SYNTAXONOMY OF THE PARIETARIETEA JUDAICAE CLASS IN EUROPE

S. Brullo and R. Guarino
Dipartimento di Botanica, Università di Catania, via A. Longo, 19 - 95125 Catania, Italy.

Abstract - On the basis of literature and unpublished data, a syntaxonomical review about the chasmophilous synanthropic vegetation occurring in the Mediterranean territories and in the Atlantic and Central Europe was carried out. These plant communities are linked to masonry walls and rocky faces heavily disturbed by men, which are colonized by a fairly specialized flora dominated by hemicriptophytes, chamaephytes and mosses. From the syntaxonomical point of view, in accordance with the greatest part of the authors who studied the matter, the wall vegetation must be considered in a well-distinguished class whose valid name is *Parietarietea judaicae* Oberd. 1977, rather than in the *Asplenietea trichomanis* class, as proposed by other authors. Within the class one order, *Tortulo-Cymbalarietalia* Segal 1969, and three alliances have been recognized: they are *Parietarion judaicae* Segal 1969, *Cymbalario-Asplenion* Segal 1969 and *Parietario judaicae-Hyoscyamion aurei* all. nova. The first of the alliances, chiefly linked to the Mediterranean bioclimate, is charaterized mainly by thermophilous chamaephytes while the cryptogams are almost absent; the second one, distributed in the territories having a temperate bioclimate, is differentiated by an high abundance of ferns and mosses; finally the third one, characterized by a thermo-xerophilous pool of chamaephytes, can be considered a S.-E. Mediterranean vicariant of the *Paretarion judaicae* alliance. For each syntaxon the nomenclatural type and synonims are reported, as well as the indication of the main ecological, floristic and chorological characteristics.

Key words - europe, phytosociology, syntaxonomy, wall vegetation, *Parietarietea judaicae*.

Introduction

Many authors gave their contribution to the study of the synanthropic chasmophylous vegetation which can be found typically on the European masonry walls and sometimes on rocky faces heavily disturbed by men. The present knowledge about the theme is quite satisfactory, since the bulk of published phytosociological relevés gives a statistically representative outline of the variation of these plant communities through Europe; nevetheless the interpretations of data are various and frequently conflicting. In particular some author doesn't deem appropriate to ascribe the mural vegetation to an independent class, as the *Parietarietea judaicae*, therefore they consider these aspects belonging to the *Asplenietea trichomanis* class; moreover, in all the syntaxonomical ranks, a confused proliferation of invalid names and synonyms can be noticed. Several doubts about the attribution of

the phytosociological relevés to a particular association have been noticed as well and frequently different vegetational aspects are grouped under the same name. Finally, in the vegetation sampling the mosses have been often neglected and this negligence gave rise to a great number of data which resulted not much clear since they are incomplete. This happens especially with the relevés from the central Europe and Atlantic regions, where the moss-cover of the walls assume an important ecological role.

In order to investigate about the relationship between the *Parietarietea judaicae* and the *Asplenietea trichomanis* classes and aiming to give a contribution to make clear the aforementioned nomenclatural problems, a syntaxonomical review based on 2360 phytosociological relevés taken from literature and on 225 unpublished ones was carried out. In appendix the synthetical tables of the 2585 relevés considered are reported, divided per association.

Data and Methods

Owing to the large number of names proposed, the starting point of the syntaxonomical review was the identification of the different vegetation types on the basis of the floristic similarity. To do that all the relevés found in the consulted bibliography and the personal ones have been processed using the statistic analysis. We based the satistical survey about the singles relevés and not on the synthetical tables, because of the frequent unhomogeneity of the phytosociological relevés gathered under the same name.

All the relevés have been divided in two groups, one belonging to the Mediterranean biogeografic region and the other to Atlantic Central-European one, depending on their provenance. In the statistical survey, only the species indicated by the authors as characteristics or differentials of association and those having a frequency higer than 45 % in at least one of the above-mentioned biogeographic region have been considered.

The relevés which, through their poverty of significant species, have been referred to *inops* forms (sensu Westhoff in Segal, 1963) have been excluded from the survey, as well as the relevés where the sampling area wasn't choosen respecting the criterion of floristic and stational homogeneity.

To value the similarity ratio between the relevées a 1273 samples X 97 species matrix was produced using the Excel® program of the Office® package for Windows'95®. All the numerical analyses were performed using the SPSS 7.0® package for Windows'95®. The euclidean squared distance (E.S.D.) was used to produce the dissimilarity matrix among sites and the ward linkage agglomeration criterion was adopted to produce the classification dendrogram. Estimating the differences between the sequence of clustering levels 44 groups of relevés have been distinguished. In order to homogenize the differences due to the different identity of the surveyors, the cover values of the relevés of each group have been standardized dividing each entry with the respective standard deviation. After that a new dendrogram was produced: in fig. 1 is represented a reduced version of the dendrogram, obtained processing one or (when possible) two relevés randomly choosen among those supplied by each author for every vegetation type.

To produce the dissimilarity matrix a quantitative criterion was adopted because in these antropogenic paucispecific vegetation types it is very important to point the attention not only on the presence of a species but also onto the differences in the cover abundance of each species occurring on the wall. The distinction between the associations based whether on the presence of differential species or on the dominance of a chief species can be justified because on the walls, where generally the competition among the species is low, while the

