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The flora of the catchment basin of Rio Santa Lucia (Sulcis, S. W. Sardinia)

Abstract

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The flora of the catchment basin of Rio Santa Lucia (S. W. Sardinia) has been studied, 669 taxa, 628 of which were species, 35 subspecies, 2 varieties and 4 hybrids were found. They were included in 364 genera and 101 families. The floristic richness indices have been determined and compared with those of other studied areas of Sulcis. An analysis of the biological spectrum showed the therophytes at 41.2% in confirmation of the full Mediterranean character of the area and the phanerophytes at 10%, showing the high degree of wooded cover. A comparison with the biological spectra of other floras shows similar values, except for a lower value for the therophytes and a significantly higher value (2.7%) for the hydrophytes. The chorologic spectrum shows dominance of Mediterranean elements (71.6%), particularly steno-Mediterranean (26%) and euri-Mediterranean (21.8%). The western-Mediterranean (3.5%), the southern-Mediterranean (3.5%) and the Atlantic-Mediterranean (3.1%) components are important in identifying the biogeographic barycentre of the studied area. The contingent of endemics (60 taxa) was 9% and shows the dominance of Sardinian-Corsican (31.7%) and Sardinian (21.7%) elements, that together make up 53.4% of the total. 10 new entities, which are endemic or with a particular phytogeografic interst for the mountain complex of Sulcis, have been lastly reported.

The floristic and vegetational studies of the past 15 years in Sulcis (Chiappini & al. 1983, Mossa 1985, Mossa & Fogu 1985, Angiolino & Chiappini 1988, Ballero 1990, Brullo 1993, Camarda & al. 1993, Ballero & al. 1994, Camarda & al. 1995, Mossa & al. 1996) have been concentrated mainly on the area of Punta Sebera-Punta Maxia-Pantaleo, Monte Tamara and Monte Arcosu. The valleys of Gutturu Mannu and Monti Nieddu have only been considered marginally, while little is known on the catchment basin of Rio Guttureddu and Sa Canna.

The aim of this work is to complete the floristic knowledge of the hilly and mountain sections of the catchment basin of Rio Santa Lucia and to contribute further to the knowledge of the bioclimatic and chorological characteristics of the mountains of Sulcis.

Geographic framing

The hilly and mountain section of the catchmemt basin of Rio Santa Lucia (Fig. 1) is part of the mountain complex of Sulcis. It borders on the Campidano and Cixerri plain to

the north, on the Rio San Gerolamo basin to the east, on the Rio di Pula basin to the south-east and south and on the Rio Palmas basin to the west.

It is included in the I.G.M.I. sections of Assemini (556, II), Capoterra (565, I) and Narcao (565, IV). From an administrative point of view, most of the area is under the communes of Assemini, Capoterra and Uta; only the Sa Mirra area is under the commune of Santadi.

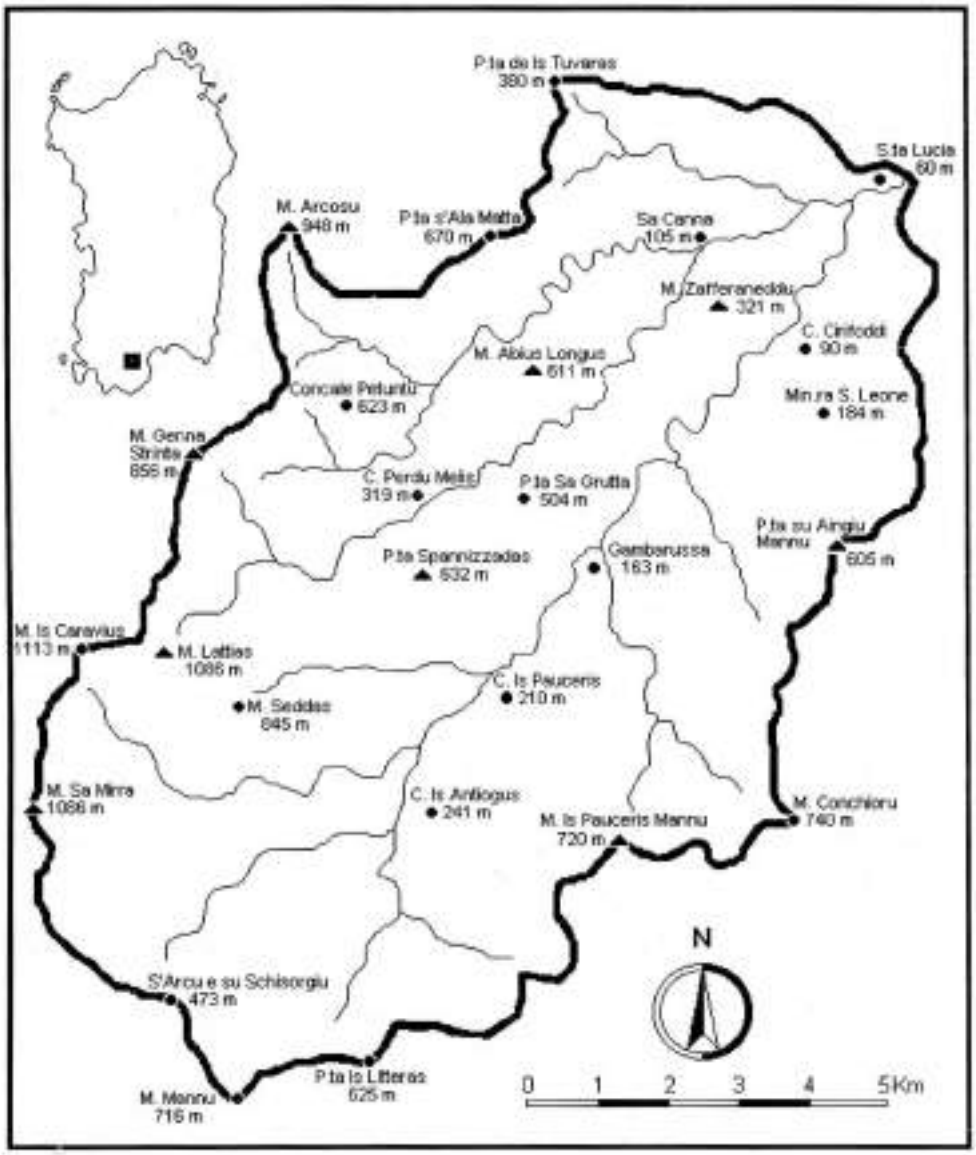

Fig. 1. Index map.

The study area includes the entire hilly and mountain system and in particular the valleys of Gutturu Mannu, Guttureddu and Sa Canna. It has a perimeter of 54.2 km and a total area of 72.9 km^2. The watershed passes through the mountains of S'Arcu de Is Sennoras (389 m), Punta su Aingiu Mannu (605 m), Monte Is Pauceris Mannu (726 m), Monte Mannu (716 m), Monte Sa Mirra (1086 m), Monte Is Caravius (1113 m), Monte Genna Strinta (856 m), Monte Arcosu (946 m), Punta s'Ala Matta (670 m) and Punta de Is Tuvaras (380 m).

Geomorphology

The catchment basin of Rio Santa Lucia can be subdivided into three well-defined morphological structures: the prevalently schistose metamorphic landscapes, the granitic landscapes and the Quaternary alluvial deposits.

The mountain and hilly section is characterised by schistose (45%), granitic (52%) and calcareous (3%) reliefs. At the top, the schistose reliefs present relics of subhorizontal erosion surfaces or gentle slopes towards the west, as can be observed at Sa Sperrimas, Medau Spuntacora, Punta Stazzu Aroni, Monte Abius Longus and Is Crabiolus Mannu. Metamorphic rocks generally present quartz veins that resist erosion and create rough forms that give the landscape a tormented aspect with winding ridge lines and meandering watercourses, especially in the degrading areas from Is Pauceris Mannus to Punta de sa Loriga.

The granitic reliefs are characterised by two different morphologies. In places where the batholith is homogeneous, the granite presents soft rounded forms with mild slopes, while where it is more fractured, vein processes are present and rough irregular forms predominate as in the whole Monte Lattias area.

The calcareous areas are mainly characterised by the Cabitza formation (Lower Cambrian-Lower Ordovician). They are located in the westernmost and highest part of the basin and form an island in the granitic batholith.

Geology

Crystalline Palaeozoic substrates dominate the study area, and Quaternary clastic formations represented essentially by ancient and present alluvium and by alluvial glacis are found subordinately.

The Palaeozoic occupies about 90% of the area; the present formations underwent structural changes essentially for tectonic reasons and by thermo-metamorphism associated with the intrusion of granitic magmas during the Hercynian orogeny.

The age of the formations ranges from the lower Cambrian to the Silurian. The Cabitza formation is the oldest, and is found in the summit areas of Monte Seddas, Is Caravius and Sa Mirra. It is made up of clayey schists, metasandstones, nodular metalimestones and metasiltites with rare limestone lenses (Carmigniani 1996).

Overlying the granitic mass are two distinct tectonically superimposed successions (Barca & al. 1986): one is allochthonous (Arburese Unit) the other para-autochthonous (San Leone Unit). The Arburese Unit is made up of a sequence of mica metasandstones, clear metaquarzites with banks of metaconglomerates, metasiltstones and metapelites; it is very similar to the Genn'Argiolas Unit of south-eastern Sardinia (Barca & al. 1991). During the first phase of Hercynian orogeny, it was affected by regional folding with a main north-east/south-west direction on the parautochthonous terrains of the San Leone

Unit. In the latter Unit, that is attributed to the Lower Ordovician - Silurian, we can observe three lithological series characterised by very few fossils due to the thermometamorphism induced by late Hercynian granitoids.

As regards the Hercynian magmatism, from a petrographical point of view the granites are classified as biotite leukogranites with a medium coarse equigranular structure (Conti 1963), and are characterised by the presence of rosy potassium feldspar (Bralia & al. 1981).

They are rarely compact, and often affected by pegmatitic quartzose vein fractures and intrusions.

As regards the Quaternary, from a stratigraphic point of view we can recognise from bottom to top an older glacis probably of the Lower - Middle Pleistocene, terraced and heavily cemented, ancient dark reddish alluvium, a few conglomeratic deposits in the form of glacis, recent alluvium (Upper Pleistocene), loosely cemented fault rubble (Post-Wurm) and present alluvia with a pebbly-sandy matrix (Holocene) along the river beds.

Hydrography

Rio Santa Lucia rises in the Gutturu Mannu Valley at a height of 575 m and after about 25 km flows into the Capoterra lagoon. Its drainage pattern includes 1,308 watersheds, for a total 526 km.

Its drainage density is 5.05 km/km^2, its drainage frequency 12.55 km/km^2 and its drainage coefficient 0.20 km/km^2 (Fadda & Pala 1992).

Its main tributaries are Rio Gutturu Mannu and Rio Guttureddu, that join at an place called Santa Lucia that gives the river its name. Among other watercourses, Rio Trunconi Mannu, Rio di Fanebas and Rio Sa Canna are worthy of mention.

Bioclimatology

The Rio Santa Lucia basin is the only catchment basin in the Sulcis mountains without a meterological station. An automised exchange has recently been installed at Gambarussa by the Forestry Authority of Sardinia.

For the bioclimatic characterisation of the site, reference was made to the data reported in Arrigoni (1968) and to those published by the National Hydrogaphic Service (Ministero LL. PP. - Ministry of Public Works - 1966-1980) for the neighbouring thermo-pluviometric stations of Is Cannoneris and Santadi. As regards the methodology we followed the suggestions of Rivas-Martinez (1995).

In spite of this, since no data were available on the minimum and maximum temperatures, it was not possible to process the normal (It) and compensated (Itc) thermicity indices. Since neither the data relating to the mean yearly or the summer evapotranspiration were available, it was not possible to calculate the aridity index (Iar), the yearly umbro-evaporation index (Ioe) and the Mediterraneity index (Im).

The bioclimates, the thermotypes and the umbrotypes were therefore calculated using the simple continentality index (Ic) and the umbrothermic index (Io).

According to the climatic data available and in agreement with the bioclimatic classification by Rivas-Martínez (op. cit.), it may be stated that the macrobioclimate of the studied area is of the Mediterranean type. In fact after the summer solstice it always presents a drought period (P<2T) longer than two months (Table 1).

Table 1. Mean monthly and annual rainfall.

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Rainy days
Is Cannoneris	166.1	164.7	134.3	90.7	64.6	16.0	3.9	13.5	47.3	133.3	143.6	193.5	1172.0	89.6
Santadi	93.0	77.3	64.9	42.8	36.3	10.8	3.8	10.9	33.2	77.9	98.6	111.7	657.0	68.4

As regards the bioclimates, from the simple continentality index and the umbrothermal index, it can be seen that both stations are within the oceanic pluvioseasonal bioclimate range since they present Ic values lower than 21 and Io values higher than 2.0 (Table 2).

Table 2. Mean monthly and yearly temperatures, continentality index and umbrothermic index.

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year lymean	Ic	Io
Is Cannoneris	6.7	5.7	7.1	9.1	15.5	18.3	22.7	22.0	19.9	12.9	9.6	7.3	13.1	17.1	6.9
Santadi	9.8	9.2	12.2	14.5	14.8	23.6	26.8	27.6	24.0	20.3	15.3	12.0	17.8	18.4	2.9

As regards thermotypes, since the data needed to calculate the compensated thermicity indices were not available, it was not possible to determine with certainty the thermotypes in Sulcis and in particular in the Rio Santa Lucia catchment basin. Based on the proposal by Rivas-Martínez (1982), using the mean yearly temperature values, we determined a meso-Mediterranean thermotype for the Is Cannoneris station (T = 13.1°) and a thermo-Mediterranean thermotype for the Santadi station (T = 17.8°).

From the above data and from a first analysis of the vegetation, we can hypothesise a thermo-Mediterranean plan only for those north-eastern areas of the basin below an altitude of 200 metres and a meso-Mediterranean thermotype for the area in general.

It was possible to calculate the umbrotypes thanks to the umbrothermal index that showed a dry umbrotype (Io = 2.9) for the Santadi station, verging on the subhumid limit (Io = 3.0-6.0), and a humid one for Is Cannoneris (Io = 6.9). Based on these data, we showed the presence of a subhumid umbrotype, that could not be determined directly but proved to be dominant on the basis of vegetation responses. In the basin, the presence of a number of mesophilic elements such as *Taxus baccata* L., *Polystichum setiferum* (Forssk.) T. Moore ex Woyn. and *Blechnum spicant* (L.) Roth, would confirm the existence of a humid umbrotype as for the Is Cannoneris area.

From pluviometric data, that were available also for the stations of Capoterra and Pantaleo, it is shown that rainfall tends to increase with increasing altitude and on moving from the coast to the flat areas inland from the mountain massif (Table 3).

Table 3. Relation between annual mean rainfall, altitude and distances.

Station	P (mm)	Altitude (m)	Distance from the sea (km)	Distance from flat areas (km)
Capoterra	552	54	5.3	0
Santadi	657	135	12.4	0
Pantaleo	888	240	18.6	7.1
Is Cannoneris	1172	716	14.2	9.8

Vegetation

In the whole catchment basin, the vegetation was systematically cut until 1948. After that date, coppicing became more irregular, tapping of the cork oak trees was abandoned

and trees are cut only in the Monte Arcosu natural reserve and along the roads inside the areas managed by the Forest Authority of the Sardinian Region.

As a result of the cuts that were practised up to the post-war period, of grazing and of fires, about 50% of the area today is made up of maquis attributed to *Quercion ilicis* Br.-Bl. 1936 em. Rivas-Martínez 1975 and *Oleo-Ceratonion* Br.-Bl. 1936 ex Guin. & Dron. 1944.

About 30% is made up of coppiced oak and cork oak woods. The latter do not cover more than 5% of the area and are concentrated in the Gutturu Mannu Valley and in particular at Is Antiogus, Fanebas, Is Pauceris, Is Castangias and Gambarussa. At Guttureddu they are only found at Perdu Melis.

The topmost areas are more frequently covered by camephytic vegetation that can be framed in the *Teucrion mari* Gamisans & Muracciole 1984 alliance and by cespitose meadows that can be included in *Periballio-Trifolion subterranei* Rivas-Martínez, Fernandez Gonzales & Sanchez Mata 1986 (Ladero & al. 1992). On the tops of Mount Arcosu, Mount Genna Strinta and along the ridges that divide the valleys of Bacchialinu, Gutturu Mannu, Guttureddu, Sa Canna and Sa Spindula, most of the area is occupied by this camephytic vegetation.

On the alluvial terraces of the pebbly beds of the torrents, a similar camephytic vegetation is found. This vegetation was referred by Biondi & al. (1995) to the *Glaucion flavi* Br.-Bl. 1947 alliance. These formations are particularly frequent in the middle parts of the Rio Gutturu Mannu Valley and in the low parts of the Rio Guttureddu Valley. Terophytic meadows that can be included among the *Maresion nanae* Gehu & al. 1981 are frequent on the same alluvial mattresses.

