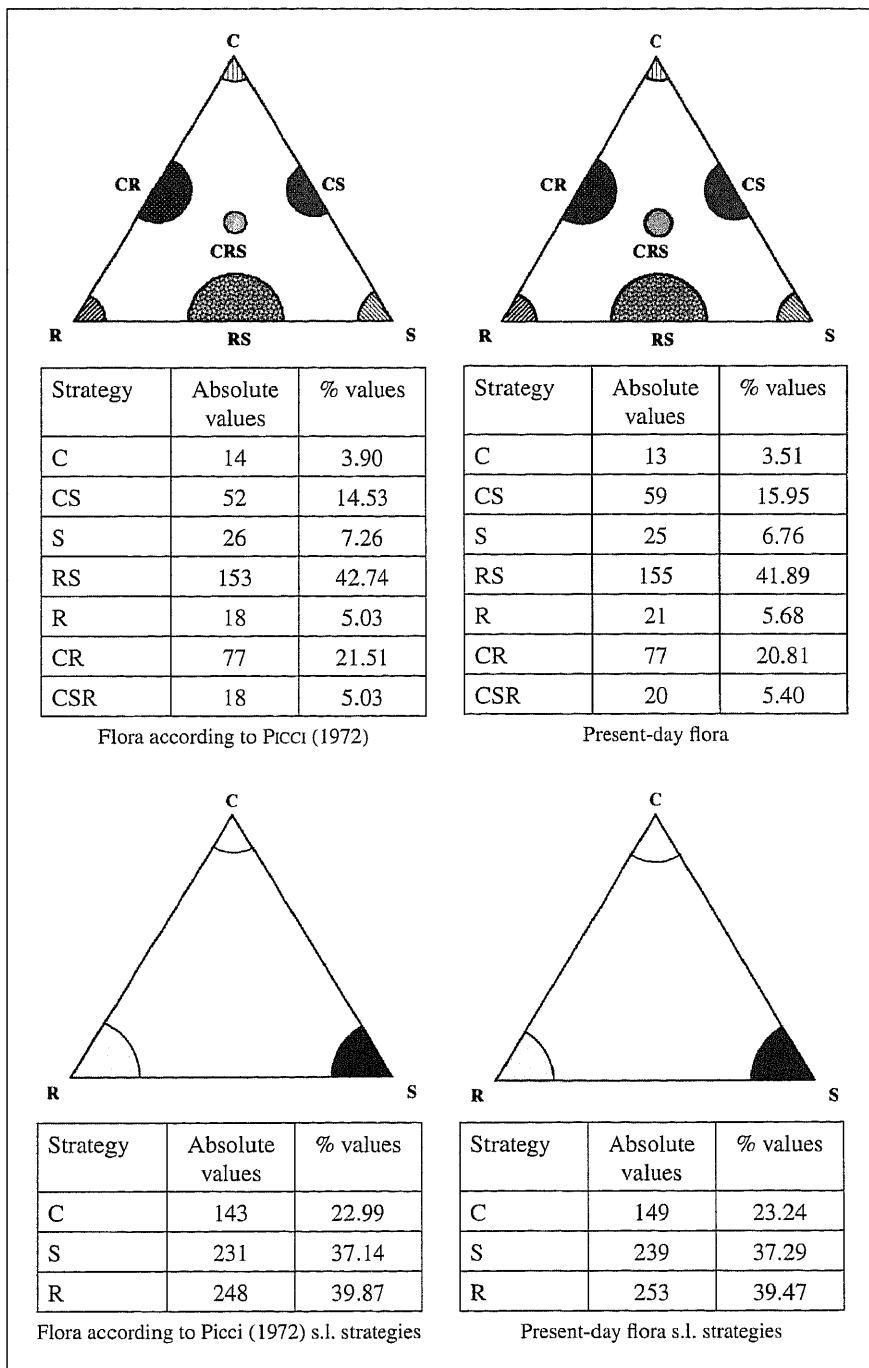


Fig. 6. Grime's strategy.