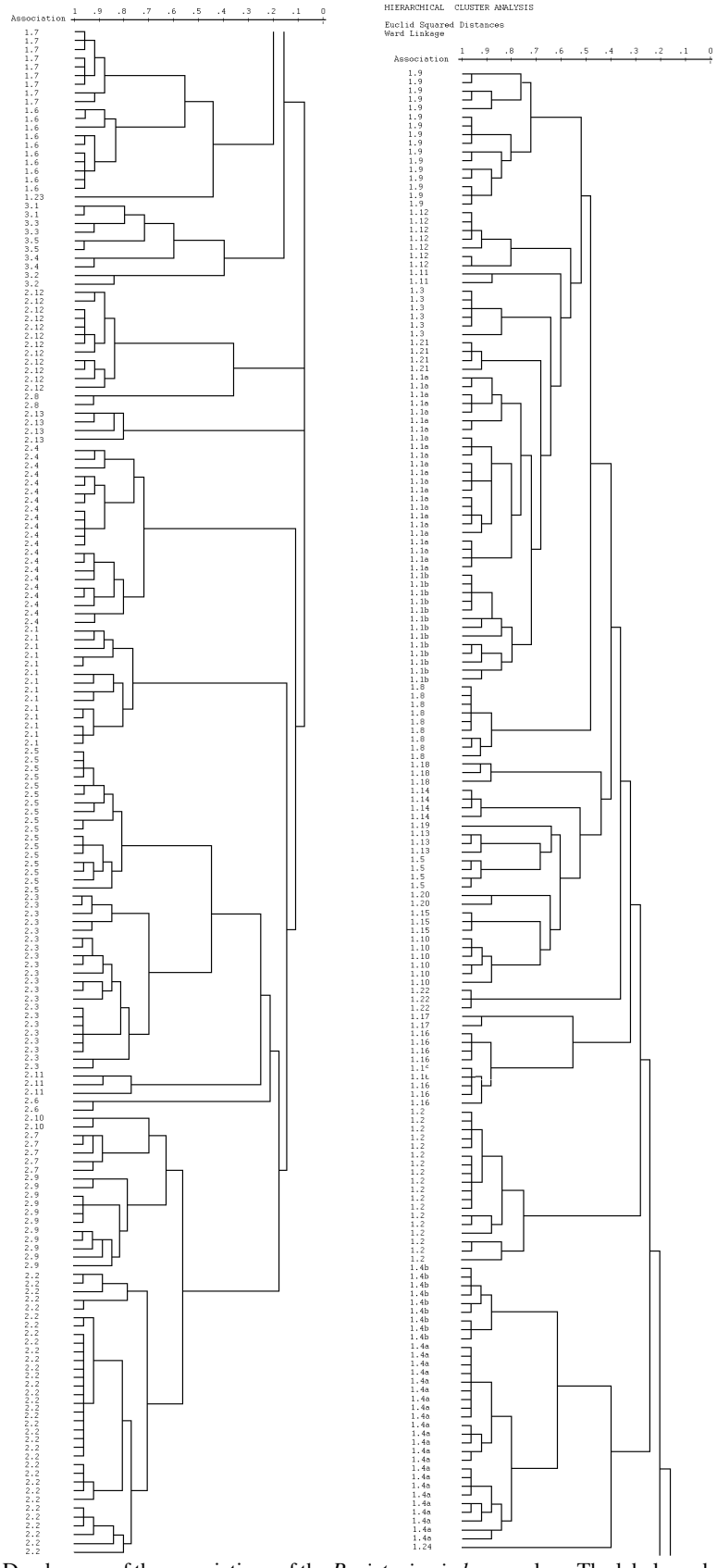

Fig. 1 - Dendogram of the associations of the *Parietariea judaucae* class. The label numbers are referred to the sequence of the associations reported in the syntaxonomic scheme

intensity and the entity of the disturbance is the determinant factor, the synecological valence of the association is often very close to the autoecological valence of the dominant species. Therefore the association distinguished on the dominance becomes well characterized (and its ecological significance becomes clear) in the sites where the chief species dominates because it is in the best conditions to express its ecological specialization. On the other hand the dominance is normally used as discriminating criterion to typify other specialized plant communities showing a considerable floristic poverty, such as the halophilous and hydrophilous vegetation.

To attribute the right nomenclatural designation to each of the 44 vegetation types recognized through the statistical survey, the rules of the international code of phytosociological nomenclature have been applied.

After having reached a clear outline of the wall vegetational aspects known till now, to choose among the possibilities for their attribution to the higer syntaxonomical ranks, a comparison between the mural vegetation and the rupestrian one was carried out. In the comparison floristic, ecological and historical data have been considered.

Results

MASONRY WALLS AND ROCKS: A COMPARISON

Wall habitat is an extreme environment in many aspects, such as: the high concentration of mineral compounds in the substratum, the scarcity of soil, the inclination, the rapid variations of temperature and humidity, the exposure to the winds and sun; moreover, generally it has an incomplete cycle of organic compounds, because a considerable part of the dead leaves and other litter is not retained in the system and thus the substratum does not receive any benefit from it. These features are shared by walls and rocky sides, but walls differ from rocks for a series of important elements, mainly correlated to the human activities, which directly or indirecly influence almost every ecological factor. The first difference is given by the periodical disturbance due to the wall cleaning, restoration and renovation: while rocks represent static, conservative habitats, with few possibilities of genic exchange among the colonizing species, on the contrary walls are new and inconstant habitats, open to the neophytes, to the anemochorous plants and to the plants with spiny seeds or having seeds covered by hooked protuberances, which can be directly disseminated by man.

Most of the wall-dwelling species are ecologically selected for their resistence to the air pollution and for their tolerance to soot and tar deposits, which together with the adhering dust particles, hamper the transpiration of the plants.

Thanks to the close capillary web existing among stones or bricks and mortar, walls are generally richer in nitrogenous matters than rocks: without considering the walls builted up to support embankments, also isolated walls are frequently enriched in nitrates percolating from the top of the wall and rising by capillarity from the bottom. The microfauna and the washed-down excrement of pigeons, sparrows, starlings, and others anthrophylus birds may contribute largely to the nitrogen dunging.

The physical decomposition of the masonry walls is more rapid than the erosion of the rocky walls. The greater water capacity favours the cryclostic processes and the heterogeneity of the building materials give rise to differences in thermal expansion that cause the crumbling of the wall into fine-particles. These processes allow the fast-forming of chalco-humic and clay-humic compounds from the nitrogenous matters transported by water circulating into the walls and hence the wall vegetation is often dominated and characterized by nitrophilous plants, such as *Parietaria judaica, Oxalis corniculata, Hyoscyamus albus, Bryum argenteum, Chelidonium*

majus, Corydalis lutea, Bryum caespiticium, Umbilicus rupestris, Barbula vinealis, Sonchus tenerrimus, Sagina procumbens, Tortula muralis and others. All these species have their primary habitats in rocky sites naturally enriched with organic nitrogen and since the man started building walls, created an environment very suitable to the requirements of these somewhat nitrophilous species; therefore, the colonization of these new habitats allowed a noteworthy enlargement of their distribution.