The river beds are characterised by maquis that can be included in the *Rubo-Nerion oleandri* alliance Bolòs 1985 and in places where the water table is shallow or along the watercourses with a constant flow rate, they are characterised by riparian woods that can be included in the *Hyperico hircini-Alnenion* Dierschke 1975 sub-alliance or in *Nerio oleandri-Salicion purpureae* De Foucault 1991. The formations belonging to the latter alliance tend to dominate in the flatter areas where the sediments increase and the watercourses slow down.

The dripping rocks on the other hand present a vegetation that is traced back to the *Adiantion* Br.-Bl. 1931 alliance. The winding ravines and rocky walls with a cool exposure tend to have a silicicolous vegetation that can be framed in the *Anomodonto-Polypodietalia serrati* Bolòs & Vives in Bolòs 1957 order. Those with a warm exposure are colonised prevalently by casmophytic formations attributed to *Phagnalo saxatilis-Cheilanthion maderensis* Loisel. 1970 corr. Pérez-Carro, Diaz-Gonzales, Fernandez-Areces & Salvo 1989, while the weakly sloping rocky areas and the poorly evolved terrains present associations that can be reduced to the *Micromerio graecae-Hyparrhenion podotrichae* Bolòs 1962 corr. and *Tuberarion guttatae* Br.-Bl. 1931 alliances (Camarda & al. 1995). All the pioneer therophytic meadows belong to the latter alliance.

Flora

The floristic survey was carried out in successive stages between 1991 and 1997. During this period a number of excursions were made to study the different seasonal aspects and the different habitats of the area.

The list of flora was prepared following the systematic order and nomenclature proposed by Pignatti (1982), except in a few cases where we preferred to follow Arrigoni & al. (1976-91), Castroviejo & al. (1986-1997), De Bolòs & Vigo (1984-1997), De Bolòs & al. (1990), Ferrarini & al. (1986), Greuter & al. (1984-1989), Jalas & Suominen (1972-1996), Pichi Sermolli (1977), Tutin & al. (1964-1980) and Scrugli (1990).

The attribution of the biological forms and subforms were made following the criteria proposed by Braun-Blanquet (1932), Raunkier (1934) and Pichi Sermolli (1948), and the forms of the diffferent taxa were checked directly in the field. Besides the biological form, for each individual entity the list shows the chorology, according to the types reported in Pignatti (op. cit.), Castroviejo & al. (op. cit.), De Bolòs & Vigo (op. cit.), De Bolòs & al. (op. cit.), Greuter & al. (op. cit.), brief indications on the habitat or place they were found, and on their frequency in the territory. As regards frequency a scale with the following abbreviations was used (cc = very common, c = common, pc = not common, r = rare, rr = very rare, n.s. = not specified). The entities reported in literature but not found in the field are indicated with an asterisk (*); for those species for which specimens exist, information about them is provided.

As regards adventitious and cultivated species, we only reported the naturalised entities.

The specimens are deposited at the Herbaria of the Department of Botanical Sciences of the University of Cagliari (CAG) and the Botanical Department of University of Catania (CAT) and the Botanical Garden of Valencia (VAL).

List of flora

PTERYDOPHYTA

Selaginellaceae

Selaginella denticulata (L.) Spring — Ch rept - Steno-Medit. — rocky ravines, maquis and woods; cc.

Isoetaceae

* ***Isoetes velatum*** A. Braun — I rad - Medit.-Atl. — permanent pools, found by Ballero (1 May 1988, CAG) and never confirmed; rr.

Isoetes durieui Bory — G bulb - W-Steno-Medit. — the outermost parts of the beds of the torrents; c.

Equisetaceae

Equisetum ramosissimum Desf. — G rhiz - Circumbor. — in the neighbourhood of the s'Arcu su Schisorgiu spring and at Sa Canna, Cirifoddi and Medau Cipriano; pc.

Equisetum telmateia Ehrh. — G rhiz - Circumbor. — Serra Sestu spring, Cirifoddi and in Gutturedddu near Mitza Vittorio; pc.

Osmundaceae

Osmunda regalis L. — G rhiz - Subcosmop. — edges of the main torrents and alder wood; pc.

Polypodiaceae

Polypodium cambricum L. subsp. ***serrulatum*** (Sch. ex Arcang.) Pichi-Serm. — H ros - Euri-Medit. — rocks, rocky faces and trunks; cc.

Sinopteridiaceae

Cheilanthes acrostica (Balb.) Tod. — H ros - Steno-Medit.-Turan. — in the crevices of sunny dry rocks, often associated with *Cosentinia vellea* (Aiton) Tod.; pc.

Cheilanthes maderensis Lowe — H ros - W-Medit.-Macarones. — found only along the Sa Rocca Lada mule-track on granitic rocks and metaquartzites; r.

Adiantaceae

Adiantum capillus-veneris L. — G rhiz - Pantrop. — springs and dripping, mostly associated with *Samolus valerandi* L.; pc.

Hemionitidaceae

Anogramma leptophylla (L.) Link — T caesp - Cosmop.-Subtrop. — wet rocks and rocky ravines; c.

Cosentinia vellea (Aiton) Tod. — H ros - Euri-Medit.-Turan. — sunny rocks of Su Tragu, Is Portellus, Sa Canna, Medau is Figus Moriscas, Rocca Fonnesa, Gutturu Ludragus and Su Dominariu; pc.

Hypolepidaceae

Pteridium aquilinum (L.) Kuhn — G rhiz - Cosmop. — in the flood plains of Rio Is Frociddus, Guttureddu and Gutturu Mannu, especially in the lower parts up to an altitude of 350 m; c.

Aspleniaceae

Asplenium onopteris L. — H ros - Subtrop.-nesicola — maquis and woods; cc.

Asplenium adiantum-nigrum L. — H ros - Paleotemp. and Subtrop. — found alone in the Longufresu channel at altitudes greater than 700 m; r.

Asplenium obovatum Viv. — H ros - Steno-Medit. — shady crags and rocky ravines at altitudes between 0 and 500 m; pc.

Asplenium billotii F.W. Schultz — H ros - W-Medit.-Atl. — found alone in clefts along Rio Sa Canna, the footpath of Peppi Meloni and at Passu Pittiu; r.

Asplenium trichomanes L. subsp. ***quadrivalens*** D. E. Mey. — H ros - Cosmop.-temp. — rocks, rocky walls and maquis; c.

Ceterach officinarum Willd. — H ros - Euras.-temp. — sunny crags; pc.

Athyriaceae

Cystopteris fragilis (L.) Bernh. — H caesp - Cosmop. — wet rocks and springs on Monte Lattias; r.

* ***Cystopteris dickieana*** R. Sim — H caesp - Subcosmop. — heaps of rock and rocky walls of Monte Arcosu (in Camarda & al. 1993); rr.

Dryopteridaceae

Dryopteris pallida (Bory) Maire & Petitm. — G rhiz - Euri-Medit. — shady, wet metamorphic rocks, preferably neutral or subalkaline; pc.

Dryopteris filix-mas (L.) Schott — G rhiz - Subcosmop. — embedded margins of Rio Sa Canna; r.

Polysticum setiferum (Forssk.) [T. Moore ex] Woyn. — G rhiz - Circumbor. — on Monte Lattias in the Longufresu e Senna Manna channel, on Monte Arcosu in the Su Scavoni channel; r.

Blechnaceae

Blechnum spicant (L.) Roth — H ros - Circumbor. — at the margin of Rio Cuguzzulu e s'Axina in homogeneous populations on dripping rocks of the San Leone Unit; rr.

SPERMATOPHYTA - GYMNOSPERMAE

Pinaceae

Pinus pinea L. — P scap - Euri-Medit. — two nuclei planted about thirty years ago near Cirifoddi and the guest-quarters of Perdu Melis; pc.

Cupressaceae

Juniperus oxycedrus L. — P scap - Euri-Medit. — maquis and woods, majestic specimens on Monte Lattias and near Perdu Melis; cc.

Juniperus turbinata Guss. — P scap - Euri-Medit. — found both in Gutturu Mannu and in Gutturedu up to an altitude of 300 m in the more thermophilous maquis; c.

Taxaceae

Taxus baccata L. — P scap - Paleotemp. — in the Longufresu e Senna Manna channel above 650 m, a specimen in Rio su Fundu at an altitude of 470 m; r.

SPERMATOPHYTA - ANGIOSPERMAE - DICOTYLEDONES

Salicaceae

Salix alba L. — P scap - Paleotemp. — only along Rio Gutturu Mannu, some majestic specimens in the neighbourhood of Gambarussa; r.

Salix purpurea L. — P caesp - Euras.-temp. — depositional areas of the torrents, particularly frequent in Gutturu Mannu and all along Rio Santa Lucia; c.

Salix arrigonii Brullo — P scap - Endem. — valley bottoms, springs and bed of torrents up to an altitude of 750 m; c.

Salix atrocinerea Brot. — P scap - W-Medit.-Atl. — found in coenosis with *Salix alba* L. in the neighbourhood of Gambarussa. Although it shows the same pollination system and a distribution area overlapping with *Salix arrigonii* Brullo, no hybrid individuals has been found. It could be caused by phenologic difference of *Salix atrocinerea* Brot. compare to *Salix arrigonii* Brullo; rr.

Populus alba L. — P scap - Paleotemp. — one specimen near the Serra Sestu spring, a number of specimens at Cirifoddi, planted in Guttureddu along the road and near the houses at Perdu Melis; pc.

Populus nigra L. — P scap - Paleotemp. — two isolated specimens near Cirifoddi, seven specimens at Pampinaxiu and one at Perdu Melis; r.

Betulaceae

Alnus glutinosa (L.) Gaertner — P scap - Paleotemp. — beds of Rio Trunconi, Gutturu Mannu, Guttureddu, Sa Canna, Is Frociddus and Cuguzzulu s'Axina; c.

Fagaceae

Castanea sativa Miller — P scap - SE-Europ. — a number of trees were planted in 1918 at Su Seminau, today only few specimens and some young plants propagated by seed remain. Only one specimen is found at Porcili Mannu; r.

Quercus ilex L. — P scap - Steno-Medit. — oak wood and derived maquis, majestic specimens in the Longufresu and Senna Manna channels; cc.

Quercus suber L. — P scap - W-Medit. — cork wood, maquis and pastures with trees, majestic specimens in the neighbourhood of the guest-quarters at Perdu Melis, Is

Castangias and Is Antiogus, an isolated speicmen was found in the Su Cuguzzulu e s'Axina channel; c.

Quercus morisii Borzì — P scap - W-Medit. — in the neighbourhood of S'arcu su Schisorgiu and Is Pauceris. Some authors (Camarda & Valsecchi 1983) consider this species as an hybrid of *Quercus ilex* L. and *Quercus suber* L.; rr.

Ulmaceae

Celtis australis L. — P scap - Euri-Medit. — rocky areas of the Bacu Perdosu channel, sa Sugraxia channel and along the Rio Sa Canna; r.

Moraceae

Ficus carica L. var. ***caprificus*** Risso — P scap - Medit.-Turan. — springs and the bed of torrents, a majestic specimen along Rio Sa Canna; c.

Urticaceae

Urtica atrovirens Req. ex Loisel. — H scap - Endem. — sheepfolds and ruderal areas; c.

Urtica dioica L. — H scap - Subcosmop. — sheepfolds, ruderal areas and road edges; c.

Urtica urens L. — T scap - Subcosmop. — ruderal areas and abandoned cultivated land; pc.

Urtica membranacea Poiret — T scap - S-Medit. — sheepfolds, ruderal areas and road edges; c.

Urtica pilulifera L. — T scap - S-Medit. — edges of footpaths and low altitude ruderal areas; r.

Parietaria diffusa Mert & W. D. J. Koch — H scap - Euri-Medit.-Macarones. — ruderal areas, road edges and sheepfolds; c.

Parietaria lusitanica L. — T rept - Steno-Medit. — wet rocks and walls; pc.

Soleirolia soleirolii (Req.) Dandy — H scap - Endem. — springs and swampy areas in the Longufresu channel and in Is Fundus above an altitude of 550 m; rr.

Santalaceae

Osyris alba L. — NP - Euri-Medit. — maquis and woods; c.

Aristolochiaceae

Aristolochia tyrrhena Nardi & Arrigoni — G rad - Endem. — along Rio Perdu Melis and in the Su Scavoni channel; rr.

Aristolochia rotunda L. subsp. ***insularis*** (Nardi & Arrigoni) Gamisans — G rhiz - Endem. — margins of footpaths and mule-tracks; r.

Rafflesiaceae

Cytinus hypocistis (L.) L. — G rad - Medit.-Macarones. — parasite at the base of rockroses, especially on *Cistus monspeliensis* L.; c.

Cytinus ruber (Fourr. ex Fritsch) Komarov — G rad - W-Medit. — parasite of rockroses, especially on *Cistus incanus* L.; pc.

Cactaceae

Opuntia ficus-barbarica A. Berger — P succ - Neotrop. — rocky walls and rugged slopes of Schina Ludragus, Su Dominariu and Medau is Figus Moriscas; c.

Polygonaceae

Polygonum scoparium Req. ex Loisel. — Ch suffr - Endem. — temporarily flooded deposition areas of Rio Gutturu Mannu and Guttureddu; r.

Polygonum aviculare L. — T rept - Cosmop. — road margins and meadows; c.

Rumex scutatus L. — H scap - Subcosmop. — heaps of stones, escarpments and sandy areas; pc.

Rumex thyrsoides Desf. — H scap - W-Medit. — deposition areas of torrents, meadows and glades; c.

Rumex sanguineus L. — H scap - Europ-Caucas. — meadows and glades; c.

Rumex pulcher L. subsp. ***divaricatus*** (L.) Murb. — H scap - Euri-Medit. — sheepfolds, ruderal areas and road margins; c.

Rumex obtusifolius L. — H scap - Subcosmop. — uncultivated areas and road margins; pc.

Rumex bucephalophorus L. — T scap - Medit.-Macarones. — deposition areas of torrents, meadows and garrigues; pc.

Chenopodiaceae

Beta vulgaris L. — H scap - Euri-Medit. — road edges and meadows; c.

Chenopodium ambrosioides L. — T scap - Cosmop. — ruderal areas; r.

Chenopodium murale L. — T scap - Subcosmop. — ruderal areas, road edges and uncultivated areas; c.

Chenopodium album L. — T scap - Subcosmop. — ruderal areas, sheepfolds and uncultivated land; c.

Phytolaccaceae

Phytolacca americana L. — G rhiz - N-Amer. — along Rio Gutturu Mannu; r.

Portulacaceae

Portulaca oleracea L. — T scap - Subcosmop. — road edges and uncultivated land; c.

Montia fontana L. subsp. ***chondrosperma*** (Fenzl) Walters — T scap - Medit.-Mount.-Subatl. — springs; r.

Caryophyllaceae

Arenaria balearica L. — Ch suffr - Endem. — shady wet crags, dripping rocks and springs; pc.

Arenaria serpyllifolia L. — T scap - Subcosmop. — footpath edges and meadows; c.

Moehringia pentandra Gay — T scap - Euri-Medit. — maquis and glades in woods; pc.

Stellaria media (L.) Vill. — T rept - Cosmop. — road edges, uncultivated areas and meadows; c.

Cerastium glomeratum Thuill. — T scap - Euri-Medit. — uncultivated areas and meadows; c.

Cerastium ligusticum Viv. — T scap - W-Medit. — meadows and glades; c.

Moenchia erecta (L.) P. Gaertn., B. Mey. & Scherb — T scap - Subnedit.-Subatl. — wet meadows; c.

Sagina apetala Ard. — T scap - Euri-Medit. — meadows; c.

Corrigiola telephiifolia Pourret — H ros - W-Medit. — deposition areas of torrents; c.

Paronychia echinulata Chater — T scap - Steno-Medit. — deposition areas of torrents; c.

Illecebrum verticillatum L. — T scap - Subatl. — muddy, wet areas; pc.

Polycarpon tetraphyllum (L.) L. — T scap - Euri-Medit. — dry meadows; c.

Spergula arvensis L. — T scap - Subcosmop. — ruderal areas, uncultivated areas and meadows; c.

Spergularia rubra (L.) J. & C. Presl — T scap - Subcosmop.-temp. — uncultivated land and meadows; c.

* ***Lychnis flos-cuculi*** L. — H scap - Eurosib. — beds of torrents and meadows (in Ballero 1990); c.

Silene italica (L.) Pers. — H ros - Euri-Medit. — glades in the cooler woods; r.

Silene nodulosa Viv. — H ros - Endem. — on the rocky walls and crests of Monte Lattias, Genna Strinta and Arcosu; pc.

Silene vulgaris (Moench) Garcke — H scap - Subcosmop. — meadows; c.

Silene laeta (Aiton) Godron — T scap - SW-Medit. — road margins, meadows and short lived cavities; pc.

Silene coelirosa (L.) Godron — T scap - SW-Medit. — thermophilous garrigues and maquis; pc.

Silene gallica L. — T scap - Euri-Medit. — meadows and garrigues; c.