The phytogeographical characteristics shown in the general chorological spectrum (Table 3) highlight the markedly Mediterranean features of the area under consideration, with 69.6 % of *taxa* belonging to Mediterranean chorotypes. Amongst these we find absolute prevalence of steno-Mediterranean entities with 41.1 % and Euro-Mediterranean with 30.2 % (Table 4). There is also a noteworthy percentage of cosmopolitan elements (14.3 %). They are found in the areas degraded in past years by stock breeding and other types of human activity, which caused the disappearance of species with a Mediterranean barycentre, favouring colonization by floristic entities having broad distribution.

The endemic component is made up of 29 entities (11.2 %). Some of them are found not only in Sardinia but also on some neighbouring islands. Among the endemisms of the island of Molara exclusive to Sardinia are the following: *Buphtalmum inuloides* Moris, *Limonium articulatum* (Loisel.) O. Kuntze, *Limonium hermaeum* (Pignatti) Pignatti and *Limonium protohermaeum* Arrigoni *et* Diana.

COROLOGIC TYPE	n° taxa	%
Atlantic	17	4.6
Circumboreal	6	1.6
Cosmopolites	53	14.3
Eurasiatic s.l.	28	7.5
Mediterranean	258	69.6
Tropical s.l.	9	2.4
Total	371	100.0

Table 3. General chorological spectrum

COROLOGIC TYPE	n° taxa	%
Steno-Medit.	106	41.1
Euri-Medit.	78	30.2
Endem.	29	11.2
S-Medit.	19	7.4
W-Medit.	12	4.6
Medit.-Turan.	4	1.6
Medit.-Macarones	2	0.8
N-Medit.	5	1.9
Total	258	100.0

Table 4. Chorological spectrum of the main Mediterranean elements.

## VEGETATION LANDSCAPE

The vegetation landscape of the island of Molara is marked by woodland formations typical of the Mediterranean coastal area, whose conservation has been favoured by limited human access to the island since it is private property, by the suspension of farming activity and the reduction of grazing to a few goats and cattle. In the areas utilized in the past for farming activity, at the present time we note the replacement of prevalently Therophyte herbaceous formations with garigue and brush plant communities which are developing gradually towards more mature formations. This is demonstrated also by the comparison between the present biological spectrum and that described by PICCI (1972) which highlights a reduction in Therophytes and an increase in Camedphytes. Vegetation cover, in recent times, has not suffered from felling, which has been performed exclusively to clear and clean away the underbrush; the effect of fire too has been limited, with the exception of that which occurred some 15 years ago in the south-eastern sector between the localities of Pumpija, Punta Scirocco and Punta dell'Aia. On the slopes with northern exposure there are floristic entities and small wood stands consisting of plants which generally flourish in cooler climates; their presence here is made possible not by exposure to cool winds but also by the streams which also provide water during the summer, thus representing a micro-climate compensation factor. The slopes with southern exposure are steeper, more difficult to access and with larger rocky outcrops, all conditions which have favoured the settlement of thermophilous and thermoxerophilous plants, giving the vegetation landscape a remarkably different aspect. In succession the physionomic description of the island vegetable landscape is reported pointing out the floristic entities which characterize the present principal groups and/or habitats.

### **Woods and stands**

The most distinctive plant of the island's vegetation cover is *Olea europaea* var. *sylvestris* Brot., which forms extensive wood stands in all sectors, especially between the Vedetta and Costa dell'Aia. In the underbrush we find a bush layer consisting of *Pistacia lentiscus* L. or, where this is not present, widespread *Clematis cirrhosa* L. both in the form of lianas between the branches of the wild olives and in creeper form through the pebbles on the ground. These woods are well structured with cover which rarely drops below 70%, and with an average height of some 8 m, representing maximum vegetation evolution. In other sectors the development of this type of vegetation is hampered by the wind which affects its structure, limiting height, and often bending the plants

to the ground or creating mechanical modifications as shown by a number of trees with contorted shapes. Together with the wild olive along the coast we find *Phillyrea angustifolia* L., *Juniperus turbinata* Guss., *Pistacia lentiscus* L., *Rhamnus alaternus* L., creating thick underbrush which is often made impenetrable by the abundant presence of *Smilax aspera* L.

