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Chorological and ecological survey on the vascular and bryophytic flora in Enna territory (Erei Mountains, C-Sicily)

Abstract

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This work deals with the vascular and bryophyte flora of the territory of Enna (Erei Mountains), characterized by mesomediterranean upper termotype and subhumid upper ombrotype and by different types of substrata as calcarenite, marl-limestone, marl-clayey, clay, gypsum, limestone, deposited between the late Miocene and Quaternary period. An inventory of 618 vascular taxa subdivided into 76 families and 140 bryophytes subdivided into 29 families is presented. Biological and chorological data and notes on species habitats are provided. The tracheophyte chorological analysis highlights the dominance of Mediterranean species in line with the geographic position and climate of the studied area. Worthy of mention is the endemic contingent represented by 24 species, 8 of which are restricted to Sicily. The vascular plants list includes species of notable phytogeographic significance as *Serratula cichoracea* subsp. *cichoracea*, occurring in Sicily in Enna only; *Ophrys archimedeae* found in Sicily, in Enna and Palermo; *Arrhenatherum nebrodense*, distributed in Sicily prevalently in the northern mountain ranges; *Saxifraga hederacea*, known in Italy, in Puglia and Sicily. The bryophyte chorological spectrum shows the dominance of Submediterranean and Temperate species in accordance with microclimatic features. Some bryophytes are new or rare for the Sicilian bryoflora: *Weissia wimmeriana* subsp. *wimmeriana* first record in Sicily; *Syntrichia handelii*, second record in Sicily and Italian peninsula; *Grimmia capillata*. and *Syntrichia papillosa*, growing in Sicily only in the territory of Enna; *Tortula revolvens*, *Syntrichia pagorum*, *Tortula israelis*, *Ditrichum cylindricum*, *Schistidium crassipilum*, *Schistidium singarense*, *Rhyncostegiella curviseta*, present in few localities of the island.

Introduction

This research, focusing on the vascular and bryophyte flora of the territory of Enna, is part of a more complete work which regards the phytosociological analysis and cartography of the vegetation of the Erei Mountains, an area which comprises places of great naturalistic importance in spite of the deterioration of the environment.

The earliest general literature data concerning the vascular flora of Castrogiovanni (Enna) date back to the latter half of the 19th century (Gussone 1842-1844; Lojacono-

Poiero 1888-1909). Afterward botanical researches ceased almost completely for over eighty years until Privitera & Lo Giudice published a contribution on the tufaceous bryovegetation of the territory of Enna (1986). More recently other contributions were published by Brullo & al. (1989), Bartolo & al. (1992), Di Martino (1992), Raimondo & al. (1992), Minissale (1993), Lo Giudice (1994), Lo Giudice & al. (1996), Lo Giudice & al. (1997), Lo Giudice & Cristaudo (1998), Lo Giudice & Cristaudo (1999), Cristaudo & Lo Giudice (1999), Lo Giudice & Cristaudo (2002), Dia & al. (2003).

This work, added to the above mentioned contributions, aims at providing a rather complete picture of the knowledge to date of the vascular and bryophyte flora of the territory of Enna.

Geomorphology and climate

The surveyed territory, extending for about 20 square kms, with altitudes ranging from about 500 to 1000 m (Fig. 1) is located on the Erei Mountains and includes the urban area of Enna (Enna Alta and Enna Bassa) and the neighbouring areas.

Geologically the area consists of a succession of sediments deposited between the superior Tortonian and inferior Pliocene. The main substrata are: calcarenite, limestone marl, clayey marl, limestone, clay, gypsum.

As far as the climate is concerned, data from the meteorological station of Enna are considered; annual rainfall is of 894.6 mm and average annual temperatures are of 15.1°C (Duro & al. 1996). According to the bioclimatic classification proposed by Rivas-Martinez (1996a, 1996b), the bioclimate of the study area belongs to upper mesomediterranean thermotype and upper subhumid ombrotype (Fig. 2).

According to Brullo & al. (1995), from the phytogeographical viewpoint, the investigated area is to be included in the "Agrigentino" district of the Eusicilian sector of the Sicilian dominion (Mediterranean region). Owing to its central position this area hosts floristic elements of the "Madonita" and "Nebrodenze" districts

Material and Methods

The area studied was explored several times from 1998 to 2002; the floristic relevés were carried out mainly in the following habitats: walls, rocks, sources, roadsides, beaten ground, paved-roads, pavement edges, flight of steps, uncultivated and cultivated fields, fields edges, pastures, grasslands, shrublands, artificial planting, woods, tree boles.

The catalogue includes the specific and subspecific entities taken from floristic investigations as well as from literature data. The species, which are first and second records for Sicilian flora, are marked by a square (■), whereas third records or rare species by two squares (■ ■). Moreover, additional comments are provided for some entities. Among the entities taken by literature data, those written in italics refer to the ones not found by us.

The UTM-coordinates (1 x 1 km) of the map of Enna (268 ISO, I.G.M.I., scale 1:25.000) was used for locating the entities listed.

The bryophytes were identified with the help of Flora d'Italia (Cortini Pedrotti 2001a), as well as Moss flora and Liverworts of Britain and Ireland (Smith 1979, 1990), Mosses

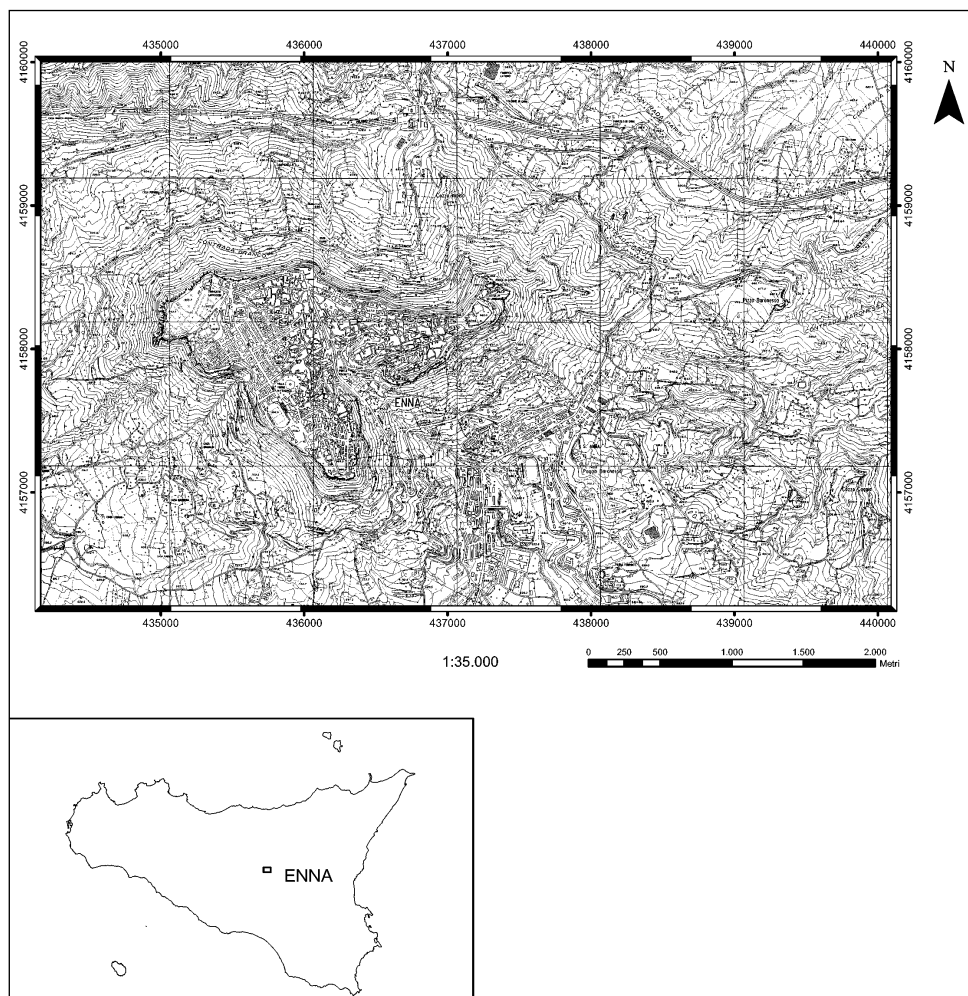


Fig. 1. Map of area studied in the central part of Sicily.

of Eastern North America (Crum & Anderson 1981), Moss Flora of Mexico. (Scharp, Crum & Eckel 1994) and several other monographic works.

Taxa nomenclature and sequence of families are in line with Grolle & Long (2000) as regards the liverworts; with Cortini Pedrotti (2001a) as for the acrocarpous mosses; and with Corley & al. (1981) and Corley & Crundwell (1991) for the pleurocarpous mosses.

Check-list of the Mosses of Italy (Cortini Pedrotti 2001b) and Check-list and red-list of the liverworts (*Marchantiophyta*) and hornworts (*Anthocerotophyta*) of Italy (Aleffi & Schumacker 1995) were also used in specific cases.

In the floristic list for each bryophyte, the biotype (Annual: An; Short turf: St; Tall turf: Ht; Cushion: Cu; Mat: Ma; Weft: We; Tail: Ta; Fans: Fa; - Magdefrau 1982); the choro-

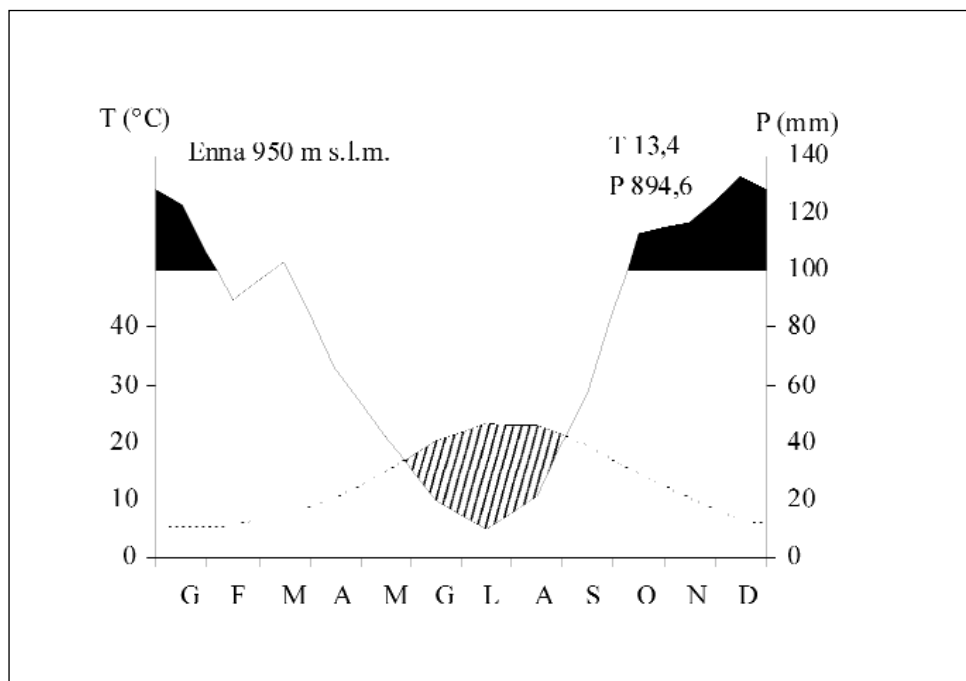


Fig. 2. Ombrothermic diagram from meteorologic station of Enna.

logical type (Düll 1983, 1984-85, 1992; Frey & Kürschner 1983, 1988), the habitat and UTM are supplied.

The close chorological types were grouped into five categories:

Submediterranean: Submedit., Submedit.-Mont., Submedit.(-Mont.), Oc.-Submedit., Submedit.-Oc., Submedit.-Suboc., Suboc.-Submedit., Submedit.-Suboc.-Mont., Suboc.-Submedit.-Mont; **Mediterranean:** Medit., Medit.-Oc., Oc.-Medit., Oc.-medit. (-Mont.), Suboc.-Medit., E Medit.-kont., Medit.-Turan; **Temperate:** Temp., Temp.-Mont., W Temp., S Temp.; **Boreal:** Bor., Bor.-Mont., Bor.-dealp., Subbor., Subbor. (-Mont.), Subbor.-Mont., Subarc.-Subalp.; **Suboceanic:** Suboc., S Suboc.-Mont..

As far as vascular plants are concerned, the identification, nomenclature and sequence of families are fundamentally based on Flora d'Italia (Pignatti 1982). Flora Europaea (Tutin & al. 1964-1980; 1993), Med-Checklist (Greuter & al. 1984-1989) and Guide des Orchidées d'Europe (Delforge, 2001) are also used to supplement to former flora.

The life form (Therophytes: T; Hemicryptophytes: H; Geophytes: G; Chamaephytes: Ch; Phanerophytes: P; Hydrophytes: I) and chorological type are mainly drawn from Pignatti (1982); in addition, habitat and UTM are provided. The latter data are left out for the species taken from literature. Information provided by previous authors (Gussone 1842-1844; Lojacono-Poiero 1888-1909) about the collecting localities and habitats are transcribed faithfully.

The close chorological types were gathered together in following groups:

Stenomediterranean: Stenomedit., E-Stenomedit., S-Stenomedit., W-Asiat.-Stenomedit., Circum-Medit., SW-Stenomedit., W-Stenomedit., SW-Medit. (Steno), W-Medit. (Steno), N-Medit. (Steno); **Mediterranean:** C-Medit., NE-Medit., E-Medit., E-Medit. (Steno-), S-Medit., S-Medit. (Euri), S-Medit.-Sahar., SW-Medit., W-Medit., NW-Medit.; **Mediterranean-Montane:** Medit.-Mont., Medit.-Mont. (Euri), Orof.-NE-Medit., E-Medit.-Mont., SW-Medit.-Mont., W-Medit.-Mont.; **Eurimediterranean:** Eurimedit., Eurimedit.-Centre-W., W-Eurimedit., Submedit.; **Mediterranean-Atlantic:** Medit.-Atl., Medit.-Atl. (Euri), Medit.-Atl. (Steno), W-Medit.-Atl., Submedit.-Subatl.; **Endemic:** Endem., Endem. Sicilian., Endem. Sicilian-Calabrian, Endem. Sicilian-Sardinian, Endem. Southern Italy and Sicily, Endem. Centre-Southern Italy and Sicily, Subendem.; **Eurasiatic:** Eurasiat., C-Asiat.-Euri-Medit., Eurasiat.-Temper., Euri-Medit.-C-Asiat., Euri-Medit.-W-Asiat., Europ.-Caucas., Europ.-W-Asiat., SE-Asiat., SE-Europ.-C-Asiat., SE-Europ., S-Europ.-Sudsib., S-Europ.-W-Asiat.; **Paleotemperate:** Paleotemp., W-Paleotemp.; **Boreal:** Circumbor., Eurosib.; **Tropical:** Pantrop., Pantrop. e Subtrop., Subtrop., Paleosubtrop.; **European:** Europ., S-Europ.; **Mediterranean-Turanic:** Euri-Medit.-Turan., E-Medit.-Turan., Euri-Medit.-Iran.-Turan., Medit.-Turan., S-Medit.-Turan., Steno-Medit.-Turan.; **Pontic:** Euri-Medit.-Pont., Euri-N.Medit.-Pont., SE-Europ. (Pont.), S-Europ.-Pont.; **Mediterranean-Macaronesian:** Euri-Medit.-Macaron., Medit.-Macaron., S-Medit.-Macaron., Steno-Medit.-Macaron.; **Cosmopolitan:** Cosmop., Termocosmop., Subcosmop., Subcosmop. Trop. and Subtrop.; **Exotic:** Exotic adv. nat., Exotic cultiv. spont., Exotic cultiv..

The specimens collected are kept in the herbarium of Botanical Department of University of Catania (CAT) and in the erbaria of the authors.

Floristic list

BRYOPHYTA

Marchantiopsida

TARGIONIACEAE

Targionia hypophylla L. – Ma - Oc.-Submedit. – fissures of rocks and walls – VB 3567, VB 3597 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

AYTONIACEAE

Reboulia hemisphaerica (L.) Raddi - Ma - S. Suboc.-Mont. - fissures of rocks – VB 3587

CONOCEPHALACEAE

Conocephalum conicum (L.) Underw. – Ma - Subbor.-Mont. – wet soils at the bottoms of source – VB 3557

LUNULARIACEAE

Lunularia cruciata (L.) Lindb. – Ma - Oc.-Medit. – humid beaten ground and walls – VB

3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3576 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

CORSINIACEAE

Corsinia coriandrina (Spreng.) Lindb. - Ma - Suboc.-Medit. – humiferous soils shaded by bushes – VB 3596

RICCIACEAE

Riccia crystallina L. emend. Raddi – An - Medit. – muddy-clayey soils, flower-beds, fields - VB 3557, VB 3558, VB 3568, VB 3567 - (Lo Giudice & al. 1997)

Riccia glauca L. – An – Submedit. - muddy-clayey soils, flower-beds, fields – VB 3567

Riccia lamellosa Raddi – An – Medit. – clayey-arenaceous soils, gardens, lawns - VB 3557, VB 3558 - (Lo Giudice & al. 1997)

Riccia sorocarpa Bisch. – An - Temp. – clayey-arenaceous, muddy-clayey soils, flower-beds, gardens, lawns, fields - VB 3557, VB 3568, VB 3567, VB 3558, VB 3577, VB 3576 - (Lo Giudice & Cristaudo 1998)

SPHAEROCARPACEAE

Sphaerocarpos michelii Bellardi – An - Suboc.-Submedit. – muddy-clayey soils, flower-beds, lawns - VB 3557, VB 3568, VB 3567, VB 3558 - (Lo Giudice & Cristaudo 1998)

PELLIACEAE

Pellia endivifolia (Dicks.) Dumort. – Ma - S. Temp. – wet calcarenite rocks more or less shaded by herbaceous plants - VB 3557, VB 3558 - (Privitera & Lo Giudice 1986; Brullo & al. 1989; Lo Giudice & al. 1997)

FOSSOMBRONIACEAE

Fossombronia caespitiformis De Not. ex Rabenh. - An – Oc.-Medit. – at the bases of walls and rocks– VB 3558, VB 3587 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

ARNELLIACEAE

Southbya nigrella (De Not.) Henriq. – An - Oc.-Medit. – humid, calcarenite, marl-limestone, gypsiferous rocks with accumulated soil - VB 3568, VB 3558, VB 4507

Southbya tophacea (Spruce) Spruce – An - Oc.-Medit. – humid, calcarenite, marl-limestone rocks with accumulated soil – VB 3567, VB 3568, VB 3557, VB 3558, VB 3597, VB 4506, VB 4507 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

CEPHALOZIELLACEAE Douin

Cephaloziella baumgartneri Schiffn. - An – Oc.-Medit. – gypsiferous, calcarenite rocks and hollows of sheltered rocks - VB 3567, VB 3568, VB 3557, VB 3558 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

PORELLACEAE

Porella platyphylla (L.) Pfeiff. – Ma - W Temp. – outcrops shaded by herbaceous plants – VB 3578

FRULLANIACEAE

Frullania dilatata (L.) Dumort. – Ma - Temp. – epiphytic on trunks of various kinds of trees – VB 3557, VB 3568

*Anthoceropsida***ANTHOCEROTACEAE**

Phaeoceros laevis (L.) Prosk. – An – Suboc.-Submedit. – marl-clayey soils, gardens, fields – VB 35 67

*Bryopsida***FISSIDENTACEAE**

Fissidens bryoides Hedw. – St - Temp. – marl-clayey, marl-limestone soils and rocky banks – VB 3576, VB 3598

Fissidens crassipes Wilson – A - St - Suboc.-Submedit. – wet rocks, source – VB 35 57 - (Privitera & Lo Giudice 1986; Brullo & al. 1989; Lo Giudice & al. 1997)

Fissidens pusillus (Wilson) Milde – St - Temp.-Mont. – humid, marl-arenaceous rocks - VB 3567

Fissidens viridulus (Sw.) Wahlenb. – St - Submedit. – humid, muddy-clayey, clayey-arenaceous soils, gardens, fields, paths - VB 3557, VB 3576

DICRANACEAE Schimp.