Petrorhagia saxifraga (L.) Link subsp. ***gasparrinii*** (Guss.) Pign. — H caesp - Euri-Medit. — rocky areas and dry meadows on Monte Lattias and Arcosu; pc.

Petrorhagia prolifera (L.) P. W. Ball & Heywood — T scap - Euri-Medit. — rocky areas, footpath edges, glades and maquis; c.

Petrorhagia velutina (Guss.) P.W. Ball & Heywood — T scap - S-Medit. — rocky areas and meadows; pc.

Dianthus gr. ***sylvestris*** Wulfen — Ch suffr - Medit.-Mount. — in the Su Scavoni channel, on the walls of the Longufresu channel and along the Sa Canna channel. It is a taxa which can be ascribed to *Dianthus sylvestris* Wulfen group , but it isn't narrowly corresponding with the typus. For this reason there are some deeper search to find a better taxonomic definition; r.

Dianthus siculus C. Presl. — H scap - Endem. (sensu Camarda & al. 1993) — rocks and rocky faces; r.

Ceratophyllaceae

Ceratophyllum demersum L. — I rad - Subcosmop. — slow watercourses of Rio Gutturu Mannu; r.

Ranunculaceae

Nigella damascena L. — T scap - Euri-Medit. — road edges, uncultivated areas and meadows; pc.

Delphinium pictum Willd. — H scap - Endem. — in the neighbourhood of Gambarussa, along Rio Guttureddu as far as Su Seminau and Is Frociddus at the road edges; c.

Anemone hortensis L. — G bulb - N-Medit. — meadows and glades; c.

Clematis flammula L. — P lian - Euri-Medit. — more thermophilous maquis of the S. Gerolamo area, Is Olias and Is Marginis Arrubius; pc.

Clematis vitalba L. — P lian - Europ-Caucas. — oak woods and riparian woods; r.

Clematis cirrhosa L. — P lian - Steno-Medit.-Turan. — maquis and oak woods; c.

* ***Ranunculus velutinus*** Ten. — H scap - N-Medit. — glades in the maquis (in Ballero 1990); c.

Ranunculus bulbosus L. subsp. ***aleae*** (Willk.) Rouy & Fouc. — H scap - Euri-Medit. — meadows and glades; c.

Ranunculus sardous Crantz — T scap - Euri-Medit. — muddy meadows in the Fanebas sheepfold; pc.

Ranunculus cordiger Viv. subsp. ***diffusus*** (Moris) Arrigoni — H scap - Endem. — swampy areas; pc.

Ranunculus muricatus L. — T scap - Euri-Medit. — beds of torrents and wet meadows;c.

Ranunculus flabellatus Desf. — H scap - Steno-Medit.-Turan. — meadows; pc.

Ranunculus ficaria L. — H scap - Eurasiat. — footpath edges and meadows; pc.

Ranunculus bullatus L. — H ros - Steno-Medit. — glades and meadows; pc.

Ranunculus ophioglossifolius Vill. — T scap - Euri-Medit. — edges of watercourses and swampy areas; pc.

* ***Ranunculus revelieri*** Boreau — T scap - Endem. — swampy areas (in Ballero 1990); r.

* ***Ranunculus peltatus*** Schrank — I rad - Europ. — wet areas (in Ballero 1990); c.

Ranunculus aquatilis L. — I rad - Subcosmop. — slow waters of the torrents under the Santa Lucia dam and in the neighbourhood of Case Boero; r.

Ranunculus trichophyllus Chaix — I rad - Europ. — oligosaprobious waters; c.

Guttiferae

Hypericum hircinum L. — NP - Endem. — riparian woods, beds of torrents and springs; c.

Hypericum australe Ten. — H scap - W-Steno-Medit. — beds of torrents; pc.

Hypericum tetrapterum Fries — H scap - Paleotemp. — swampy terrains at torrent edges; pc.

Hypericum perforatum L. — H scap - Subcosmop. — road edges and uncultivated areas at low altitudes; c.

Lauraceae

Laurus nobilis L. — P caesp - Steno-Medit. — three nuclei in Rio Sa Canna and one isolated specimen; rr.

Papaveraceae

Papaver setigerum DC. — T scap - W-Medit. — ruderal and anthropic areas, road edges and meadows; c.

Papaver rhoeas L. — T scap - E-Medit. — ruderal, road edges, uncultivated areas and meadows; c.

Papaver dubium L. — T scap - E-Medit.-Turan. — meadows and cultivated areas at Cirifoddi and Santa Lucia, deposition areas of torrents; c.

* ***Papaver pinnatifidum*** Moris — T scap - Steno-Medit. — beds (in Ballero 1990); c.

Glaucium corniculatum (L.) J. H. Rudolph — T scap - S-Medit. — deposition areas of torrents, especially in the neighbourhood of Cirifoddi; pc.

Fumaria capreolata. — T scap - Euri-Medit. — road margins, uncultivated areas, meadows and garrigues; c.

Fumaria officinalis L. — T scap - Subcosmop. — ruderal areas, uncultivated areas and meadows; c.

Cruciferae

Sisymbrium officinale (L.) Scop. — T scap - Subcosmop. — uncultivated areas and meadows; c.

Arabidopsis thaliana (L.) Heynhold — T scap - Cosmop. — road edges, deposition sands and heaps of stones; c.

Bunias erucago L. — T scap - Euri-Medit. — road edges, deposition areas, meadows and uncutivated areas; pc.

Malcolmia ramosissima (Desf.) Thell. — T scap - W-Medit. — deposition areas of torrents; pc.

Barbarea rupicola Moris — Ch suffr - Endem. — in the Su Scavoni channel and on the rocky ridges of Monte Lattias; r.

Nasturtium officinale R. Br. — H scap - Cosmop. — edges of torrents and swampy areas; c.

Cardamine hirsuta L. — T scap - Cosmop. — road edges, meadows and deposition areas of torrents; c.

* ***Arabis collina*** Ten. — H scap - Medit.-Mount. — beds (in Ballero 1990); pc.

Arabis verna (L.) R. Br. — T scap - Steno-Medit. — rocks, heaps of stones and beds of torrents; pc.

Lobularia maritima (L.) Desv. — H scap - Steno-Medit. — rocks and faces in the lower areas, in the neighbourhood of Case Boero, Medau Cipriano, Cirifoddi and the areas surrounding Sa Canna; c.

Erophila verna (L.) Chevall. — T scap - Circumbor. — rocky areas, deposition areas of torrents and dry meadows; c.

Capsella bursa-pastoris (L.) Medikus — H bienn - Cosmop. — meadows; c.

Capsella rubella Reuter — T scap - Euri-Medit. — meadows and glades; c.

Hornungia petraea (L.) Rchb. — T scap - Euri-Medit. — deposition sands and meadows; c.

Teesdalia coronopifolia (J. P. Bergeret) Thell. — T scap - Euri-Medit. — road margins, uncultivated land and meadows; c.

Biscutella didyma L. — T scap - S-Medit.-Turan. — road margins, meadows and garrigues; c.

Brassica rapa L. subsp. ***sylvestris*** (L.) Janchen — H scap - Euri-Medit. — cultivated areas in the neighbourhood of Cirifoddi; pc.

Sinapsis arvensis L. — T scap - Steno-Medit. — ruderal areas, uncultivated areas and meadows; c.

Raphanus raphanistrum L. — T scap - Euri- Medit. — ruderal areas, sheepfolds and uncultivated land; pc.

Resedaceae

Reseda luteola L. — H scap - Circumbor. — road edges, meadows and garrigues; pc.

Reseda alba L. — H scap - Steno-Medit. — neighbourhood of Is Olias, Camp'e Luas and Medau Ninni Arxiu; r.

Crassulaceae

Crassula tillaea Lest.-Garl. — T scap - Submedit.-Subatl. — depositional sands of torrents; pc.

Umbilicus rupestris (Salisb.) Dandy — G rhiz - Medit.-Atl. — faces and rocks; c.

Umbilicus gaditanus Boiss. — G bulb - Steno-Medit. — faces and rocks; c.

Sedum album L. — Ch succ - Euri-Medit. — sunny rocks; pc.

Sedum dasyphyllum L. — Ch succ - Euri-Medit. — sunny rocks, often associated with *Cosentinia vellea* (Aiton) Tod. and *Cheilanthes acrosticha* (Balbis) Tod.; c.

Sedum andegavense (DC.) Desv. — T scap - W-Medit. — found only on the top of Monte Lattias, above Paddera and on Monte Arcosu; r.

Sedum stellatum L. — T scap - Steno-Medit. — sunny rocks; c.

Sedum caeruleum L. — T scap - SW-Medit. — sunny rocks; cc.

Saxifragaceae

Saxifraga corsica Gren. & Godr. — H scap - Endem. — rocks and cool, shady rocky faces above altitudes of 150 m; c.

Rosaceae

Rubus ulmifolius Schott — NP - Euri-Medit. — maquis and woods, torrent beds and springs; cc.

Rosa canina L. — NP - Paleotemp. — bed of Rio Guttureddu and Is Frociddus; pc.

Rosa sempervirens L. — NP - Steno-Medit. — maquis; c.

Sanguisorba minor Scop. subsp. ***muricata*** (Gremli) Briq. — H scap - Subcosmop. — dry meadows and garrigues; pc.

Potentilla reptans L. — H ros - Subcosmop. — wet places, watercourses and especially riparian woods; pc.

Aphanes arvensis L. — T scap - Subcosmop. — ruderal areas, road edges and uncultivated land; pc.

Aphanes microcarpa (Boiss. & Reuter) Rothm. — T scap - Subatl. — meadows and glades; pc.

Pyrus amygdaliformis Vill. — P caesp - Steno-Medit. — one specimen at the road edge below Schina su Dominariu and one near Trunconeddu; r.

Prunus spinosa L. — P caesp - Europ-Caucas. — rocky areas of Punta Ignazio Ortu and Perdu Catta; r.

Leguminosae

Ceratonia siliqua L. — P scap - S-Medit. — beds of torrents and maquis up to an altitude of 350 m; cc.

Acacia pycnantha Bentham — P scap - Australia — near Cirifoddi, planted and naturalised in time; c.

Acacia retinoides Schltr. — P scap - Australia — inhabited areas in the neighbourhood of Santa Lucia; pc.

Anagyris foetida L. — P caesp - S-Medit. — very few specimens on the schistose crystalline limestones of Gutturu Mannu, one specimen on the road edge near Medau Cipriano and a few plantlets at Concale Petuntu; r.

Calicotome villosa (Poiret) Link in Schrader — P caesp - Steno-Medit. — degraded maquis affected by fires, especially near Serra Narboni; pc.

Teline monspessulana (L.) Koch — P caesp - Steno-Medit.-Macarones. — two findings only in the cork wood of Is Antiogus; r.

Genista corsica (Loisel.) DC. [in Lam. & DC.] — NP - Endem. — found at S'Arcu e s'Arena, Perdu Melis, on Monte Arcosu and Lattias; pc.

Genista morisii Colla — NP - Endem. — only in the rockrose maquis near Santa Lucia e Camp'e Luas; rr.

Genista valsecchiae Brullo & De Marco — NP - Endem. — thermophilous maquis of Is Olias, Santa Lucia and Punta Donna Angelica; rr.

Genista aetnensis (Biv.) DC. — P caesp - Endem. — five specimens, two of which had been pollarded a few years before above Monte Seddas; rr.

Lupinus angustifolius L. — T scap - Steno-Medit. — glades and meadows; c.

Lupinus micranthus Guss. — T scap - Steno-Medit. — road margins, uncultivated areas and meadows; c.

Astragalus hamosus L. — T scap - Medit-Turan. — depositional areas of torrents, meadows and garrigues; pc.

Bisserula pelecinus L. — T scap - Steno-Medit. — road margins, meadows, garrigues and maquis; c.

Bituminaria bituminosa (L.) Stirton — H scap - Euri-Medit. — road margins in the neighbourhood of Case Boero, Medau Cipriano and Cirifoddi; pc.

Bituminaria morisiana (Pign. & Metlesics) Greuter — Ch frut - Endem. — rocky faces of Schina su Dominariu, Schina Ludragus, Canale Sirboni Mannu, Su Dragu, Is Sperrimas, Canale di Sa Canna and above Paddera; pc.

Vicia villosa Roth — T scap - Euri-Medit. — road edges, ruderal areas and meadows; c.

Vicia pseudocracca Bertol. — T scap - Steno-Medit. — beds and hedges; c.

Vicia atropurpurea Desf. — T scap - Steno-Medit. — meadows, garrigues and glades in the maquis; pc

Vicia disperma DC. — T scap - W-Medit. — depositional areas of torrents and garrigues; c.

Vicia sativa L. — T scap - Subcosmop. — uncultivated areas, meadows and garrigues; c.

Vicia sativa L. subsp. ***angustifolia*** (Grub.) Gaudin — T scap - Subcosmop. — road edges, uncultivated areas and meadows; c.

Vicia lathyroides L. — T scap - Euri-Medit. — road edges, uncultivated areas and meadows; c.

Vicia lutea L. — T scap - Euri-Medit. — depositional sands, meadows and garrigues; c.

Vicia lutea L. subsp. ***vestita*** (Boiss.) Rouy — T scap - Euri-Medit. — meadows, garrigues and poorly evolved maquis; pc.

Vicia bithynica (L.) L. — T scap - Euri-Medit. — road edges, uncultivated areas and meadows; c.

Vicia narbonensis L. — T scap - Euri-Medit. — road edges, uncultivated areas and meadows; r.

Lathyrus sphaericus Retz. — T scap - Euri-Medit. — uncultivated areas, meadows and garrigues; c.

* ***Lathyrus hirsutus*** L. — T scap - Euri-Medit. — among the maquis (in Ballero 1990); c.

Lathyrus articulatus L. — T scap - Steno-Medit. — marginal areas, garrigues, open maquis; c.

Lathyrus ochrus (L.) DC. — T scap - Steno-Medit. — ruderal areas, road margins, uncultivated areas and meadows; pc.

Pisum sativum L. subsp. ***elatius*** (Bieb.) Asch. & Graebner — T scap - Steno-Medit.-Turan. — anthropised areas, sheepfolds and uncultivated areas; pc.

Ononis natrix L. — Ch suffr - Euri-Medit. — road edges in the neighbourhood of Santa Lucia: pc.

Ononis reclinata L. — T scap - S-Medit.-Turan. — depositional areas, meadows and garrigues; c.

Medicago orbicularis (L.) Bartal. — T scap - Euri-Medit. — road edges, uncultivated areas, meadows and garrigues; c.

Medicago rigidula (L.) All. — T scap - Euri-Medit. — road edges, uncultivated areas and meadows; c.

* ***Medicago tornata*** (L.) Miller — T scap - W-Medit.-Macarones. — meadows (in Ladero & al. op. cit.); n.s.

Medicago truncatula Gaertner — T scap - Steno-Medit. — road edges, uncultivated areas, meadows and garrigues; c.

Medicago arabica (L.) Hudson — T scap - Euri-Medit. — ruderal areas, road margins, uncultivated areas and meadows; c.

Medicago hispida Gaertner — T scap - Subcosmop. — depositional areas, meadows and garrigues; pc.

Medicago praecox DC. — T scap - Steno-Medit. — uncultivated areas, meadows, garrigues and glades in the maquis; c.

Trifolium nigrescens Viv. — T scap - Euri-Medit. — road margins, uncultivated areas and meadows; c.

Trifolium glomeratum L. — T scap - Euri-Medit. — heaps of stone, meadows and garrigues; c.

Trifolium suffocatum L. — T scap - Steno-Medit. — heaps of stone, meadows and garrigues; pc.

Trifolium tomentosum L. — T rept - W-Paleotemp. — road edges, meadows and garrigues; c.

Trifolium campestre Schreber — T scap - W-Paleotemp. — meadows, garrigues and glades in the maquis; c.

Trifolium arvense L. — T scap - W-Paleotemp. — road edges and meadows; c.

Trifolium bocconei Savi — T scap - Steno-Medit. — meadows, garrigues and maquis; pc.

Trifolium scabrum L. — T scap - Euri-Medit. — meadows; pc.

Trifolium stellatum L. — T scap - Euri-Medit. — ruderal areas, road edges, uncultivated areas, meadows and garrigues; c.

Trifolium cherleri L. — T scap - Euri-Medit. — meadows, garrigues and glades in the maquis; c.

Trifolium angustifolium L. — T scap - Euri-Medit. — road edges, meadows, garrigues and degraded maquis; c.

Trifolium subterraneum L. — T rept - Euri-Medit. — road edges, meadows and garrigues; c.

Dorycnium hirsutum (L.) Ser. — Ch suffr - Euri-Medit. — garigues and glades in the maquis; c.

Dorycnium rectum (L.) Ser. — Ch suffr - Steno-Medit. — shores of the watercourses and riparian woods, frequent near Medau Cipriano; pc.

Lotus corniculatus L. — H scap - Cosmop. — road edges, uncultivated areas and meadows; c.

Lotus angustissimus L. — T scap - Euri-Medit. — meadows and garrigues; pc.