Groups and/or isolated exemplars of *Quercus ilex* L., *Quercus suber* L. and *Acer monspessulanum* L. are found exclusively in the northern sector of the island, situated in clefts with cool exposure; often they are set amidst rocky areas which act as a barrier limiting the radiation of the sun on the surface of the territory in which these plants grow. Their distribution also depends on the water supply as shown by some exemplars of *Quercus ilex* L. growing along the Orto valley where humidity is greater, or the only exemplar of *Castanea sativa* Miller growing in the vicinity of a spring and which flowers and yields its fruit regularly each year (PIREDDA S. *in verbis*). Less dependent on the availability of water is *Quercus suber* L. which grows in several groups between Punta La Guardia and the Orto valley and Punta Leoneddu. The largest stand is located at the foot of the rocky area of Punta La Guardia, with northern exposure, consisting of ten exemplars, all well-preserved and some of considerable size, so much so that we can consider them patriarch trees. The largest of these is some 12 m in height, with a trunk circumference of 3.91 m and maximum branch extension of 23 m. The other stands of cork oak are to be found among the great granite boulders along the slopes of the reliefs, with their roots clinging to the soil of the crevices. Of particular interest is the presence of *Acer monspessulanum* L., a species which flourishes at greater elevations on the interior mountain reliefs of Sardinia. It is to be found at approximately 130 m asl, set among the rocks, with north east exposure on the slope of Punta La Guardia above the Ponziano ruins.

The presence of *Phillyrea latifolia* L. and *Juniperus turbinata* Guss. is limited to isolated exemplars which are often found in mixed plant communities with various other floristic entities and only rarely form small stands where they are the dominant species. In the narrow valley running from the western slope of Punta La Guardia down towards the sea in a northerly direction we found a small wood of *Phillyrea latifolia* L. with some exemplars which even reach 8-10 m in height. Along the coast there are a few stands of *Juniperus turbinata* Guss., as can be seen in the area between Cala Spagnola and Cala di Chiesa, while the largest stand is to be found in the medium-high portion of the Vallata.

## Brush growth

Brush growth such as *Erica arborea* L., *Myrtus communis* L., *Calicotome villosa* (Poiret) Link and *Arbutus unedo* L. sporadically forms part of the wooded and brush growth areas but they never characterize vegetation formations with high coverage indices. Some exemplars of *Myrtus communis* L. have achieved exceptional size, almost taking the form of trees, with height in excess of 4 m and trunk diameter of 12 cm. They grow amidst great granite boulders between Punta La Guardia and the Orto valley, with north-eastern exposure and 30° soil slope, a configuration similar to that observed on the island of Asinara (BOCCHIERI, 1988).

The clumps of brush growth are marked by *Pistacia lentiscus* L., *Phillyrea angustifolia* L., *Cistus sp. pl.*, *Lavandula stoechas* L. and, sporadically, by *Rosmarinus officinalis* L. Amongst the various species of rockrose the most widespread is *Cistus monspeliensis* L. which is abundant in the south western sector where degradation of vegetation cover involves a vast area. In this zone, during the summer of 1986 a fire destroyed important wild olive wood formations (PIREDDA S. *in verbis*) favouring the growth of several species including *Daphne gnidium* L. At the present time there are several phanerophytes in bush form which indicates that phytocoenoses are developing into formations replacing rockrose stands. At times amongst the bushes there are exemplars of considerable size of *Genista corsica* (Loisel.) DC. which is plentiful at Punta La Guardia and in the rocky areas round Pumpija. In the Vallata on the other hand there is a single stand of *Teucrium marum* L. which is only found rarely amongst the bushes or with other endemic camephytes such as *Stachys glutinosa* L. and *Helichrysum italicum* (Roth) G. Don *fil. ssp. microphyllum* (Willd.) Nyman. The camephyte formations have a preference for rocky fissures or stony soils where they encounter less competition with larger species.

The southern sector between the Vedetta and Punta di Scirocco is characterized by formations of *Euphorbia dendroides* L. with some individual plants even reaching 2.5 m in height; they are rooted on substrata with high rock content, well exposed to the sun and with a marked slope to the soil. Interesting formations of this type are to be found along the short, steep valleys which drop down towards the sea from Villa Tamponi. In some parts vegetation cover consists of formations of *Olea europaea* var. *sylvestris* Brot. Alternating with *Euphorbia dendroides* L. indicating areas with different soil composition: the wild olive flourishes on richer soils, whereas euphorbias prefer soils on a thinner substratum, with outcropping rock.