In addition to the nitrophilous species, walls are easily colonized by adventitious ones: *Erigeron karwinskianus* and *Cheiranthus cheiri* in Europe became spontaneous and flourish exclusively on walls, but also *Antirrhinum majus*, *Parietaria judaica*, *Umbilicus rupestris, Matthiola incana, Corydalis lutea, Cymbalaria muralis, Soleirolia soleirolii* and others, even if original of S.European areas, have found suitable sites much more often on walls than on rock crevices, and therefore they become anthropochore in large areas of Europe. Some of them still show a distinct pattern of migration along the valleys of the great European rivers and their tributaries and along the Western coasts of Europe, considering the density and the richness of their growing sites in these areas (Cufodontis, 1947; Mennema and Segal, 1967; Segal, 1969).

As well as the adventitious, also some polyploid species, such as *Asplenium trichomanes* ssp. *quadrivalens*, *Asplenium ruta-muraria* ssp. *ruta-muraria*, *Ceterach officinarum* have found their preferential habitat on walls. Segal (1969) demonstrated that the general weighted ratio between diploids and polyploids occurring on the European walls is 1,88 but this value increases going from W. to E. and from S. to W. and C. Europe. This ploidy spectrum is deeply in contrast with the predominant diploidy of the rupestrian plant communities (Pignatti, 1960; 1961).

From these observations a more general ecologic reflection arises: the mural vegetation can be considered a system showing low values of centralization and entropy, while the rupestrian one is characterized by high values of the aforesaid parameters. The low centralization testify that the dominance on walls is owned by a pool of widely distributed species while the rocky habitats present an high percent of endemism or at least of species having a restricted areal. The low entropy testify that the wall vegetation is characterized by the dominance of one or few species, while in the rupestrian communities there is an equilibrium condition between the different floristic components of the vegetation. Therefore, wall-dwelling and rupicolous phytocoenoses can be considered two opposite biologic expressions, arisen from the same ecological specialisation but separed by deeply different determinism and temporal scale.

Obviously, the verticalness of the walls allows also to bluntly rupestrian species the participation to the wall-dwelling coenoses; neverthless, the frequent "floristic contaminations" due to the apophytism of the rupestrian species aren't so pronounced to allow the attibution to the wall vegetation of the remarkable biogeographic connotation which is typical of the *Asplenietea trichomanis* plant communities, because the weighted contribution of the rupestrian species is generally low, since many species have a relatively unimportant degree of coverage and frequency in comparison with the mural ones. On the other hand the chief species of the wall vegetation, with their large areale set the wall vegetation out of restricted biogeographic limits which aren't pertinent to any synanthropic vegetation type.

Therefore, in accordance with the greatest part of the authors who studied the mural vegetation, it is preferable to consider the sinanthropic chasmophytic perennial vegetation in a well-distinguished class whose valid name is *Parietarietea judaicae* Oberdorfer 1977.

SYNTAXONOMIC CONSIDERATIONS

According to literature data, several syntaxonomical patterns have been proposed about the wall vegetation (Table 1). At the beginning those plant communities were included in typically chasmophylous alliances, as *Asplenion glandulosi* (Braun-Blanquet, 1931, 1952) and *Potentillion caulescentis* (Tüxen 1937; Büker, 1939; Schwicherath, 1944; Braun-Blanquet and Tüxen, 1952; Pignatti, 1952; Oberdorfer, 1957) or in nitrophilous alliances as *Chenopodion muralis* (Buchwald, 1952) and *Arction* (Oberdorfer, 1954).

The first author who hypotized the possibility of attribute this vegetation within autonomous syntaxa was Rivas-Martínez (cfr. Rivas-Goday, 1955), by the proposition of the order *Parietarietalia nom. nud.*, which was included in the *Parietarienea rupestris*, subclass of the *Asplenietea rupestris*. Then some alliances belonging to the *Parietarietalia* order were described. In particular: Rivas-Martínez (1960) proposed as *nomina nuda* two alliances: *Parietario-Galion muralis*, having a Mediterranean distribution, and *Parietario-Centranthion rubri*, an Atlantic vicariant of the first alliance. Afterwards Braun-Blanquet (1964) described the *Linario-Parietarion diffusae nom. nud.* from the Pyrenean chain, while successively the same author (Braun-Blanquet, 1966), apart from the *Parietario-Galion muralis*, recognized a new alliance: *Asplenio-Sedion*, which, since it is typified by the *Selaginello-Anogrammetum leptophyllae* Molinier 1937, can be considered a synonym of the *Polypodion serrati* Bolós & Vives in Bolós 1957.

Rivas-Goday (1964) was the first who proposed an independent class, *Parietarietea*, for the rupestrian and subrupestrian nitrophilous vegetation, including both annual and perennial plant communities. This class includes the order *Parietarietalia*, typified by the *Parietario-Galion murale* alliance, where two associations were attributed: *Parietarietum mauritanicae-bethuricum* and *Oryzopsis miliacea-Antirrhinum australe* ass.. The first one is clearly a subnitrophylous terophytic association of the *Geranio-Anthriscion* Rivas-Martínez (1975) 1978; while the second one, which is a perennial mural association, was choosen by Rivas-Martínez et al. (1993) as lectotype of the *Parietario-Galion murale*, but the absence in the relative relevés of any *Parietaria* species, invalidates the alliance and consequenly the higer syntaxa (Art. 3f).

Oberdorfer (1967; 1969; 1975), who shared the same opinion of Rivas-Goday (l.c.), proposed the new class *Cymbalario-Parietarietea diffusae*, but since the correlated alliance is represented by the *Parietario-Galion murale* Rivas-Martínez 1960 (or *Galio-Parietarion* nom. invers.) which, as aforesaid, is an invalid name, the class is invalidated as well (Art. 8). Then Oberdorfer (1977) suggested the name *Parietarietea judaicae,* referred to the name proposed by Rivas-Martínez in Rivas-Goday 1955, which was considered of priority towards his previously proposed name *Cymbalario-Parietarietea diffusae*. The *Parietarietea judaicae* is typified by the *Parietarietalia judaicae* which in its turn is typified by the *Centrantho-Parietarion*. These syntaxa are nomenclaturally valid but the order and the related alliance are illegitimate, since they are synonims subsequent to the names validly proposed by Segal (1969).

A different syntaxonomical proposal was made by Segal (1969), who described a new order exclusively intended for the perennial wall vegetation, which was named *Tortulo-Cymbalarietalia* and attributed to the class *Asplenietea rupestris*. Within this order he distinguished two alliances: *Parietarion judaicae*, having a prevalently Mediterranean distribution and *Cymbalario-Asplenion*, widespread in the Atlantic and central-European territories.