Lotus edulis L. — T scap - Steno-Medit. — cultivated areas, uncultivated areas and meadows; c.

Lotus conimbricensis Brot. — T scap - W-Steno-Medit. — found only on Monte Arcosu in the *Poa bulbosa* L. meadows; r.

Lotus ornithopodioides L. — T scap - Steno-Medit. — road edges, uncultivated areas and meadows; c.

Tetragonolobus maritimus (L.) Roth — H scap - Medit.-Pontic — at the edges of the alder wood near Medau Cipriano; r.

Ornithopus compressus L. — T scap - Euri-Medit. — road edges, dry meadows and garrigues; c.

Ornithopus pinnatus (Miller) Druce — T scap - Medit.-Atl. — road margins, uncultivated areas and meadows; pc.

Scorpiurus muricatus L. — T scap - Euri-Medit. — heaps of stones, meadows, garrigues and degraded maquis; c.

Oxalidaceae

Oxalis pes-caprae L. — G bulb - Southafr. — marginal and anthropic areas; c.

Geraniaceae

Geranium lanuginosum Lam. — T scap - Central-Medit. — woods above an altitude of 600 m; pc.

Geranium rotundifolium L. — T scap - Paleotemp. — ruderal areas and road edges; c.

Geranium molle L. — T scap - Subcosmop. — ruderal areas, road edges, uncultivated areas and meadows; c.

Geranium dissectum L. — T scap - Euri-Medit. — glades and meadows; pc.

Geranium lucidum L. — T scap - Euri-Medit. — shady faces and crags; c.

Geranium robertianum L. — T scap - Subcosmop. — maquis and glades in woods; c.

Geranium purpureum L. — T scap - Euri-Medit. — garrigues, glades and maquis; c.

Erodium ciconium (L.) L'Hér. — H bienn - Euri-Medit.-Pontic — ruderal areas, road edges, uncultivated areas and meadows; pc.

Erodium moschatum (L.) L'Hér. — T scap - Subcosmop. — ruderal areas, road edges, uncultivated areas and meadows; c.

Erodium cicutarium (L.) L'Hér. — H ros - Subcosmop. — ruderal areas, road edges, uncultivated areas and meadows; c.

Linaceae

Linum bienne Miller — H bienn - Euri-Medit.-Atl. — meadows, garrigues, maquis and glades in woods; c.

Linum trigynum L. — T scap - Euri-Medit. — meadows, garrigues and degraded maquis; c.

Linum strictum L. — T scap - Steno-Medit. — meadows and garrigues; c.

Radiola linoides Roth — T scap - Paleotemp. — found only on Monte Lattias near the Longufresu spring; rr.

Euphorbiaceae

Mercurialis ambigua L. f. — T scap - Paleotemp. — synanthropic areas, road edges and in the neighbourhood of sheepfolds; c.

Mercurialis corsica Cosson — Ch suffr - Endem. — rocky areas bed of Rio Sa Canna, heaps of stone in the Su Scavoni channel and in the Longufresu channel; r.

Euphorbia dendroides L. — NP - Steno-Medit.-Macarones. — rocky areas, heaps of stone and degraded maquis up to an altitude of 550 m; c.

Euphorbia pterococca Brot. — T scap - W-Medit.-Macarones. — uncultivated areas, meadows and garigues; r.

Euphorbia helioscopia L. — T scap - Cosmop. — ruderal areas, sheepfolds, road edges and meadows; c.

Euphorbia exigua L. — T scap - Euri-Medit. — rocky areas, meadows, garrigues and glades in maquis; c.

Euphorbia peplus L. — T scap - Cosmop. — ruderal areas, sheepfolds, road margins, uncultivated areas and meadows; pc.

Euphorbia cupanii Guss. ex Bertol. — Ch suffr - Endem. — uncultivated areas of the western slope of Monte Arcosu and near Santa Lucia; r.

Euphorbia terracina L. — H scap - Steno-Medit. — uncultivated areas, meadows and garrigues; c.

Euphorbia amygdaloides L. subsp. ***arbuscula*** Meusel — Ch suffr - Central-Europ.-Caucas. — bed of the Rio su Cuguzzulu and s'Axina and Rio Sa Canna in woods ripariali and at the edges; r.

Euphorbia semiperfoliata Viv. — H bienn - Endem. — beds of torrents, springs and wet places, at altitudes above 300 m; r.

Euphorbia characias L. — NP - Steno-Medit. — marginal areas, garrigues and open maquis; c.

Rutaceae

Ruta chalepensis L. — Ch suffr - S-Medit. — ruderal or anthropic areas, especially in the neighbourhood of Santa Lucia and Cirifoddi, garrigues and degraded maquis; pc.

Cneoraceae

Cneorum tricoccon L. — NP - NW-Medit. — only one specimen found in the neighbourhood of Santa Lucia; rr.

Simaroubaceae

Ailanthus altissima (Miller) Swingle — P scap - Cina — road edges near Santa Lucia; pc.

Anacardiaceae

Pistacia lentiscus L. — P caesp - Steno-Medit. — garrigues, maquis and woods up to an altitude of 890 m; cc.

Rhamnaceae

Rhamnus alaternus L. — P caesp - Steno-Medit. — bed of torrents and more thermophilous maquis up to an altitude of 395 m. Majestic specimens in the Baccu Perdosu channel; pc.

Vitaceae

Vitis vinifera L. subsp. ***sylvestris*** (Gmelin) Hegi — P lian - Euri-Medit. — along the watercourses and near the springs at altitudes above 250 m; pc.

Malvaceae

Malva sylvestris L. — H scap - Subcosmop. — ruderal areas, sheepfolds, road margins, uncultivated areas and meadows; c.

Lavatera cretica L. — T scap - Steno-Medit. — at Sa Canna and on the road edgs in the neighbourhood of the Girina sheepfold; pc.

Lavatera olbia L. — P caesp - Steno-Medit. — road edges and rocky areas; c.

Thymelaeaceae

Daphne gnidium L. — P caesp - Steno-Medit.-Macarones. — garrigues and degraded maquis; pc.

Violaceae

Viola alba Besser subsp. ***dehnhardtii*** (Ten.) W. Becker — H ros - Euri-Medit. — found only in the Is Antiogus cork wood; rr.

* ***Viola corsica*** Nyman subsp. ***limbarae*** Merxm. & Lippert — H scap - Endem. — found by Martelli (29 Mar 1898, FI) and never confirmed (Corrias 1984); n.s.

Cistaceae

Cistus incanus L. — NP - Steno-Medit. — garrigues, maquis and glades in the woods; c.

Cistus monspeliensis L. — NP - Steno-Medit.-Macarones. — garrigues and degraded maquis; cc.

Cistus salvifolius L. — NP - Steno-Medit. — garrigues and maquis; c.

Tuberaria guttata (L.) Fourr. — T scap - Euri-Medit. — road edges, meadows and deposition areas of torrents; c.

Fumana thymifolia (L.) Webb — Ch suffr - Steno-Medit. — found only on the schistose crystalline limestones of Gutturu Mannu; r.

Tamaricaceae

* ***Tamarix tetragyna*** Ehrenb. — NP - Medit.-Turan. — bed (in Ballero 1990); r.

Tamarix africana Poiret — P scap - W-Medit. — along Rio Santa Lucia as far as the Capoterra lagoons; c.

Tamarix gallica L. — P caesp - W-Medit. — in the *Nerium oleander* L. maquis and in the lower areas of Rio Guttureddu and Gutturu Mannu; pc.

Cucurbitaceae

Bryonia marmorata Petit — G rhiz - Endem. — road edges and maquis, especially in the neighbourhood of Medau Ninni Arxiu and Sa Canna; pc.

Lythraceae

Lythrum salicaria L. — H scap - Subcosmop. — on the edges of the watercourses, especially at Cirifoddi; pc.

Lythrum junceum Banks & Sol. in Russell — H scap - Steno-Medit.-Macarones. — wet zones and cavities along Rio Is Frociddus; pc.

Lythrum hyssopifolia L. — T scap - Subcosmop. — wet zones and flood plains of the torrents; pc.

Lythrum portula (L.) D. Webb — T rept - European-W-Siber. — swampy areas, cavities and still waters of the torrents; pc.

Myrtaceae

Myrtus communis L. — P caesp - Steno-Medit. — in the more thermophilous maquis and on very humid soils, especially along Rio Sa Canna; pc.

Eucalyptus camaldulensis Dehnh. — P scap - Australia — in reforested areas, in the neighbourhood of sheepfolds, guest-quarters and anthropic areas; c.

Onagraceae

Epilobium hirsutum L. — H scap - Subcosmop. — low areas of Rio Gutturu Mannu and Gutturedu; pc.

Epilobium lanceolatum Sebast. & Mauri — H scap - W-Europ. — wet rocks, springs and water courses; c.

Epilobium tetragonum L. — H scap - Paleotemp. — wet rocks, springs and watercourses; pc.

Haloragaceae

Myriophyllum spicatum L. — I rad - Subcosmop. — slow flowing waters of Rio Gutturu Mannu; r.

* ***Myriophyllum alterniflorum*** DC. — I rad - Anfiatlant. — muddy substrates (in Ballero 1990); c.

Theligonaceae

Theligonum cynocrambe L. — T scap - Steno-Medit. — ruderal areas, meadows, garrigues and maquis; c.

Araliaceae

Hedera helix L. — P lian - Submedit.-Subatl. — springs, watercourses, cool humid woods. In the Longufresu channel it covers whole rocky faces; pc.

Umbelliferae

Eryngium campestre L. — H scap - Euri-Medit. — on sand heaps at Trunconeddu; r.

Scandix pecten-veneris L. — T scap - Subcosmop. — uncultivated areas, meadows and garigues; c.

Smyrnium olusatrum L. — H bienn - Medit.-Atl. — ruderali and anthropic areas, uncultivated areas and wet meadows; pc.

Smyrnium rotundifolium Miller — H bienn - S-Medit. — road edges, uncultivated areas; pc.

Bunium corydalinum DC. — G bulb - W-Medit.-Mount. — ridge areas of Monte Arcosu, Genna Strinta and Monte Lattias at altitudes above 850 m; r.

Berula erecta (Hudson) Coville — G rhiz - Circumbor. — bends and stagnant areas of Rio Gutturu Mannu; r.

Seseli bocconi Guss. subsp. ***praecox*** Gamisans — H scap - Endem. — on Monte Lattias in crevices of granitic rocks at an altitude of 1000 m and at Su Scavoni on a schistose face exposed to the east; r.

Oenanthe lisae Moris — H scap - Endem. — swampy areas and springs; r.

Oenanthe pimpinelloides L. — H scap - Medit.-Atl. — along the watercourses, especially in *Alnus glutinosa* (L.) Gaertner riparian woods; c.

Oenanthe crocata L. — H scap - Subatl. — very wet zones, springs and watercourses; pc.

Foeniculum vulgare L. subsp. ***piperitum*** (Ucria) Coutinho — H scap - S-Medit. — road edges, uncultivated areas and meadows; c.

Magydaris pastinacea (Lam.) Paol. — H scap - W-Steno-Medit. — only one population found at Case Boero; pc.

Bupleurum fruticosum L. — NP - Steno-Medit. — found only at the end of the Longufresu heaps of stones and at Mitza is Seddas; r.

Apium nodiflorum (L.) Lag. — I rad - Euri-Medit. — silty cavities, springs and watercourses; pc.

Ammoides pusilla (Brot.) Breistr. — T scap - Steno-Medit. — road edges, meadows and glades; pc.

Ferula communis L. — H scap - S-Medit. — marginal areas, meadows and garrigues; c.

Tordylium apulum L. — T scap - Steno-Medit. — sandy areas of torrents, meadows and garrigues; c.

Thapsia garganica L. — H scap - S-Medit. — dry meadows and garrigues; c.

Torilis nodosa (L.) Gaertner — T scap - Euri-Medit.-Turan. — ruderali areas, road edges, uncultivated areas and meadows; c.

Torilis arvensis (Hudson) Link subsp. ***purpurea*** (Ten.) Hayek — T scap - Subcosmop. — footpath edges, meadows, garrigues and degraded maquis; c.

Orlaya kochii Heyw. — T scap - Steno-Medit. — uncultivated areas and meadows; pc.

Daucus carota L. — H bienn - Subcosmop. — ruderal areas, road edges and meadows; c.

Ericaceae

Erica terminalis Salisb. — P caesp - W-Medit. — edges of Rio Trunconi Mannu, Su Fundu, Cuguzzulu s'Axina, Is Frociddus, Gutturu Mannu and at Sa Canna, Fanebas and Medau Cipriano; c.

Erica arborea L. — P caesp - Steno-Medit. — garrigues, maquis and woods; cc.

Erica scoparia L. — P caesp - Steno-Medit. — found only on Monte Lattias and Is Caravius in garrigues and maquis at altitudes above 920 m; c.

Arbutus unedo L. — P caesp - Steno-Medit. — maquis and woods; cc.

Primulaceae

Cyclamen repandum Sibth. & Sm. — G bulb - N-Medit. — maquis and woods; cc.

Asterolinon linum-stellatum (L.) Duby — T scap - Steno-Medit. — rocks, meadows and garrigues; c.

Anagallis arvensis L. — T rept - Euri-Medit. — uncultivated areas, meadows and garrigues; c.

Anagallis parviflora Hoffsgg. & Link — T rept - W-Steno-Medit. — uncultivated areas and wet meadows; pc.

Samolus valerandi L. — H scap - Subcosmop. — wet zones and springs, often associated with *Adiantum capillus-veneris* L.; c.

Plumbaginaceae

Armeria sulcitana Arrigoni — Ch suffr - Endem. — in the Senna Manna channel at altitudes above 700 m, on the tops of Monte Lattias, Monte Arcosu and at Su Scavoni; r.

Oleaceae

Olea europaea L. var. ***sylvestris*** Brot. — P scap - Steno-Medit. — in the more thermophilous maquis, majestic specimens along Rio sa Canna, in the Baccu Perdosu channel and in Gutturu Mannu at Schina Ladragus; c.

Phillyrea angustifolia L. — P caesp - W-Steno-Medit. — garrigues and the more thermoxerophilous maquis, found at Serra Narboni, below Monte Su Tronu and at Monte Seddas; r.

Phillyrea latifolia L. — P scap - Steno-Medit. — maquis and woods, majestic specimens in Baccu Pedrosu, in the Longufresu channel and below Is Pauceris Mannu; cc.

Gentianaceae

Cicendia filiformis (L.) Delarbre — T scap - SW-Europ. — wet and dry zones; pc.

Blackstonia perfoliata (L.) Hudson — T scap - Euri-Medit. — wet and cool meadows; c.

Centaurium erythraea Rafn subsp. ***majus*** (Hoffsgg. & Link) Melderis — T scap - Paleotemp. — edges of footpaths, glades and degraded maquis; c.

Centaurium maritimum (L.) Fritsch — T scap - W-Steno-Medit. — meadows, garrigues and glades of the more thermophilous maquis; r.

Apocynaceae

Nerium oleander L. — P caesp - S-Medit. — beds of torrents up to altitudes of 650 m; cc.

Asclepiadaceae

Gomphocarpus fruticosus (L.) Aiton f. — P caesp - Southafr. — lower parts of Rio Gutturu Mannu and Gutturedddu; c.

Vincetoxicum hirundinaria Medikus subsp. ***contiguum*** (Koch) Markgraf — H scap - Eurasiat. — beds of the torrents, especially along Rio Gutturu Mannu and Trunconi; pc.

Rubiaceae

Sherardia arvensis L. — T scap - Subcosmop. — road edges, uncultivated areas, meadows and garrigues; cc.

Asperula laevigata L. — H scap - W-Central-Medit. — found only on Monte Arcosu at the edges of the maquis; r.

Galium scabrum L. — H scap - W-Medit.-Mount. — maquis and woods; c.

Galium aparine L. — T scap - Eurasiat. — uncultivated areas and hedges; c.

Galium corsicum Sprengel — H scap - Endem. — found only on the ridges of Monte Lattias and in a side channel of Senna Manna; rr.

Galium verrucosum Hudson — T scap - Steno-Medit. — in deposition areas of Rio Sa Canna and in therophytic meadows; pc.

Galium parisiense L. — T scap - Euri-Medit. — meadows, garrigues and thermophilous maquis; c.

Galium divaricatum Lam. — T scap - Steno-Medit. — uncultivated areas and meadows; c.

Galium murale (L.) All. — T scap - Steno-Medit. — faces and rocky areas; pc.

Rubia peregrina L. — P lian - Steno-Medit.-Macarones. — maquis and woods; cc.

Convolvulaceae

Convolvulus siculus L. — T scap - S-Medit. — found only under a few specimens of *Juniperus turbinata* Guss. at Gutturu Mannu; r.

Convolvulus arvensis L. — G rhiz - Cosmop. — road edges, meadows and garrigues; pc.

Convolvulus althaeoides L. — H scand - W-Steno-Medit. — road edges, meadows and garrigues; c.

Boraginaceae

Heliotropium europaeum L. — T scap - Euri-Medit.-Turan. — ruderal areas, road edges and uncultivated areas; c.