Dicranella howei Renauld & Cardot - St - Oc.-Medit. – bare clayey and loamy soils – VB 3566

Dicranella varia (Hedw.) Schimp. – C – St - Temp. – marl-limestone soils, fields – VB 4508

DITRICHACEAE

■ ■ *Ditrichum cylindricum* (Hedw.) Grout – St – Subbor. – sheltered soils, artificial planting – VB 3558 - (Lo Giudice & al. 1996; Lo Giudice & al. 1997)

ENCALYPTACEAE

Encalypta vulgaris Hedw. – St - Submedit. – marl-limestone, gypsiferous rocks with accumulated soils, fissures of rocks – VB 35 56 - (Dia & al. 2003)

POTTIACEAE

Acaulon triquetrum (Spruce) Müll. Hal. – An – Submedit. – bare clayey and marl-gypsiferous soils – VB 35 66

Aloina aloides (Schultz.) Kindb - An - Submedit. – clayey-arenaceous, marl-gypsiferous, marl-limestone soils in openings among bushes – VB 3547, VB 3558 VB 3556, VB 3566, VB 3567, VB 3569, VB 3568, VB 4509 - (Lo Giudice & Cristaudo 1998)

Aloina ambigua (Bruch & Schimp.) Limpr. – An - Submedit. – clayey-arenaceous, marl-

gypsiferous, marl-limestone soils in openings among bushes - VB 3556, VB 3558, VB 3566, VB 3568, VB 3569, VB 3577 - (Lo Giudice & al. 1997)

Aloina rigida (Hedw.) Limpr. - An - Temp. - clayey-arenaceous soils - VB 3568, VB 3586 (Lo Giudice & al. 1997)

Barbula convoluta Hedw. - St - Temp. - clayey-arenaceous soils, fields, roadsides - VB 3567, VB 3576 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Barbula unguiculata Hedw. - St - Temp. - several sites - VB 3548, VB 3547, VB 3546, VB 3558, VB 3557, VB 3556, VB 3567, VB 3577, VB 3597 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Crossidium crassinerve (De Not.) Jur. - Cu - Submedit. - dry marl-gypsiferous, clayey soils - VB 3567, VB 4508

Crossidium squamiferum (Viv.) Jur. - Cu - Submedit. - rocks, banks, fissures of rocks with accumulated soil, - VB 3547, VB 3558, VB 3556, VB 3566, VB 3567, VB 3569 VB 3568, VB 3598, VB 4509

Didymodon acutus (Brid.) K. Saito - St - Submedit. - more and less humid calcarenite, marl-gypsiferous, marl-limestone soils - VB 3567, VB 3568, VB 3576, VB 3588, VB 3598, VB 4508 (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Didymodon fallax (Hedw.) R. H. Zande - St - Temp.-Mont. - humid soils and rocks - VB 5358, VB 3567, VB 3568, VB 3576, VB 3578 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Didymodon insulanus (De Not.) M. O. Hill - St - Submedit.-Suboc. - humid and sheltered rocks and walls with accumulated soil - VB 3568, VB 3558, VB 3569, VB 3579 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Didymodon luridus Hornsch. - St - Submedit. - marl-limestone, marl-gypsiferous soils - VB 3566, VB 3567, VB 3547, VB 3598, VB 3576 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998, 2002)

Didymodon rigidulus Hedw. - St - Temp. - dry calcarenite rocks and walls with a thin layer of soil - VB 3557, VB 3558, VB 3567, VB 3568 - (Lo Giudice & Cristaudo 1998)

Didymodon tophaceus (Brid.) Lisa - St - Temp. - wet, calcarenite, marl-clayey rocks and walls with accumulated soil - VB 3557, VB 3577, VB 3578 - (Privitera & Lo Giudice 1986; Brullo & al. 1989; Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Didymodon vinealis (Brid.) R. H. Zander - St - Submedit. - soils, banks, walls and rocks with accumulated soil - VB 3548, VB 3547, VB 3546, VB 3558, VB 3557, VB 3556, VB 3567, VB 3577, VB 3597, VB 3596, VB 4506, VB 4507, VB 4508 (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998, 2002)

Eucladium verticillatum (Brid.) Bruch & al. - St - Submedit. (-Mont.) - wet, calcarenite rocks, walls, banks with accumulated soil - VB 3557, VB 3578, VB 3567 (Privitera & Lo Giudice 1986; Brullo & al. 1989; Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Gyroweisia reflexa (Brid.) Schimp. - St - Oc.-Medit. (- Mont.) - sheltered walls with accumulated soil - VB 3568

Gyroweisia tenuis (Hedw.) Schimp. - St - Submedit.- Suboc.-Mont. – protected calcarenite soils by herbaceous plants - VB 3568 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Gymnostomum calcareum Nees & Hornsch. – St - Submedit.-Mont. – calcarenite, marl-limestone, weathered walls and rocks - VB 5358, VB 3567, VB 3568, VB 3576, VB 3578 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Gymnostomum calcareum var. ***intermedium*** Schimp. – St - Submedit.-Mont. – calcarenite weathered walls - VB 3568

Gymnostomum viridulum Brid. – St - Oc.-Medit. – calcarenite, marl-gypsiferous, gypsiferous walls, fissures of rocks with accumulated soil - VB 5358, VB 3566, VB 3567, VB 3568, VB 3576, VB 3578, VB 3598, VB 4508, VB 4509

Hymenostylium recurvirostre (Hedw.) Dixon – St – Bor.-dealp. – humid, calcarenite, marl-arenaceous rocks with accumulated soil - VB 5358, VB 3568, VB 3578.

Phascum cuspidatum Hedw. – An - Temp. – muddy-clayey soils, flower-beds, fields – VB 3567, VB 3568, VB 3576 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Phascum cuspidatum Hedw. var. ***piliferum*** (Hedw.) Hook & Taylor – An - Temp. – Muddy-clayey soils, flower-beds, fields – VB 3567, VB 3566

Pleurochaete squarrosa (Brid.) Lindb. - Ht - Submedit. – more and less humiferous soils among shrubs, artificial planting, sometimes fissures of rocks with accumulated earth – VB 3566, VB 3567, VB 3568, VB 3569, VB 3556, VB 3577, VB 3588, VB 3596, VB 3598, VB 3597, VB 4508, VB 4509

Pottia davalliana (Sm.) C. E. O. Jensen – St - Submedit. – bare clayey soils – VB 3566 - (Lo Giudice & al. 1997)

Pottia starkeana (Hedw.) Müll. Hal. – St - Submedit. – bare, dry marl-gypsiferous soils – VB 3598 - (Lo Giudice & Cristaudo 1998)

Pseudocrossidium hornschruchianum (Schultz) R. H. Zander – St - Submedit.-Suboc. – several sites - VB 3548, VB 3547, VB 3546, VB 3558, VB 3557, VB 3556, VB 3567, VB 3577, VB 3597 (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Pseudocrossidium revolutum (Brid.) R. H. Zander – St - Oc.-Submedit. – calcarenite, marl-limestone rocks and walls - VB 35 57, VB 35 58, VB 35 78, VB 35 86 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998, 2002)

Syntrichia calcicolens Amann – St - Submedit.-Mont. – calcarenite, marl-limestone rocks and walls – VB 3557, VB 3558, VB 3586, VB 4508, VB 4507 - (Lo Giudice & Cristaudo 2002)

■ ***Syntrichia handelii*** Schiffn. – St – E Medit.-kont – marl-gypsiferous rocks – VB 3598
Plants medium-sized, 1.5-1.8 cm high, in dense tufts, brownish-green, tomentous at the base. Leaves 1.8-2.5 long, oblong-spatulate, slightly narrow in the middle, concave, upper cells, quadrate-rounded, papillose, basal cells rectangular, smooth, narrower near the margins; more or less acute apex, sometimes emarginate, margins revolute in the lower $\frac{3}{4}$. Costa stout, excurrent in a long, hyaline, dentate, hair point, which is reddish at the base.

Recorded from few localities of eastern mediterranean area (Kramer 1980), in Italy it has been found only in Sicily. In the territory of Enna it grows together with *Crossidium squamiferum* (Viv.) Jur.

Syntrichia inermis (Brid.) Bruch – St - Submedit.(-Mont.) – humiferous soils, woods - VB 3579

Syntrichia intermedia Brid. – Ht - Submedit.-Mont – calcarenite, marl-limestone rocks and walls – VB 3558, VB 3557, VB 3586 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo, 1998, 2002)

Syntrichia laevipila Brid. – St - Oc.-Submedit. – boles of *Ulmus minor* Miller, *Fraxinus ornus* L., *Robinia pseudacacia* L., *Aesculus hippocastanum* L., *Populus nigra* L. – VB 3557, VB 3568 - (Lo Giudice & al. 1997)

Syntrichia latifolia (Bruch ex Hartm.) Huebener – St – Temp. – at the lowest part of *Populus nigra* L., *Ulmus minor* Miller – VB 3576, VB 3557 - (Lo Giudice & al. 1997)

■ ■ ***Syntrichia pagorum*** (Milde.) Amann - St - Submedit.-suboc. – boles of *Ulmus minor* Miller, *Fraxinus ornus* L., *Robinia pseudacacia* L., *Aesculus hippocastanum* L. *Populus nigra* L., *Cedrus libani* A. Rich. – VB 3557 - (Lo Giudice & al. 1997)

■ ***Syntrichia papillosa*** (Wilson) Jur. – St – W.temp. – boles of *Ulmus minor* Miller, *Fraxinus ornus* L., *Robinia pseudacacia* L., *Aesculus hippocastanum* L., *Populus nigra* L., *Cedrus libani* A. Rich. - VB 3557, VB 3576 - (Lo Giudice & al. 1997)

Syntrichia princeps (De Not.) Mitt. – Ht - Oc.-Submedit. – marl- limestone, limestone soils and rocks with accumulated soil – VB 3557, VB 3576, VB 4507 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Syntrichia ruralis (Hedw.) Web. & D. Mohr ssp. *ruralis* – Ht - Temp. – more or less humiferous soils, woods – VB 4507

Syntrichia virescens (De Not.) Ochyra – St - Temp. – boles of *Ulmus minor* Miller, *Fraxinus ornus* L., *Robinia pseudacacia* L. – VB 3557, VB 3569, VB 3577, VB 3578 - (Lo Giudice & al. 1997)

Timmia anomala (Bruch. & Schimp) Limpr. – St – Medit. – humid shaded banks and fissures of rocks - VB 3557, VB 3566 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Tortella inflexa (Bruch) Broth. – St - Oc.-Medit. – humid marl-limestone walls - VB 3577, VB 3578, VB 3597 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Tortella tortuosa (Hedw.) Limpr. – Ht - Bor.-Mont. – humiferous soils, woods - VB 3596

Tortula atrovirens (Sm.) Lindb. – St - Submedit. – outcrops with accumulated soil - VB 4508

Tortula cuneifolia (Dicks.) Turner – St - Suboc.-Submedit. – humid rocks shaded by herbaceous plants – VB 3559

■ ■ ***Tortula israelis*** Bizot & Bilewsky - St - Medit. – sheltered walls and rocks with accumulated soil – VB 4509

Tortula marginata (Bruch & Schimp.) Spruce – St - Oc.-Medit. – humid, calcarenite and marl-limestone walls - VB 3558, VB 3557, VB 3556, VB 3567, VB 3577 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Tortula muralis Hedw. - St - Temp. – walls and rocks with accumulated soil – VB 3548, VB 3547, VB 3546, VB 3558, VB 3557, VB 3556, VB 3567, VB 3577, VB 3597 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998, 2002)

Tortula muralis var. *aestiva* Hedw. – St - Temp. – more and less humid shaded walls and rocks - VB 3558, VB 3568, VB 3578, VB 3569, VB 3577, VB 3579 (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Tortula muralis var. *obcordata* (Schimp.) Limpr. – St - Submedit. - outcrops and rocky banks - VB 3548

■ ***Tortula revolvens*** (Schimp.) G. Roth – St – Submedit. - gypsiferous rocks with accumulated soil – VB 3556, VB 3598, VB 4509

Tortula subulata Hedw. var. *subinermis* (Brid.) Wilson – St - Suboc.-Submedit.-Mont. – humiferous soils, *Ulmus minor* Miller and *Fraxinus ornus* L. woods – VB 3568

Tortula subulata Hedw. var. *subulata* – St - Subbor.(-Mont.) – humiferous soils, *Ulmus minor* Miller and *Fraxinus ornus* L. woods - VB 3568

Trichostomum brachyodontium Bruch – St - Submedit.-Mont. – calcarenite and marl-limestone soils and walls, VB 3568, VB 3576, VB 3588, VB 3596

Trichostomum crispulum Bruch – St - Temp.-Mont. – varying kinds of soil among shrubs -VB 5358, VB 3566, VB 3567, VB 3568, VB 3576, VB 3578, VB 3588, VB 3598, VB 4508, VB 4509 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Weissia brachycarpa (Nees & Hornsch.) Jur. – St - Temp. – bare soils at the base of rocks – VB 3596

Weissia condensata (Voit) Lindb. – St - Submedit.- Mont. – outcrops and fissures of rocks with accumulated soil – VB 3599

Weissia controversa Hedw. – St - Temp. – clayey-gypsiferous, marl-limestone soils, fissures of rocks, edges of fields - VB 3547, VB 3556, VB 3566, VB 3567, VB 3568, VB 3576, VB 4509, VB 4508 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

■ ***Weissia wimmeriana*** (Sendtn.) Bruch & al. ssp. *wimmeriana* – St - Subarc-Subalp. humid calcarenite rocks with accumulated soil among herbaceous plants. – VB 3568.

Plants small, generally about 2.5-3 mm high. Leaves linear-lanceolate, 1.3-1.8 mm long, concave at the base, acute and apiculate, more or less cucullate; margins plane below, tightly involute above. Costa strong, excurrent; upper cells, subrounded-rounded, papillose, basal cells hyaline. Sporophyte lacking. The species is closely related to *Weissia controversa* Hedw., but it can be distinguished from the latter by following features: paroicous, leaves with apiculus not pellucide and base concave. Known in Europe and Asia, in Italy it has been cited for Aos, Lom, Tra, Ven, Frv, Emr, Tos, Cam, Cal, Sar (Cortini Pedrotti, 2001b). The report for Sicily by Dull (1984-85) refers to the island of Malta (Cortini Pedrotti 1992). The Sicilian specimens grow together to *Hymenostylium recurvirostre*

(Hedw.) Dixon, *Gymnostomum calcareum* Nees & Hornsch, *Gymnostomum calcareum* var. *intermedium* Schimp. The phanerogamic vegetation is mainly composed of typical species of class *Asplenieta trichomanis* (Br.-Bl. 1934) Oberd. 1977 as *Anthemis cupani-ana* Tod., *Athamanta sicula* L., *Pimpinella anisoides* Briganti subsp. *gussonei* Bert.

GRIMMIACEAE

■ ■ *Grimmia capillata* De Not. – Medit.-Turan. – exposed calcarenite weathered walls, sometimes rocks - VB 3557, VB 3558, VB 3578. - (Lo Giudice & Cristaudo, 1999, 2002)

Grimmia crinita Brid. – Cu – Submedit – exposed calcarenite rocks and weathered walls - VB 3578 - (Lo Giudice & Cristaudo 1998, 2002)

Grimmia orbicularis Hornsch. ex Grev. – Cu - Submedit.-(Mont.) – exposed rock and walls - VB 3558, VB 3557, VB 3576 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998; 2002)

Grimmia pulvinata (Hedw.) Sm. – Cu - Temp. – exposed rocks and walls – VB 3558, VB 3557, VB 3577, VB 3578, VB 3598. - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 2002)

■ ■ *Schistidium crassipilum* Blom - Cu - Bor. – marl-limestone rocks – VB 3557

■ ■ *Schistidium singarense* (Schiffn.) Laz. – Cu - Submedit. – marl-limestone rocks – VB 3557

FUNARIACEAE

Entosthodon attenuatus (Dicks.) Bryhn – St - Submedit.-Occ. – more or less protected soils – VB 3557, VB 4509 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Entosthodon fascicularis (Hedw.) Müll. Hal. – St - Suboc.-Submedit. – muddy-clayey soils, flower-beds, gardens, fields - VB 3557, VB 3567, VB 3568, VB 3576

Funaria convexa Spruce – St – Medit. – humid walls with accumulated soil - VB 3557, VB 4507 - (Lo Giudice & al. 1997)

Funaria hygrometrica Hedw. – St - Temp. – nitrified soils, edges of fields, paths, roads - VB 3547, VB 3556, VB 3557, VB 3566, VB 3567, VB 3568, VB 3576, VB 4509, VB 4508 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Funaria muhlenbergii Turner - St - Submedit.-Suboc.-Mont. – marl-limestone rocks with accumulated soil – VB 3557, VB 4507 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Funaria pulchella H. Philib. – St - Submedit.-Suboc.-Mont. – humid walls and fissures of rocks with accumulated soil – VB 3568, VB 3558 - (Lo Giudice & Cristaudo 1998)

BRYACEAE

Bryum alpinum With. – Ht – Suboc.-Submed.-Mont – wet, clayey-arenaceous soils – VB 3576

Bryum argenteum Hedw. – St - Temp. – more or less nitrified soils and walls with accumulated soil – VB 3566, VB 3576, VB 3578, VB 3598 - (Lo Giudice & Cristaudo 1998)

Bryum bicolor Dicks. – St - Submedit. – several sites - VB 3566, VB 3567, VB 3568, VB 3569, VB 3557, VB 3558, VB 3576, VB 3577, VB 3566, VB 3578, VB 3597, VB 4508, VB 4509 - (Lo Giudice & Cristaudo 1998)

Bryum caespitium Hedw. – St - Temp. – several sites - VB 3548, VB 3547, VB 3549, VB 3566, VB 3567, VB 3568, VB 3569, VB 3556, VB 3559, VB 3577, VB 3588, VB 3596, VB 3598, VB 3597, VB 4508, VB 4509 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Bryum capillare Hedw. – St - Temp. – humid rocks, walls, tree boles – VB 3567, VB 3568, VB 3577, VB 3579 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Bryum donianum Grev. – St - Oc.- Medit. –, humiferous soils among shrubs, artificial planting, at the bases of rocks – VB 3566, VB 3569, VB 3586, VB 3596 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Bryum gemmiparum De Not. – St – Suboc.-Submedit. – wet walls – VB 3578, VB 3568. - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Bryum imbricatum (Schwaegr.) Bruch & Schimp. – St - Temp. - humid calcarenite rocks – VB 3558 - (Lo Giudice & al. 1997)

Bryum pseudotriquetrum (Hedw.) P. Gaertn. & al. – Ht - Temp. – wet streambanks and sheltered soils – VB 3576

Bryum radiculosum Brid. – St - Suboc.-Medit. – more or less humiferous soils among bushes gypsiferous rocks with accumulated soil, – VB 3558, VB 3548 VB 3566, VB 3576, VB 4508 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Bryum ruderale Crundw. & Nyholm – St – Suboc.- muddy-clayey soils, gardens, flowerbeds – VB 3557, VB 3567

Bryum turbinatum (Hedw.) Turner – St – Temp. – humid soils, source – VB 3568 - (Lo Giudice & Cristaudo 1998)

Bryum torquescens Bruch & Schimp. - St - Submedit.-Suboc. – varying kinds of soil - VB 3566, VB, 3577, VB 3588, VB 3597, VB 3598 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Pohlia wahlenbergii (Weber & D. Mohr) A. L. Andrews – Ht - Subbor. – wet soils, source – VB 3557, VB 3578 - (Lo Giudice & Cristaudo 1998)

ORTHOTRICHACEAE

Orthotrichum affine Brid. - Cu - Temp. – boles of *Quercus virgiliana* (Ten.)Ten., *Acer negundo* L., *Acer pseudoplatanus* L., *Ulmus minor* Miller, *Fraxinus ornus* L. - VB 3557, VB 3558, VB 3567, VB 3568, VB 3578, VB 3598. - (Lo Giudice & al. 1997)

Orthotrichum anomalum Hedw. – Cu - Temp. – marl-limestone, marl-gypsiferous rocks - VB 3557, VB 3558, VB 3567, VB 3568, VB 3578, VB 3598. - (Lo Giudice & al. 1997)

Orthotrichum diaphanum Brid. - Cu - Temp. – boles of *Pinus pinea* L., *Cupressus sempervirens* L., *Cupressus macrocarpa* Hartweg., *Populus nigra* L., *Aesculus hippocastanum*

L., *Cedrus libani* A. Rich. - VB 3557, VB 3558, VB 3567, VB 3568, VB 3578, VB 3598, VB 4508. - (Lo Giudice & al. 1997)

Orthotrichum lyellii Hook. & Taylor – Cu - Suboc.-Submedit. – boles of *Ulmus minor* Miller, *Fraxinus ornus* L., *Robinia pseudacacia* L., *Aesculus hippocastanum* L., *Cedrus libani* A. Rich. - VB 3557, VB 3558, VB 3567, VB 3568, VB 3578, VB 3598. - (Lo Giudice & al. 1997)

Orthotrichum striatum Hedw. – Cu - Suboc. – boles of *Ulmus minor* Miller, *Fraxinus ornus*, *Cupressus sempervirens* L., *Robinia pseudacacia* L., *Aesculus hippocastanum* L., *Populus nigra* L. - VB 3557, VB 3558, VB 3567, VB 3568, VB 3578, VB 3598. - (Lo Giudice & al. 1997)

Orthotrichum stramineum Hornsch. ex Brid. – Cu - Suboc. – boles of *Ulmus minor* Miller, *Fraxinus ornus* L., *Robinia pseudacacia* L., *Populus nigra* L. - VB 3557, VB 3558, VB 3567, VB 3568, VB 3578, VB 3598 - (Lo Giudice & al. 1997)

Orthotrichum tenellum Bruch ex Brid. – Cu – Submedit.-Suboc. – boles of *Ulmus minor* Miller, *Fraxinus ornus* L. - VB 3557, VB 3558, VB 3568, VB 3578 - (Lo Giudice & al. 1997)

LEUCODONTACEAE

Leucodon sciuroides (Hedw.) Schwägr. – Ta - Temp. – boles of *Ulmus minor* Miller, *Fraxinus ornus* L., *Fraxinus oxycarpa* Bieb., *Robinia pseudacacia* L. - VB 3557, VB 3558, VB 3567, VB 3568, VB 3578, VB 3598. - (Lo Giudice & al. 1997)

Pterogonium gracile (Hedw.) Sm. – We - Suboc.-Submedit.-Mont. – boles of *Ulmus minor* Miller - VB 3569

NECKERACEAE

Leptodon smithii (Hedw.) Weber & D. Mohr – Fa - Oc.-Medit. – boles of *Ulmus minor* Miller - VB 3568 - (Lo Giudice & al. 1997)

LESKEACEAE

Habrodon perpusillus (De Not.) Lindb. – E – Mat - Med.-oc. – boles of *Ulmus minor* Miller, *Fraxinus ornus* L., *Robinia pseudacacia* L., -VB 3557, VB 3568, - (Lo Giudice & al. 1997)