The last syntaxonomical model was proposed by Poldini and Vidali (1994): they split the wall vegetation in two main groups: the first one, belonging to the *Asplenietea trichomanis* class, is represented by the *Tortulo-Cymbalarietalia* order and groups the mesophylous cryptogam-rich vegetation types commonly present in Atlantic and central Europe, and the second one, regarding the more xerotermophylous plant communities occurring mainly in the Mediterranean area, which is referred to the *Parietarietalia judaicae* order, attributed

to the *Parietarietea judaicae* class.

According to the present survey, the European wall vegetation can be divides in three main groups: neverthless for the frequency of species in common due to the ecological plasticity of the characteristic species of the *Parietarieta judaicae* class, it is impossible to find enough elements to do any distinction at the order level, so all the associations considered in the present study are grouped in a single order including three alliances: *Parietarion judaicae* Segal 1969, *Cymbalario-Asplenion* Segal 1969 and *Parietario judaicae-Hyoscyamion aurei* all. nova. The first one is chiefly linked to the Mediterranean bioclimate, where cryptogams are almost absent and the characterization is given by a group of chamaephytes having a Mediterranean distribution; the second one is rich in ferns and mosses and strictly linked to a temperate Atlantic and central-European bioclimate; finally the third one groups markedly thermo-xerophilous communities which are partly vicariant in the S.-E. Mediterranean region of those belonging to the *Paretarion judaicae* alliance (fig.2).

The application of the code of phytosociological nomenclature has let to clearify the complicated nomenclatural situation which is due, as aforesaid, both to a considerable proliferation of syntaxa and to the misinterpretation of the original significance given to each name by the author. In the following scheme the valid name of each syntaxon is reported, with the relative nomenclatural type and synonims, as well as the indication of ecological, floristic and chorological characteristics mainly gathered from the consulted references. In the ecological characterization of syntaxa the bioclimatic zoning proposed by Rivas-Martínez (cf. Rivas-Martínez *et al*. 1991) was adopted.

SYNTAXONOMIC SCHEME

PARIETARIETEA JUDAICAE Oberd. 1977, Süddeut. Pflanzegesell. (I): 39.
Holotype: *Parietarietalia judaicae* Rivas-Martínez 1969 corr. Oberd. 1977.
Syn.: *Parietarienea rupestris* Rivas-Martínez in Rivas-Goday et al., 1955 nom. inval. (Art. 2b, Art.34).
Parietarietea Rívas-Goday 1964 nom. inval. (Art. 8).
Cymbalario-Parietarietea Oberd. in Oberd. et al. 1967 nom. inval. (Art. 8).

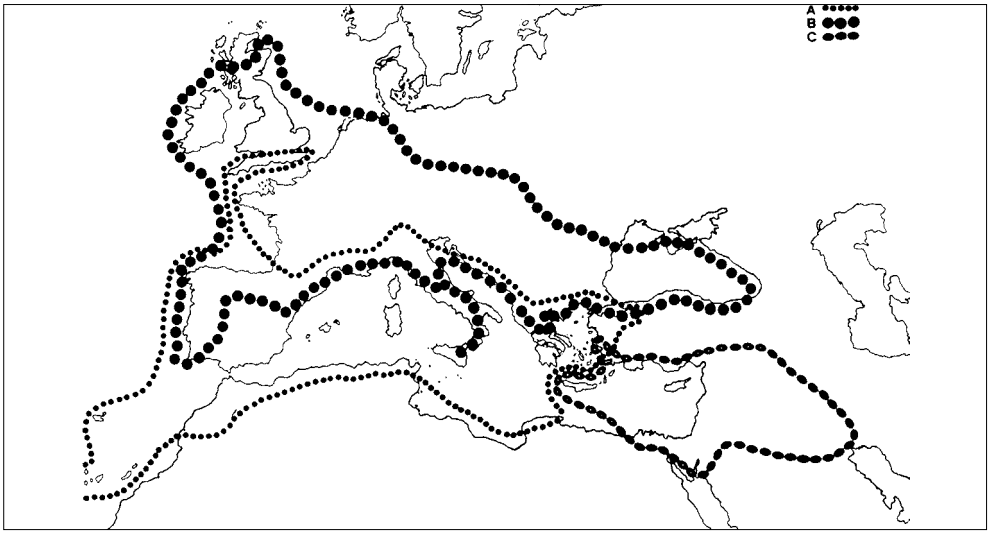

Fig. 2 - Geographical distribution of the alliances of the *Parietarietea judaicae* class. A: *Parietarion judaicae*; B*: Cymbalario-Asplenion*; C: *Parietario judaicae-Hyoscyamion aurei*.

Cymbalario-Parietarietea diffusae Oberd. 1969 nom inval. (Art. 8).
Cymbalario-Parietarietea diffusae Oberd. ex Oberd. 1977 nom. inval. (Art. 3a)
Parietarietea muralia Rivas-Martínez ex Izco, Ohba & R.Tx. in R. Tx. 1977 nom. illeg. (Art.34).

ECOLOGY: Wall vegetation occurring either on various masonry works or on rocks markedly influenced by human activities. The charachterization is given by chasmophytes, chomophytes and litophytes.

CHARACTERISTIC SPECIES: *Parietaria judaica, Cymbalaria muralis, Sonchus tenerrimus, Umbilicus rupestris,Cheiranthus cheiri, Antirrhinum majus, Erigeron karwinskianus.*

DIFFERENTIAL SPECIES: *Ceterach officinarum, Sedum dasyphyllum.*

DISTRIBUTION: Mediterranean area, Macaronesia, Central and Atlantic Europe.

Tortulo-Cymbalarietalia Segal 1969, Ecol. Not. Wall Veg.: 153.

Lectotype: *Cymbalario-Asplenion* Segal 1969.

Syn.:*Parietarietalia* Rivas-Martínez in Rivas-Goday et al., 1955: 356. nom. inval. (Art.2b).
Parietarietalia muralis Rivas-Martínez 1960 nom. inval. (Art. 8).
Parietarietalia Rivas-Goday 1964 nom. inval. (Art.8).
Parietarietalia diffusae Br.-Bl. 1964 nom. inval. (Art. 2b).
Parietarietalia murale Rivas-Martínez ex Br.-Bl. 1966 nom. inval. (Art. 8).
Parietarietalia Bolòs 1967 nom. inval. (Art. 3a).
Parietarietalia muralis Rivas Martínez 1969 nom. illeg. (Art. 22, 23, 34).
Parietarietalia muralis Rivas-Martínez ex Oberdorfer 1969 nom. inval. (Art. 8).
Parietarietalia judaicae Rivas-Martínez 1969 corr. Oberd. 1977 nom. illeg. (Art. 22, 23).