Cerinthe major L. — T scap - Steno-Medit. — found only at Santa Lucia at the road edges; r.

Alkanna tinctoria (L.) Tausch — H scap - Steno-Medit. — road edges and uncultivated areas; r.

Echium italicum L. — H bienn - Euri-Medit. — marginal and ruderal areas, uncultivated areas and meadows; c.

Echium plantagineum L. — H bienn - Euri-Medit. — ruderal areas, road edges and uncultivated areas; c.

* ***Echium sabulicola*** Pomel — H scap - Steno-Medit. — meadows (in Ballero 1990); r.

Echium creticum L. — H bienn - W-Steno-Medit. — rocky areas and areas of granitic deformation; pc.

Anchusa italica Retz. — H scap - Euri-Medit. — in the Su Scavoni and Senna Manna channels at altitudes above 550 m; r.

Borago officinalis L. — T scap - Euri-Medit. — ruderal areas, road edges, uncultivated areas and meadows; c.

Borago pygmaea (DC.) Chater & Greuter — T scap - Endem. — found only in the pebbly beds of the Senna Manna and Longufresu channels, respectively at altitudes of 620 and 670 m. There had been a previous report for the Sulcis area (Valsecchi 1980), but the date and gatherer were not mentioned in the herbarium specimen; rr.

Myosotis arvensis (L.) Hill — T scap - Europ-W-Asiat. — uncultivated areas, meadows and edges of the footpaths; c.

Myosotis ramosissima Rochel in Schultes — T scap - Europ-W-Asiat. — meadows and garrigues of Monte Arcosu, Genna Strinta and Is Caravius; r.

Myosotis discolor Pers. — T scap - Medit.-Atl. — at the foot of the faces of Sa Sperrimas on granitic deformation; r.

Cynoglossum creticum Miller — H bienn - Euri-Medit. — road edges, uncultivated areas and meadows; c.

Callitrichaceae

Callitriche stagnalis Scop. — I rad - Eurasiat. — stagnant or slow flowing waters; pc.

Labiatae

Teucrium massiliense L. — Ch suffr - W-Steno-Medit. — greto of the torrents, pebbly areas and areas of granitic deformation; pc.

Teucrium chamaedrys L. — Ch suffr - Euri-Medit. — garrigues and glades of the maquis; pc.

Teucrium flavum L. subsp. ***glaucum*** (Jordan & Fourr.) Ronn. — Ch frut - Steno-Medit. — found only along the Longufresu heaps of stones; r.

Teucrium marum L. — Ch suffr - Endem. — marginal and rocky areas; c.

Prasium majus L. — Ch frut - Steno-Medit. — garrigues and thermophilous maquis; pc.

Marrubium vulgare L. — H scap - Subcosmop. — ruderal areas, sheepfolds and road edges; pc.

Sideritis romana L. — T scap - Steno-Medit. — meadows, garrigues and thermophilous maquis; c.

Lamium bifidum Cyr. — T scap - Steno-Medit. — glades in woods; r.

Lamium amplexicaule L. — T scap - Paleotemp. — ruderal areas, sheepfolds, uncultivated areas and meadows; c.

Stachys glutinosa L. — Ch frut - Endem. — garrigues, pebbly beds of torrents and rocky areas; c.

Stachys corsica Pers. — H rept - Endem. — rocks of the channel of Su Scavoni and Longufresu, Rio Sa Mina and Trunconi. At altitudes above 800 m; r.

Stachys ocymastrum (L.) Briq. — T scap-W-Steno-Medit. — meadows and garrigues; pc.

Stachys arvensis (L.) L. — T scap - Subcosmop. — uncultivated areas, meadows and garrigues; c.

Prunella vulgaris L. — H scap - Circumbor. — flood plains of Rio Gutturu Mannu and Guttureddu; r.

Micromeria graeca (L.) Bentham — Ch suffr - Steno-Medit. — found only in the savanoid formation at *Cymbopogon hirtus* (L.) Janchen at Genna Narboni; r.

Micromeria graeca (L.) Bentham subsp. ***tenuifolia*** (Ten.) Nyman — Ch suffr - Steno-Medit. — rocky areas and heaps of stone; c.

Calamintha nepeta (L.) Savi subsp. ***glandulosa*** (Req.) P. Ball — H scap - Medit.-Mount. — deposition areas at the edges of Rio Gutturu Mannu; r.

Clinopodium vulgare L. subsp. ***arundanum*** (Boiss.) Nyman — H scap - Circumbor. — edges of riparian woods; r.

Lycopus europaeus L. — I rad - Circumbor. — edges of Rio Is Frociddus; r.

Mentha requieni Bentham — H rept - Endem. — along Rio Perdu Melis and in the channels of Longufresu and Senna Manna; r.

Mentha pulegium L. — H scap - Subcosmop. — wet zones and banks of the torrents, especially along Rio Gutturu Mannu at Serra Niedda; pc.

Mentha insularis Req. ex Gren. & Godr. — H scap - Endem. — wet places, springs and banks of torrents; c.

Rosmarinus officinalis L. — NP - Steno-Medit. — topmost areas of Monte Lattias, Arcu de su Schisorgiu and Sa Canna channel; pc.

Lavandula stoechas L. — NP - Steno-Medit. — garrigues and degraded maquis; cc.

Salvia sclarea L. — H bienn - Euri-Medit. — along the railway layout of Cirifoddi; r.

Salvia verbenaca L. — H scap - Medit.-Atl. — ruderal areas, road edges, uncultivated areas and meadows; pc.

Solanaceae

Atropa belladonna L. — H scap - Medit.-Mount. — found only along Rio Perdu Melis at Su Seminau; r.

Solanum nigrum L. — T scap - Cosmop. — ruderal areas, sheepfolds and uncultivated areas; pc.

Solanum luteum Miller — T scap - Euri.-Medit. — only one finding in the bed of Rio Sa Canna in pebbly areas; r.

* ***Solanum elaeagnifolium*** Cav. — Ch frut - Sudamer. — sunny glades (in Ballero 1990); r.

Datura stramonium L. — T scap - Cosmop. — on heaps of terra riportata at Santa Lucia; r.

Scrophulariaceae

Verbascum thapsus L. — H bienn - Europ.-Caucas. — ruderal areas, road edges and uncultivated areas; pc.

Verbascum conocarpum Moris — H bienn - Endem. — escarpments, rocks and rocky faces; pc.

Verbascum sinuatum L. — H bienn - Euri-Medit. — road edges and uncultivated areas; c.

Verbascum pulverulentum Vill. — H bienn - Central-S-Europ. — found in the Su Scavoni channel and along Is Frociddus road; pc.

Scrophularia peregrina L. — T scap - Steno-Medit. — cool glades especially at the end of the Longufresu and Su Scavoni heaps of stone; pc.

Scrophularia trifoliata L. — H scap - Endem. — in the Longufresu channel, on the limestones of Monte Seddas and in the Su Scavoni channel; pc.

* ***Scrophularia ramosissima*** Loisel. — Ch suffr - Endem. — in the bed of Rio Gutturu Mannu (in Mossa & Fogu , op. cit.); n.s.

Misopates orontium (L.) Rafin. — T scap - Paleotemp. — dry meadows and rocky areas; c.

Linaria pelisseriana (L.) Miller — T scap - Medit.-Atl. — edges of mule-tracks, meadows and garrigues; c.

Linaria arcusangeli Atzei & Camarda — Ch suffr - Endem. — only two plants found on a granitic face of Monte Arcosu and three specimens in the Longufresu channel; rr.

Linaria triphylla (L.) Miller — T scap - W-Medit. — marginal and anthropic areas, meadows; c.

Cymbalaria aequitriloba (Viv.) A. Chev. — Ch rept - Endem. — shady, humid rocks, springs; pc.

Digitalis purpurea L. — H scap - W-Euri-Medit. — glades and edges of mule-tracks at altitudes above 320 m, especially near the Su Suergiu spring and the Peppi Meloni mule-track; pc.

Veronica arvensis L. — T scap - Subcosmop. — marginal or anthropic areas, uncultivated areas and meadows; c.

Veronica cymbalaria Bodard — T scap - Euri-Medit. — faces and rocky areas; pc.

Veronica anagallis-aquatica L. — H scap - Cosmop. — slow flowing waters and periodically flooded areas, very frequent near the Sa Canna spring; c.

Veronica beccabunga L. — H rept - Eurasiat. — slow flowing waters and swampy areas; r.

Odontites lutea (L.) Clairv. — T scap - Euri-Medit. — rocky areas, meadows and garrigues. Frequent at s'Arcu de su Schisorgiu; pc.

Parentucellia viscosa (L.) Caruel — T scap - Medit.-Atl. — meadows, garrigues and edges of the maquis; c.

Parentucellia latifolia (L.) Caruel — T scap - Euri-Medit. — road edges, meadows and garrigues; c.

Bellardia trixago (L.) All. — T scap - Euri-Medit. — road edges, uncultivated areas, meadows and garrigues; c.

Orobanchaceae

Orobanche ramosa L. subsp. ***nana*** (Reuter) Coutinho — T par - Paleotemp. — uncultivated areas and meadows; c.

Orobanche ramosa L. subsp. ***mutelii*** (F. W. Schultz) Coutinho — T par - Paleotemp. — meadows especially at Cirifoddi; pc.

Orobanche lavandulacea Rchb. — T par - W-Medit.-Macarones. — found only on Monte Arcosu; r.

Orobanche crenata Forssk. — T par - Euri-Medit.-Turan. — uncultivated areas and meadows; c.

Orobanche schultzii Mutel — T par - S-Medit. — edges of roads and mule-tracks; r.

Orobanche canescens C. Presl. — T par - W-Steno-Medit. — road edges; pc.

Orobanche minor Cyr. — T par - Subcosmop. — parasite on *Bituminaria morisiana* (Pign. & Metlesics) Greuter at Schina de su Dominariu; pc.

Orobanche lutea Baumg. — T par - Central-S-Europ. — road edges at Stazzu Aroni; r.

Orobanche rigens Loisel. — T par - Endem. — parasite on *Genista corsica* (Loisel.) DC. at s'Arcu and s'Arena and on Monte Arcosu; r.

Plantaginaceae

Plantago major L. — H ros - Subcosmop. — at the edges of riparian woods, especially in the lower parts of Rio Gutturu Mannu; r.

Plantago coronopus L. — T scap - Euri-Medit. — road edges, uncultivated areas and meadows; c.

Plantago lanceolata L. — H ros - Cosmop. — ruderal areas, road edges, uncultivated areas and meadows; c.

Plantago lagopus L. — T scap - Steno-Medit. — uncultivated areas, meadows and garrigues; c.

Plantago bellardi All. — T scap - S-Medit. — road edges, uncultivated areas and meadows; c.

Plantago arenaria Waldst. & Kit. — T scap - Steno-Medit. — beds of the torrents and deposition areas; pc.

Plantago afra L. — T scap - Euri-Medit. — in the savanoid formation at *Cymbopogon hirtus* (L.) Janchen; pc.

Caprifoliaceae

Viburnum tinus L. — P caesp - Steno-Medit. — evolved maquis and woods, especially at Sa Meliana e Su Pirastu; pc.

Lonicera implexa Aiton — P lian - Steno-Medit. — maquis and woods; c.

Valerianaceae

Valerianella microcarpa Loisel. — T scap - Steno-Medit. — road edges, uncultivated areas, meadows and garrigues; pc.

Valerianella carinata Loisel. — T scap - Euri-Medit. — road edges, uncultivated areas and meadows; c.

Centranthus calcitrapa (L.) DC. — T scap - Steno-Medit. — deposition areas of the torrents, meadows and garrigues; c.

Dipsacaceae

Dipsacus ferox Loisel. — H bienn - Endem. (sensu Bocchieri & al. 1995) — found only at the edges of the Peppi Meloni mule-track and on Monte Arcosu; r.

Scabiosa maritima L. — H bienn - Steno-Medit. — road edges and uncultivated areas; pc.

Campanulaceae

Legousia falcata (Ten.) Fritsch — T scap - Steno-Medit. — road edges, uncultivated areas and meadows; pc.

Campanula erinus L. — T scap - Steno-Medit. — rocky areas and dry meadows; c.

Jasione montana L. — H bienn - Europ-Caucas. — sandy or pebbly areas and dry parts of the beds; pc.

Laurentia gasparrinii (Tineo) Strobl — T scap - W-Steno-Medit. — springs and wet rocks; c.

Compositae

Eupatorium cannabinum L. — H scap - Paleotemp. — springs, watercourses and riparian woods; pc.

Aster squamatus (Sprengel) Hieron. — T scap - Neotrop. — road edges, uncultivated areas and meadows; r.

Conyza bonariensis (L.) Cronq. — T scap - America tropic. — road edges and synanthropic areas; c.

Conyza albida Willd. — T scap - America tropic. — road edges and sinantropiche areas; pc.

Bellis annua L. — T scap - Steno-Medit.-Macarones. — ruderal areas, road edges and meadows; c.

Bellis perennis L. — H ros - Circumbor. — ruderal areas, sheepfolds, road edges and meadows; c.

Bellis sylvestris Cyr. — H ros - Steno-Medit. — road edges, uncultivated areas, meadows and glades; c.

Bellium bellidioides L. — H ros - Endem. — cool, wet rocks, springs; c.

Evax pygmaea (L.) Brot. — T rept - Steno-Medit. — therophytic meadows and edges of footpaths on the tops of Monte Arcosu and Punta Maxia; r.

Filago germanica (L.) Hudson — T scap - Paleotemp. — road edges, meadows, garrigues and glades; c.

Filago eriocephala Guss. — T scap - E-Steno-Medit. — road edges, meadows, garrigues and glades; pc.

Oglifa gallica (L.) Chrtek & Holub — T scap - Euri-Medit. — meadows and garrigues; c.

Phagnalon rupestre (L.) DC. subsp. ***annoticum*** (Jordan) Pign. — Ch suffr - W-Steno-Medit. — garrigues and alluvial mattresses of the beds of the torrents; pc.

Phagnalon saxatile (L.) Cass. — Ch suffr - W-Medit. — rocky areas; c.

Helichrysum montelinasanum E. Schmid — Ch suffr - Endem. — tops of Monte Lattias and Monte Arcosu; rr.

Helichrysum italicum (Roth) Don subsp. ***microphyllum*** (Willd.) Nyman — Ch suffr - Endem. (sensu Biondi & al. op. cit.) — rocky areas, deposition areas of torrents, garrigues and degraded maquis; c.

Inula graveolens (L.) Desf. — T scap - Medit.-Turan. — bed of the Rio Santa Lucia; pc.

Inula viscosa (L.) Aiton — H scap - Euri-Medit. — ruderal areas, road edges, uncultivated areas and meadows; cc.

Pulicaria odora (L.) Rchb. — H scap - Euri-Medit. — glades, maquis, oak wood and cork wood; c.

Pallenis spinosa (L.) Cass. — H bienn - Euri-Medit. — ruderal areas and road edges; r.

Anthemis arvensis L. subsp. ***incrassata*** (Loisel.) Nyman — T scap - Subcosmop. — ruderal areas, road edges, meadows and garrigues; c.

Achillea ageratum L. — H scap - W-Steno-Medit. — wet meadows; c.

Achillea ligustica All. — H scap - W-Steno-Medit. — dry, sunny slopes; pc.

Chrysanthemum coronarium L. — T scap - Steno-Medit. — anthropic areas, road edges and uncultivated areas; pc.

Coleostephus myconis (L.) Cass. — T scap - Steno-Medit. — cultivated fields at Cirifoddi; pc.

Leucanthemum flosculosum (L.) P. Giraud — Ch suffr - Endem. — in homogeneous populations in the lower part of Rio Santa Lucia; r.

Artemisia arborescens L. — NP - S-Medit. — road edges at Santa Lucia; pc.

Senecio leucanthemifolius Poiret — T scap - Steno-Medit. — meadows and garrigues; c.

Senecio vulgaris L. — T scap - Cosmop. — ruderali and anthropic areas, road edges, uncultivated areas and meadows; c.

Senecio lividus L. — T scap - Steno-Medit. — meadows, garrigues and glades in the maquis; pc.

Calendula arvensis L. — T scap - Euri-Medit. — ruderal areas, road edges, sheepfolds and meadows; c.

Carduus pycnocephalus L. — H bienn - Euri-Medit.-Turan. — ruderal areas and road edges; c.

* ***Carduus tenuiflorus*** Curtis — H bienn - W-Europ. — meadows (in Ladero & al. op. cit.); n.s.

Ptilostemon casabonae (L.) Greuter — H scap - Endem. — edges of roads and footpaths, deposition areas of the torrents; c.

Cirsium vulgare (Savi) Ten. — H bienn - Subcosmop. — road edges at Santa Lucia and Porcili Mannu; r.

Cynara cardunculus L. — H scap - Steno-Medit. — road edges and uncultivated areas; pc.

Silybum marianum (L.) Gaertner — H bienn - Medit.-Turan. — synanthropic and ruderali areas, road edges and uncultivated areas; pc.