### Shady cliff environments

The cliff environment is rich in fissures and rocky crevices in which are to be found small meadows of *Sedum caeruleum* L., small stands of *Cheilanthes maderensis* Lowe or individual exemplars of *Asplenium obovatum* Viv. as well as other endemic entities which grow in cool corners such as *Cymbalaria aequitriloba* (Viv.) A. Cheval., *Arenaria balearica* L., *Mentha requienii* Benth and *Brimeura fastigiata* (Viv.) Chouard, whereas *Carex microcarpa* Bertol. is characteristic round the rare pools of water in the valley bed. Along the strictly coastal strip and more rarely in the rocky areas of the interior we found *Dracunculus muscivorus* (L. fil.) Parl., while *Arum pictum* L. fil. is widespread throughout the area under study. *Scrophularia trifoliata* L. was observed exclusively as a rupicolous species, a fact in all probability resulting from grazing since this plant is attractive to ruminants.

The coastal strip is marked by rupicolous formations consisting of *Crithmum maritimum* L. together with several species belonging to the *Limonium* genus.

### Meadows and ruderal environments

In some sectors of the island, farming activity led to the destruction of vegetation cover to make way for crop sowing and the raising of vegetables. This activity has been suspended for some fifty years and thus the subsequent abandoning of these areas favoured the growth of herbaceous formations, including also invasive species such as *Convolvulus arvensis* L., *Erodium moschatum* L'Hér, *Poa trivialis* L., *Trifolium incarnatum* L. and *Linaria triphylla* (L.) Miller, all entities previously noted by BÈGUINOT (1929) and/or PICCI (1972) but not found by us. These meadows have now been colonized by more evolved vegetation species, except for some areas where grazing still takes place. The greatest concentration of cattle is to be found round Villa Tamponi where there are meadows consisting of numerous nitrophilous entities many of which belong to *Asteraceae*, *Fabaceae*, *Geraniaceae* and *Poaceae*. Often these meadows are dominated by *Asphodelus aestivus* Brot. and *Carlina corymbosa* L. as indeed is often observed in many other areas. Other cattle grazing areas are the Orto valley, Pumpija and the southern slope of Monte Castello, whereas the goats prefer the rocky areas of the eastern zone between Falconara, Pedraglione and Casa Vecchia.

During Autumn alongside the pathways we noted the flowering of various species of the genus *Romulea* and only in two localities of the western sector of the island did we find *Scilla autumnalis* L. a novelty for the flora of Molara.



### Riparian environments

Along the Orto valley in the vicinity of the spring there are some stands of riparian growth with *Salix cinerea* L. and damp meadows consisting of *Carex* sp. pl., *Apium nodiflorum* (L.) Lag., *Oenanthe pimpinelloides* L., *Smyrniolus olusatrum* L., *Isolepis cernua* (Vahl) R. et S., *Samolus valerandi* L. and *Lythrum hyssopifolia* L.

In the vicinity of the coast of Cala di Chiesa there are clumps of *Vitex agnus-castus* L. which mark vegetation landscape during their flowering in the late spring and summer months with intense shades of violet.

Walking along the pathways of the island of Molara the visitor will observe scenery of high naturalistic value, a blend of the intense shades of blue and turquoise of the sea surrounding it, rocky areas and granite spurs moulded by marine aerosol, and formations of evergreen sclerophylls which cover the steep slopes dipping down towards the sea. Conservation of this environment has been made possible because the island is privately owned, a fact which has limited access and prevented the incursion of hordes of tourists who, if not adequately controlled, can well represent potential causes of ecosystem degradation. Moreover, all due merit goes to the Tamponi family for having always resisted the lure of uncontrolled tourist development which, above all at the end of the 1960s, was rife in many localities along the coasts of Sardinia. Another important factor is the presence on the island of the family of Mr. Salvatore Piredda, who have acted as caretakers for the past thirty years, and whose careful custodianship has made possible – and still does – the protection of the outstanding natural beauties of this island. One more point – since the island is included in the Tavolara – Capo Coda Cavallo Marine Park, it is to be hoped that by implementing appropriate management and conservation actions, it will be possible to enhance not only the natural beauties linked to sea and coast, but also the island's geological, zoological, anthropological and botanical heritage.

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