ECOLOGY: see class.

CHARACTERISTIC SPECIES: see class

DIFFERENTIAL SPECIES: see class.

DISTRIBUTION: see class.

1- ***Parietarion judaicae*** Segal 1969, Ecol. Not. Wall Veg.: 153.

Lectotype: *Oxalido-Parietarietum judaicae* (Br.-Bl. 1952) Segal 1969 hoc loco.

Syn.: *Parietario-Centranthion rubri* Rivas-Martínez 1960 nom. inval. (Art. 8).
Parietario-Galion muralis Rivas-Martínez 1960 nom. inval. (Art. 8).
Linarion cymbalariae Segal, 1961 nom. inval. (Art. 2b).
Linario-Parietarion diffusae Br.-Bl. 1964 nom. inval. (Art. 2b).
Centrantho-Galion murale Rívas-Goday 1964 nom. inval. (Art. 2b).
Parietario-Galion muralis Rivas-Martínez ex Rivas Goday 1964 nom. inval. (art. 3f).
Parietario-Galion murale Rivas-Martínez ex Br.-Bl. 1966 nom. inval. (art. 3f).
Galio-Parietarion Rivas-Martínez ex Oberdorfer 1969 nom. inval. (Art. 3f).
Galio-Parietarion mauritanicae Rivas-Martínez 1969 nom. inval. (Art. 3f).
Parietario-Centranthion rubri Rivas-Martínez 1969 nom. illeg. (Art. 22, 23).
Galio-Parietarion muralis Vigo & Terradas 1969 nom. illeg. (Art.22, 23, 34).
Centrantho-Parietarion judaicae Rivas-Martínez 1975 nom. illeg. (Art. 29).
Crithmo-Parietarion judaicae Caneva et al. 1989 nom. inval. (Art. 3b).

ECOLOGY: Termophilous vegetation mainly linked to the Mediterranean bioclimate, sometimes occurring in territories with a temperate bioclimate but only in edaphoxeric conditions. This alliance is characterized by chasmophytes, chiefly chamaephytes and more rarely hemicryptophytes or nanophanerophytes.

CHARACTERISTIC SPECIES: *Centranthus ruber, Hyoseris radiata, Ficus carica, Antirrhinum*

tortuosum, Capparis spinosa.
DIFFERENTIAL SPECIES:, *Antirrhinum siculum, Reichardia picroides, Umbilicus horizontalis, Hyoscyamus albus, Cicerbita tenerrima, Petroselinum crispum, Matthiola incana, Phagnalon sordidum, Chaenorrhinum origanifolium*.
DISTRIBUTION: Western, Central and North-Eastern Mediterranean area, Macaronesia and Atlantic territories of Iberian peninsula. Marginal penetrations in South-European countries.

1.1- ***Oxalido-Parietarietum judaicae*** (Br.-Bl. 1952) Segal 1969, Ecol. Not. Wall Veg.: 154.
a) ***typicum*** (Tab. 2A).
Lectotype: to be designated
Syn.: *Parietarietum murale* Arènes 1929 nom. inval. (Art. 7).
Parietaria ramiflora-Oxalis corniculata Ass. Br.-Bl. 1931 nom. inval. (Art. 2b).
Parietarietum murale Br.-Bl. 1952 nom. illeg. (Art. 34).
Parietaria ramiflora-Oxalis corniculata Ass. Br.-Bl. 1952 nom. inval. (Art. 3a).
Bromo-Parietarietum judaicae Segal 1969 nom. illeg. (Art. 3a).
Parietario lusitanicae-Antirrhinetum siculi Oberd. 1975 pro parte.
Parietarietum judaicae Diaz-Gonzalez 1989 non *Parietaria ramiflora* Ass. Buchwald 1952
Suaedo verae-Parietarietum judaicae Caneva et al. 1989 nom. inval. (Art. 2b).
ECOLOGY: sciaphilous and nitrophilous subassociation mainly spreaded on N.-facing or shady walls. In its typical aspect it forms a belt in the lower part of the wall.
DIFFERENTIAL SPECIES: *Parietaria judaica* (dominant).
DISTRIBUTION: Mediterranean area, in the thermo and meso-mediterranean belts.
b) cymbalarietosum muralis Brullo & Guarino subass. nova. (Tab. 2, B).
Holotype: tab. 6, rel. 4, Bartolo & Brullo (1986), hoc loco.
5Syn.: *Linario cymbalariae-Parietarietum ramiflorae* Bartolo & Brullo 1986 non Pignatti 1952.
Cymbalarietum muralis Hruska 1982 non Görs ex Oberd. 1967.
Cymbalaria muralis ges. Brandes 1989a non Görs 1966.
ECOLOGY: this subassociation differs from the previous one for its more mesic exigences; in particular it needs a moderately humid soil during all the vegetative period.
DIFFERENTIAL SPECIES: *Cymbalaria muralis*.
DISTRIBUTION: Mediterranean area, in the mesomediterranean belt.

1.2- ***Capparidetum rupestris*** Bolòs & Molinier 1958, Collect. Bot. 5(3): 802. (Tab. 3).
Lectotype: tab.18, rel. 1, Bolòs & Molinier (1958), hoc loco.
Syn.: *Capparidetum inermis* Bolòs 1962 nom. illeg. (Art. 29).
Capparidi-Parietarietum judaicae Segal 1969 nom. illeg. (Art. 22, 23).
Centaureo-Capparidetum rupestris Caneva et al. 1989 nom. inval. (Art. 2b).
ECOLOGY: Markedly thermo-xerophilous association generally occurring on S.-facing walls and sunny disturbed rocks.
DIFFERENTIAL SPECIES: *Capparis spinosa*.
DISTRIBUTION: Mediterranean area; its typical aspect is localized in the thermo-mediterranean belt; sometimes it is present also in the meso-mediterranean belt on the top of south-facing walls, in very xeric conditions.