Galactites tomentosa Moench — H bienn - Steno-Medit. — ruderal areas, road edges, uncultivated areas and meadows; c.

Onopordum illyricum L. — H bienn - Steno-Medit. — sheepfolds, synanthropic areas especially at Sa Canna, Sa Guardiedda and Is Pauceris; c.

Crupina crupinastrum (Moris) Vis. — T scap - Steno-Medit. — meadows, garrigues and glades; pc.

Centaurea calcitrapa L. — H bienn - Subcosmop. — anthropic areas, road edges and meadows; c.

Carthamus lanatus L. — T scap - Euri-Medit. — olive and carob groves at Santa Lucia; pc.

Carlina corymbosa L. — H scap - Steno-Medit. — road edges, meadows and garrigues; c.

Carlina lanata L. — T scap - Steno-Medit. — road edges and uncultivated areas; pc.

Chamaeleon gummifer (L.) Cass. — H ros - S-Medit. — uncultivated areas, meadows and garrigues; c.

Scolymus hispanicus L. — H bienn - Euri-Medit. — road edges and uncultivated areas at Santa Lucia; pc.

Cichorium intybus L. — H scap - Cosmop. — road edges presso Santa Lucia and Cirifoddi; pc.

Tolpis umbellata Bertol. — T scap - Steno-Medit. — uncultivated areas, meadows, garrigues and glades in the maquis; c.

Hyoseris scabra L. — T ros - Steno-Medit. — road edges, uncultivated areas and meadows; pc.

Rhagadiolus stellatus (L.) Willd. — T scap - Euri-Medit. — uncultivated areas, meadows and garrigues; c.

Hedypnois rhagadioloides (L.) Willd. — T scap - Steno-Medit. — meadows and garrigues; c.

Hedypnois cretica (L.) Willd. — T scap - Steno-Medit. — meadows and garrigues; pc.

Hypochoeris glabra L. — T scap - Euri-Medit. — road edges, uncultivated areas and meadows; c.

Hypochoeris cretensis (L.) Chaub. & Bory — H scap - NE-Medit. — rocky areas of Su Scavoni; r.

Hypochoeris achyrophorus L. — T scap - Steno-Medit. — meadows, garrigues and glades in the maquis; pc.

Robertia taraxacoides (Loisel.) DC. — H ros - Endem. — granitic and schistose rocks of Monte Lattias and Monte Arcosu at altitudes above 650 m; pc.

Urospermum picroides (L.) Scop. ex F. W. Schmidt — T scap - Euri-Medit. — ruderal areas, road edges, uncultivated areas and meadows; c.

Urospermum dalechampii (L.) Scop. ex F. W. Schmidt — H scap - W-Euri-Medit. — road edges, uncultivated areas and meadows; c.

* ***Leontodon taraxacoides*** (Vill.) Mérat — T scap - Medit.-Mount. — meadows (in Ladero & al. op. cit.); n.s.

Andryala integrifolia L. — T scap - W-Euri-Medit. — meadows, garrigues and glades in the maquis; c.

Chondrilla juncea L. — H scap - Euri-Medit. — meadows and garrigues; pc.

Taraxacum officinale Weber — H ros - Circumbor. — ruderal areas, meadows and glades; c.

Sonchus asper (L.) Hill — T scap - Subcosmop. — road edges, sheepfolds and uncultivated areas; c.

Sonchus oleraceus L. — T scap - Subcosmop. — road edges and uncultivated areas; c.

Sonchus tenerrimus L. — T scap - Steno-Medit. — ruderal areas, road edges, sheepfolds and uncultivated areas; c.

Lactuca viminea (L.) J. & C. Presl. — H bienn - Euri-Medit. — heaps of stone of Longufresu and Is Castangias; r.

Mycelis muralis (L.) Dumort. — H scap - Europ-Caucas. — road edges and glades; pc.

Reichardia picroides (L.) Roth — H scap - Steno-Medit. — road edges and meadows; c.

Aetheorrhiza bulbosa (L.) Cass. — G bulb - Steno-Medit. — road edges and meadows; c.

Crepis leontodontoides All. — H ros - W-Medit.-Mount. — rocky areas, garrigues and maquis; pc.

Crepis foetida L. — H bienn - Euri-Medit. — road edges, uncultivated areas, meadows and garrigues; c.

Crepis vesicaria L. — T scap - Submedit.-Subatl. — ruderal areas, road edges, uncultivated areas and meadows; c.

Crepis bellidifolia Loisel. — T scap - W-Steno-Medit. — rocky areas and meadows at the lower altitudes; pc.

ANGIOSPERMAE - MONOCOTYLEDONES

Alismataceae

Alisma plantago-aquatica L. — I rad - Subcosmop. — stagnant or slow flowing waters of Rio Gutturedu and Gutturu Mannu; pc.

Baldellia ranunculoides (L.) Parl. — I rad - Medit.-Atl. — stagnant or slow flowing waters of Rio Gutturu Mannu; r.

Potamogetonaceae

Potamogeton natans L. — I rad - Subcosmop. — stagnant waters; c.

* ***Potamogeton coloratus*** Hornem. — I rad - Subtrop. — in muddy substrates and slow flowing waters (in Ballero 1990); r.

Zannichelliaceae

* ***Zannichellia palustris*** L. — I rad - Cosmop. — pools ephemeral, found by Ballero (21 Apr 1988, CAG) and never confirmed; rr.

Liliaceae

Asphodelus aestivus Brot. — G rhiz - Steno-Medit. — meadows, garrigues and maquis; cc.

Colchicum cupanii Guss. — G bulb - Steno-Medit. — rocks of Medau Figu Moriscas and Sa Sperrimas; pc.

Gagea granatelli Parl. — G bulb - S-Medit. — meadows and garrigues of the topmost areas of Monte Lattias and Monte Arcosu; r.

Lilium candidum L. — G bulb - E-Medit. — in a glade at the edges of Rio Gutturu Mannu; rr.

Scilla autumnalis L. — G bulb - Euri-Medit. — meadows and garrigues; c.

Scilla obtusifolia Poiret — G bulb - SW-Medit. — rocky areas, slopes, meadows and garrigues at the lower altitudes; pc.

Urginea maritima (L.) Baker — G bulb - Steno-Medit.-Macarones. — meadows and garrigues; c.

Urginea fugax (Moris) Steinh. — G bulb - SW-Medit. — rocky areas, meadows and garrigues at Schina Ludragus, Rocca Fonnesa and Sa Sperrimas; pc.

Urginea undulata (Desf.) Steinh. — G bulb - S-Medit. — on poorly evolved soils and in clefts in the rocks along Rio Sa Canna, at Stazzu Aroni and Passu Pittiu; r.

Ornithogalum biflorum Jordan & Fourr. — G bulb - Endem. — found only along the mule-track to Is Castangias and on Monte Arcosu; r.

Brimeura fastigiata (Viv.) Chouard — G bulb - W-Medit.-nesicola — rocks and rocky cags; c.

Leopoldia comosa (L.) Parl. — G bulb - Euri-Medit. — rocky areas, meadows and garrigues; c.

Allium vineale L. — G bulb - Euri-Medit. — found at the edges of the road to Gutturedda at Mitza Vittorio and at low altitudes on Monte Arcosu; r.

Allium ampeloprasum L. — G bulb - Euri-Medit. — heaps of stone and meadows at Cirifoddi, Passu Pittiu and at an altitude of about 800 m on the southern slope of Monte Arcosu; r.

Allium parciflorum Viv. — G bulb - Endem. — rocks and rocky faces; r.

Allium neapolitanum Cyr. — G bulb - Steno-Medit. — found only at the edges of the road to Gutturu Mannu at Is Antiogus; r.

Allium roseum L. — G bulb - Steno-Medit. — found only in a glade at S'Arcu de su Suergiu, Stazzu Aroni and on Monte Arcosu; r.

Allium subhirsutum L. — G bulb - Steno-Medit. — meadows, garrigues and maquis; c.

Allium triquetrum L. — G bulb - W-Steno-Medit. — road edges, glades, maquis and woods; c.

Asparagus acutifolius L. — G rhiz - Steno-Medit. — maquis and woods; cc.

Asparagus albus L. — Ch frut - W-Steno-Medit. — rocky areas, garrigues and degraded maquis up to an alttiude of 150 m; c.

Ruscus aculeatus L. — Ch frut - Euri-Medit. — maquis and woods; c.

Smilax aspera L. — NP - Paleo-Subtrop. — maquis and woods; cc.

Amaryllidaceae

Leucojum aestivum L. subsp. ***pulchellum*** (Salisb.) Briq. — G bulb - W-Medit. — persistent cavities; r.

Leucojum autumnale L. — G bulb - Steno-Medit. — meadows and glades; c.

Pancratium illyricum L. — G bulb - Endem. — cool, wet rocky areas, often at the edges of torrents; pc.

Narcissus tazetta L. — G bulb - Steno-Medit. — grassy slopes of Monte Lattias; rr.

Dioscoreaceae

Tamus communis L. — G rad - Euri-Medit. — glades, maquis and woods; c.

Iridaceae

Iris germanica L. — G rhiz - uncertain origin — a few specimens at the edges of the Paddera field; r.

Gynandriris sisyrinchium (L.) Parl. — G bulb - Steno-Medit. — dry meadows at the lower altitudes; pc.

Crocus minimus DC. — G bulb - Endem. — meadows and garrigues at altitudes above 450 m; c.

Romulea ligustica Parl. — G bulb - SW-Steno-Medit. — glades at Punta Ignazio Ortu; r.

Romulea requienii Parl. — G bulb - Endem. — meadows and garrigues; c.

Romulea rollii Parl. — G bulb - W-Steno-Medit. — sandy areas of Rio Su Fundu at an altitude of 400 m; r.

Romulea columnae Sebast. & Mauri — G bulb - Steno-Medit. — meadows, garrigues and glades; c.

Gladiolus italicus Miller — G bulb - Euri-Medit. — meadows and uncultivated areas at low altitudes; pc.

Gladiolus byzantinus Miller — G bulb - Steno-Medit. — found only in the Paddera field; r.

Juncaceae

Juncus subulatus Forssk. — G rhiz - S-Medit. — at Camp'e Luas; r.

* ***Juncus tenageja*** Ehrh. — T caesp - Paleotemp. — wet swampy zones (in Ballero 1990); c.

Juncus bufonius L. — T caesp - Cosmop. — wet places, swampy terrains and watercourses; c.

Juncus effusus L. — G rhiz - Cosmop. — in the neighbourhood of the Sa Canna spring and along Rio Is Frociddus; pc.

Juncus acutus L. — H caesp - Euri-Medit. — beds of the torrents; c.

Juncus heterophyllus Desf. — I rad - W-Medit.-Atl. — on cool, wet terrains; c.

Juncus fontanesii Gay — G rhiz - Paleo-Subtrop. — sandy areas at the edges of the torrents; c.

Juncus articulatus L. — G rhiz - Circumbor. — beds of the torrents; c.

Juncus capitatus Weigel — T scap - Euri-Medit.-Atl. — deposition areas and beds of the torrents; pc.

Luzula forsteri (Sm.) DC. — H caesp - Euri-Medit. — evolved maquis and woods; c.

Gramineae

Lamarckia aurea (L.) Moench — T scap - Steno-Medit.-Turan. — road edges, uncultivated areas, meadows and garrigues; c.

Cynosurus echinatus L. — T scap - Euri-Medit. — edges of footpaths, meadows and garrigues; c.

Cynosurus elegans Desf. — T scap - Steno-Medit. — meadows, garrigues and glades in the maquis; c.

Briza maxima L. — T scap - Paleo-Subtrop. — meadows, garrigues and degraded maquis; c.

Briza minor L. — T scap - Subcosmop. — meadows, garrigues and maquis; c.

Dactylis hispanica Roth — H caesp - Steno-Medit. — rocky areas, dry meadows and garrigues; c.

Dactylis glomerata L. — H caesp - Paleotemp. — uncultivated areas and meadows; pc.

Poa annua L. — T caesp - Cosmop. — marginal and anthropic areas, uncultivated areas and meadows; c.

Poa bulbosa L. — H caesp - Paleotemp. — rocky areas, dry meadows and garrigues; c.

Poa nemorialis L. — H caesp - Circumbor. — found in the *Alnus glutinosa* (L.) Gaertner wood at Su Seminau; r.

Vulpia geniculata (L.) Link — T caesp - W-Steno-Medit. — meadows and garrigues; c.

Vulpia ligustica (All.) Link — T caesp - Steno-Medit. — road edges, uncultivated areas and meadows; c.

Vulpia ciliata (Danth.) Link — T caesp - Euri-Medit. — road edges, uncultivated areas, meadows and garrigues; c.

Vulpia myuros (L.) Gmelin — T caesp - Subcosmop. — road edges, uncultivated areas and meadows; c.

Festuca arundinacea Schreber — H caesp - Paleotemp. — beds of the torrents and riparian woods; pc.

Nardurus halleri (Viv.) Fiori — T scap - W-Euri-Medit. — on granitic deformation and pebbles; pc.

Desmazeria rigida (L.) Tutin in Clapham, Tutin & E. F. Warburg — T scap - Euri-Medit. — road edges, uncultivated areas and meadows; c.

Melica ciliata L. — H caesp - Euri-Medit.-Turan. — rocky areas and meadows on Monte Arcosu; pc.

Melica arrecta Kuntze — H caesp - Steno-Medit. — rocky areas, garrigues and maquis; pc.

Melica minuta L. — H caesp - Steno-Medit. — road edges, rocky areas, meadows and garrigues; c.

Psilurus incurvus (Gouan) Schinz & Thell. — T scap - Euri-Medit. — road edges, uncultivated areas, meadows and glades; pc.

Lolium rigidum Gaudin — T scap - Paleo-Subtrop. — road edges, uncultivated areas and meadows; pc.

Bromus rubens L. — T scap - S-Medit.-Turan. — ruderal areas, road edges, uncultivated areas and meadows; c.

Bromus sterilis L. — T scap - Euri-Medit.-Turan. — ruderal areas, road edges, uncultivated areas and meadows; c.

Bromus madritensis L. — T scap - Euri-Medit. — ruderal areas, road edges, uncultivated areas and meadows; pc.

Bromus rigidus Roth — T scap - Paleo-Subtrop. — ruderal areas, road edges, uncultivated areas and meadows; pc.

Bromus scoparius L. — T scap - Steno-Medit. — uncultivated areas and meadows; c.

Bromus intermedius Guss. — T scap - Euri-Medit. — meadows and garrigues; pc.

Bromus hordeaceus L. — T scap - Subcosmop. — road edges, sheepfolds, uncultivated areas and meadows; c.

Brachypodium sylvaticum (Hudson) P. Beauv. — H caesp - Paleotemp. — in riparian woods and more rarely in cork woods; c.

Brachypodium retusum (Pers.) Beauv. — H caesp - W-Steno-Medit. — garrigues and degraded maquis; c.

Brachypodium distachyum (L.) P. Beauv. — T scap - Steno-Medit.-Turan. — meadows, garrigues and degraded maquis; c.

Hordeum murinum L. — T scap - Circumbor. — ruderal areas, road edges, uncultivated areas and meadows; c.

Hordeum leporinum Link — T scap - Euri-Medit. — ruderal areas, uncultivated areas and meadows; c.

Dasypyrum villosum (L.) Borbás — T scap - Euri-Medit.-Turan. — ruderal areas, uncultivated areas and meadows; c.

Avena barbata Potter ex Link in Schrader — T scap - Euri-Medit.-Turan. — ruderal areas, road edges, uncultivated areas and meadows; c.

Avena sterilis L. — T scap - Euri-Medit.-Turan. — ruderal areas, road edges, uncultivated areas and meadows; c.

Holcus lanatus L. — H caesp - Circumbor. — meadows and glades of riparian woods; pc.

Lophochloa cristata (L.) Hylander — T caesp - Subcosmop. — uncultivated areas, meadows and garrigues; c.

Trisetaria panicea (Lam.) Maire — T scap - W-Steno-Medit.-Macarones. — ruderal areas, road edges, uncultivated areas and meadows; r.

Agrostis stolonifera L. — H rept - Circumbor. — in the *Alnus glutinosa* (L.) Gaertner wood and at the edges of the torrents; pc.

Gastridium ventricosum (Gouan) Schinz & Thell. — T scap - Medit.-Atl. — road edges, meadows, garrigues and glades in the maquis; c.

Polypogon viridis (Gouan) Breistr. — H caesp - Paleo-Subtrop. — wet deposition sands and banks of the torrents; pc.

Polypogon subspathaceus Req. — T scap - Steno-Medit. — wet depositional sands and banks of the torrents; pc.

Lagurus ovatus L. — T scap - Euri-Medit. — ruderal areas, road edges, uncultivated areas and meadows; c.

Aira caryophyllea L. — T scap - Paleo-Subtrop. — sandy areas of the torrents, meadows and garrigues; c.

Aira cupaniana Guss. — T scap - W-Steno-Medit. — sandy areas, meadows and garrigues; c.