AMBLYSTEGIACEAE

Amblystegium serpens (Hedw.) Bruch & al. – Ma - Temp. – more or less humiferous soils, edges of fields, paths, roads - VB 3586, VB 4508 - (Lo Giudice & al. 1997; Dia & al. 2003)

Cratoneuron filicinum (Hedw.) Spruce – Ma - Temp. – wet calcarenite rocks, source – VB 3557 - (Privitera & Lo Giudice 1986; Brullo & al. 1989; Lo Giudice & al. 1997)

Palustriella commutata (Hedw.) Ochya – Ma – Temp - wet calcarenite rocks, source – VB 3557 - (Privitera & Lo Giudice 1986; Brullo & al. 1989, Lo Giudice & al. 1997)

BRACHYTHECIACEAE

Brachythecium velutinum (Hedw.) Bruch & al. – We - Temp. – At the lowest part of trees – VB 3568 - (Lo Giudice & al. 1997)

Eurhynchium hians (Hedw.) Sande Lac. – We - Temp. – humid, marl-limestone rocks - VB 3557 (Lo Giudice & al. 1997)

Eurhynchium praelongum (Hedw.) Bruch & al. – We - Temp. – marl-limestone soils, artificial planting – VB 3557, VB 3597 - (Lo Giudice & al. 1997)

Homalothecium aureum (Lag.) H. Rob. – Ma – Med. – humiferous soils among rocks, shrubs, artificial planting - VB 3556, VB 3566, VB 3569, VB 3579, VB 3598, VB 4508

Homalothecium sericeum (Hedw.) Bruch & al. – Ma - Temp. – several sites – VB 3557, VB 3558, VB 3567, VB 3568, VB 3577, VB 3578, VB 3598, - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

■ ■ ***Rhynchostegiella curviseta*** (Brid.) Lindb. – We – Submedit.-Suboc. – wet rocks - VB 3557, VB 3567 - (Privitera & Lo Giudice 1986; Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Rhynchostegiella litorea (De Not.) Limpr. – We - Oc.-medit. – humiferous soils among shrubs – VB 4507 - (Lo Giudice & Cristaudo 1998)

Rhynchostegiella tenella (Dicks) Limpr. – We – Submedit.-suboc. – humid, calcarenite rocks – VB 3567 - (Lo Giudice & Cristaudo 1998)

Rhynchostegium confertum (Dicks.) Bruch & al. – We - Submed.-Oc. – calcarenite rocks and fissures of rocks – VB 3567, VB 3568 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Rhynchostegium megapolitanum (Weber & D. Mohr) Bruch & al. – We – Submedit - humiferous soils, scrublands, artificial planting – VB 3577, VB 3578, VB 3598 - (Lo Giudice & al. 1997)

Rhynchostegium riparioides (Hedw.) C. E. O. Jensen – We - Temp. – wet rocks, at the edges of stream – VB 3576

Scleropodium touretii (Brid) L. F. Koch. – We - Oc.-Submedit. – humiferous soils, scrublands, artificial planting – VB 3568, VB 3577, VB 3598. - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

Scorpiurum circinatum (Brid.) M. Fleisch. & Loeske – We - Oc-Medit. – calcarenite, marl-limestone walls and fissures of rocks – VB 3558, VB 3567, VB 3568, VB 3577 - (Lo Giudice & al. 1997; Lo Giudice & Cristaudo 1998)

HYPNACEAE

Hypnum cupressiforme Hedw. – Ma - Temp. – at the bases of trees – VB 3568 - (Lo Giudice & al. 1997)

Hypnum cupressiforme Hedw. var. ***filiforme*** Brid. – Ma - Temp. – at the bases of trees – VB 3568

PTERIDOPHYTA**EQUISETACEAE**

Equisetum ramosissimum Desf. - G rhiz - Circumbor. - wet ditches - VB 3557

ADIANTACEAE

Adiantum capillus-veneris L. - G rhiz - Pantrop. - wet and dripped walls, wet and dripped rocks - VB 3578, VB 3557, VB 3567 - (Di Martino, 1992; Lo Giudice & Cristaudo, 1998)

PINOPHYTA**PINACEAE**

Pinus halepensis Miller - P scap - Steno-Medit. - artificial planting - VB 3578, VB 3557, VB 3587 - (Di Martino, 1992; Lo Giudice & Cristaudo, 1998)

Pinus pinea L. - P scap - Eurimedit. - artificial planting - VB 3587, VB 3597

Pinus wallichiana Jackson - P scap - Exotic cultivated (Centroasiat.) - artificial planting - VB 3578

CUPRESSACEAE

Chamaecyparis lawsoniana (Murray) Parl. - P scap - Exotic cultivated (N America) - artificial planting - VB 3578

Cupressus arizonica Green - P scap - Exotic cultivated (N America) - artificial planting - VB 3578, VB 3588, VB 3587, VB 3597

Cupressus macrocarpa Hartweg - P scap - Exotic cultivated (N-America) - artificial planting - VB 3578, VB 3588, VB 3587, VB 3597

Cupressus sempervirens L. - P scap - E-Euri-Medit. - artificial planting - VB 3588, VB 3587, VB 3597

MAGNOLIOPHYTA**SALICACEAE**

Populus alba L. - P scap - Paleotemp. - VB 3568, VB 3578

Populus nigra L. - P scap - Paleotemp. - VB 3568, VB 3578

CORYLACEAE

Corylus avellana L. - P caesp - Europeo-Caucas. - woods - VB 3578

FAGACEAE

Quercus virgiliana (Ten.) Ten. - Pscap - SE-Europ. - isolated plants in uncultivated fields - VB 3569

ULMACEAE

Ulmus minor Miller - P caesp - Europeo-Caucas. - roadsides, shrublands, woods - VB 3569, VB 3558, VB 3568, VB 3578, VB 3588, VB 3577, VB 3586

MORACEAE

Ficus carica L. - P scap - Medit.-Turan. - rocky clefts, weathered walls, rubble - VB 3568, VB 3578, VB 3557 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

URTICACEAE

Parietaria judaica L. - H scap - Eurimedit.-Macaron. - walls, at the bases of walls, roadsides, rubble, rocks - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Parietaria lusitanica L. - T rept - Stenomedit. - walls - VB 3578 - (Lo Giudice & Cristaudo 1998)

Urtica dioica L. - H scap - Subcosmop. - rubble, at the bases of shaded walls, roadsides - VB 3569, VB 3548, VB 3568, VB 3557

Urtica membranacea Poiret - T scap - S-Medit. - cultivated fields, flower-beds, rubble, roadsides - VB 3569, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3587 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Urtica pilulifera L. - T scap - S-Medit. - rubble - VB 3567

SANTALACEAE

Osyris alba L. - NP - Eurimedit. - fields edges, garrigues, hedges - VB 3548, VB 3578, VB 3557, VB 3567, VB 3577, VB 3587, VB 3556 - (Minissale 1993; Lo Giudice & Cristaudo 1998)

CACTACEAE

Opuntia ficus-indica (L.) Miller - P succ - Exotic cultiv. spont. (Neotropic.) - clefts of rocks - VB 3557 - (Lo Giudice & Cristaudo 1998)

POLYGONACEAE

Fallopia aubertii (L. Henry) Holub - P lian - Centro-Asiat. Cultiv. - walls - VB 3557

Fallopia convolvulus (L.) Halub - T scap - Circumbor. - (Di Martino 1992)

Polygonum arenastrum Boreau - T rept - Subcosmop. - beaten ground, paved roads, flight of steps - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Lo Giudice & Cristaudo 1998)

Polygonum aviculare L. - T rept - Cosmop. - rubble, roadsides, flower-beds - VB 3558, VB 3568, VB 3557, VB 3567, VB 3577, VB 3556, VB 3566

Rumex bucephalophorus L. - T scap - Medit.-Macaron. - rubble, flower-beds, sandy soils - VB 3557, VB 3567, VB 3577, VB 3566

Rumex crispus L. - H scap - Subcosmop. - humid ditches - VB 3578, VB 3557, VB 3577 - (Lo Giudice & Cristaudo 1998)

Rumex cristatus DC. - H scap - NE-Medit. - humid ditches - VB 3568, VB 3577, VB 3586

Rumex pulcher L. - H scap - Eurimedit. - uncultivated clayey fields - VB 3586

Rumex sanguineus L. - H scap - Europeo-Caucas. - humid ditches - VB 3586

Rumex thyrsoides Desf. - H scap - W-Medit. - roadsides, uncultivated fields - VB 3578 - (Lo Giudice & Cristaudo 1998)

CHENOPODIACEAE

Atriplex halimus L. - P caesp - Medit.-Atl. (Steno) - uncultivated clayey fields - VB 3547

Atriplex prostrata DC. - T scap - Circumbor. - subsalty soils - VB 3566

Atriplex rosea L. - T scap - C-Asiat.-Eurimedit. - clayey ditches, rubble - VB 3567, VB 3566 - (Lo Giudice & Cristaudo 1998)

Beta vulgaris L. subsp. *vulgaris* - H scap - Eurimedit. - roadsides, uncultivated fields - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3566, VB 3586

Chenopodium album L. - T scap - Subcosmop. - roadsides, cultivated fields, rubble - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3587, VB 3566 - (Lo Giudice & Cristaudo 1998)

Chenopodium ambrosioides L. - H scap - Cosmop. - roadsides, rubble, - VB 3557

Chenopodium multifidum L. - H scap - Sudamer. - roadsides, pavement-edges - VB 3557

Chenopodium murale L. - T scap - Subcosmop. - roadsides, rubble, cultivated and uncultivated fields - VB 3568, VB 3557

Chenopodium opulifolium Schrader - T scap - Paleotemp. - roadsides, rubble - VB 3567

Chenopodium vulvaria L. - T scap - Eurimedit. - cultivated and uncultivated fields, rubble, flower-beds - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Lo Giudice & Cristaudo 1998)

Salsola agrigentina Guss. - NP Endem. Sic.

in collibus ac planitiebus argillosis hye. subin - Castrogiovanni (Gussone 1842-1845, sub *S. vermiculata* Lin. = *S. agrigentina* β *glabra* Guss.); colli marnacei o salmastro-argillosi inondati in inverno, nell'interno dell'Isola - Castrogiovanni (Gussone in Lojacono 1888-1909, sub *S. vermiculata* L. var. b. *glabra* Lag.); Enna e altrove (?) (Raimondo & al. 1992)

Salsola oppositifolia Desf. - NP S-Medit. - uncultivated clayey lands - VB 3547, VB 3557

in collibus argillosis et salsis - Castrogiovanni (Gussone 1842-1845); nei colli argillosi, marnacei subsalsi - Castrogiovanni (Lojacono 1888-1909)

AMARANTHACEAE

Amaranthus albus L. - T scap - Exotic adv. nat. (Nordamer.) - pavement-edges, uncultivated fields, rubble - VB 3557

Amaranthus blitoides S. Watson - T scap - Exotic adv. nat. (Nordamer.) - cultivated and uncultivated fields, flower-beds - VB 3568

Amaranthus deflexus L. - T scap - Exotic adv. nat. (Sudamer.) - beaten ground, flight of

steps, pavement-edges, rubble - VB 3558, VB 3568, VB 3557, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Amaranthus graecizans L. - T scap - Paleosubtrop. - cultivated fields, flower-beds - VB 3577

Amaranthus retroflexus L. - T scap - Exotic adv. nat. (Cosmop.) - cultivated and uncultivated fields, flower-beds, rubble - VB 3559, VB 3569, VB 3558, VB 3557, VB 3567, VB 3577, VB 3566

Amaranthus viridis L. - T scap - Exotic adv. nat. (Sudamer.) - roadsides, pavement-edges, flower-beds, cultivated fields - VB 3557

NYCTAGINACEAE

Mirabilis jalapa L. - G bulb - Exotic cultiv. spont. (Sudamer.) - roadsides, flower-beds - VB 3557

PHYTOLACCACEAE

Phytolacca americana L. - G rihz - Nordamer.

in ruderatis, sepibus, et in sylvatici umbrosis - Castrogiovanni (Gussone 1842-1845, sub *Phytolacca decandra* Lin.)

PORTULACACEAE

Portulaca oleracea L. - T scap - Subcosmop. - cultivated fields, flower-beds - VB 3557, VB 3567, VB 3566 - (Lo Giudice & Cristaudo 1998)

CARYOPHYLLACEAE

Arenaria leptoclados (Rchb.) Guss. - T scap - Paleotemp. - paved roads, walls, flight of steps, rocks - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Lo Giudice & Cristaudo 1998)

Arenaria serpyllifolia L. - T scap - Subcosmop. - (Di Martino 1992)

Cerastium glomeratum Thuill. - T scap - Subcosmop. - walls, beaten ground, flight of steps - VB 3568, VB 3578, VB 3557, VB 3567, VB3566

Cerastium pentandrum L. - T scap - Stenomedit.-Turan. - sandy soils, rubble - VB 3578 - (Lo Giudice & Cristaudo 1998)

Cerastium semidecandrum L. - T scap - Cosmop. - walls - VB 3578

Dianthus sicularis Presl - H scap - Endemic Sicilian-Sardinian - grasslands, clefts of rocks - VB 3569, VB 3568, VB 3578, VB 3557, VB 3567, VB 3587, VB 3556, VB 3566 - (Di Martino 1992 sub *D. sylvestris* Wulfen; Minissale 1993; Lo Giudice & Cristaudo 1998)

Gypsophila arrostii Guss. - Ch suffr - Endem. Centre-Southern Italy and Sicily - grasslands - VB 3577, VB 3587, VB 3556, VB 3566, VB 3576 - (Minissale 1993)

in collibus gypsaceis - Castrogiovanni (Gussone 1842-1845)

Herniaria hirsuta L. - T scap - Paleotemp. - rubble, sandy soils - VB 3567

Minuartia mediterranea (Link) Maly - T scap - NW-Medit. - paved roads - VB 3578, VB 3557, VB 3567 - (Lo Giudice & Cristaudo 1998)

Paronychia argentea Lam. - H caesp - Stenomedit. - sandy soils - VB 3557

Polycarpon tetraphyllum L. - T scap - Eurimedit. - beaten ground - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577

Sagina apetala Ard. - T scap - Eurimedit. - beaten ground, paved roads - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Silene fruticosa L. - Ch suffr - NE-Medit. - sunny walls, clefts of rocks - VB 3558, VB 3578, VB 3557, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Silene gallica L. - T scap - Eurimedit. - roadsides, flight of steps, uncultivated fields, flower-beds - VB 3557

Silene italica (L.) Pers. - H ros - Eurimedit. - rocky clefts - VB 3569, VB 3578, VB 3587, VB 3586 - (Lo Giudice & Cristaudo 1998)

Silene latifolia Poir. - H bienne - Stenomedit. - road slope, hedges, woods, - VB 3569, VB 3568, VB 3557, VB 3567

Silene neglecta Ten. - T scap - SW-Medit. - (Di Martino 1992)

Silene nocturna L. - T scap - S-Medit.-Macaron. - roadsides, flight of steps - VB 3558 - (Lo Giudice & Cristaudo 1998)

Silene vulgaris (Moench) Garcke - H scap - Subcosmop. - rocky clefts, rubble - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Lo Giudice & Cristaudo 1998)

Spergularia bocconii (Scheele) Asch. & Gr. - T scap - Subcosmop. - roadsides, pavement-edges, rubble - VB 3557, VB 3567, VB 3556, VB 3566

Spergularia rubra (L.) Presl - Ch suffr - Subcosmop. - beaten ground - VB 3557 - (Lo Giudice & Cristaudo 1998)

Stellaria media (L.) Vill. subsp. *cupaniana* (Jordan & Fourr.) Nyman - T rept - Cosmop. - flower-beds - VB 3578 - (Lo Giudice & Cristaudo 1998)

Stellaria media (L.) Vill. subsp. *media* - T rept - Cosmop. - cultivated and uncultivated fields - VB 3578, VB 3557, VB 3567 - (Lo Giudice & Cristaudo 1998)

Stellaria neglecta Weihe - T scap - Paleotemp. - flower-beds, vegetable plots, gardens, roadsides, rubble - VB 3578

Stellaria pallida (Dumort.) Piré - T scap - Paleotemp. - roadsides, beaten ground, flight of steps - VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

RANUNCULACEAE

Anemone coronaria L. - G bulb - Stenomedit. - fields - VB 3556, VB 3566

Clematis cirrhosa L. - P lian - Stenomedit. - (Di Martino 1992)

Clematis vitalba L. - P lian - Europeo-Caucas. - woods, hedges and shrublands - VB 3569, VB 3568, VB 3578, VB 3588, VB 3557, VB 3577 - (Lo Giudice & Cristaudo 1998)

Delphinium halteratum S. & S. - T scap - Stenomedit. - uncultivated lands - VB 3558

Nigella damascena L. - T scap - Eurimedit. - uncultivated fields, pastures - VB 3569, VB 3588

Ranunculus bulbosus L. subsp. *aleae* (Willk.) Rouy & Fouc. - H scap - Eurimedit. - grasslands - VB 3578

Ranunculus ficaria L. - G bulb - Eurasiat. - uncultivated fields - VB 3556

Ranunculus flabellatus Desf. - H scap - Stenomedit.-Turan. - grasslands - VB 3578

Ranunculus omiophyllus Ten. - I rad - W-Medit.-Atl.

ad scaterigenes, et in acquosis montosis - Castrogiovanni (Gussone 1842-1845, sub *Ranunculus coenosus* Guss.); negli stagni montuosi al margine delle sponde e nei luoghi aquitrinosi nemorosi - Castrogiovanni (Gussone in Lojacono 1888-1909, sub *Ranunculus coenosus* Guss.)

GUTTIFERAE

Hypericum hircinum L. - NP - Stenomedit. - wet walls, ditches and rocks- VB 3578, VB 3557 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Hypericum perforatum L. - H scap - Stenomedit. - shrublands and hedges, uncultivated fields, grasslands - VB 3569, VB 3568, VB 3578, VB 3587 - (Minissale 1993)

Hypericum perforatum L. - H scap - Subcosmop. - shrublands and hedges - VB 3579, VB 3558, VB 3578, VB 3567 - (Lo Giudice & Cristaudo 1998)

Hypericum triquetrifolium Turra - H scap - E-Stenomedit. - rubble, roadsides - VB 3558, VB 3577

PAPAVERACEAE

Fumaria agraria Lag. - T scap - Stenomedit. - vegetable plots, flower-beds - VB 3557, VB 3577

Fumaria capreolata L. - T scap - Eurimedit. - vegetable plots, rubble, walls - VB 3568, VB 3567

Fumaria officinalis L. subsp. *wirtgenii* (Koch) Arcang. - T scap - Paleotemp. - vegetable plots - VB 3567, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Papaver hybridum L. - T scap - Medit.-Turan. - uncultivated fields - VB 3567

Papaver rhoeas L. - T scap - E-Medit. - fields, roadsides, flower-beds - VB 3568, VB 3578, VB 3588, VB 3557, VB 3567, VB 3577, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Papaver setigerum DC. - T scap - W-Medit. - uncultivated fields - VB 3568, VB 3567

CAPPARIDACEAE

Capparis spinosa L. - NP-Eurasiat. - sunny walls, clefts of rocks - VB 3569, VB 3558, VB 3578, VB 3557, VB 3567, VB 3577, VB 3576 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

CRUCIFERAE

Arabis verna (L.) R.Br. - T scap - Stenomedit. - walls, flight of steps, rocks - VB 3578, VB 3557 - (Lo Giudice & Cristaudo 1998)

Arabis collina Ten. - H scap - Orof.-Medit.

in calcareis aut arenosis umbrosis montosis - Castrogiovanni (Gussone 1842-1845); rupi calcaree ombrose, dalla regione collina sino sui monti - Castrogiovanni (Gussone in Lojacono 1888-1909)

Barbarea bracteosa Guss. - H scap - Orof. S-Medit. - humid soil - VB 3568

Calepina irregularis (Asso) Thell. - T scap - Medit.-Turan. - flower-beds - VB 3557

Capsella bursa-pastoris (L.) Medicus - H bienne - Cosmop. - beaten ground, roadsides, vegetable plots - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Cardamine hirsuta L. - T scap - Cosmop. - wet walls, flower-beds - VB 3579, VB 3568

Cardaria draba (L.) Desv. - G rihz/H scap - Medit.-Turan.

in arvis et in cultis argillosis - Castrogiovanni (Gussone 1842-1845, sub *Lepidium draba* Lin.)

Diplotaxis crassifolia (Rafin.) DC. - Ch suffr - S-Medit. - sunny walls, rocky clefts - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3556, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

in rupibus gypsaceis, non in arenosis - Castrogiovanni (Gussone 1842-1845)

Diplotaxis eruroides (L.) DC. - T scap - W-Medit. (Steno) - uncultivated fields, flower-beds, vegetable plots, rubble - VB 3567, VB 3577, VB 3566

Erophila verna (L.) Chevall. - T scap - Circumbor. - walls, rocks - VB 3558, VB 3568, VB 3578, VB 3557 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Eruca sativa Miller - T scap - Medit.-Turan. - uncultivated fields - VB 3566

in agris et in arvis apricis - Castrogiovanni (Gussone 1842-1845); campi arenosi - Castrogiovanni (Gussone in Lojacono 1888-1909, sub *Eruca sativa* DC.)

Erysimum cheiri (L.) Crantz - Ch suffr - Eurimedit. - sunny walls - VB 3558, VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

in muris vetustis in elatioribus - Castrogiovanni (Gussone 1842-1845, sub *Cheiranthus cheiri* Lin.); sulle rupi del monte di Castrogiovanni (Guss., Crippa in Lojacono 1888-1909, sub *Cheiranthus cheiri* Lin.)