1.3- ***Adianto-Parietarietum judaicae*** Segal 1969, Ecol. Not. Wall Veg.: 154. (Tab. 4E).
Lectotype: Tab.6, rel.1, Segal (1969), hoc loco.
Syn.: *Parietarietum judaicae adiantetosum* Crespo & Mateo 1988.
Adianto-Parietarietum judaicae Caneva et al. 1990 nom. inval. (Art. 2a, 3b).
Cymbalario muralis-Adiantetum capilli-veneris Rivas-Martínez et al. 1993 nom. illeg. (Art. 22, 23).
Parietario diffusae-Cymbalarietum muralis adiantetosum Caneva et al. 1995.
ECOLOGY: Markedly edapho-hygrophylous association, it represents an intermediate aspect between the *Oxalido-Parietarietum judaicae* and the *Adiantion* associations.
DIFFERENTIAL SPECIES: *Adiantum capillus-veneris*.
DISTRIBUTION: Mediterranean area, in the thermo and meso-mediterranean belts.

1.4- ***Centranthetum rubri*** Oberd.1969, Vegetatio 17: 211.
a) ***typicum*** (Tab. 5A).
Lectotype: tab. 1, rel. 16, Oberdofer (1969), hoc loco.
Syn.: *Centaureo-Centranthetum rubri* Caneva et al. 1990 nom. nud. (Art.2b).
ECOLOGY: heliophilous subassociation occurring generally on the top of exposed walls.
DIFFERENTIAL SPECIES: *Centranthus ruber*.
DISTRIBUTION: Mediterranean area, in the thermo and meso-mediterranean inferior belts.
b) asplenietosum trichomanis Brullo & Guarino subass. nova. (Tab. 5B).
Holotype:tab 21, rel. 2, Segal (1969), hoc loco.
Syn.: *Asplenio-Parietarietum judaicae* with *Centranthus ruber* Segal 1969.
ECOLOGY: this subassociation requires the same exposure of the previous one, but it is linked to a more mesic macroclimate.
DIFFERENTIAL SPECIES: mosses and ferns trangressive of the *Cymbalario-Asplenion* alliance.
DISTRIBUTION: Mediterranean area, in the oro and meso-mediterranean superior belts. It is present also in the countries having a temperate bioclimate, but limitedly to xeric habitats of the hilly belt.

1.5- ***Centrantho-Hypericetum majoris*** Rivas-Martínez 1969 corr. Brullo & Guarino. (Tab. 4D).
Holotype: tab.2, rel. 3, Rivas Martínez (1969).
Syn.: *Centrantho-Hypericetum hircini* Rivas-Martínez 1969 (Art. 43).
Hypericetum hircini Rivas-Martínez 1969 nom. inval (Art. 3a).
ECOLOGY: fresh and shady walls in areas characterized by a very damp macroclimate.
DIFFERENTIAL SPECIES: *Hypericum hircinum ssp. majus*.
DISTRIBUTION: known up to now from Atlantic Iberian territories and on the mountain belt of nort-eastern-side of Etna (Sicily).

1.6- ***Cymbalario-Crithmetum maritimi*** Segal 1969, Ecol. Not. Wall Veg.: 165. (Tab. 4B).
Lectotype: tab. 17, rel. 1, Segal (1969), hoc loco.
Syn.: *Oxalido-Parietarietum diffusae crithmetosum maritimi* Rivas-Martínez 1969.
Crithmo-Cymbalarietum muralis Caneva et al. 1990 nom. inval. (Art. 2b, 3b).
Parietarietum judaicae crithmetosum maritimi (Rivas-Martínez 1969) Díaz & Prieto 1994.
ECOLOGY: subalophilous association occurring on the walls close to the sea in fresh and moisty conditions.
DIFFERENTIAL SPECIES: *Crithmum maritimum*.

DISTRIBUTION: known up to now from European Atlantic coasts and Italian Tyrrhenian coasts.

1.7- ***Cymbalario-Trachelietum coerulei*** Rivas-Martínez 1969, Publ. Inst. Biol. Apl. Barcelona 46: 10. (Tab. 4C).
Holotype: tab. 3, rel. 1, Rivas Martínez (1969).
ECOLOGY: moderately edapho-hygophilous association occurring on walls and disturbed marly rocks.
DIFFERENTIAL SPECIES: *Trachelium coeruleum*.
DISTRIBUTION: known up to now from occidental Galician territories and along the Italian Tyrrhenian coasts and Sicily.

1.8- ***Linario-Erigeronetum mucronati*** Segal 1969, Ecol. Not. Wall Veg: 168. (Tab. 6).
Lectotype: tab. 19, rel. 3, Segal (1969), hoc loco.
Syn.: *Fico-Erigeronetum mucronati* Segal 1969 nom. inval. (Art. 3a).
Polypodio-Erigeronetum mucronati Segal 1969 nom. inval. (Art. 3a).
Erigeronetum karwinskiani Oberd. 1969 nom. illeg. (Art. 22, 23).
Polygonum capitatum comm. Ortiz & Rodriguez Oubiña 1993 nom. inval. (Art. 3c).
ECOLOGY: Mesophilous vegetation linked to cement or mortar-jointed walls, growing in scarcely humified narrow crevices.
DIFFERENTIAL SPECIES: *Erigeron karwinskianus*.
DISTRIBUTION: Mediterranean and Atlantic Europe. In W. Europe the association is more frequently encountered on S.-facing walls, while in the Mediterranean area it doesn't show pronounced preference to a particular type of exposure.
1.9**- *Hyoscyamo albi-Parietarietum judaicae*** Segal 1969, Ecol. Not. Wall Veg: 154. (Tab. 4A).
Lectotype: tab.12, rel.2, Segal (1969), hoc loco.
Syn.: *Parietario-Hyoscyametum albi* Bartolo & Brullo 1986 nom. illeg. (Art. 22, 23).
ECOLOGY: halo-tolerant termophilous association mainly occurring on walls near the sea dunged by sea-birds.
DIFFERENTIAL SPECIES: *Hyoscyamus albus*.
DISTRIBUTION: Mediterranean area, in the thermo-mediteranean belt; except for the S.-E. territories.