Aira tenorei Guss. — T scap - Steno-Medit. — meadows, garrigues and degraded maquis; c.

Aira elegans Willd. — T scap - Euri-Medit. — glades, maquis and woods; pc.

Corynephorus fasciculatus Boiss. & Reuter — T scap - W-Steno-Medit. — meadows, garrigues and glades; r.

Phragmites australis (Cav.) Trin. — G rhiz - Subcosmop. — swampy areas, edges of the torrents and in particular below the Santa Lucia dam; pc.

Arundo donax L. — G rhiz - Subcosmop. — at Cirifoddi in contact with the *Populus alba* L. formation of Rio Gutturu Mannu; pc.

Phalaris minor Retz. — T scap - Paleo-Subtrop. — ruderal areas, road edges, uncultivated areas and meadows; c.

Anthoxanthum ovatum Lag. — T scap - W-Steno-Medit. — garrigues and degraded maquis; pc.

Alopecorus geniculatus L. — H caesp - Subcosmop. — wet rocks and edges of the torrents; pc.

Stipa bromoides (L.) Dörfler — H caesp - Steno-Medit. — glades and maquis; pc.

Stipa capensis Thunb. — T scap - Steno-Medit. — uncultivated areas, meadows and garrigues; c.

Oryzopsis miliacea (L.) Asch. & Schweinf. — H caesp - Steno-Medit.-Turan. — road edges, uncultivated areas, meadows and garrigues; c.

Oryzopsis miliacea (L.) Asch. & Schweinf. subsp. ***thomasii*** (Duby) Pign. — H caesp - Steno-Medit. — road edges, uncultivated areas and garrigues; pc.

Paspalum paspalodes (Michx.) Scribner — G rhiz - Subcosmop. — temporarily flooded areas, especially on the bank of the Santa Lucia dam; c.

Cymbopogon hirtus (L.) Janchen — H caesp - Paleotrop. — road edges, rocks and gently sloping rocky faces of the areas of Rocca Fonnesa, Ludragus and Schina su Dominariu; c.

Araceae

Arum italicum Miller — G rhiz - Steno-Medit. — found only at Cirifoddi at the edges of Rio Gutturu Mannu and the S. Antonio houses; pc.

Arum pictum L. f. — G rhiz - Endem. — glades and *Oleo-Ceratonion* Br.-Bl. 1936 ex Guin. & Dron. 1944maquis; c.

Arisarum vulgare Targ.-Tozz. — G rhiz - Steno-Medit. — garrigues, maquis and woods; cc.

Ambrosinia bassii L. — G rhiz - W-Steno-Medit. — meadows, glades, garrigues and maquis; c.

Lemnaceae

Lemna minor L. — I nat - Subcosmop. — cavities along il Rio Is Frociddus and Perdu Melis; r.

Sparganiaceae

Sparganium emersum Rehmann — I rad - Eurasiat. — edges of Rio Gutturu Mannu and Guttureddu where the waters flow more slowly; pc.

Typhaceae

Typha latifolia L. — G rhiz - Cosmop. — stagnant waters below the Santa Lucia dam and at Passu Pittiu; r.

Typha angustifolia L. — G rhiz - Circumbor. — found only along Rio Marroccu and in Rio Is Frociddus; r.

Cyperaceae

Carex distachya Desf. — H caesp - Steno-Medit. — evolved maquis and woods; c.

Carex divulsa Stokes — H caesp - Euri-Medit. — glades, maquis and woods; pc.

Carex divisa Hudson — G rhiz - Euri-Medit.-Atl. — wet meadows, swampy areas and edges of the torrents; pc.

Carex hallerana Asso — H caesp - Euri-Medit. — maquis and woods; pc.

Carex distans L. — H caesp - Euri-Medit. — glades, maquis and woods; pc.

Carex pendula Hudson — H caesp - Eurasiat. — riparian woods; pc.

Carex microcarpa Bertol. ex Moris — G rhiz - Endem. — springs, swampy areas and beds of the torrents; pc.

Carex flacca Schreber — G rhiz - Europ. — wet zones, springs and riparian woods; pc.

Holoschoenus australis (L.) Rchb. — G rhiz - Euri-Medit. — edges of the torrents; c.

Isolepis cernua (Vahl) R. & S. — T scap - Subcosmop. — wet consolidated sands at Is Pauceris, Gambarussa and the bed of Rio Sa Canna; pc.

Isolepis setacea (L.) R. Br. — T scap - Paleotemp. — found only at a karst spring along Rio Is Frociddus; r.

Cyperus longus L. — G rhiz - Paleotemp. — stagnant or slow flowing waters, especially at Sa Canna and below the Santa Lucia dam; pc.

Cyperus rotundus L. - G rhiz - Subcosmop. - wet meadows in anthropic areas; pc.

Orchidaceae

Limodorum abortivum (L.) Swartz — G rhiz - Euri-Medit. — evolved maquis and woods; c.

Neotinea maculata (Desf.) Stearn — G bulb - Steno-Medit. — glades in the maquis and woods; c.

Ophrys apifera Hudson — G bulb - Euri-Medit. — meadows and glades in the maquis; pc.

Ophrys holoserica (N. L. Burm.) W. Greuter subsp. ***chestermanii*** J. J. Wood — G bulb - Endem. — on alluvial terrains near the Santa Lucia dam; r.

Ophrys morisii (Martelli) Soò in Keller & al. — G bulb - Endem. — road edges, meadows, garrigues and maquis; c.

Ophrys tenthredinifera Willd. — G bulb - Steno-Medit. — road edges, meadows and garrigues; c.

Ophrys* × *maremmae O. & E. Danesch subsp. *woodii* Corrias (*O. holoserica* subsp. *chestermanii* × *O. tenthredinifera*) — G bulb - Endem. — only one specimen was found near the Santa Lucia dam; rr.

Orchis longicornu Poiret — G bulb - W-Steno-Medit. — road edges, meadows and garrigues; cc.

Orchis mascula (L.) L. subsp. ***ichnusae*** Corrias — G bulb - Endem. — only three specimens at the end of Longufresu channel and one on Monte Seddas; r.

Orchis papilionacea L. — G bulb - Euri-Medit. — meadows, garrigues and glades in the maquis; c.

Orchis papilionacea L. subsp. ***grandiflora*** (Boiss.) H. Baumann — G bulb - Euri-Medit. — drier meadows and garrigues; c.

Orchis provincialis Balbis ex Lam. & DC. — G bulb - Steno-Medit. — on Monte Lattias in a side channel of Senna Manna and at the end of the Longufresu channel; r.

Orchis* × *penzigiana A. Camus subsp. ***sardoa*** Scrugli & Grasso (*Orchis mascula* subsp. *ichnusae* × *O. provincialis*) — G bulb - Endem. — only one specimen in the Longufresu channel; rr.

Serapias cordigera L. — G bulb - Steno-Medit. — meadows, garrigues and edges of the maquis; c.

Serapias lingua L. — G bulb - W-Steno-Medit. — meadows, garrigues and glades in the maquis; pc.

Serapias nurrica Corrias — G bulb - W-Steno-Medit. — in the more thermophilous maquis; r.

Serapias parviflora Parl. — G bulb - Steno-Medit. — meadows and garrigues, often mixed with *Serapias lingua* L.; c.

Serapias* × *semilingua Camus & al. (*S. lingua* × *S. parviflora*) — G bulb - Steno-Medit. — meadows and garrigues; pc.

Spiranthes aestivalis (Poiret in Lam.) Rich. — G rhiz - Medit.-Atl. — found only along Rio Perdu Melis and Rio Su Cuguzzulu and s'Axina; rr.

Spiranthes spiralis (L.) Chevall. — G rhiz - Europ-Caucas. — road edges and meadows; pc.

Discussion

With the research carried out in the mountain and hilly part of the catchment basin of Rio Santa Lucia it has been possible to assess 669 taxa, of which 629 were species, 35 subspecies, 2 varieties and 3 hybrids, belonging to 364 genera and 101 families (Table 4). The *Dicotyledones* with 70 families, 266 genera and 486 entities were dominant over the other systematic groups.

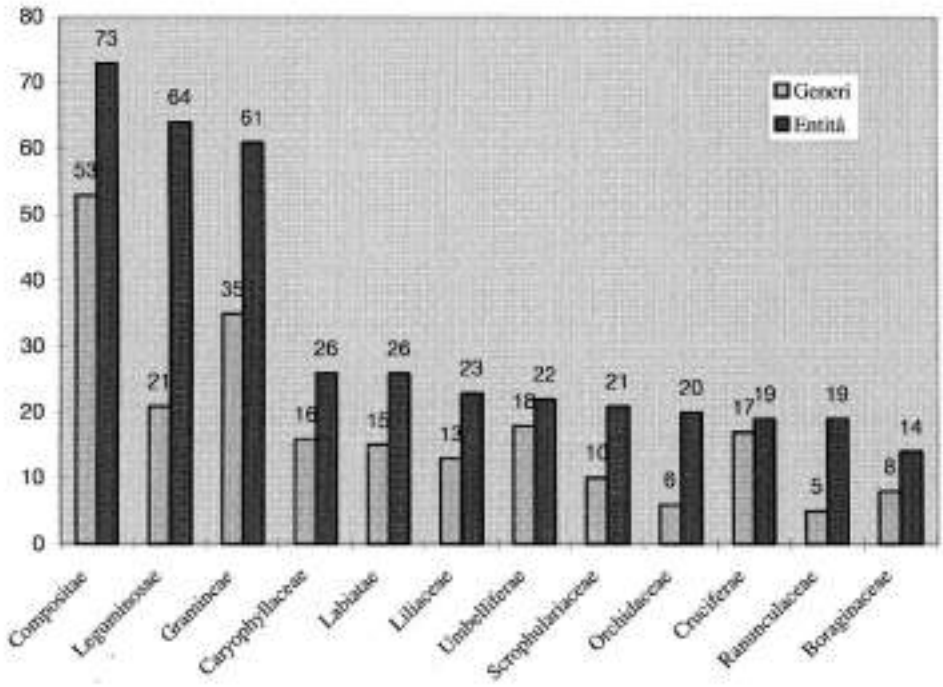

Fig. 2. Families with the greatest number of genera and entities.

The families with the greatest number of entities (Fig. 2 and Table 5) are in the order the *Compositae* (73), the *Leguminosae* (64) and the *Gramineae* (61).

An interesting point about the *Umbelliferae* and the *Cruciferae* is that their number of genera (18 and 17 respectively) is very near their number of entities (22 and 19).

Table 4. Taxa flora of Rio Santa Lucia.

	FAMILIES	GENERA	SPECIES	SUBSPECIES	VARIETIES	HYBRIDS
Pteridophyta	13	16	23	2	-	-
Gymnospermae	3	3	4	-	-	-
Dicotyledones	70	266	456	28	2	-
Monocotyledones	15	79	146	5	-	3
Total	101	364	629	35	2	3

Table 5. Families with the greatest number of taxa.

Families	Genera	Species	Subspecies	Hybrids	Total
Compositae	53	70	3	-	73
Leguminosae	21	60	4	-	64
Gramineae	35	60	1	-	61
Caryophyllaceae	16	25	1	-	26
Labiatae	15	23	3	-	26
Liliaceae	13	23	-	-	23
Umbelliferae	18	19	3	-	22
Scrophulariaceae	10	21	-	-	21
Orchidaceae	6	14	3	3	20
Cruciferae	17	18	1	-	19
Ranunculaceae	5	17	2	-	19
Boraginaceae	8	14	-	-	14

Table 6 shows a comparison of the floristic richness of the studied area with that of the nearby areas of Pixinamanna (Arrigoni 1964), Pantaleo-Gutturu Mannu-Punta Maxia (Camarda & al. 1993), Monte Tamara (Ballero & al. op. cit.) and Monte Arcosu (Mossa & al. 1996). In considering the flora of Pixinamanna we did not include any taxa lower than subspecies. This reduced the entities from 552 to 467. From a comparison of the different florae, it was found that the Rio Santa Lucia catchment basin is floristically poorer that all other areas, except for Pantaleo-Gutturu Mannu-Punta Maxia. These data are justified by the remarkable difference in area, by the nature of the substrates and by the relative homogeneity of the examined territory compared to the areas of Monte Tamara, Monte Arcosu and Pixinamanna. The only really comparable area by size and territorial homogeneity was the Pantaleo-Gutturu Mannu-Punta Maxia area, that is remarkably poorer in terms of numbers and their relation with the area.

Table 6. Floristic richness.

FLORA	Area (km^2)	Entity	Entity/km^2	Genera	Gen./km^2	Families	Fam./km^2
Rio Santa Lucia	73	669	9.2	364	5.0	101	1.4
Monte Tamara (Ballero & al. op. cit.)	25	472	18.9	294	11.8	78	3.1
Monte Arcosu (Mossa & al. 1996)	32	520	16.3	303	9.5	90	2.8
Pixinamanna (Arrigoni 1964)	40	467	11.7	269	6.7	n.s.	-
Pantaleo (Camarda & al. 1993)	120	593	4.9	338	2.8	90	0.8

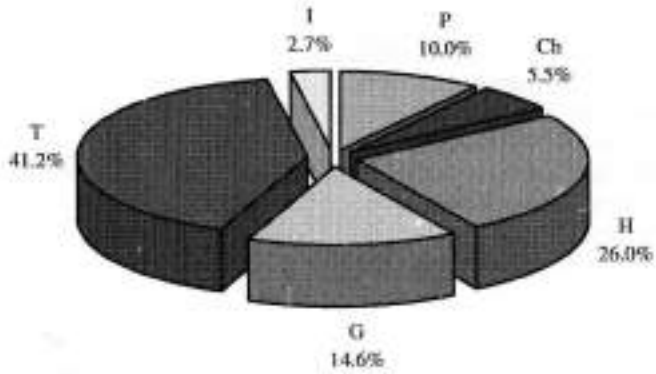

Fig. 3. Biological spectrum of the flora of the Rio Santa Lucia catchment basin.

The data relating to the biological spectrum (Fig. 3) basically confirm the Mediterranean nature of the area (T = 41.2%) and the high degree of wooded cover (P = 10%).

The high percentage of geophytes (G = 14.6%) seems related to the anthropic use of the land, especially to the practice of fires and sylvo-pastoral types of activities. The percentage of hydrophytes, that are mainly located along the torrents and in the neighbourhood of the springs, is significant (I = 2.7%).

From a comparison of the biological spectrum (Table 7) with that of Sardinia (Bocchieri 1995) no particular disagreement emerges. The only differences are in the therophytes values compared to the florae of Pixinamanna (Arrigoni 1964) and Pantaleo-Gutturu Mannu-Punta Maxia (Camarda & al. 1993). The therophyte percentage values observed for these florae were significantly higher (10.8 and 7 percentage points), though there are no important landscape justifications except that of an exposure to the sea for the Pixinamanna area and of an inclusion of agricultural areas in the Pantaleo-Gutturu Mannu-Panta Maxia area. As regards recent surveys on Monte Tamara and Monte Arcosu, from a comparison with the flora of Rio Santa Lucia, the observed values seem to agree except for the hydrophytes. This is attributable to the geomorphological and geological nature of the two systems. In fact both present very few watercourses and springs. Moreover Monte Tamara is made up of calcareous rocks that present deep karst phenomena.

Table 7. Comparision of biological spectra.

	P	Ch	H	G	T	I
Rio Santa Lucia	10.0	5.5	26.0	14.6	41.2	2.7
Pixinamanna (Arrigoni 1964)	9.0	5.0	19.0	15.0	52.0	0.0
Pantaleo (Camarda & al. 1993)	9.3	3.7	26.7	11.4	48.2	0.7
Monte Tamara (Ballero & al. op. cit.)	10.0	5.0	26.0	14.0	45.0	0.0
Monte Arcosu (Mossa & al. 1996)	10.4	5.0	25.6	14.0	43.6	1.4
Sardegna (Bocchieri, op. cit.)	8.8	8.1	28.1	12.1	39.9	3.0

Fig. 4 and Table 8 report the chorological spectrum and categories grouped in macroforms for a better comparison. The second spectrum (Fig. 5 and Table 9) represents the main Mediterranean elements, while the third (Fig. 6 and Table 10) shows all the Mediterranean subelements according to biogeographic and pivotal criteria.

These spectra clearly show dominance of the Mediterranean species (71.6%) and in particular of steno-Mediterranean (26%), euri-Mediterranean (21.8%) and endemic (9%) elements. The western-Mediterranean (3.5%), southern-Mediterranean (3.5%) and Atlantic-Mediterranean (3.1) components appear important in identifying the barycentre of the studied area.

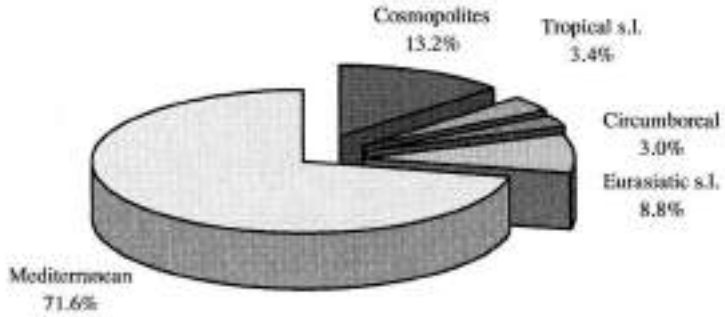

Fig. 4. General chorological spectrum.