Hirschfeldia incana (L.) Lagr. F. - H scap - Medit.-Macaron. - uncultivated fields, flower-beds, rubble - VB 3578, VB 3557, VB 3567, VB 3566 - (Lo Giudice & Cristaudo 1998)

in ruderalis - Castrogiovanni (Presl. Fl. Sic. pag. 97, sub *Hirschfeldia adpressa*, in Cannarella 1910, sub *Sinapis geniculata* Desf.)

Isatis canescens DC. - H bienne - Euri-Medit.-irano-turaniana - roadsides - VB 3566

in collibus apricis subargillosis - Castrogiovanni (Gussone 1842-1845)

Isatis tinctoria L. - H bienne - SE-Asiat. - roadsides, rubble - VB 3578, VB 3588, VB 3577, VB 3556, VB 3566, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Lobularia maritima (L.) Desv. - Ch suffr - Stenomedit. - sunny walls and rocks, rubble, flight of steps - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Matthiola fruticulosa (L.) Maire - Ch suffr - Subendem. - sunny walls, rocks - VB 3558, VB 3568, VB 3557, VB 3567, VB 3566 - (Raimondo & al. 1992 sub *Matthiola fruticulosa* (L.) Maire subsp. *fruticulosa*; Lo Giudice & Cristaudo 1998)

in rupibus calcareis submaritimis, vel montosis - Castrogiovanni (Gussone 1842-1845, sub *Matthiola coronopifolia* Dec. var. b. *integrifolia*); colline aride calcaree interne o maritimae; rupi marnacee o gessose, sino sulle più alte montagne in suolo secco e ghiadoso - Castrogiovanni (Gussone in Lojacono 1888-1909, sub *Matthiola tristis* DC. var. d. *tricornis*)

Matthiola incana (L.) R.Br. - Ch suffr - Stenomedit. - walls - VB 3568

Moricandia arvensis (L.) DC. - T scap - S-Medit.-Sahar. - clayey lands - VB 3548, VB 3578, VB 3547, VB 3577, VB 3566

Nasturtium officinale R.Br. - H scap - Cosmop. - marshy places - VB 3557

Raphanus raphanistrum L. subsp. *raphanistrum* - T scap - Circumbor. - cultivated and uncultivated fields - VB 3579

Rapistrum rugosum (L.) All. subsp. *rugosum* - T scap - Eurimedit. - cultivated and uncultivated fields - VB 3569, VB 3586

Sinapis alba L. - T scap - E-Medit. - uncultivated fields, rubble, embankment, flower-beds - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3556, VB 3566 - (Di Martino 1992 sub *Sinapis alba* L subsp. *alba*; Lo Giudice & Cristaudo 1998)

in ruderalis, tectis, muris, et aggeribus sylvaticis - Castrogiovanni (Gussone 1842-1845)

Sisymbrium irio L. - T scap - Paleotemp. - roadsides, pavement-edges, rubble, rocky clefts, walls - VB 3568, VB 3557, VB 3566 - (Lo Giudice & Cristaudo 1998)

Sisymbrium officinale (L.) Scop. - T scap - Paleotemp. - flower-beds, roadsides, rubble - VB 3568 - (Lo Giudice & Cristaudo 1998)

Sisymbrium polyceratum L. - T scap - Eurimedit. - flower-beds, roadsides, flight of steps - VB 3568 - (Lo Giudice & Cristaudo 1998)

RESEDACEAE

Reseda alba L. - T scap - Stenomedit. - sunny walls, roadsides - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Reseda lutea L. - H scap - Europ. - uncultivated fields, roadsides - VB 3557, VB 3577 - (Lo Giudice & Cristaudo 1998)

CRASSULACEAE

Sedum album L. - Ch succ - Eurimedit. - (Di Martino 1992)

Sedum clusianum Guss. - Ch succ - walls and rocks, roofs of old houses - VB 3558, VB 3568, VB 3578 - (Lo Giudice & Cristaudo 1998)

Sedum dasyphyllum L. - Ch succ - Eurimedit. - weathered walls, rocks, monuments - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Sedum hispanicum L. - T scap - SE-Europ. (Pontica) - walls, roofs of old houses, gutters - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Lo Giudice & Cristaudo 1998)

in luoghi ombrosi o aprici sulle rocce umide muscose lussureggiante - Castrogiovanni (Insenga in Lojaccono 1888-1909, sub *Sedum glaucum* W. & Kit.); -

Sedum rupestre L. - Ch succ-W- e C-Europ. - (Di Martino 1992)

Sedum sediforme (Jacq.) Pau - Ch succ - Stenomedit. - weathered walls, rocks, roofs of old houses, gutters - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3556, VB 3566 - (Lo Giudice & Cristaudo 1998)

Umbilicus horizontalis (Guss.) DC. - G bulb - Stenomedit. - shaded walls, gutter, roofs of old house, rocks - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Lo Giudice & Cristaudo 1998)

Umbilicus rupestris (Salisb.) Dandy - G bulb - Medit.-Atl. - shaded walls, gutter, roofs of old house, rocks - VB 3557, VB 3567 - (Di Martino 1992)

SAXIFRAGACEAE

Saxifraga bulbifera L. - H scap - NE-Medit. - weathered walls, embankment - VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Saxifraga hederacea L. - T rept - Stenomedit.-Orient. - shaded walls - VB 3568 - (Raimondo & al. 1992)

in montosis rupibus humentibus, vel muscosis, et in urbibus editoribus ad muros umbrosus - Castrogiovanni (Gussone 1842-1845, sub *Saxifraga parviflora* Biv.)

Saxifraga tridactylites L. - T scap - Eurimedit. - paved roads, flight of steps - VB 3558, VB 3568, VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

ROSACEAE

Crataegus monogyna Jacq. - P caesp - Paleotemp. - hedges and shrublands - VB 3569, VB 3568, VB 3578, VB 3587, VB 3576

Potentilla reptans L. - H ros - Paleotemp. - clayey and humid grasslands - VB 3586

Prunus spinosa L. - P caesp - Europeo-Caucas. - woods, hedges and shrublands - VB 3569, VB 3568, VB 3578, VB 3586

Rosa canina L. sensu Bouleng var. *corymbifera* (Borkh.) Rouy - NP

ad sepes, et in dumetis - Castrogiovanni (Gussone 1842-1845, sub *Rosa dumetorum* Thuill.)

Rosa canina L. - NP - Paleotemp. - hedges and shrublands - VB 3569, VB 3568, VB 3578, VB 3587, VB 3556, VB 3586

Rosa sempervirens L. - NP - Stenomedit. - hedges and shrublands - VB 3568, VB 3587, VB 3586

Rubus ulmifolius Schott - NP - Eurimedit. - hedges and shrublands - VB 3569, VB 3558, VB 3568, VB 3578, VB 3588, VB 3557, VB 3567, VB 3577, VB 3556, VB 3566, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Sanguisorba minor Scop. subsp. *muricata* (Gremli) Briq. - H scap - Subcosmop. - grasslands, pastures, roadsides - VB 3569, VB 3558, VB 3578, VB 3587, VB 3566, VB 3586 - (Lo Giudice & Cristaudo 1998)

LEGUMINOSAE

Anthyllis vulneraria L. subsp. *maura* (Beck) Lindb. - H scap - SW-Medit. (Steno-) - grasslands, clefts of rocks and walls - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3587, VB 3556, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Astragalus hamosus L. - T scap - Medit.-Turan. - uncultivated fields - VB 3578, VB 3566 - (Lo Giudice & Cristaudo 1998)

Astragalus monspessulanus L. subsp. *monspessulanus* - H ros - Eurimedit. - grasslands - VB 3587

Cercis siliquastrum L. - P scap - S-Europ.-W Asiat. - artificial planting - VB 3578

Coronilla scorpioides (L.) Koch - T scap - Eurimedit. - pastures - VB 3569, VB 3587, VB 3556, VB 3566

Glycyrrhiza glabra L. - G rihz - W-Asiatic-Stenomedit. - roadsides - VB 3577

Hedysarum coronarium L. - H scap - W-Medit. - uncultivated fields, pastures - VB 3569, VB 3578, VB 3577, VB 3587, VB 3566, VB 3576, VB 3586

Hedysarum spinosissimum L. - T scap - W-Stenomedit. - uncultivated fields, pastures - VB 3587

Hippocrepis unisiliquosa L. - T scap - Eurimedit. - pastures - VB 3569, VB 3587, VB 3566, VB 3576

Lathyrus annuus L. - T scap - Eurimedit. - uncultivated fields - VB 3579

Lathyrus articulatus L. - T scap - Stenomedit. - road slopes, grasslands - VB 3557

Lathyrus cicera L. - T scap - Eurimedit. - road slopes - VB 3578, VB 3566

Lathyrus ochrus (L.) DC. - T scap - Stenomedit. - uncultivated fields - VB 3577, VB 3587

Lathyrus odoratus L. - T scap - Endem. Centre-Southern Italy and Sicily - grasslands - VB 3579, VB 3568, VB 3578, VB 3566

Lathyrus sylvestris L. - H scand - Europeo-Caucas. - grasslands - VB 3569, VB 3588, VB 3587, VB 3576, VB 3586

Lotus commutatus Guss. - Ch suffr - Stenomedit. - rocky clefts, pavement-edges - VB 3578, VB 3587

Lotus edulis L. - T scap - Stenomedit. - uncultivated fields, pastures - VB 3566

Lotus ornithopodioides L. - T scap - Stenomedit. - uncultivated fields, flower-beds - VB 3567, VB 3577, VB 3556, VB 3566, VB 3586

Lupinus angustifolius L. - T scap - Stenomedit.

in collibus aridis arenosis apricis - Castrogiovanni (Gussone 1842-1845)

Medicago arabica (L.) Hudson - T scap - Eurimedit. - cultivated and uncultivated fields, flower-beds - VB 3558, VB 3578, VB 3557, VB 3567, VB 3566

Medicago ciliaris (L.) All. - T scap - S-Medit.-Macaron. - uncultivated fields - VB 3556, VB 3566

Medicago hispida Gaertner - T scap - Subcosmop. - roadsides, uncultivated fields, flower-beds - VB 3558, VB 3578, VB 3557, VB 3567, VB 3577, VB 3566, VB 3586 - (Lo Giudice & Cristaudo 1998)

Medicago lupulina L. - T scap - Paleotemp. - rocky clefts, flower-beds, pastures - VB 3569, VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Medicago minima (L.) Bartal. - T scap - Eurimedit.-Centroasiat. - roadsides, uncultivated fields, flower-beds - VB 3578, VB 3566 - (Di Martino 1992)

Medicago orbicularis (L.) Bartal. - T scap - Eurimedit. - uncultivated fields, roadsides, rubble - VB 3578, VB 3567, VB 3577, VB 3587, VB 3556, VB 3566, VB 3586 - (Lo Giudice & Cristaudo 1998)

Medicago sativa L. subsp. *falcata* (L.) Arcangeli - H scap - Eurasiat.

in aridissimis collibus arenosis - Castrogiovanni (Gussone 1842-1845, sub *Medicago falcata* Lin.); colli aridi arenosi - Castrogiovanni (Tineo in Lojacono 1888-1909, sub *Medicago falcata* Lin.)

Medicago scutellata (L.) Miller - T scap - Eurimedit. - clayey fields - VB 3586

Medicago truncatula Gaertner - T scap - Stenomedit. - uncultivated fields, roadsides, rubble - VB 3557, VB 3567, VB 3566 - (Lo Giudice & Cristaudo 1998)

Melilotus elegans Salzm. - T scap - S-Medit.

luoghi erbosi marittimi nei seminati ed in luoghi arvatichi nell'interno dell'Isola - Castrogiovanni (Crippa in Lojacono 1888-1909)

Melilotus indica (L.) All. - T scap - Subcosmop. - fields - VB 3567

Melilotus infesta Guss. - T scap - Stenomedit.-fields - VB 3568

Melilotus sulcata Desf. - T scap - S-Medit. - fields - VB 3569, VB 3578, VB 3557, VB 3567, VB 3577, VB 3587, VB 3566, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Onobrychis aequidentata (S. & S.) D'Urv. - T scap - E-Medit. (Steno-) - grasslands - VB 3587

- Onobrychis caput-galli*** (L.) Lam. - T scap - Stenomedit. - grasslands - VB 3566
- Ononis breviflora*** DC. - T scap - S-Medit. - clayey fields, uncultivated fields - VB 3587, VB 3586
- Ononis natrix*** L. subsp. ***ramosissima*** (Desf.) Batt.& Trab. - H caesp - Eurimedit. - uncultivated fields - VB 3586
- Ononis oligophylla*** Ten. - T scap - Endem. Centre-Southern Italy and Sicily - clayey fields - VB 3569, VB 3556, VB 3566
- Ononis pusilla*** L. - H scap - Eurimedit. - grasslands, garrigues - VB 3587
- Ononis reclinata*** L. - T scap - E-Medit.-Turan. - pastures, garrigues - VB 3587, VB 3576
- Pisum sativum*** L. - T scap - Subcosmop. - road slope - VB 3579
- Psoralea bituminosa*** L. - H scap - Eurimedit. - grasslands - VB 3578, VB 3557, VB 3577, VB 3587, VB 3566, VB 3576, VB - (Di Martino 1992; Minissale 1993; Lo Giudice & Cristaudo 1998)
- Robinia pseudoacacia*** L. - P caesp - Nordamer. - roadsides, road-slope, artificial planting - VB 3569, VB 3568, VB 3578, VB 3577
- Scorpiurus subvillosus*** L. - T scap - Circum-Medit. - uncultivated fields, pastures - VB 3578, VB 3566 - (Lo Giudice & Cristaudo 1998)
- Spartium junceum*** L. - P caesp - Eurimedit. - shrublands - VB 3569, VB 3568, VB 3578, VB 3588, VB 3577, VB 3587, VB 3566 - (Minissale 1993)
- Tetragonolobus purpureus*** Moench - T scap - Stenomedit. - uncultivated fields, pastures - VB 3569, VB 3579, VB 3588, VB 3587
- Trifolium angustifolium*** L. subsp. ***angustifolium*** - T scap - Eurimedit. - uncultivated fields, pastures - VB 3569, VB 3578, VB 3587
- Trifolium campestre*** Schreber - T scap - W-Paleotemp. - uncultivated fields, rubble, roadsides - VB 3569, VB 3558, VB 3578, VB 3557, VB 3577, VB 3587, VB 3576, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)
- Trifolium cherleri*** L. - T scap - Eurimedit. - uncultivated fields - VB 3569, VB 3556
- Trifolium maritimum*** Huds. b. ***glabrum*** - T scap
in pascuis, et arvis, in herbosis, ac humentibus maritimis - Castrogiovanni (Gussone 1842-1845)
- Trifolium nigrescens*** Viv. - T scap - Eurimedit. - uncultivated fields - VB 3578, VB 3567 - (Lo Giudice & Cristaudo 1998)
- Trifolium pallidum*** L. - T scap - Eurimedit. - uncultivated fields - VB 3569, VB 3578, VB 3586
- Trifolium physodes*** Steven - H scap - E-Medit. - grasslands - VB 3569
- Trifolium resupinatum*** L. - T rept - Paleotemp. - humid uncultivated fields - VB 3577, VB 3556, VB 3586

Trifolium scabrum L. - T scap - Eurimedit. - uncultivated fields - VB 3569, VB 3558, VB 3578, VB 3567, VB 3587, VB 3566, VB 3576 - (Lo Giudice & Cristaudo 1998)

Trifolium stellatum L. - T scap - Eurimedit. - uncultivated fields - VB 3578, VB 3557, VB 3587, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Trifolium subterraneum L. - T rept - Eurimedit. - uncultivated fields - VB 3547, VB 3586

Trifolium tomentosum L. - T rept - Paleotemp. - pastures, clayey fields - VB 3556, VB 3566

Vicia ambigua Guss. - T scap

in herbosis submontosis - Castrogiovanni (Gussone 1842-1845)

Vicia calcarata Desf. subsp. *triflora* (Ten.) Burt & Lewis - T scap

inter segetes, et in cultis - Castrogiovanni (Gussone 1842-1845, sub *Vicia triflora* Ten. "Castrogiovanni allo Sferro")

Vicia hybrida L. - T scap - Eurimedit. - uncultivated fields - VB 3578

Vicia pseudocracca Bertol. - T scap - Stenomedit. - road slopes - VB 3587

Vicia sativa L. subsp. *macrocarpa* (Moris) Arcang. - T scap - Medit.-Turan. - roadsides - VB 3578

Vicia sativa L. - T scap - Subcosmop. - uncultivated fields - VB 3578, VB 3557

Vicia villosa Roth subsp. *varia* (Host) Corb. - T scap - Eurimedit. - roadsides, road slopes, uncultivated fields - VB 3578, VB 3588, VB 3567, VB 3577, VB 3566, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

OXALIDACEAE

Oxalis corniculata L. - H rept - Cosmop. - beaten ground, flight of steps, pavements - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Lo Giudice & Cristaudo 1998)

Oxalis pes-caprae L. - G bulb - Sud-Afr. - flower-beds, roadsides, uncultivated fields - VB 3558, VB 3567, VB 3577, VB 3566

GERANIACEAE

Erodium chium (L.) Willd. - T scap - Eurimedit.

luoghi erbosi marittimi, suolo per lo più sabbioso - Castrogiovanni (Lojacono 1888-1909, sub *Erodium chium* Lin.)

Erodium ciconium (L.) L'Hér. - T scap - Eurimedit.-Pontico - rubble, uncultivated fields - VB 3578

Erodium cicutarium (L.) L'Hér. s.s. - T scap - Subcosmop. - uncultivated fields, rubble - VB 3578, VB 3557 - (Lo Giudice & Cristaudo 1998)

Erodium malacoides (L.) L' Hér. - T scap - Medit.-Macaron. - uncultivated fields, rubble - VB 3578, VB 3557, VB 3567, VB 3566, VB 3586 - (Di Martino 1992)

Geranium dissectum L. - T scap - Eurasiat. - clayey and humid grasslands - VB 3586

Geranium lucidum L. - T scap - Eurimedit. - walls, flight of steps, rubble - VB 3568, VB 3578, VB 3557 - (Lo Giudice & Cristaudo 1998)

Geranium molle L. - T scap - Subcosmop. - uncultivated fields, rubble, roadsides - VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Geranium purpureum Vill. - T scap - Eurimedit. - rocky clefts, shrublands - VB 3579, VB 3578, VB 3588

Geranium rotundifolium L. - T scap - Paleotemp. - uncultivated fields, rubble, flight of steps, flower-beds - VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Geranium sanguineum L. - H scap - Europeo-Caucas.

in montosis petrosis ad sepes, in dumetis - Castrogiovanni (Gussone 1842-1845); dumeti montani, luoghi selvatici aprici e sassosi - Castrogiovanni (Lojacono 1888-1909)

LINACEAE

Linum collinum Guss. - H scap - W-Medit. (Euri)

in collibus marnaceis - Castrogiovanni (Gussone 1842-1845, sub *Linum austriacum* Lin.); colli marnacei - Castrogiovanni (Lojacono 1888-1909, sub *Linum austriacum* Lin.); Enna (Raimondo & al. 1992)

Linum decumbens Desf. - T scap - W-Stenomedit. - uncultivated fields, pastures - VB 3566

Linum strictum L. subsp. ***corymbulosum*** (Rchb.) Rouy - T scap - Stenomedit. - grasslands - VB 3587

Linum strictum L. subsp. ***strictum*** - T scap - Stenomedit. - grasslands - VB 3569, VB 3578, VB 3587

EUPHORBIACEAE

Chrozophora tinctoria (L.) Juss. - T scap - Medit.-Turan. - cultivated and uncultivated fields, nitrophilous soils - VB 3566, VB 3577

Euphorbia ceratocarpa Ten. - Ch suffr - Endem. Centre-Southern Italy and Sicily - rubble, road-slope - VB 3569, VB 3579, VB 3558, VB 3568, VB 3578, VB 3588

Euphorbia characias L. - NP - Stenomedit. - hedges - VB 3547, VB 3557

Euphorbia exigua L. - T scap - Eurimedit. - cultivated and uncultivated fields - VB 3569, VB 3566

Euphorbia helioscopia L. - T scap - Cosmop. - cultivated and uncultivated fields, roadsides, rubble - VB 3578, VB 3557, VB 3567, VB 3577, VB 3566 - (Lo Giudice & Cristaudo 1998)

Euphorbia humifusa Willd. - T rept - Asiat. - roadsides, pavement-edges - VB 3558, VB 3577

Euphorbia maculata L. - T rept - Nordamer. - beaten ground, paved roads, pavement-edges, flight of steps - VB 3558, VB 3567

Euphorbia peplus L. - T scap - Eurosib. - uncultivated fields, rubble - VB 3558

Euphorbia rigida Bieb. - Ch suffr - S-Europ. - incoherent or loose rocks - VB 3557, VB 3556, VB 3566 - (Lo Giudice & Cristaudo 1998)

in montosis depressis, et in collibus calcareis - Castrogiovanni (Gussone 1842-1845, sub *Euphorbia biglandulosa* Desf.); colli calcarei aridissimi - Castrogiovanni (Lojacono 1888-1909, sub *Euphorbia biglandulosa* Desf.)