1.10- ***Oryzopsio miliaceae-Antirrhinetum granitici*** Rivas-Goday 1964 corr. Rivas-Martínez 1969, Publ. Inst. Biol. Apl. Barcelona 46: 10. (Tab. 4G).
Lectotype: ass. 2, pag.107, rel. 1, Rivas-Goday (1964), hoc loco.
Syn.: *Oryzopsio miliaceae-Antirrhinetum australis* Rivas-Goday 1964 (Art. 43).
ECOLOGY: Shady walls and rocky faces..
DIFFERENTIAL SPECIES: *Antirrhinum graniticum*.
DISTRIBUTION: W.-Iberian peninsula, in the meso-mediterranean belt and Atlantic region.

1.11- ***Parietario-Matthioletum incanae*** Vigo & Terradas 1969, Acta Geobot. Barc. 4: 13. (Tab. 7C).
Holotype: rel. pag. 13, Vigo & Terradas (1969).
ECOLOGY: Nitrophilous community mainly occurring on coastal rock crevices.
DIFFERENTIAL SPECIES: *Matthiola incana*.
DISTRIBUTION: konwn up to now from the Baix Llobregat (Catalunja, Spain).

1.12- ***Umbilicetum horizontalis*** Bolòs & Vigo 1972, Rap. Com. Int. Mer Mèdit. 21(3): 81. (Tab. 7L).
Holotype: rel. pag. 15, Bolòs (1967).
Syn.: *Asplenio- Cotyledonetum horizontalis* Horvatic 1963 nom. inval. (Art. 7)
Capparidetum inermis umbilicetosum gaditani Bolòs 1967.
Parietario judaicae -Umbilicetum horizontalis Rivas-Martínez et al. 1993 nom. illeg. (Art. 22, 23).
Umbilico horizontalis-Parietarietum diffusae Caneva et al. 1993 nom. illeg. (Art. 29).
ECOLOGY: moderately hygrophilous association occurring on shady walls.
DIFFERENTIAL SPECIES: *Umbilicus horizontalis*.
DISTRIBUTION: Western and Central Mediterranean area, in the thermo-mediterranean superior and meso-mediterranean belts.

1.13- ***Chaenorrhino crassifolii-Sarcocapnetum enneaphyllae*** Rivas-Martínez & Lopez in Lopez 1978 Anal. Inst. Bot. Cavanilles 34: 611. (Tab. 7B).
Holotype: tab. 5, rel. 7, Lopez (1978).
ECOLOGY: subnitrophilous and heliophilous association growing on urban walls and disturbed rock crevices.
DIFFERENTIAL SPECIES: *Chaenorrhinum crassifolium* and *Sarcocapnos enneaphyllae*.
DISTRIBUTION: konwn up to now from the Serrania of Cuenca mountains (Spain).

1.14- ***Soncho dianae-Parietarietum mauritanicae*** Esteve Chueca 1973 corr. Rivas-Martínez 1980, Anal. Inst. Bot. Cavanilles 35: 230. (Tab. 4F).
Lectotype: tab. pag. 85, rel. 1, Esteve Chueca (1973), hoc loco.
Syn.: *Soncho dianae-Parietarietum lusitanicae* Esteva Chueca 1973 (Art.43).
Parietarietum judaicae sonchetosum dianae Cantò et al. 1986.
ECOLOGY: Thermo-xerophilous association occurring on coastal sunny walls and disturbed rocks.
DIFFERENTIAL SPECIES: *Sonchus dianae*.
DISTRIBUTION: Southern Spain, in the dry thermo-mediterranean belt.

1.15- ***Umbilicetum rupestri-neglecti*** Rivas-Martínez et al. 1980, Lazaroa 2: 71. (Tab. 5M).
Holotype: tab. 37, rel. 2, Rivas-Martínez et al. (1980)
Syn.: *Umbilicetum rupestri-neglecti* Rivas-Martínez et al. in Rivas-Martínez 1980 nom.nud. (Art. 2b).
ECOLOGY: moderately hygrophilous association occurring on walls and ralely on palm stipes enriched with organic matters
DIFFERENTIAL SPECIES: *Umbilicus rupestris* and *Umbilicus neglectus*.
DISTRIBUTION: W. Spain, in the dry or subhumid thermo-mediterranean and rarely in the meso-mediterranean belts

1.16- ***Antirrhinetum siculi*** Bartolo & Brullo 1986, Arch. Bot. Biogeogr. Ital. 62: 38. (Tab. 7G).
Holotype: Tab.3, rel.2. Bartolo & Brullo (1986).
Syn.: *Parietario-Antirrhinetum siculi* Brandes 1991 non Oberd. 1975.
ECOLOGY: xerothermophilous association growing on scarcely humified crevices of the top of exposed walls.

DIFFERENTIAL SPECIES: *Antirrhinum siculum*.
DISTRIBUTION: exclusively present in Sicily, in the thermo-mediterranean belt.

1.17- ***Majoranetum onitae*** Bartolo & Brullo 1986, Arch. Bot. Biogeogr. Ital. 62: 45. (Tab. 7H).
Holotype: tab.8, rel. 4, Bartolo & Brullo (1986).
ECOLOGY: xerothermophilous association exlusively growing on limestone-builted walls
DIFFERENTIAL SPECIES: *Majorana onites*.
DISTRIBUTION: The association is exclusive of the ancient walls of Siracusa (Sicily). Probably the differential species was imported as aromatic herb by Grecian settlers and became naturalized in the anthropogenic habitats of the surroundings of the town.

1.18- ***Antirrhino linkiani-Parietarietum judaicae*** Ortiz 1989, Doc. Phytosoc. 11: 507. (Tab. 7A).
Holotype: Tab.1, rel.7, Ortiz (1989).
ECOLOGY: xerothermophilous association growing on exopsed walls of ancient buildings.
DIFFERENTIAL SPECIES: *Antirrhinum majus* ssp. *linkianum*..
DISTRIBUTION: Murcia (S. Spain), in the subhumid meso-mediterranean belt.
1.19- ***Calendulo algarbiensis-Parietarietum judaicae*** J. & P. Guitian 1989, Bol. Soc. Brot. 62, series 2: 80. (Tab. 4H).
Holotype: Tab. 1, rel. 1, Guitian & Guitian (1989).
ECOLOGY: halo-nitrophilous association occurring on coastal rocks dunged by sea-birds.
DIFFERENTIAL SPECIES: *Calendula algarbiensis*.
DISTRIBUTION: only known for the Cies islands (Pontevedra, NW Iberian peninsula), in the Atlantic region.