Table 8. General chorological types.

CHOROLOGICAL TYPE	no. taxa	%
Cosmopolites	88	13.2
Tropical s.l.	23	3.4
Circumboreal	20	3.0
Eurasiatic s.l.	59	8.8
Mediterranean	479	71.6
Total	669	100.0

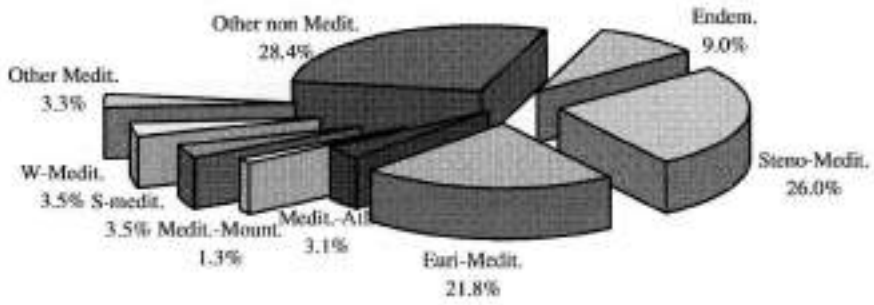

Fig. 5. Chorological spectrum of the main Mediterranean elements.

Table 9. Main Mediterranean chorological types.

CHOROGICAL TYPE	n. taxa	%
Endem.	60	9.0
Steno-Medit.	174	26.0
Euri-Medit.	147	21.8
Medit.-Atl.	21	3.1
Medit.-Mount.	9	1.3
S-medit.	23	3.5
W-Medit.	23	3.5
Other Medit.	22	3.3
Other non Medit.	190	28.4
Total	669	100.0

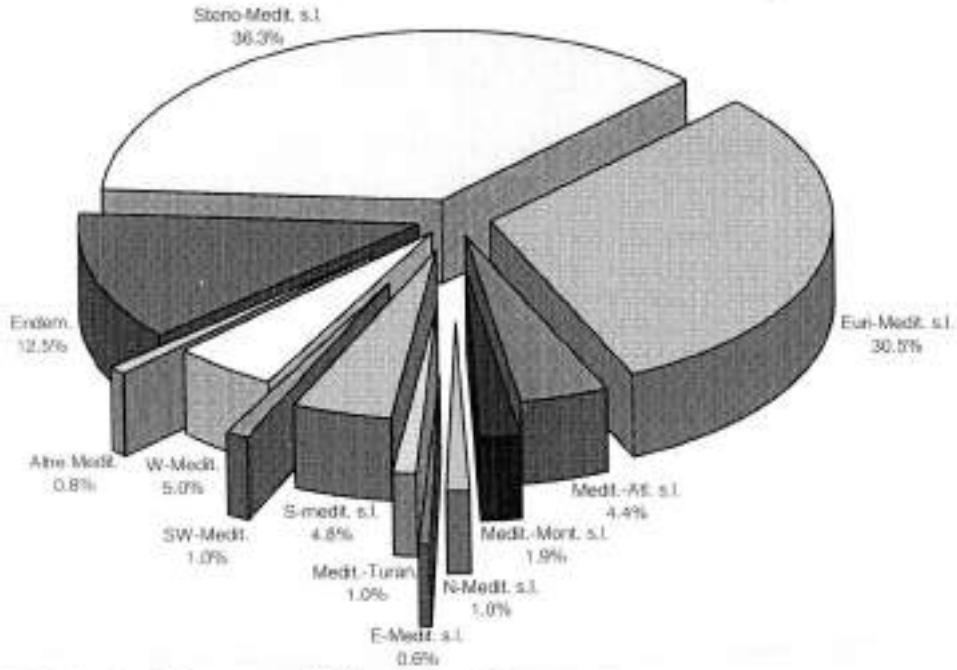

Fig. 6. Chorological spectrum of Mediterranean subelements.

Table 10. Mediterranean subelements.

CHOROGICAL TYPE	no. taxa	%	CHOROGICAL TYPE	no. taxa	%
Endem.	**60**	**12.50**	**Medit.-Mount. s.l.**	**9**	**1.9**
Steno-Medit. s.s.	127		N-Medit. s.s.	3	
W-Steno-Medit.	30		NE-Medit.	1	
Steno-Medit.-Macarones.	9		NW-Medit.	1	
Steno-Medit.-Turan.	8		**N-Medit. s.l.**	**5**	**1.0**

Table 10 (continued).

CHOROGICAL TYPE	no. taxa	%	CHOROGICAL TYPE	no. taxa	%
Steno-Medit. s.l.	**174**	**36.3**	E-Medit. s.s.	2	
Euri-Medit. s.s.	127		E-Medit.-Turan.	1	
Euri-Medit.-Turan.	10		**E-Medit. s.l.**	**3**	**0.6**
W-Euri-Medit.	6		**Medit.-Turan.**	**5**	**1.0**
Euri.-Medit.-Macarones.	4		S-Medit. s.s.	20	
Euri-Medit. s.l.	**147**	**30.5**	S-Medit.-Turan.	3	
Medit.-Atl. s.s.	15		**S-Medit. s.l.**	**23**	**4.8**
Submedit.-Subatl.	6		**SW-Medit**	**5**	**1.0**
Medit.-Atl. s.l.	**21**	**4.4**	W-Medit.	19	
Medit.-Mount. s.s.	6		W-Medit.-Macarones.	4	
W-Medit.-Mount.	3		**W-Medit.**	**23**	**5.0**
			Other Medit.	**4**	**0.8**
			Total Medit.	**479**	**100.0**

The spectrum of endemic entities (60 taxa, 51 of which specific, 7 subspecific and 2 hybrids) was made by separating the Sardinian component from the Sardo-Corsican and other widely distributed components (Fig. 7 and Table 11). According to Arrigoni & Di Tommaso (1991), Tyrrhenian entities and those present also on the French coasts (Ga) and on the Hyères islands (H) have been included in the insular Tyrrhenian endemic, Tyrrhenian and western Mediterranean categories. The graph shows a clear dominance of Sardo-Corsican (31.7%) and Sardinian (21.7%) endemics, that together reach 53.4% of the total. The Sardo-Corsican and Sardo-Corso-Tuscan Archipelago figure (16.7%) is so high as a result of the siliceous substrate that tends to dominate the morphologies of the topmost zones, the rocky faces and areas above an altitude of 400-600 m.

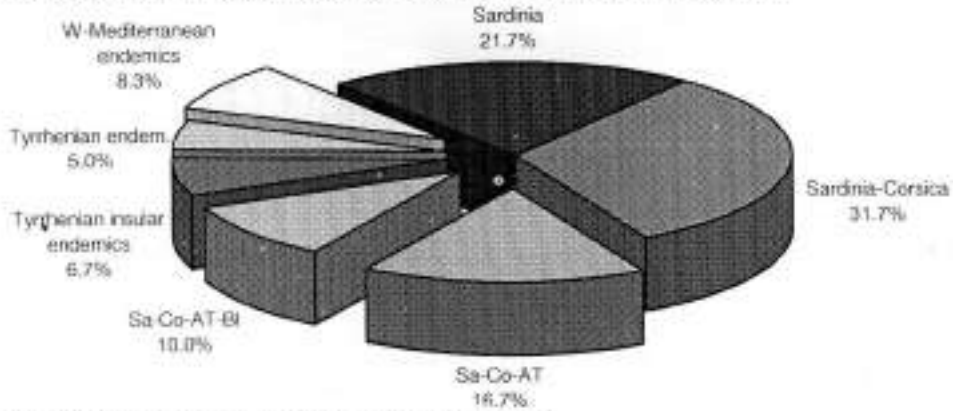

Fig. 7. Chorological spectrum of the endemic component.

The endemic component (Table 12) and in particular the exclusive taxa *Armeria sulcitana* Arrigoni, *Genista valsecchiae* Brullo & De Marco and *Helichrysum montelinasanum* E. Schmid show the floristic independence of the sector, in confirmation of what was pointed out by Mossa & al. (1996).

Table 11. Number and percentage of endemics.

	no. taxa	%
Sardinia	13	21.7
Sardinia-Corsica	19	31.7
Sardinia-Corsica-Tuscan Archipelago	10	16.7
Sardinia-Corsica-Tuscan Archipelago-Balearic Islands	6	10.0
Tyrrhenian insular endemics (sensu Arrigoni & al. op. cit.)	4	6.7
Tyrrhenian endemics (sensu Arrigoni & al. op. cit.)	3	5.0
Western-Mediterranean endemics (sensu Arrigoni & al. op. cit.)	5	8.3
Total	60	100.0

The observation of *Borago pygmaea* (DC.) Chater & Greuter, *Galium corsicum* Sprengel, *Genista aetnensis* (Biv.) DC., *Genista valsecchiae* Brullo & De Marco, *Linaria arcusangeli* Atzei & Camarda, *Ophrys* x *marenmae* O. & E. Danesch nsubsp. *woodii* Corrias and *Orchis* x *penzigiana* Camus nsubsp. *sardoa* Scrugli & Grasso contributes to give a better definition of the distribution area and of the ecology of these entities.

Table 12. The endemic component of Rio Santa Lucia.

ENTITIES	DISTRIBUTION AREA
Allium parciflorum Viv.	Sa-Co
Arenaria balearica L.	Sa-Co-AT-Bl
Aristolochia rotunda L. subsp. *insularis* (Nardi & Arrigoni) Gamisans	Sa-Co
Aristolochia tyrrhena Nardi & Arrigoni	Sa
Armeria sulcitana Arrigoni	Sa
Arum pictum L. f.	Sa-Co-AT-Bl
Barbarea rupicola Moris	Sa-Co
Bellium bellidioides L.	Sa-Co-Bl
Bituminaria morisiana (Pign. & Metlesics) Greuter	Sa-La Galite (Tn)
Borago pygmaea (DC.) Chater & Greuter	Sa-Co-AT
Bryonia marmorata Petit	Sa-Co
Carex microcarpa Bertol. ex Moris	Sa-Co-AT
Crocus minimus DC. in Rédouté	Sa-Co-AT
Cymbalaria aequitriloba (Viv.) A. Chev.	Sa-Co-AT-Bl
Delphinium pictum Willd.	Sa-Co-Bl-H
Dianthus siculus C. Presl.	Sa-Co-Si
Dipsacus ferox Loisel.	Sa-Co
Euphorbia cupanii Guss. ex Bertol.	Sa-Co-Si
Euphorbia semiperfoliata Viv.	Sa-Co
Galium corsicum Sprengel	Sa-Co
Genista aetnensis (Biv.) DC.	Sa-Si
Genista corsica (Loisel.) DC. in Lam. & DC.	Sa-Co
Genista valsecchiae Brullo & De Marco	Sa
Genista morisii Colla	Sa
Helichrysum italicum (Roth) subsp. *microphyllum* (Willd.) Nyman	Sa-Co-Bl
Helichrysum montelinasanum E. Schmid	Sa

Table 12 (continued).

ENTITIES	DISTRIBUTION AREA
Hypericum hircinum L.	Sa-Co-AT
Leucanthemum flosculosum (L.) P. Giraud	Sa-Co
Linaria arcusangeli Atzei & Camarda	Sa
Mentha insularis Req. ex Gren. & Godr.	Sa-Co-AT-Bl
Mentha requienii Bentham	Sa-Co-AT
Mercurialis corsica Cosson	Sa-Co
Oenanthe lisae Moris	Sa
Ophrys holoserica (Burm.) Greuter subsp. *chestermanii* Wood	Sa
Ophrys morisii (Martelli) Soò in Keller & al.	Sa-Co
Ophrys x *maremmae* O. & E. Danesch subsp. *woodii* Corrias	Sa
Orchis mascula (L.) L. subsp. *ichnusae* Corrias	Sa
Orchis x *penzigiana* Camus nsubsp. *sardoa* Scrugli & Grasso	Sa
Ornithogalum biflorum Jordan & Fourr.	Sa-Co
Orobanche rigens Loisel.	Sa-Co
Pancratium illyricum L.	Sa-Co-AT
Polygonum scoparium Req. ex Loisel.	Sa-Co
Ptilostemon casabonae (L.) Greuter	Sa-Co-AT-H
Ranunculus cordiger Viv. subsp. *diffusus* (Moris) Arrigoni	Sa-Co
Ranunculus revelieri Boreau	Sa-Co-Ga
Robertia taraxacoides (Loisel.) DC.	Sa-Co-Si-It
Romulea requieni Parl.	Sa-Co-It
Salix arrigoni Brullo	Sa
Saxifraga corsica Gren. & Godr.	Sa-Co
Scrophularia ramosissima Loisel.	Sa-Co-Bl-Ga
Scrophularia trifoliata L.	Sa-Co-AT
Seseli bocconi Guss. subsp. *praecox* Gamisans	Sa-Co
Silene nodulosa Viv.	Sa-Co
Soleirolia soleirolii (Req.) Dandy	Sa-Co-AT-(Bl)
Stachys corsica Pers.	Sa-Co
Stachys glutinosa L.	Sa-Co-AT
Teucrium marum L.	Sa-Co-AT-(Bl)-H
Urtica atrovirens Req. ex Loisel.	Sa-Co-AT-(Bl)-It
Verbascum conocarpum Moris	Sa-Co-AT
Viola corsica Nyman subsp. *limbarae* Merxm. & Lippert	Sa

In particular, the finding of *Borago pygmaea* (DC.) Chater & Greuter in the Sa Senna Manna and Longufresu channels confirms the bibliographical datum reported by Valsecchi (op. cit.) on an exsiccata from the Capoterra area, preserved at the herbarium CAG without any information on the date or gatherer.

As regards *Galium corsicum* Sprengel, this is the first report in Sulcis and the second in southern Sardinia. It had only been found on Monte Linas by Angiolino and Chiappini (1983).

Genista aetnensis (Biv.) DC. had only been reported at Is Cannoneris (Arrigoni & al. 1967), while *Genista valsecchiae* Brullo & De Marco was believed to be coastal, since it had only been reported for south-western coasts (Brullo & De Marco 1996).

The finding of *Linaria arcusangeli* Atzei & Camarda both on Monte Arcosu and on Monte Lattias, extends the distribution area of this species to the Sulcis mountains, since

it had only been reported at Arco dell'Angelo (Atzei & Camarda 1984, Camarda 1985) and Rio Cannas (Ballero 1988).

As regards *Ophrys* x *maremmae* O. & E. Danesch nsubsp. *woodii* Corrias and *Orchis* x *penzigiana* Camus nsubsp. *sardoa* Scrugli & Grasso, it should be mentioned that this is the first report for Sulcis and that only one specimen of each had been found.

The data confirming the presence of rare endemics such as *Genista morisii* Colla, *Mentha requienii* Bentham, *Ophrys holoserica* (Burm.) Greuter subsp. *chestermanii* Wood, *Orchis mascula* (L.) L. subsp. *ichnusae* Corrias and *Soleirolia soleirolii* (Req.) Dandy are also worthy of mention.

The following were also included among the endemic entities *Dipsacus ferox* Loisel. in agreement with the suggestion by Bocchieri & al. (op. cit.) and *Helichrysum italicum* (Roth) Don subsp. *microphyllum* (Willd.) Nyman according to a proposal by Biondi & al. (op. cit.).

However, as regards *Serapias nurrica* Corrias, it should be pointed out that it has not been included among endemic entities, in the light of recent findings in south Portugal (Salkowski 1993) and in that of of taxonomic and phytogeographic studies (Scrugli 1997). Based on these studies and following the proposal by Scrugli (op. cit.), it has been deemed suitable to consider this species a western steno-Mediterranean.

As regards the phytogeographically interesting taxa, the finding of *Urginea fugax* (Moris) Steinh. (Arrigoni 1964), *Salix atrocinerea* Brot. (Camarda & al. 1993) and *Spiranthes aestivalis* (Poiret in Lam.) Rich. (Marras & al. 1995) is confirmed.

As regards *Taxus baccata* L., a second population in the Senna Manna channel and a number of isolated specimens on the ridges of Monte Lattias and in Rio su Fundu are pointed out.

The following are new findings for the mountain complex of Sulcis: *Blechnum spicant* (L.) Roth, *Cneorum tricoccon* L., *Laurus nobilis* L., *Leucojum aestivum* L. subsp. *pulchellum* (Salisb.) Briq. and *Quercus morisii* Borzì.

In particular, as regards *Blechnum spicant* (L.) Roth, it should be pointed out that this is the third report in Sardinia and the first in Sulcis, since this entity had only been reported in Gennargentu and Limbara (Ferrarini & al. op. cit.).

Considering their inaccessible positions and large size, the populations of *Laurus nobilis* L. are certainly among the most interesting examples of laurisilva relics in Sardinia.

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