SIMAROUBACEAE

Ailanthus altissima (Miller) Swingle - P scap - Exotic cultiv. spont. (Cina) - roadsides, road-slope, walls - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

POLYGALACEAE

Polygala monspeliaca L. - T scap - Stenomedit. - meadows - VB 3569

ANACARDIACEAE

Pistacia lentiscus L. - P caesp - S-Medit.-Macaron. - rocks - VB 3578 - (Lo Giudice & Cristaudo 1998)

Rhus coriaria L. - P caesp - S-Medit. - hedges, roadsides, road slopes - VB 3577, VB 3556

ACERACEAE

Acer negundo L. - P scap - Exotic cultivated (Nordamer.) - artificial planting - VB 3578

Acer pseudoplatanus L. - P scap - Europeo-Caucas. - artificial planting - VB 3568, VB 3578

HIPPOCASTANACEAE

Aesculus hippocastanum L. - P scap - Exotic cultivated - parks - VB 3558

RHAMNACEAE

Rhamnus alaternus L. - P caesp - Stenomedit. - hedges and shrublands - VB 3578, VB 3557, VB 3567, VB 3577, VB 3556 - (Lo Giudice & Cristaudo 1998)

MALVACEAE

Lavatera agrigentina Tineo - NP - Endemic Sicilian-Sardinian - uncultivated fields - VB 3586 - (Raimondo & al. 1992)

in arvis argillosis - Castrogiovanni (Gussone 1842-1845); campi argillosi della Sicilia meridionale - Castrogiovanni (Gussone in Lojacono 1888-1909)

Lavatera cretica L. - T scap - Stenomedit. - rubble and uncultivated fields - VB 3567

Lavatera olbia L. - P caesp - Stenomedit. - uncultivated lands - VB 3558, VB 3568, VB 3567

Lavatera trimestris L. - T scap - Stenomedit. - fields- VB 3578, VB 3588, VB 3577, VB 3556, VB 3576, VB 3586 - (Lo Giudice & Cristaudo 1998)

Malope malacoides L. - T scap - Stenomedit.-W-Asiat.

in arvis argilloso-calcareis - Castrogiovanni (Gussone 1842-1845); campi arvali argillosi o calcarei - Castrogiovanni (Lojacono 1888-1909)

Malva nicaensis All. - T scap - Stenomedit. - uncultivated lands - VB 3578, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Malva sylvestris L. - H scap - Eurosib. - roadsides, rubble - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

CISTACEAE

Cistus creticus L. - NP - Centro-Medit. - garrigues - VB 3587, VB 3576 - (Minissale 1993)

Fumana arabica (L.) Spacq - Ch suffr - S-Medit.-Turan

in collibus aridis argilloso-calcareis - Castrogiovanni (Gussone 1842-1845, sub *Helianthemum arabicum* Pers.)

Fumana thymifolia (L.) Spach - Ch suffr - Stenomedit. - garrigues - VB 3587 - (Minissale 1993)

Helianthemum cinereum (Cav.) Pers. - Ch suffr - SW-Medit.-Mont. - garrigues - VB 3587 - (Minissale 1993)

in asperis calcareis montosis - Castrogiovanni (Gussone 1842-1845, sub *Helianthemum rubellum* Presl. del Prag.); nelle rupi calcaree dei monti sino ai più eccelsi, luoghi sassosi aridi - Castrogiovanni (Crippa in Lojacono 1888-1909, sub *Helianthemum rubellum* Presl var. *lanceolatum* Willk.)

Helianthemum ledifolium (L.) Miller - T scap - Stenomedit.

in collibus et in campis arenosis - Castrogiovanni (Gussone 1842-1845, sub *Helianthemum niloticum* Pers.); colli erbosi arenosi, campi secchi argillosi - Castrogiovanni (Lojacono 1888-1909, sub *Helianthemum ledifolium* Lin.)

Helianthemum salicifolium (L.) Miller - T scap - Eurimedit. - meadows - VB 3569, VB 3566

Tuberaria guttata (L.) Fourr. - T scap - Eurimedit. - meadows - VB 3578

TAMARICACEAE

Tamarix gallica Lin. - P caesp - W-Medit.

in arenosis maritimis inundatis, in alvei - Castrogiovanni (Gussone 1842-1845); lungo i torrenti in luoghi inondati paludosi o spiagge arenose umide, presso il mare - Castrogiovanni (Gussone in Lojacono 1888-1909)

CUCURBITACEAE

Ecballium elaterium (L.) A.Rich. - H rept - Eurimedit. - uncultivated fields, rubble - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Lo Giudice & Cristaudo 1998)

LYTHRACEAE

Lythrum junceum Banks & Sol. - H scap - Stenomedit.-Macarones. - humid ditches - VB 3556

MYRTACEAE

Eucaliptus camaldulensis Dehnh. - P scap - Australian - artificial planting - VB 3569, VB 3579, VB 3548, VB 3578, VB 3588, VB 3587, VB 3597

ONAGRACEAE

Epilobium hirsutum L. - H scap - Subcosmop. - humid places - VB 3578

Epilobium tetragonum L. subsp. *tourneforti* (Michalet) Lévêillé - H scap - Paleotemp. - flight of steps, road and pavement edges - VB 3579, VB 3558, VB 3568, VB 3578, VB 3577 - (Lo Giudice & Cristaudo 1998)

THELIGONACEAE

Theligonum cynocrambe L. - T scap - Stenomedit. - weathered and shaded walls, rocks - VB 3578, VB 3557

CORNACEAE

Cornus sanguinea L. - P caesp - Eurasiat. - shrublands - VB 3578

ARALIACEAE

Hedera helix L. - P lian - Submedit. - shrublands, walls, rocks, tree boles - VB 3569, VB 3568, VB 3578, VB 3557 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

UMBELLIFERAE

Ammi majus L. - T scap - Eurimedit. - fields - VB 3569, VB 3546, VB 3556, VB 3566, VB 3586

Ammi visnaga (L.) Lam. - T scap - Eurimedit. - fields - VB 3569, VB 3556, VB 3566

Anthriscus nemorosa (Bieb.) Sprengel - H scap - S-Europ.-Pontico - shaded places, woods, at the bases of shaded walls, roadsides - VB 3568, VB 3578

Apium graveolens L. - H scap - Paleotemp. - wet walls - VB 3557, VB 3567

Apium nodiflorum (L.) Lag. - I rad - Eurimedit. - marshy places - VB 3557

Athamanta sicula L. - H scap - SW-Medit. - clefts of weathered walls, rocky clefts - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

in rupibus calcareis montosis - Castrogiovanni (Gussone 1842-1845); rupi calcaree colline e montuose - Castrogiovanni (Gussone in Lojacono 1888-1909, sub *Tinguarra sicula* Parl.)

Bonannia graeca (L.) Halácsy - H scap - Subendem.

in pascuis et herbosis montosis apricis - Castrogiovanni (Gussone 1842-1845, sub *Bonannia resinifera* Guss.)

Bupleurum fruticosum L. - NP - Stenomedit. - road slopes - VB 3558

in sylvaticis et in rupibus aridis - Castrogiovanni (Gussone 1842-1845); dumeti collini nelle siepi lungo i torrenti - Castrogiovanni (Gussone in Lojacono 1888-1909)

Bupleurum tenuissimum L. - T scap - Eurimedit. - clayey fields - VB 3566

Cachrys cristata DC. - H scap - E-Medit. - grasslands - VB 3578, VB 3556, VB 3566, VB 3576 - (Minissale 1993)

Cnidium silaifolium (Jacq.) Simonkai - H scap - SE-Europ.

in nemoribus, et in dumetis montosis - Castrogiovanni (Gussone 1842-1845, sub *Cnidium apioides* Spreng.); dumeti boschivi, boschi montuosi ombrosi freschi - Castrogiovanni (Insenga in Lojacono 1888-1909, sub *Cnidium apioides* Spreng.)

Conium maculatum L. - H scap - Paleotemp. - humid and nitrophilous soils - VB 3569, VB 3558, VB 3568, VB 3557, VB 3577 - (Lo Giudice & Cristaudo 1998)

Daucus aureus Desf. - T scap - S-Medit. - clayey fields - VB 3569, VB 3548, VB 3556 in argillosis, inter segetes, et in arvis - Castrogiovanni (Gussone 1842-1845)

Daucus carota L. - H bienne - Subcosmop. - uncultivated fields, rubble - VB 3569, VB 3548, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3587, VB 3556 - (Di Martino 1992; Minissale 1993; Lo Giudice & Cristaudo 1998)

Daucus muricatus (L.) L. - T scap - W-Medit. - clayey fields - VB 3569

in argillosis, inter segetes, et in arvis - Castrogiovanni (Gussone 1842-1845)

Elaeoselinum asclepium (L.) Bertol. subsp. *meoides* (Desf.) Fiori ex Tutin - H scap - S-Medit. - grasslands - VB 3569, VB 3548, VB 3587, VB 3556, VB 3566, VB 3576 - (Minissale 1993)

in collibus herbosis, et ad margines vallium in subumbrosis humo repletis - Castrogiovanni (Gussone 1842-1845, sub *Elaeoselinum meoides* Dec.); pascui montani argillosi, campi arvatici - Castrogiovanni (Tin. Nym. et Guss. in Lojacono 1888-1909, sub *Elaeoselinum meoides* DC.)

Eryngium campestre L. - H scap - Eurimedit. - uncultivated fields, pastures - VB 3569, VB 3558, VB 3578, VB 3577, VB 3587, VB 3556, VB 3566, VB 3576 - (Minissale 1993)

Eryngium dichotomum Desf. - H scap - SW-Medit. - clayey lands - VB 3569, VB 3567, VB 3556, VB 3566

Eryngium triquetrum Vahl - H scap - SW-Medit. - clayey lands - VB 3569, VB 3547, VB 3566

Ferula communis L. - H scap - S-Medit. (Euri) - uncultivated fields, pastures - VB 3548, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Foeniculum vulgare Miller subsp. *piperitum* (Ucria) Coutinho - H scap - S-Medit. - uncultivated fields - VB 3569, VB 3578, VB 3577, VB 3587, VB 3586

Foeniculum vulgare Miller subsp. *vulgare* - H scap - S-Medit. - uncultivated fields - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3556, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Kundmannia sicula (L.) DC. - H scap - Stenomedit. - grasslands - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3587, VB 3556, VB 3566, VB 3576 - (Minissale 1993)

Magydaris pastinacea (Lam.) Paol. - H scap - Stenomedit.-Occid.

in sylvaticis, dumetis, vallibus umbrosis - Castrogiovanni (Gussone 1842-1845, sub *Magydaris tomentosa* DC.); dumeti, siepi, colline e nella regione montana -

Castrogiovanni (Gussone in Lojacono 1888-1909, sub *Magydaris tomentosa* DC.; Di Martino 1992)

Opopanax chironium (L.) Koch - H scap - Stenomedit. - rubble, hedges, shrublands - VB 3568, VB 3578, VB 3588, VB 3557 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)
dumeti collini o montani - Castrogiovanni (Crippa in Lojacono 1888-1909)

Pimpinella anisoides Briganti subsp. ***gussonei*** Bert. - H scap - Endem. Centre-Southern Italy and Sicily - grasslands, weathered walls, rocky clefts - VB 3569, VB 3558, VB 3578, VB 3557, VB 3567, VB 3587 - (Di Martino 1992; Minissale 1993; Lo Giudice & Cristaudo 1998)
in apricis pascuis maritimis, vel montosis - Castrogiovanni (Gussone 1842-1845, sub *Pimpinella gussonei* Bert.); pascui marittimi comunissima, meno comune nei luoghi montani in colli arenosi, al margine dei boschi - Castrogiovanni (Gussone in Lojacono 1888-1909, sub *Pimpinella gussonei* Bert.)

Ridolfia segetum Moris - T scap - Stenomedit. - fields - VB 3569, VB 3556, VB 3566

Seseli tortuosum L. - H bienne - Stenomedit. - grasslands - VB 3587 - (Minissale 1993)

Smyrniolum olusatrum L. - H bienne - Medit.-Atl. (Euri) - shaded rubble, at the bases of shaded walls, roadsides - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577

Smyrniolum perfoliatum L. - H bienne-Eurimedit. - (Di Martino 1992)

Smyrniolum rotundifolium Miller - H bienne - S-Medit. - flower-beds - VB 3568, VB 3578

Thapsia garganica L. - H scap - S-Medit. - uncultivated fields, pastures, flower-beds - VB 3557, VB 3567, VB 3577, VB 3566

Tordylium apulum L. - T scap - Stenomedit. - roadsides - VB 3556

Torilis nodosa (L.) Gaertner - T scap - Medit.-Turan. - rubble, roadsides - VB 3586

PRIMULACEAE

Anagallis arvensis L. - T rept - Subcosmop. - cultivated and uncultivated fields, roadsides, rubble - VB 3568, VB 3557, VB 3577, VB 3566

Cyclamen hederifolium Aiton - G bulb - N-Medit. (Steno) - shrublands, woods - VB 3568, VB 3578

Samolus valerandi L. - H scap - Subcosmop. - wet walls and rocks - VB 3578, VB 3557, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

OLEACEAE

Fraxinus ornus L. - P scap - Euri-N.Medit.-Pontico - woods - VB 3558, VB 3568 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Fraxinus angustifolia Vahl subsp. ***angustifolia***. - P scap - (W-Medit.-Atl.) - woods - VB 3568, VB 3578

GENTIANACEAE

Blackstonia perfoliata (L.) Hudson - T scap - Eurimedit. - humid grasslands - VB 3569, VB 3568, VB 3578, VB 3587 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Centaureum erythraea Rafn subsp. *majus* (Hoffingg. & Link) Melderis - T scap - Paleotemp. - grasslands - VB 3569, VB 3578, VB 3587 - (Minissale 1993)

Centaureum tenuiflorum (Hoffingg. & Lk.) Fritsch - T scap - Paleotemp. - clayey fields - VB 3569

APOCYNACEAE

Vinca major L. - Ch rept - Eurimedit. - hedges and shrublands - VB 3568 - (Lo Giudice & Cristaudo 1998)

RUBIACEAE

Asperula aristata L. fil. subsp. *scabra* (Presl) Nym. - Ch suffr - Medit.-Mont. - grasslands, garrigues - VB 3578, VB 3587

Galium aparine L. - T scap - Eurasiat. - roadsides, rubble, uncultivated lands, hedges - VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Galium lucidum All. - H scap - Eurimedit. - rocky clefts, weathered walls, grasslands - VB 3569, VB 3578, VB 3557, VB 3567, VB 3587, VB 3556, VB 3576 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Galium murale (L.) All. - T scap - Stenomedit. - walls, rocks - VB 3578 - (Minissale 1993; Lo Giudice & Cristaudo 1998)

Galium verrucosum Hudson - T scap - Stenomedit. - flower-beds, uncultivated fields, - VB 3577, VB 3556, VB 3566

Rubia peregrina L. - P lian - Stenomedit.-Macarones. - hedges and shrublands, woods - VB 3569, VB 3568, VB 3578, VB 3588, VB 3577, VB 3587, VB 3556, VB 3586 - (Lo Giudice & Cristaudo 1998)

Sherardia arvensis L. - T scap - Subcosmop. - walls and rubble, pavement-edges, uncultivated lands, pastures - VB 3578, VB 3567, VB 3587 - (Lo Giudice & Cristaudo 1998)

Valantia muralis L. - T scap - Stenomedit. - walls, rocks, rubble - VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

CONVOLVULACEAE

Convolvulus althaeoides L. - H scand - Stenomedit. - roadsides, rubble, uncultivated lands, pastures - VB 3558, VB 3578, VB 3557, VB 3567, VB 3587, VB 3556, VB 3566 - (Lo Giudice & Cristaudo 1998)

Convolvulus arvensis L. - G rihz - Subcosmop. - cultivated and uncultivated fields, flower-beds - VB 3558, VB 3568, VB 3578, VB 3567, VB 3577, VB 3566 - (Di Martino 1992)

Convolvulus elegantissimus Miller - H scand - E-Stenomedit. - rubble, pavement-edges, roadsides - VB 3558, VB 3567 - (Lo Giudice & Cristaudo 1998)

in collibus demissis lapidosis aridis - Castrogiovanni (Gussone 1842-1845, sub *Convolvulus tenuissimus* Sibth.); colli marnacei o calcarei - Castrogiovanni (Herb. Pan. in Lojaccono 1888-1909, sub *Convolvulus tenuissimus* Sibth.);

Cuscuta kotschy Desmoulins - T par - Stenomedit. - VB 3566

BORAGINACEAE

Anchusa italica Retz. - H scap - Eurimedit. - roadsides - VB 3568

Borago officinalis L. - T scap - Eurimedit. - cultivated and uncultivated fields, rubble - VB 3578, VB 3557, VB 3567, VB 3577, VB 3586 - (Lo Giudice & Cristaudo 1998)

Cerinth major L. - T scap - Stenomedit. - roadsides, fields edges, rubble - VB 3557

Cynoglossum creticum Miller - H bienne - Eurimedit. - uncultivated lands - VB 3568

Echium italicum L. subsp. *siculum* Lacaita - H bienne - Endem. Sicilian - fields edges - VB 3578, VB 3586

Echium plantagineum L. - T scap - Eurimedit. - uncultivated fields, rubble, roadsides - VB 3558, VB 3578, VB 3557, VB 3586 - (Lo Giudice & Cristaudo 1998)

Heliotropium europaeum L. - T scap - Eurimedit.-Turan. - cultivated fields, rubble, roadsides - VB 3568, VB 3557, VB 3577

Myosotis ramosissima Rochel in Schultes - T scap - Europeo-Caucas. - walls - VB 3578

VERBENACEAE

Verbena officinalis L. - H scap - Cosmop. - roadsides, pavement-edges, rubble - VB 3578, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

LABIATAE

Ajuga chamaepitys (L.) Schreber - T scap - Eurimedit. - rocky clefts - VB 3578

Ajuga iva (L.) Schreber - Ch suffr - Stenomedit. - pastures, beaten ground - VB 3558

Ballota nigra L. subsp. *uncinata* (Fiori & Bég.) Patzak - H scap - Stenomedit. - rubble, uncultivated lands, hedges - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Lo Giudice & Cristaudo 1998)

Calamintha nepeta (L.) Savi - Ch suffr - Medit.-Mont. (Euri) - uncultivated fields, flight of steps, roadsides, weathered walls, rubble - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Clinopodium vulgare L. - H scap - Circumbor. - shrublands, woods - VB 3578

Coridothymus capitatus (L.) Reichenb. Fil. - Ch frut - E-Stenomedit. - garrigues - VB 3569, VB 3587, VB 3556, VB 3566 - (Minissale 1993)

Lamium amplexicaule L. - T scap - Paleotemp. - flower-beds, rubble - VB 3578, VB 3557 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Mentha spicata L. subsp. *glabrata* (Lej. & Court.) Lebeau - H scap - Euri-Medit. - uncultivated lands - VB 3558, VB 3557

Micromeria canescens (Guss.) Benth. - Ch suffr - Endem. Centre-Southern Italy and Sicily - garrigues, rocky clefts - VB 3558, VB 3578, VB 3557, VB 3567, VB 3587 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Micromeria consentina (Ten.) Terr. - Ch suffr - Endem. - (Di Martino 1992)

Micromeria graeca (L.) Benth - Ch suffr - Stenomedit. - garrigues, grasslands, weathered walls, rocky clefts - VB 3569, VB 3568, VB 3578, VB 3557, VB 3587, VB 3556, VB 3566 - (Di Martino 1992; Minissale 1993; Lo Giudice & Cristaudo 1998)

Nepeta apulei Ucria. - H scap - SW-Medit.

in apricis collibus argilloso-calcareis - Castrogiovanni (Gussone 1842-1845); campi pietrosi argilloso-calcarei aprici montani nell'interno dell'Isola - Castrogiovanni (Lojacono 1888-1909)

Prunella laciniata (L.) L. - H scap - Eurimedit. - grasslands - VB 3587

Salvia grahami Benth - P caesp - Messico - road-slopes - VB 3567

Salvia verbenaca L. - H scap - Medit.-Atl. (Steno) - uncultivated fields, pastures, beaten ground, flower-beds - VB 3558, VB 3578, VB 3557 - (Lo Giudice & Cristaudo 1998)

Salvia verbenaca L. var. *horminoides* Pourr. - H scap - Medit.-Atl. - flower-beds - VB 3557

Salvia viridis L. - T scap - Stenomedit.

in collibus et in campis aridis sterilibus - Castrogiovanni - (Gussone 1842-1845); colli, campi arenosi sterili - Castrogiovanni (Lojacono 1888-1909, sub *Salvia horminum* Lin.; Raimondo & al. 1992)

Sideritis romana L. - T scap - Stenomedit. - walls and rubble, pavement-edges, uncultivated fields - VB 3569, VB 3578, VB 3556

Teucrium capitatum L. - Ch suffr - Stenomedit. - garrigues - VB 3569, VB 3578, VB 3587 - (Lo Giudice & Cristaudo 1998)

in collibus aridis apricis - Castrogiovanni (Gussone 1842-1845, sub *Teucrium pseudo-hyssopus* Schreb.); colli aridi della Sicilia meridionale e centrale - Castrogiovanni (Lojacono 1888-1909, sub *Teucrium pseudo-hyssopus* Schreb.);

Teucrium flavum L. - Ch frut - Stenomedit. - rocky clefts - VB 3578, VB 3557 - (Di Martino 1992; Minissale 1993; Lo Giudice & Cristaudo 1998)

Teucrium spinosum L. - T scap - Stenomedit.-Sudoccid.

in arvis humidis argillosis - Castrogiovanni (Gussone 1842-1845)

Thymus spinulosus Ten. - Ch rept - Endemic Centre-Southern Italy and Sicily - garrigues - VB 3587, VB 3556

in collibus aridis calcareis elatioribus - Castrogiovanni (Gussone 1842-1845, sub *Thymus zygis* Lin. var. *a* Guss. = *T. acicularis a* Guss.); in terreni aridissimi marnosi solatii - Castrogiovanni ? (Gussone in Lojacono 1888-1909, sub *Thymus gussonei* Lojac.)-

SOLANACEAE

Datura stramonium L. - T scap - Cosmop. - rubble - VB 3578 - (Lo Giudice & Cristaudo 1998)

Hyoscyamus albus L. - H bienne - Eurimedit. - walls - VB 3568, VB 3557, VB 3567 - (Lo Giudice & Cristaudo 1998)

Lycium intricatum Boiss. - NP - S-Stenomedit. - road slopes - VB 3547

Solanum dulcamara L. - NP - Paleotemp. - humid places - VB 3547, VB 3557, VB 3567

Solanum luteum Miller subsp. *alatum* (Moench) Dostal - T scap - Eurimedit. - roadsides, rubble, flower-beds - VB 3577

Solanum nigrum L. - T scap - Cosmop. - cultivated and uncultivated fields, roadsides, rubble, flower-beds - VB 3578, VB 3557, VB 3567, VB 3577, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

SCROPHULARIACEAE

Antirrhinum siculum Miller - Ch frut - Endem. Centre-Southern Italy and Sicily - sunny and arid walls, flight of steps, rocky clefts - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Lo Giudice & Cristaudo 1998)

Bellardia trixago (L.) All. - T scap - Eurimedit. - uncultivated fields - VB 3569, VB 3567, VB 3577, VB 3566, VB 3576

Cymbalaria muralis Gaertn., Mey. et Sch. - H scap - Subcosmop. - shaded walls - VB 3568 - (Lo Giudice & Cristaudo 1998)

Kickxia spuria (L.) Dumort. - T scap - Eurasiat. - cultivated fields - VB 3566

Linaria reflexa (L.) Desf. - T rept - SW-Medit. - rubble, walls, cultivated fields, flower-beds - VB 3558, VB 3578, VB 3557, VB 3577, VB 3556 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Odontites rigidifolia (Biv.) Benth. - T scap - Endem. Sicilian - clayey soils - VB 3587, VB 3566

Parentucellia latifolia (L.) Caruel - T scap - Eurimedit. - pastures, uncultivated lands - VB 3578 - (Lo Giudice & Cristaudo 1998)

Verbascum sinuatum L. - H bienne - Eurimedit. - uncultivated fields, rubble, roadsides - VB 3568, VB 3557, VB 3567, VB 3577

Verbascum thapsus L. subsp. *thapsus* - H bienne - Europeo-Caucas. - uncultivated lands, rubble - VB 3568

Veronica anagallis-aquatica L. - H scap - Cosmop. - ditches, marshy places - VB 3578, VB 3557, VB 3556 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Veronica arvensis L. - T scap - Subcosmop. - beaten ground, flight of steps, rubble, walls, roadsides - VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Veronica cymbalaria Bodard - T scap - Eurimedit. - walls, rubble, flight of steps - VB 3579, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Veronica hederifolia L. - T scap - Eurasiat. - roadsides, flower-beds, rubble - VB 3578, VB 3557, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

† *Veronica media* Schrad.

in pratis vallium - Castrogiovanni (Gussone 1842-1845)

Veronica persica Poir. - T scap - Subcosmop. - flower-beds - VB 3567

ACANTHACEAE

Acanthus mollis L. - H scap - W-Stenomedit. - shaded places - VB 3569, VB 3558, VB 3568, VB 3578, VB 3588, VB 3567 - (Lo Giudice & Cristaudo 1998)

PLANTAGINACEAE

Plantago lagopus L. - T scap - Stenomedit. - uncultivated lands, pastures - VB 3577

Plantago lanceolata L. - H ros - Cosmop. - uncultivated lands, roadsides - VB 3569, VB 3558, VB 3567

Plantago major L. subsp. *major* - H ros - Cosmop. - roadsides - VB 3558, VB 3567

Plantago serraria L. - H ros - Stenomedit. - uncultivated fields, beaten ground, pastures - VB 3569, VB 3558, VB 3578, VB 3557, VB 3567, VB 3587, VB 3556, VB 3566 - (Lo Giudice & Cristaudo 1998)

CAPRIFOLIACEAE

Lonicera etrusca Santi - P lian - Eurimedit. - hedges and shrublands, woods - VB 3569, VB 3578, VB 3556

in dumetis, et ad sepes - Castrogiovanni (Gussone 1842-1845, sub *Lonicera etrusca* Savi)

Sambucus nigra L. - P caesp - Europeo-Caucas. - uncultivated fields, rubble - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3586

Viburnum tinus L. - P caesp - Stenomedit. - rocky clefts - VB 3578

VALERIANACEAE

Centranthus ruber (L.) DC. - Ch suffr - Stenomedit. - sunny walls, rocks - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Fedia cornucopiae (L.) Gaertner - T scap - Stenomedit. - cultivated and uncultivated fields, flower-beds, rubble - VB 3578, VB 3557, VB 3566

Valerianella discoidea (L.) Loisel. - T scap - Stenomedit. - pastures, uncultivated fields - VB 3578, VB 3566

Valerianella eriocarpa Desv. - T scap - Stenomedit. - pastures, uncultivated fields - VB 3557

DIPSACACEAE

Dipsacus fullonum L. - H bienne - Eurimedit. - uncultivated lands, rubble - VB 3548, VB 3568, VB 3578, VB 3586 - (Lo Giudice & Cristaudo 1998)

Scabiosa dichotoma Ucria - T scap - Endem.

in campis et arvis argillosis inter segetes - Castrogiovanni (Gussone 1842-1845); campi argillosi, culture nella Sicilia meridionale e centrale comune - Castrogiovanni (Gussone in Lojacono 1888-1909); Enna (Raimondo & al. 1992)

Scabiosa maritima L. - H bienne - Stenomedit. - roadsides, rubble, grasslands - VB 3569,

VB 3548, VB 3558, VB 3578, VB 3557, VB 3567, VB 3577, VB 3587, VB 3556 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

CAMPANULACEAE

Campanula erinus L. - T scap - Stenomedit. - beaten ground, walls, rocks, flight of steps - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

COMPOSITAE

Achillea ligustica All. - H scap - W-Stenomedit. - uncultivated lands, rubble, roadsides, weathered walls - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3587, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Aetheorrhiza bulbosa (L.) Cass. - G bulb - Stenomedit. - at bases of walls, flower-beds, flight of steps, roadsides - VB 3578, VB 3557

Anacyclus tomentosus (All.) DC. - T scap - Stenomedit. - uncultivated fields - VB 3579, VB 3557, VB 3567, VB 3556, VB 3566, VB 3586

Anthemis arvensis L. subsp. *arvensis* - T scap - Eurimedit.-Turan. - cultivated and uncultivated fields - VB 3578, VB 3557 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Anthemis arvensis L. subsp. *incrassata* (Loisel.) Nyman - T scap - Stenomedit. - uncultivated fields, pastures - VB 3578, VB 3557, VB 3567

Anthemis cupaniana Tod. - Ch suffr - Endem. Sicilian - shaded walls, rocky clefts - VB 3568

Anthemis mixta L. - T scap - Stenomedit. - uncultivated lands - VB 3557, VB 3566

Artemisia annua L. - T scap -Eurasiat. - rubble, roadsides - VB 3567, VB 3566

Artemisia arborescens L. - NP - S-Medit. - sunny walls, rocky clefts, road slope, fields edges - VB 3548, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Aster squamatus (Sprengel) Hieron. - H scap - Exotic adv. nat. (Neotropic.) - roadsides, pavement-edges, flight of steps - VB 3569, VB 3579, VB 3568, VB 3578, VB 3557, VB 3577, VB 3566 - (Lo Giudice & Cristaudo 1998)

Atractylis cancellata L. - T scap - S-Medit. - pastures, uncultivated lands - VB 3556, VB 3566

Atractylis gummifera L. - H ros - S-Medit. - pastures, uncultivated lands - VB 3569, VB 3557, VB 3587, VB 3566, VB 3576 - (Minissale 1993)

Bellis perennis L. - H ros - Circumbor. - uncultivated lands, beaten ground, flower-beds - VB 3578, VB 3557, VB 3556, VB 3566

Bellis sylvestris Cyr. - H ros - Stenomedit. - uncultivated lands, pastures - VB 3569

Calendula arvensis L. subsp. *arvensis* - T scap - Eurimedit. - cultivated fields, flower-beds, roadsides, rubble - VB 3578, VB 3557, VB 3567, VB 3577, VB 3566

Calendula fulgida Rafin. - Ch suffr - W-Medit. - sunny walls, weathered walls, rocky clefts - VB 3578, VB 3557, VB 3566 - (Di Martino 1992); Lo Giudice & Cristaudo 1998)

in apricis herbosis, et in cultis a mare parum dissitis - Castrogiovanni (Gussone 1842-1845, sub *Calendula fulgida* Raf.); pendii rocciosi secchi, rupi erbose più raramente e per caso nei campi erbosi aprici essenzialmente marittimi - Castrogiovanni (Tin. Nym. et Guss. in Lojacono 1888-1909, sub *Calendula fulgida* Raf.)

Carduncellus coeruleus (L.) DC. - H scap - S-Medit. - uncultivated fields, pastures - VB 3569, VB 3586

Carduncellus pinnatus (Desf.) DC. - H ros - SW-Medit. - garrigues, pastures, uncultivated lands - VB 3558, VB 3578, VB 3587, VB 3566

Carduus argyrea Biv. - T scap - Stenomedit. - uncultivated lands, roadsides, rubble - VB 3578, VB 3557

Carduus corymbosus Ten. - T scap - Endem. - (Di Martino 1992)

Carduus nutans L. - H bienne - W-Europ.

in pascuis et ad vias, in apricis herbosis dem. - Castrogiovanni (Gussone 1842-1845)

Carduus pycnocephalus L. - H bienne - Eurimedit.-Turan. - uncultivated fields, roadsides - VB 3558, VB 3568, VB 3578, VB 3588, VB 3557, VB 3567, VB 3586 - (Lo Giudice & Cristaudo 1998)

Carlina corymbosa L. - H scap - Stenomedit. - uncultivated fields, pastures - VB 3569, VB 3578, VB 3587, VB 3556

colli sterili arenosi, per le vie ed i campi - Castrogiovanni (Torn. in Lojacono 1888-1909, sub *Carlina involucrata* Desf.)

Carlina lanata L. - T scap - Stenomedit. - pastures, uncultivated lands - VB 3548, VB 3556 - (Di Martino 1992)

Carlina sicula Ten. subsp. *sicula* - H scap - Endem. Sicilian - pastures, uncultivated lands - VB 3569, VB 3567, VB 3587 - (Minissale 1993)

Carthamus lanatus L. - T scap - Eurimedit. - roadsides, uncultivated fields, pastures - VB 3569, VB 3548, VB 3578, VB 3577, VB 3586

Catananche lutea L. - T scap - S-Medit. - clayey lands - VB 3566

Centaurea calcitrapa L. - H bienne - Subcosmop. - uncultivated fields, pastures - VB 3586

Centaurea melitensis L. - T scap - Pantrop. e Subtrop. - uncultivated fields, pastures - VB 3548

Centaurea nicaeensis All. - H bienne - SW-Stenomedit. - uncultivated fields, pastures - VB 3569, VB 3558, VB 3578, VB 3557, VB 3566, VB 3586 - (Lo Giudice & Cristaudo 1998)

Centaurea solstitialis L. subsp. *solstitialis* - H bienne - Subcosmop. - uncultivated fields, pastures - VB 3569, VB 3567

Chondrilla juncea L. - H scap - S-Europ.-Sudsib. - roadsides, pavement-edges - VB 3558,

VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Chrysanthemum coronarium L. - T scap - Stenomedit. - roadsides, uncultivated fields, rubble - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3556, VB 3586 - (Lo Giudice & Cristaudo 1998)

Chrysanthemum segetum L. - T scap - Eurimedit. - cultivated and uncultivated fields - VB 3567

Cichorium intybus L. - H scap - Cosmop. - uncultivated fields, pastures, roadsides, pavement-edges - VB 3569, VB 3586

Cirsium scabrum (Poiret) Dur. & Barr. - H scap - SW-Medit. - uncultivated fields, road-slopes - VB 3548, VB 3588, VB 3586

Cirsium vulgare (Savi) Ten. - H bienne - Subcosmop. - uncultivated lands, rubble - VB 3586

Conyza albida Willd. - T scap - Exotic adv. nat (America Tropic.) - roadsides, pavement-edges, flower-beed - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3566 - (Lo Giudice & Cristaudo 1998)

Conyza bonariensis (L.) Cronq. - T scap - Exotic adv. nat (America Tropic.) - roadsides, pavement-edges, flower-beed - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3566 - (Lo Giudice & Cristaudo 1998)

Conyza canadensis (L.) Cronq. - T scap - Exotic adv. nat. (Subcosmop) - roadsides, pavement-edges, flower-beed - VB 3558, VB 3566 - (Di Martino 1992)

Crepis bursifolia L. - H scap - Endem. Centre-Southern Italy and Sicily - beaten ground, paved-roads, pavement-edges - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Crepis leontodontoides All. - H ros - W-Medit.-Mont. - pastures, uncultivated lands - VB 3568, VB 3578, VB 3567 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Crepis vesicaria L. subsp. ***taraxacifolia*** (Thuill) Thell. - T scap - Medit.-Atl. (Euri) - uncultivated fields - VB 3566

Crepis vesicaria L. - T scap - Submedit.-Subatl. - uncultivated fields - VB 3569, VB 3578, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Crepis vesicaria L. var. ***purpurea*** Guss - T scap

in pascuis apricis demissis, vel montosis - Castrogiovanni (Gussone 1842-1845, sub *Crepis purpurea* Guss.)

Crupina crupinastrum (Moris) Vis. - T scap - Stenomedit. - roadsides - VB 3578, VB 3567, VB 3587, VB 3556, VB 3566 - (Lo Giudice & Cristaudo 1998)

Cynara cardunculus L. subsp. ***cardunculus*** - H scap - Stenomedit. - uncultivated fields, pastures - VB 3556, VB 3566, VB 3586

Dittrichia graveolens (L.) Greuter - T scap - Medit.-Turan. - roadsides, paved roads - VB 3578, VB 3567 - (Lo Giudice & Cristaudo 1998)

Dittrichia viscosa (L.) Greuter - H scap - Eurimedit. - humid and uncultivated lands, rubble, roadsides - VB 3579, VB 3548, VB 3558, VB 3578, VB 3557, VB 3567, VB 3577, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Evax pygmaea (L.) Brot. - T rept - Stenomedit. - pastures, garrigues - VB 3569

Filago pyramidata L. - T scap - Eurimedit. - pastures - VB 3557, VB 3566

Galactites tomentosa Moench - H bienne - Stenomedit. - uncultivated lands, rubble, roadsides - VB 3578, VB 3588, VB 3557, VB 3577, VB 3566, VB 3586

Gnaphalium luteo-album L. - T scap - Subcosmop. - flower-beds - VB 3558

Hedypnois cretica (L.) Willd. - T scap - Stenomedit. - pastures, uncultivated lands - VB 3569, VB 3566

Hyoseris radiata L. - H ros - Stenomedit. - shaded walls, rocky clefts, pavement-edges, flight of steps - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3587, VB 3556, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Hypochoeris achyrophorus L. - T scap - Stenomedit. - pastures, rubble, roadsides, flight of steps, flower-beds - VB 3569, VB 3578, VB 3557, VB 3566 - (Lo Giudice & Cristaudo 1998)

Hypochoeris cretensis (L.) Chaub. & Bory - H scap - Orof.-NE-Medit. - uncultivated lands, pastures - VB 3569, VB 3578 - (Lo Giudice & Cristaudo 1998)

Hypochoeris laevigata (L.) Ces., P. & G. - H ros - SW-Medit.-Mont. - shaded walls, rocky clefts - VB 3558, VB 3568, VB 3578, VB 3557, VB 3587 - (Di Martino 1992)

Hypochoeris radicata L. - H ros - Europ.-Caucas. - uncultivated lands, pastures - VB 3578, VB 3557 - (Lo Giudice & Cristaudo 1998)

Inula conyza Dc. - H bienne - Europ.-W-Asiat. - roadsides, hedges - VB 3568

Lactuca serriola L. - H bienne - S-Europ.-Sudsib. - roadsides, rubble - VB 3558, VB 3567, VB 3566

Leontodon sicularis (Guss.) Finch & Sell - H ros - Endemic Sicilian-Calabrian - grasslands - VB 3578, VB 3587 - (Raimondo & al. 1992)

in humentibus pratis argillosis - Castrogiovanni (Gussone 1842-1845, sub *Apargia sicularis* Guss.); pascui umentis montani, rara, in luoghi sassosi selvatici elevati - Castrogiovanni (Lojacono 1888-1909, sub *Apargia sicularis* Guss.)

Leontodon tuberosus L. - H ros - Stenomedit. - uncultivated fields, pastures - VB 3558, VB 3566

Mantisalca salmantica (L.) Briq. & Cavill. - H scap - Stenomedit.

in collibus argillosis - Castrogiovanni (Gussone 1842-1845, sub *Centaurea salmantica* Lin.)

Matricaria chamomilla L. - T scap - Subcosmop. - rubble - VB 3567

Notobasis syriaca (L.) Cass. - T scap - Stenomedit. - uncultivated lands, pastures - VB 3588, VB 3577, VB 3556, VB 3566, VB 3586

Onopordum illyricum L. - H bienne - Stenomedit. - uncultivated lands, pastures, roadsides - VB 3578, VB 3586

Pallenis spinosa (L.) Cass. - T scap - Eurimedit. - uncultivated fields - VB 3569, VB 3578, VB 3557, VB 3587, VB 3556, VB 3566, VB 3586 - (Lo Giudice & Cristaudo 1998)

Picris aculeata Vahl - H scap - SW-Stenomedit. - grasslands - VB 3587, VB 3566, VB 3576 - (Minissale 1993)

Picris echioides L. - T scap - Eurimedit. - uncultivated fields, pastures, rubble, roadsides - VB 3569, VB 3548, VB 3558, VB 3578, VB 3557, VB 3567, VB 3577, VB 3556, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Picris hieracioides L. - H scap - Eurosib. - uncultivated fields, pastures, roadsides - VB 3569, VB 3558, VB 3568, VB 3578, VB 3588, VB 3557, VB 3567, VB 3587 - (Lo Giudice & Cristaudo 1998)

Podospermum canum C. A. Meyer - H scap - SE-Europ.-Centroasiat. - clayey soils - VB 3569

Podospermum laciniatum (L.) DC. - H bienne - Paleotemp. - clayey soils - VB 3557, VB 3567, VB 3566

Podospermum resedifolium (L.) DC. - H bienne - Eurimedit.-W-Asiat. - clayey soils - VB 3578, VB 3567

Pulicaria dysenterica (L.) Bernh. - H scap - Eurimedit. - humid ditches - VB 3558, VB 3557, VB 3567, VB 3577

Pulicaria odora (L.) Rchb. - H scap - Eurimedit. - grasslands - VB 3587

Reichardia picroides (L.) Roth - H scap - Stenomedit. - sunny walls, rocky clefts, uncultivated fields - VB 3569, VB 3558, VB 3578, VB 3557, VB 3567, VB 3577, VB 3587, VB 3556, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Santolina ericoides Poir. - Cultivated

mai più ritrovata ed a me nota solo da un ramuscolo serbato nello Herb. dell'Orto di Palermo - Castrogiovanni (Herb. Tod. in Lojacono 1888-1909)

Scolymus grandiflorus Desf. - H scap - SW-Medit. - uncultivated fields, pastures - VB 3569, VB 3578, VB 3557, VB 3556

Scolymus maculatus L. - T scap - S-Medit. - uncultivated fields, pastures - VB 3567, VB 3586

Scorzonera deliciosa Guss. - G bulb - SW-Stenomedit. - uncultivated lands - VB 3587 - (Minissale 1993)

in collibus apricis calcareis - Castrogiovanni (Gussone 1842-1845)

Scorzonera hirsuta L. - H scap - NW-Medit. - pastures - VB 3569, VB 3578, VB 3587, VB 3566, VB 3566

Senecio chrysanthemifolius Poir. - Ch suffr - Endemic Southern Italy and Sicily - roadsides, flower-beds - VB 3579, VB 3558, VB 3567

in submontosis et in maritimis vulcanicis - Castrogiovanni (Gussone 1842-1845, sub *Senecio squalidus* Lin. var. *chrysanthemifolius*); colli arenosi aridi vulcanici, marittimi o montani in luoghi calcareo-schistosi in tutta la parte Orient. e Sett. dell'Isola - Castrogiovanni (Gussone in Lojacono 1888-1909)

Senecio delphinifolius Vahl - T scap - SW-Medit. - roadsides - VB 3579

Senecio lycopifolius Desf. - Ch suffr - Endemic Centre-Southern Italy and Sicily - uncultivated lands - VB 3578 - (Raimondo & al. 1992)

in argillosis humentibus - Castrogiovanni (Gussone 1842-1845)

Senecio vulgaris L. - T scap - Eurimedit. - roadsides, rubble, flower-beds - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Lo Giudice & Cristaudo 1998)

Serratula cichoracea (L.) DC. subsp. *cichoracea* - H scap - SW-Medit. - grasslands - VB 3587 - (Bartolo & al. 1992; Raimondo & al. 1992; Minissale 1993)

in calcareis demissis, vel submontosis - Castrogiovanni (Gussone 1842-1845, sub *Centaurea cichoracea* Lin.); fruticeti sassosi calcarei nella regione collina - Castrogiovanni (Gussone in Lojacono 1888-1909, sub *Serratula cichoracea* DC.);

Silybum marianum (L.) Gaertner - H bienne - Medit.-Turan. - uncultivated lands, rubble - VB 3578, VB 3588, VB 3557, VB 3567, VB 3586

Sonchus arvensis L. subsp. *arvensis* - H ros - Eurosib. - road slopes - VB 3578

Sonchus asper (L.) Hill - T scap - Eurasiat. - roadsides, flower-beds - VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3587

in cultis humentibus submontosis, vel demissis - Castrogiovanni (Gussone 1842-1845)

Sonchus oleraceus L. - T scap - Eurasiat. - roadsides, pavement-edges, walls, cultivated fields - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3556, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Sonchus tenerrimus L. - T scap - Stenomedit. - walls, roadsides, flight of steps, paved roads - VB 3558, VB 3568, VB 3577, VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Taraxacum minimum (Briganti) Terr. - H ros - Endem. Southern Italy and Sicily - flight of steps, pavement-edges, roadsides - VB 3558, VB 3568, VB 3557

Tolpis virgata (Desf.) Bertol. subsp. *virgata* - H scap - Stenomedit. - roadsides - VB 3569, VB 3558, VB 3557

Tragopogon porrifolius L. - H bienne - Eurimedit. - uncultivated fields - VB 3578

Tragopogon porrifolius L. subsp. *cupani* (Guss.) Pign. - H bienne - Endem. Southern Italy and Sicily

in cultis, et in pascuis apricis montosis - Castrogiovanni (Gussone 1842-1845, sub *Tragopogon cupani* Guss.); campi nella bassa regione collina - Castrogiovanni (Gussone in Lojacono 1888-1909, sub *Tragopogon cupani* Guss.); Castrogiovanni (Raimondo & al. 1992)

Tussilago farfara L. - G rihz - Paleotemp. - clayey and humid soils - VB 3568, VB 3578 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Urospermum dalechampii (L.) Schmidt - H scap - Eurimedit.-Centro-Occid. - uncultivated fields, rubble, beaten ground, pastures - VB 3569, VB 3558, VB 3578, VB 3557, VB 3577, VB 3587, VB 3556, VB 3566

Urospermum picroides (L.) Schmidt - T scap - Eurimedit. - uncultivated fields, rubble, flower-beds - VB 3557, VB 3566

Xanthium spinosum L. - T scap - Subcosmop. - rubble, roadsides, flower-beds - VB 3567, VB 3577

LILIOPSIDA

LILIACEAE

Allium amethystinum Tausch - G bulb - E-Medit.-Mont. - uncultivated fields, pastures - VB 3569

Allium ampeloprasum L. - G bulb - Eurimedit. - uncultivated fields, pastures - VB 3586

Allium arvense Guss. - G bulb - Eurasiat.-Temper. - grasslands, rocky clefts - VB 3569, VB 3557, VB 3587, VB 3556, VB 3566 - (Di Martino 1992)

Allium chamaemoly L. - G bulb - Stenomedit. - beaten ground - VB 3557

colli aridi marittimi e montani - Castrogiovanni, Crippa! (Lojacono 1888-1909)

Allium roseum L. - G bulb - Stenomedit. - flower-beds - VB 3577

Allium roseum L. var. *bulbilliferum* Vis. - G bulb - Stenomedit. - flower-beds - VB 3569, VB 3577, VB 3587

Allium subhirsutum L. - G bulb - Stenomedit. - shrublands, hedges, woods, rocky clefts - VB 3578, VB 3557 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Asparagus acutifolius L. - G rihz - Stenomedit. - hedges and shrublands - VB 3569, VB 3558, VB 3568, VB 3578, VB 3588, VB 3577, VB 3587, VB 3597, VB 3556, VB 3576, VB 3586 - (Minissale 1993; Lo Giudice & Cristaudo 1998)

Asparagus stipularis Forsskål - NP - S-Medit.

in collibus arenosis et sabulosis maritimis - Castrogiovanni (Gussone 1842-1845, sub *Asparagus horridus* Lin.)

Asphodeline lutea (L.) Rchb. - G rihz - E-Medit. - uncultivated lands, pastures - VB 3557, VB 3567, VB 3587, VB 3556, VB 3566 - (Lo Giudice & Cristaudo 1998)

Asphodelus microcarpus Salzm. & Viv. - G rihz - Stenomedit. - grasslands, uncultivated lands, pastures - VB 3569, VB 3558, VB 3557, VB 3587, VB 3556, VB 3566, VB 3576 - (Minissale 1993)

Bellevalia dubia (Guss.) Kunth - G bulb - Endem.

in pascuis montosis - Castrogiovanni (Gussone 1842-1845, sub *Hyacinthus dubius* Guss.); colli e pascui montani - Castrogiovanni (Gussone in Lojacono 1888-1909, sub *Bellevallia dubia* Guss.); Castrogiovanni (Raimondo & al. 1992 sub *Bellevallia dubia* (Guss.) Kunth subsp. *dubia*)

Bellevallia romana (L.) Sweet - G bulb - Centro-Medit. - cultivated fields - VB 3556

Leopoldia comosa (L.) Parl. - G bulb - Eurimedit. - uncultivated fields - VB 3578, VB 3557

Lilium candidum L. - G bulb - E-Medit.

in sylvis ac in collibus apricis - Castrogiovanni (Gussone 1842-1845); Castrogiovanni (Gussone in Lojacono 1888-1909)

Ornithogalum narbonense L. - G bulb - Eurimedit. - grasslands - VB 3587

Ornithogalum nutans L.

Castrogiovanni (Crippa alla Misericordia) Lojacono 1888-1909, sub *Myogalum nutans* Link).

Scilla cupani Guss. - G bulb - Endem.

in apricis pascuis, et in aridis montosis - Castrogiovanni (Gussone 1842-1845); pascui montani in luoghi aridi sassosi - Castrogiovanni (Lojacono 1888-1909)

Scilla hyacinthoides L. - G bulb - W-Asiat.

in apricis cultis, ad margines hortorum - Castrogiovanni (Gussone 1842-1845); in luoghi culti raro in Sicilia - Castrogiovanni (Gussone in Lojacono 1888-1909)

Urginea maritima (L.) Baker - G bulb - Stenomedit. - garrigues - VB 3557

AMARYLLIDACEAE

Narcissus tazetta L. - G bulb - Stenomedit. - cultivated fields - VB 3556

Sternbergia lutea (L.) Ker-Gawl. - G bulb - Medit.-Mont. - uncultivated lands - VB 3557

IRIDACEAE

Crocus longiflorus Rafin. - G bulb - Subendem. - uncultivated lands

Gladiolus italicus Miller - G bulb - Eurimedit. - fields - VB 3569, VB 3586

Iris foetidissima L. - G rihz - Eurimedit.

in sylvaticis montosis humidiusculis, et secus sepes - Castrogiovanni (Gussone 1842-1845); luoghi boschivi elevati, raramente nel basso - Castrogiovanni (Gussone in Lojacono 1888-1909, sub *Xyphion foetidissimum* Parl.)-

Iris germanica L. - G rihz

in muris vetustis, et in ruderatis - Castrogiovanni (Gussone 1842-1845)-

Iris planifolia (Miller) Dur. & Sch. - G bulb - S-Medit. - rocky clefts, uncultivated lands - VB 3556, VB 3566

Iris sisyrinchium L. - G bulb - Stenomedit. - uncultivated lands, pastures - VB 3577, VB 3566

Romulea bulbocodium (L.) Seb. & Mauri - G bulb - Stenomedit. - uncultivated lands - VB 3557

JUNCACEAE

Juncus articulatus L. - G rihz - Circumbor. - wet ditches, humid grasslands - VB 3556

Juncus bufonius L. - T caesp - Cosmop. - wet ditches - VB 3557

Juncus hybridus Brot. - T caesp - Medit.-Atl. - humid soils - VB 3556

in udis et in arenosis maritimis - Castrogiovanni (Gussone 1842-1845)

GRAMINEAE

Aegilops geniculata Roth - T scap - Stenomedit.-Turan. - uncultivated fields, pastures - VB 3569, VB 3578, VB 3557, VB 3567, VB 3556, VB 3566 - (Lo Giudice & Cristaudo 1998)

Agropyron repens (L.) Beauv. - G rihz - Circumbor. - clayey lands - VB 3569, VB 3568, VB 3567, VB 3577, VB 3566, VB 3586

Agrostis stolonifera L. - H rept - Circumbor. - humid grasslands - VB 3578, VB 3557 - (Lo Giudice & Cristaudo 1998)

Ampelodesmos mauritanicus (Poiret) Dur. & Sch. - H caesp - Stenomedit.-Sudoccid. - grasslands - VB 3569, VB 3568, VB 3588, VB 3598, VB 3557, VB 3577, VB 3587, VB 3566, VB 3576, VB 3586 - (Minissale 1993)

Arrhenatherum nebrodense Brullo, Minissale & Spampinato - H caesp - Paleotemp. - rocky clefts, fissures of weathered walls, woods - VB 3568, VB 3578 - (Lo Giudice & Cristaudo 1998)

Arundo pliniana Turra - G rihz - Stenomedit. - wet hollows, clayey and wet places - VB 3569, VB 3558, VB 3568, VB 3588, VB 3577, VB 3556, VB 3566, VB 3586

Avena barbata Potter - T scap - Eurimedit.-Turan. - cultivated and uncultivated fields - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Avena sterilis L. - T scap - Eurimedit.-Turan. - cultivated and uncultivated fields - VB 3569, VB 3578, VB 3588, VB 3557, VB 3567, VB 3577, VB 3566, VB 3576, VB 3586 - (Lo Giudice & Cristaudo 1998)

Avenula cincinnata (Ten.) Holub - H caesp - SW-Medit.-Mont. - grasslands - VB 3569, VB 3578, VB 3587, VB 3576 - (Minissale 1993)

Brachypodium distachyum (L.) Beauv. - T scap - Stenomedit.-Turan. - uncultivated fields, roadsides - VB 3569, VB 3587, VB 3566

Brachypodium rupestre (Host) Roemer & Schultes - H caesp - Subatl. - grasslands - VB 3569, VB 3578

Brachypodium sylvaticum (Hudson) Beauv. - H caesp - Paleotemp. - woods, shrublands - VB 3568, VB 3578

Briza maxima L. - T scap - Paleosubtrop. - uncultivated fields, pastures - VB 3569, VB 3587, VB 3576

Bromus alopecuroides Poiret - T scap - Stenomedit. - clayey lands - VB 3556, VB 3566

Bromus fasciculatus Presl - T scap - S-Medit. - roadsides, flight of steps, rubble - VB 3558, VB 3578

Bromus gussonei Parl. - T scap - Eurimedit. - roadsides, rubble, flower-beds - VB 3568, VB 3578, VB 3557, VB 3567, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Bromus hordeaceus L. - T scap - Subcosmop. - roadsides, humid fields - VB 3579, VB 3578, VB 3557, VB 3567, VB 3556, VB 3566, VB 3586 - (Di Martino 1992)

Bromus lanceolatus Roth - T scap - Paleotemp. - clayey fields - VB 3569, VB 3566,

Bromus madritensis L. - T scap - Eurimedit. - uncultivated fields and rubble, weathered walls, roadsides - VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Bromus rigidus Roth. - T scap - Subtrop. - uncultivated fields, roadsides, rubble - VB 358 - (Di Martino 1992)

Bromus rubens L. - T scap - S-Medit.-Turan. - roadsides, flight of steps, rubble - VB 3578, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Bromus scoparius L. - T scap - Stenomedit. - uncultivated fields - VB 3556

Bromus sterilis L. - T scap - Eurimedit.-Turan. - roadsides, rubble, flower-beds - VB 3578, VB 3577 - (Di Martino 1992)

Catapodium rigidum (L.) Hubbard - T scap - Eurimedit. - flight of steps, road and pavement edges, beaten ground - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3566, VB 3576 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Cynodon dactylon (L.) Pers. - G rihz - Termocosmop. - uncultivated fields, beaten ground, flower-beds, pavement-edges, paved-roads - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3566 - (Lo Giudice & Cristaudo 1998)

Cynosurus echinatus L. - T scap - Eurimedit. - weathered walls, rocks - VB 3578, VB 3567, VB 3587 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Cynosurus elegans Desf. - T scap - Stenomedit. - weathered walls, rocks - VB 3578 - (Lo Giudice & Cristaudo 1998)

Dactylis glomerata L. - H caesp - Paleotemp. - grasslands - VB 3578, VB 3567, VB 3577 - (Lo Giudice & Cristaudo 1998)

Dactylis hispanica Roth - H caesp - Stenomedit. - uncultivated fields, pastures - VB 3569, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3587, VB 3566, VB 3576, VB 3586 - (Di Martino 1992; Minissale 1993; Lo Giudice & Cristaudo 1998)

Dasypyrum villosum (L.) Borbás - T scap - Eurimedit.-Turan. - roadsides, rubble, uncultivated fields - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3556, VB 3566, VB 3586 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Digitaria sanguinalis (L.) Scop. - T scap - Cosmop. - cultivated fields - VB 3558, VB 3568, VB 3566 - (Lo Giudice & Cristaudo 1998)

Eragrostis megastachya (Koeler) Link - T scap - Termocosmop. - cultivated fields - VB 3566

Festuca circummediterranea Patzke - H caesp - Eurimedit. - garrigues, grasslands, weathered walls, rocks - VB 3569, VB 3578, VB 3587 - (Lo Giudice & Cristaudo 1998)

Festuca duriuscula Lin. - H caesp

in siccis, et aridis montosis - Castrogiovanni (Gussone 1842-1845)

Festuca fenas Lag. - H caesp - Eurimedit. - uncultivated clayey fields - VB 3569, VB 3579, VB 3548, VB 3578, VB 3588, VB 3577, VB 3566, VB 3586

Festuca robustifolia Mgf.-Dbg. - H caesp - Endem. - (Di Martino 1992)

Gastridium scabrum Presl - T scap - Stenomedit. - pastures - VB 3569, VB 3576

Glyceria plicata Fries - I rad - Subcosmop. - marshy places - VB 3557

Hainardia cylindrica (Willd.) Greuter - T scap - Eurimedit. - clayey soils - VB 3569, VB 3557, VB 3556

Hordeum bulbosum L. - H caesp - Paleosubtrop. - pastures, uncultivated fields, rubble - VB 3569, VB 3568

Hordeum leporinum Link - T scap - Eurimedit. - roadsides, uncultivated lands, rubble, flower-beds - VB 3579, VB 3558, VB 3568, VB 3578, VB 3557, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Hordeum maritimum With. - T scap - W-Eurimedit. - clayey lands - VB 3569, VB 3557, VB 3556, VB 3566

Hordeum murinum L. - T scap - Circumbor. - (Di Martino 1992)

Hordeum vulgare L. - T scap - Exotic cultiv. spont. - roadsides - VB 3567

Lagurus ovatus L. - T scap - Eurimedit. - uncultivated lands, pastures, roadsides, pavement-edges - VB 3578, VB 3557 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Lamarckia aurea (L.) Moench - T scap - Stenomedit.-Turan. - roadsides, flight of steps - VB 3566

Lolium perenne L. - H caesp - Circumbor. - uncultivated fields - VB 3569, VB 3558, VB 3578, VB 3557

Lolium perenne L. var. *gracile* Bert.

in pascuis elatioribus - Castrogiovanni (Herb. Pan. in Lojacono 1888-1909)

Lolium rigidum Gaudin - T scap - Paleosubtrop. - uncultivated fields - VB 3567

Lolium siculum Parl.

nei campi vie - Castrogiovanni (Lojacono 1888-1909, *L. siculum* Parl. = *L. multiflorum* a. Guss)-

Lophochloa cristata (L.) Hyl. - T caesp - Subcosmop. - flight of steps, roadsides, pave-

ment-edges, beaten ground - VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Lygeum spartum L. - H caesp - S-Medit. - clayey soils - VB 3547

in collibus argillosis - Castrogiovanni (Gussone 1842-1845); argille sterilissime marnose, comune nei colli dell'interno dell'Isola, come anco nel litorale - Castrogiovanni (Gussone in Lojacono 1888-1909)

Melica magnolii G. & G. - H caesp - Stenomedit.-Turan. - roadsides - VB 3568, VB 3557, VB 3586

Oryzopsis miliacea (L.) Asch. & Schweinf. subsp. ***miliacea*** - H caesp - Stenomedit.-Turan. - uncultivated lands, roadsides, pavement-edges, rubble - VB 3569, VB 3579, VB 3558, VB 3568, VB 3578, VB 3557, VB 3567, VB 3577, VB 3586 - (Lo Giudice & Cristaudo 1998)

Parapholis strigosa (Dumort.) Hubbard - T scap - Medit.-Atl. - clayey soils - VB 3569, VB 3547, VB 3556

Paspalum paspaloides (Michx.) Scribner - G rihz - Subcosmop. - humid places - VB 3557, VB 3556

Phalaris bulbosa L. - H caesp - Stenomedit.-Macarones. - uncultivated fields - VB 3569, VB 3577

Phalaris coerulescens Desf. - H caesp - Stenomedit.-Macarones. - uncultivated fields - VB 3569, VB 3578, VB 3586

Phalaris minor Retz. - T scap - Paleosubtrop. - uncultivated fields - VB 3569, VB 3577

Phalaris paradoxa L. - T scap - Stenomedit. - uncultivated fields - VB 3569, VB 3567

Phalaris truncata Guss. - H caesp - S-Medit. - uncultivated clayey and humid lands - VB 3569, VB 3548

Phragmites australis (Cav.) Trin. - G rihz - Subcosmop. - humid ditches - VB 3557

Poa annua L. - T caesp - Cosmop. - beaten ground - VB 3568, VB 3578, VB 3557, VB 3567, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Poa bulbosa L. - H caesp - Paleotemp. - uncultivated lands, beaten ground, pastures - VB 3569, VB 3578, VB 3557, VB 3567, VB 3587, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Poa sylvicola Guss. - H caesp - Eurimedit. - roadsides - VB 3568, VB 3578, VB 3557 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Polypogon monspeliensis (L.) Desf. - T scap - Paleosubtrop. - clayey and humid soils - VB 3578, VB 3557, VB 3567, VB 3556 - (Lo Giudice & Cristaudo 1998)

Polypogon viridis (Gouan) Breistr. - H caesp - Paleosubtrop. - clayey and humid soils - VB 3558, VB 3578, VB 3557, VB 3567 - (Di Martino 1992)

Setaria ambigua Guss. - T scap - Termocosmop. - cultivated fields - VB 3558

Setaria verticillata (L.) Beauv. - T scap - Termocosmop. - cultivated fields, flower-beds, roadsides - VB 3558, VB 3568, VB 3577, VB 3566 - (Lo Giudice & Cristaudo 1998)

Stipa capensis Thumb. - T scap -Stenomedit.-Turan. - grasslands, roadsides, uncultivated lands - VB 3567, VB 3577, VB 3566

Trisetum splendens C. Presl - H caesp - Endemic. Sicilian-Sardinian - grasslands - VB 3569, VB 3578, VB 3587 - (Lo Giudice & Cristaudo 1998)

Vulpia ciliata (Danth.) Link - T caesp - Eurimedit. - arid grasslands, flight of steps, pavement-edges - VB 3569, VB 3578, VB 3567, VB 3587, VB 3566 - (Di Martino 1992; Lo Giudice & Cristaudo 1998)

Vulpia ligustica (All.) Link - T caesp - Stenomedit. - uncultivated lands, roadsides - VB 3578

Vulpia muralis (Kunth) Nees - T caesp - Stenomedit.-Occid. - flight of steps, rubble - VB 3567, VB 3577

ARACEAE

Arum italicum Miller - G rihz - Stenomedit. - shaded places, woods - VB 3568, VB 3557, VB 3577

Biarum tenuifolium (L.) Schott - G rihz - Stenomedit. - pastures - VB 3557

CYPERACEAE

Carex flacca Schreber subsp. *serrulata* (Biv.) Greuter - G rihz - Europ. - grasslands - VB 3569, VB 3587, VB 3576

Cyperus aureus Ten. - G rihz - Subtrop. - cultivated places - VB 3566

† *Cyperus fascicularis* Desf.

in salsis, paludosis non procul - Castrogiovanni (Gussone 1842-1845)

Cyperus rotundus L. - G rihz - Subcosmop. Trop. e Subtrop. - cultivated places - VB 3566

Holoschoenus australis (L.) Rchb. - G rihz - Eurimedit. - marshy places - VB 3557

ORCHIDACEAE

Anacamptis pyramidalis (L.) L.C. Rich. - G bulb - Eurimedit. - grasslands - VB 3587

Himantoglossum hircinum (L.) Sprengel - G bulb - Medit.-Atl. (Euri) - flower-beds, uncultivated fields - VB 3569, VB 3557, VB 3577, VB 3566

in pinguibus sylvaticis montosis - Castrogiovanni (Gussone 1842-1845); sul calcare in suolo pingue sugli alti monti, sporadico - Castrogiovanni (Gussone in Lojacono 1888-1909)

Himantoglossum robertianum (Loiseleur) P. Delforge - G bulb - Stenomedit. - uncultivated lands, flower-beds - VB.3588 - VB 3558, VB 3568, VB 3578, VB 3557 - (Galesi 2003)

Ophrys apifera Hudson - G bulb - Medit.-Atl. (Euri) - subhumid grasslands - VB 3578

Ophrys archimedeae P. Delforge & M. Walravens - G bulb - Endem. Sicilian - flower-beds in landscape garden - VB 3578, VB 3557

Ophrys fusca Link - G bulb - Medit.-Atl. (Steno) - grasslands - VB 3557, VB 3566

Ophrys garganica O. & E. Danesch - G bulb - Endem. Centre-Southern Italy and Sicily - grasslands - VB 3578, VB 3557

Ophrys incubacea Bianca - G bulb - Stenomedit. - grasslands - VB 3578, VB 3566, VB 3557

Ophrys lutea Cavanilles - G bulb - Stenomedit. - pastures, grasslands - VB 3557

Ophrys panormitana (Todaro) Soó - G bulb - Endem. Sicilian - pastures - VB.35.88 - (Galesi 2003)

Ophrys sicula Tineo - G bulb - Stenomedit. - flower-beds in landscape garden, pastures - VB 3557

Orchis anthropophora (L.) Allioni - G bulb - Medit.-Atl. (Steno) - pastures, grasslands - VB 3569, VB 3578, VB 3587

Castrogiovanni (Todaro, 1842 sub *Aceras anthropophora* R. Brown.); in herbosis apricis, vel demissis - Castrogiovanni (Gussone 1842-1845, sub *Aceras antropophora* Brown.)

Orchis commutata Tod. - G bulb - Endem. Sicilian - pastures, uncultivated lands - VB 3557

Orchis conica Willd. - G bulb

in herbosis montosis - Castrogiovanni (Gussone 1842-1845)

Orchis italica Poiret - G bulb - Stenomedit. - uncultivated fields, pastures - VB 3557, VB 3566

Orchis lactea Poiret. - G bulb-Stenomedit.

in apricis herbosis demissis vel montosis - Castrogiovanni (Gussone 1842-1845, sub *Orchis tenoreana* Guss.); Castrogiovanni? (Lojacono 1888-1909)

Orchis lactea Poiret. var. *acuminata* Lojac.

colli erbosi calcarei - Castrogiovanni, Crippa! (in Herb. Lojac.) (Lojacono 1888-1909)

Orchis papilionacea L. - G bulb - Eurimedit.

in collibus apricis calcareis siccis - Castrogiovanni (Gussone 1842-1845, sub *Orchis rubra* Jacq.)

Serapias vomeracea (Burm.) Briq. - G bulb - Eurimedit. — grasslands - VB 3578, VB 3587, VB 3557

Discussion and conclusions

The survey carried out allowed us to provide available information on the flora of the Erei Mountains, which to date was scarce and fragmentary.

A list of 758 specific and subspecific taxa, of which 618 tracheophytes, with the exception of the extinct species (2), belonging to 74 families, and 140 bryophytes to 29 families, has been drawn up using collections of the authors and bibliographic references.

The histogram of the bryophyte families (Fig. 3) shows the dominance of *Pottiaceae* with 20 genera and 59 species; *Bryaceae* with 2 genera and 14 species, *Brachytheciaceae* with 7 genera and 13 species. Also *Orthotrichaceae* with 1 genus and 7 species, *Grimmiaceae* and *Funariaceae* with 2 genera and 6 species have some weight. The liverworts belonging to different families, among which *Ricciaceae* is the richest, are 18 in total. The remarkably high incidence of *Brachytheciaceae* and liverworts could be related to ecological protective niches, optimal by the humidity (undergrowth, ditches, sources, etc.).

From the analysis of the biotype (Fig. 4), results show the dominance of short turf species (50 %), belonging mostly to the *Pottiaceae* family, followed by annual (12 %), mat (12 %) cushion (11 %), weft (9 %), tall turf species (5%). The short turf species, usually spread in uncultivated fields and grasslands, as well as walls and rocks, have generally more resistance to the atmospheric pollution and water stress. The annual species, which prefer the same habitats as the short turf, are relatively well represented; on account of the brief cycle they are competitive in areas characterized by Mediterranean climate.

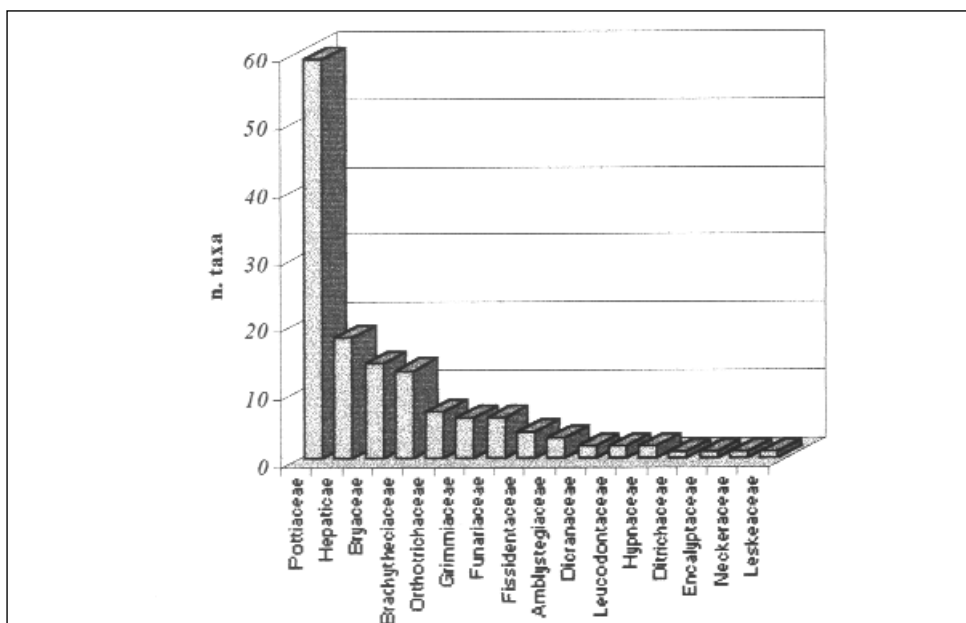


Fig. 3. Histogram of the Bryophyte Families.

The analysis of the chorological spectrum (Fig.5) shows the high percentage of the Submediterranean (41 %) and Temperate (33 %) species. The Mediterranean species account for the 17 %, of which 10 % is Oceanic-Mediterranean. Finally the Boreal (6%) and Suboceanic (3%) species are represented with a lower percentage. The Temperate, Oceanic-Mediterranean, Boreal and Suboceanic species amount to 52 %; this datum probably is to be linked to the presence, in the study area, of cool and humid habitats and microhabitats

Some bryophyte collected are of great importance from the phytogeographical and ecological point of view:

Weissia wimmeriana ssp. *wimmeriana*, terricolous subarctic-subalpine species, is new for the Sicilian bryoflora. Its occurrence in an area with Mediterranean climate, could be explained by the fact that the bryophytes are not frequently linked to the macroclimate, therefore they are able to exist in extrazonal microhabitats.

Syntrichia handelii, sassiculous kontinental eastern mediterranean species, is represented in Italy by only two populations: one is in Bosco di Ficuzza (PA), at about 10 km from Marineo (Blockeel 2000), the other in Bosco di Contrada Baronessa, at 4 km from Enna. In order to stop the decrease in numbers or the total extinction of this threatened species, these populations might be safeguarded.

Grimmia capillata, sassiculous mediterranean–turanian species, known in Spain, Mallorca and France (Greven 1995a, 1995b), in Italy it is recorded in Sardinia (locus classicus, De Notaris 1838), Sicily (Lo Giudice & Cristaudo 1999, 2002), and Calabria (Privitera & Puglisi 2002).

Tortula revolvens, gipsicolous submediterranean species, with specific microecological requirements, occurs in Sicily in the territory of Agrigento (Privitera & Puglisi 1989) and Enna.

Syntrichia papillosa, corticolous W-temperate species, to date recovered in Sicily only in the territory of Enna (Lo Giudice 1994).

Syntrichia pagorum, corticolous submediterranean-suboceanic species, known in

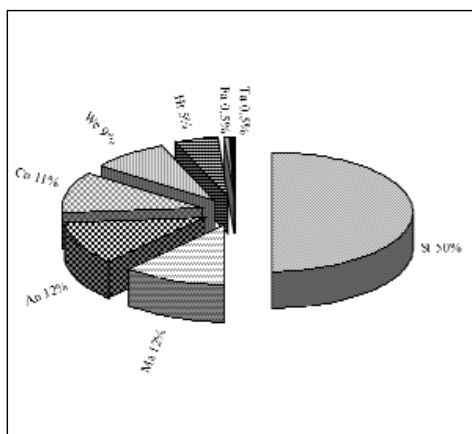


Fig. 4. Biological spectrum of Bryophyte flora.

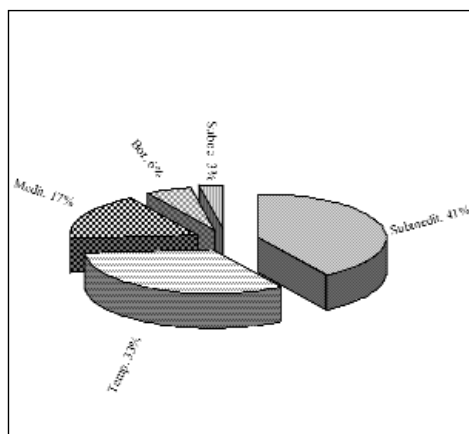


Fig. 5. Chorological spectrum of Bryophyte flora.

Sicily for Palermo (Dia 1992), Enna (Lo Giudice 1994) and Militello in Val di Catania (Gueli & al. 2004).

Tortula israelis, sassiculous mediterranean species, is probably a misidentification of specimens of *Tortula muralis*; to date it has been collected in Agrigento (Aiello & Dia 2000), Militello in Val Di Catania (Gueli & al. 2001) and Enna.

Other species such as *Schistidium crassipilum*, *Schistidium singarense*, *Ditrichum cylindricum*, *Rhynchostegiella curviseta* are very rare in Sicily.

As regards the vascular plants, the floristic hystogram (Fig. 6), carried out excluding the bibliographical records (57), shows the dominance of *Compositae* (17%) with 54 genera and 94 species, *Graminaceae* (12%) with 40 genera and 69 species, *Leguminosae* (10%) with 21 genera and 58 species; followed by *Umbelliferae* (5%) with 21 genera and 30 species, *Cruciferae* (4%) with 19 genera and 24 species, *Caryophyllaceae* (4%) with 12 genera and 23 species.

Within the flora, we should mention the presence of 15 species belonging to *Orchidaceae* (3%), of which some are rather rare in Sicily: *Anacamptis pyramidalis*, *Himanthoglossum robertianum*, *H.hircinum*, *Ophrys fusca*, *O. garganica*, *O. incubacea*,

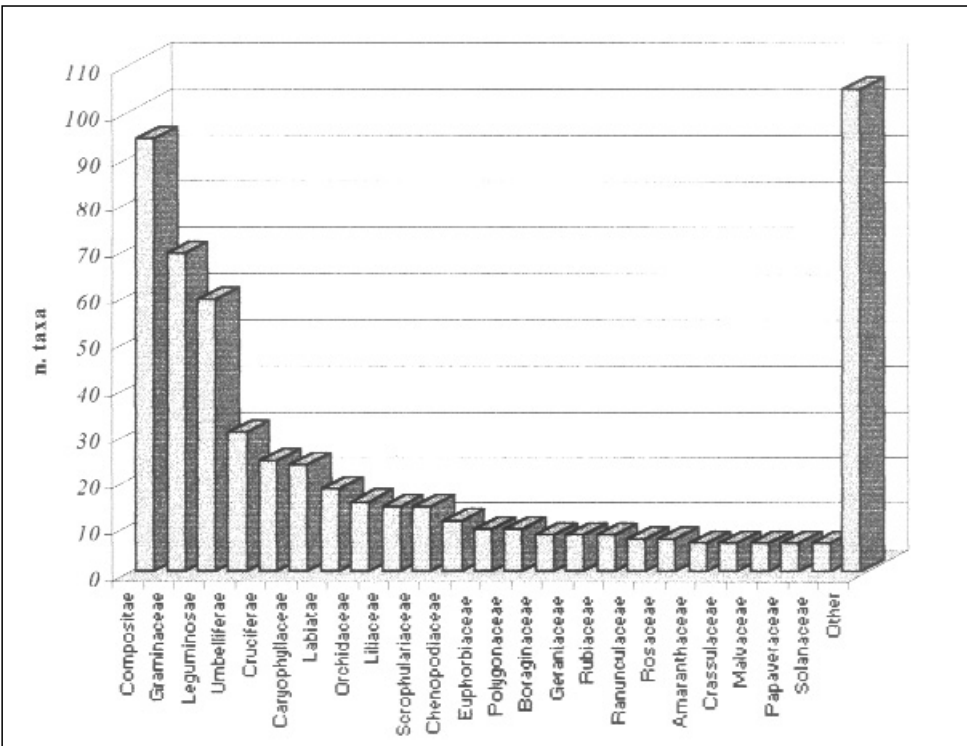


Fig. 6. Histogram of the Tracheophyte Families.

O. lutea, *O. archimedeae*, *O. apifera*, *O. panormitana*, *O. sicula*, *Orchis commutata*, *O. italica*, *O. anthropophora*, *Serapias vomeracea*

From the life-form spectrum showed in Figure 7, the therophytes account for about half of the total flora (45%), highlighting both the mediterranean character of flora and the human pressure. The wealth of short cycle plants is linked to the spreading of favourable habitats as uncultivated fields, meadows, beaten ground etc. The hemicryptophytes and geophytes account for 28% and 11% respectively. Their relative high presence is likely to be related to the position of area surveyed: high-hill - mountain. The phanerophytes (7%) and camephytes (6%) follow with a lower percentage. Finally the hydrophytes, relegated to those rare habitats which have a constant water supply, are irrelevant (0,5%).

The chorological spectrum (Fig. 8) underlines clearly the dominance of mediterranean species (Stenomedit., Eurimedit., Medit., Medit.-Mont. groups) in line to the geographic position and the climatic features. Their high percentage (51%) reflects a relatively naturalness of the flora which probably depends on a moderate anthropic pressure.

Within the mediterranean contingent, the share of the northern species (NE-Medit. N-Medit. NW-Medit., NE-Medit.-Mont.) as *Saxifraga bulbifera*, *Silene fruticosa*, *Cyclamen hederifolium*, *Scorzonera hirsuta*, the western species (W-Medit., W-Medit.-Atl., W-Stenomedit., W-Medit.-Mont., W-Eurimedit.) as *Calendula fulgida*, *Hordeum maritimum*, *Linum decumbens*, *Senecio delphinifolius*, eastern species (E-Medit., E-Stenomedit., E-Medit.-Mont.) as *Allium amethystinum*, *Cachrys cristata*, *Coridothymus capitatus*, *Onobrychis aequidentata*, *Saxifraga hederacea* and the southern species (S-Medit., S-Stenomedit., SW-Medit., SW-Stenomedit., SW-Medit.-Mont., S-Medit.-Mont.) as *Athamanta sicula*, *Avenula cincinnata*, *Carduncellus pinnatus*, *Catananche lutea*, *Diplotaxis crassifolia*, *Eryngium dichotomum*, *Moricandia arvensis*, *Ononis breviflora*, *Lygeum spartum*, *Iris planifolia*, has been worked out (Fig. 9). The last three groups, especially, testify to paleogeological vicissitudes connections between Sicily and the surrounding territories.

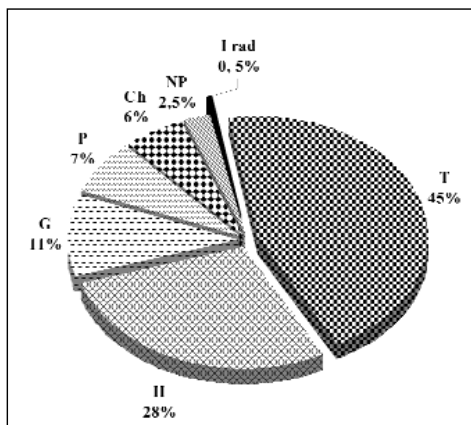


Fig. 7. Biological spectrum of vascular flora.

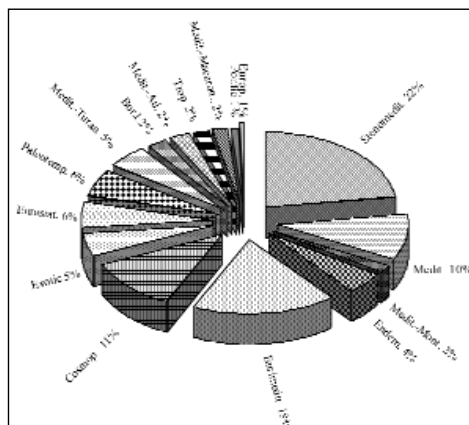


Fig. 8. Chorological spectrum of the vascular flora.

It is noteworthy the endemic component (4%), among which list *Anthemis cupaniana*, *Arrhenatherum nebrodense*, *Carlina sicula* subsp. *sicula*, *Echium italicum* subsp. *siculum*, *Odontites rigidifolia*, *Ophrys archimedeae*, *Ophrys panormitana* (Sicilian endemic s.t.), *Lavatera agrigentina*, *Leontodon siculus* (Sicilian-Calabrian endemic), *Dianthus siculus*, *Trisetum splendens* (Sicilian-Sardinian endemic), *Antirrhinum siculum*, *Gypsophila arrostii* subsp. *arrostii*, *Lathyrus odoratus*, *Micromeria canescens*, *Ononis oligophylla*, *Pimpinella anisoides* subsp. *gussonei*, *Senecio lycopifolius*, *Thymus spinulosus* (Centre-Southern Italian and Sicilian endemic).

The species widely distributed (cosmopolitan group) account for 12 %; the exotic species, which are generally of American origin, account for 3%. Nowadays these species are on the increase in numbers owing to the contraction or the disappearance of natural or seminatural habitats. Among the most frequent are: *Amaranthus albus*, *A. blitoides*, *A. deflexus*, *A. retroflexus*, *Aster squamatus*, *Conyza albida*, *C. bonariensis*, *C. canadensis*, *Cynodon dactylon*, *Digitaria sanguinalis*, *Euphorbia maculata*, *E. humifusa*, *Robinia pseudoacacia*, *Poa annua*.

The Mediterranean-Turanic account for 5%; they are related to xeric and anthropic environments, the paleotemperate and eurasiatic species both of which account for 6 %; whereas the remaining chorological groups (Bor., Medit.-Atl., Trop., Medit.-Macaron., Europ, Pont.) are represented with a low percentage.

From the phytogeographic point of view, particularly interesting is the finding of *Saxifraga hederacea*, known in Italy only in Apulia (Bianco, 1987) and Sicily (Brullo & al. 1976; Bevilacqua & Grillo, 1988); *Serratula cichoracea* subsp. *cichoracea*, found in Sicily only in the territory of Enna (Bartolo & al. 1992); *Ophrys archimedeae*, rare Sicilian orchis (Enna - locus classicus, Delforge 2001); *Arrhenatherum nebrodense* orophilous

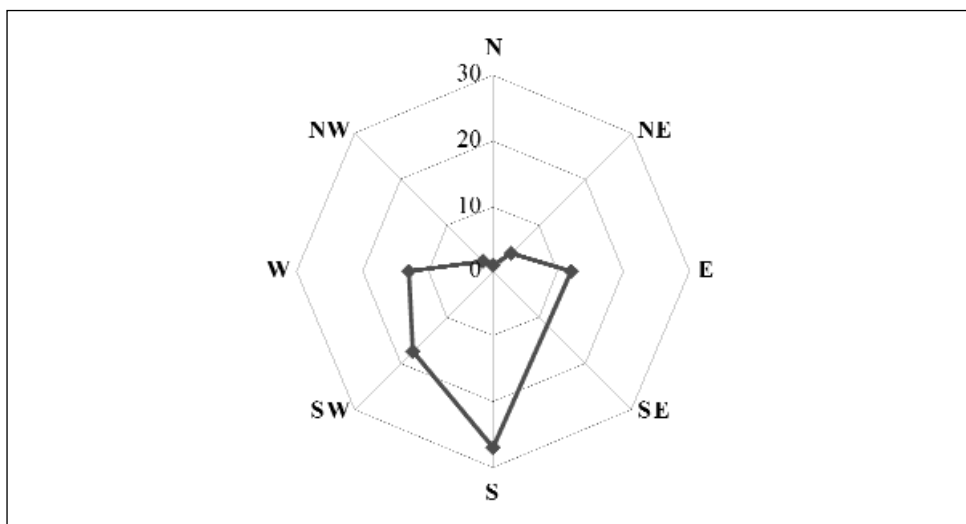


Fig. 9. Percentage of the species with southern, western, northern, eastern Mediterranean ranges.

species found in various localities of the island and to date not recorded from the Erei Mountains; *Artemisia annua*, species of Asiatic origin, recorded to date in Sicily only in territory of Enna (Cristaudo & Lo Giudice 1999); this species, from unpublished data, is spread in other urban areas of Central Sicily.

Even though subject to undoubted human pressure the area surveyed enables species very different in phytogeographical significance and ecological requirements to live together; this certainly depends on environmental diversity (various kinds of substrata and a wide spectrum of microclimate). More than 700 taxa (619 tracheophytes and 140 bryophytes) present over an area of about 20 square kms, mean a fifth and a fourth of all taxa of Sicilian vascular and bryophyte flora, which up to date numbers 3085 (Brullo, unpublished data) and 605 entities (Aleffi & Schumacker 1995; Cortini Pedrotti 2001b) respectively.

Further researches and conservation projects are needed in the area surveyed, paying special attention to humid and rocky habitats, and to vestiges of woods and garrigues, which still miraculously exist.

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