1.20- ***Chaenorrhino granatensis-Parietarietum judaicae*** Gómez Mercado & Valle 1991, Rivasgodaya 6: 138. (Tab. 7D).
Holotype: tab.1, rel. 5, Gómez Mercado & Valle (1991).
Syn.: *Chaenorrhino villosi-Parietarietum diffusae* Gómez Mercado & Valle1989 nom. inval. (Art. 2b).
ECOLOGY: nitrophilous association densely covering walls enriched in organic matters.
DIFFERENTIAL SPECIES: *Chaenorrhinum granatensis*.
DISTRIBUTION: Excusively present in the Subbético sector of the Andalusian province (Spain), in the meso-mediterranean belt.

1.21- ***Parietario judaicae-Phyllytidetum sagittatae*** Rivas-Martínez et al. 1992, Itinera Geobot. 6: 172. (Tab. 7N).
Holotype: tab. 38, rel. 2, Rivas-Martínez et al. (1992).
Syn.: *Parietaria judaica* et *Linaria cymbalaria* group. Bolòs et Molinier 1958 nom. inval. (Art. 3c).
ECOLOGY: termophylous and moderately edapho-hygrophilous association occurring on shady rocky faces in areas influenced by the sea, without heavy seasonal variations.
DIFFERENTIAL SPECIES: *Phyllsytis sagittata*.
DISTRIBUTION: known up to now from the Baleares archipelago.

1.22- ***Antirrhinetum tortuosi*** Caneva et al. 1995, Fitosoc. 29: 174. (Tab. 7I).
Holotype: Tab.9, rel.14, Caneva et al. (1995).
ECOLOGY: helio-thermophilous association growing mainly on the top of exposed walls.
DIFFERENTIAL SPECIES: *Antirrhinum majus ssp. tortuosum*.

DISTRIBUTION: known up to now from the Latium region (C. Italy).

1.23- ***Antirrhinetum barrelieri*** Brullo & Guarino ass. nova. (Tab. 7E).
Holotype: rel. pag. 86, Esteve Chueca 1973.
ECOLOGY: helio-thermophilous association growing on exposed walls of inland ancient buildings.
DIFFERENTIAL SPECIES: *Antirrhinum barrelieri*.
DISTRIBUTION: Southern Spain, in the dry thermo-mediterranean belt.

1.24- ***Parietario judaicae-Brassicetum oleraceae*** Fernandez Prieto & Herrera ex Brullo & Guarino ass. nova. (Tab. 7F).
Holotype: rel. I pag. 122, Fernández Prieto & Herrera Gallastegui 1992, hoc loco.
Syn.: *Parietario judaicae-Brassicetum oleraceae* Herrera & Fernandez Prieto 1989 nom. inval. (Art. 2b).
Parietario judaicae-Brassicetum oleraceae Herrera & Fernandez Prieto ex Rivas-Martínez et al. 1991 nom. inval. (Art. 2b).
ECOLOGY: halo-tolerant and markedly nitrophilous association mainly occurring on rocky faces close to the sea and well-dunged by sea-birds.
DIFFERENTIAL SPECIES: *Brassica oleracea*.
DISTRIBUTION: known up to now from the Atlantic Spanish coasts.

2- ***Cymbalario-Asplenion*** Segal 1969, Ecol. Not. Wall Veg.: 185.
Lectotype: *Asplenietum rutae murario-trichomanis* Kuhn 1937.
Syn.: *Asplenion rutae-murariae* Gams 1936 nom. inval. (Art.2b).
Tortulo-Linarion cymbalariae Westhoff 1966 nom. inval. (Art.2b).
ECOLOGY: mesophylous vegetation linked to a temperate bioclimate, occurring also in territories with a very damp meso- or supramediterranean bioclimate. This alliance is characterized by chasmophilous hemicryptophytes and chomophytes, as the mosses.
CHARACTERISTIC SPECIES: *Asplenium trichomanes ssp. quadrivalens, Corydalis lutea, Tortula muralis, Homalothecium sericeum, Barbula acuta, Barbula unguiculata, Ceratodon purpureus, Bryum caespiticium, Grimmia pulvinata, Hypnum cupressiforme, Barbula vinealis, Scorpiurum circinnatum*.
DIFFERENTIAL SPECIES: *Cystopteris fragilis, Asplenium ruta-muraria ssp. ruta-muraria, Chelidonium majus, Sedum album, Asplenium adiantum-nigrum, Polypodium cambricum, Anomodon viticulosus*.
DISTRIBUTION: Atlantic and Central Europe, with penetrations in the Mediterranean territories limitedly to mountain sites.

2.1- ***Corydalidetum luteae*** Kaiser 1926, Feddes Repert. Beih. 44: 73. (Tab. 8E).
Lectotype: tab. 83, rel. 7, Kaiser (1926), hoc loco.
Syn.: *Asplenio-Corydaletum luteae* Segal 1969 nom. illeg. (Art. 22, 23).
Parietaria ramiflora ass. Buchwald 1952 p.p.
Corydalis lutea ges. Brandes 1992 (Art. 3c).
ECOLOGY: Sciaphilous subnitrophilous association occurring on fresh basic walls in sites having a constant and heavy air moisture
DIFFERENTIAL SPECIES: *Corydalis lutea*.
DISTRIBUTION: Atlantic and Central Europe, mainly distributed along the greatest river and their tributaries.

2.2- ***Asplenietum rutae murario-trichomanis*** Kuhn 1937, Die Pflanzengesell. Neckarg. Schwäb. Alb.: 43. (Tab. 9).
Lectotype: to be designated
Syn.: *Ceterach officinarum* ass. Arènes 1929 nom. inval. (Art. 7).
Asplenietum trichomano-rutae-murariae R. Tx. 1937 nom. illeg. (Art.33).
Asplenietum rutae-murariae Schwickerath 1944 nom. illeg. (Art. 22, 23).
Parietaria ramiflora ass. Buchwald 1952 p.p.
Ceteracho officinarum-Cotyledonetum umbilici (Webb 1947) Br.-Bl. & Tx 1952 nom. illeg. (Art. 22, 23).
Tortulo-Asplenietum Oberd. 1957 nom. inval. (Art. 3a).
Asplenium trichomanes -Asplenium adiantum-nigrum Ges. Tx. & Oberd. 1958 nom. inval. (Art. 3c).
Asplenium trichomanes-Encalypta contorta Ges. Tx. & Oberd. 1958 nom. inval. (Art. 3c).
Asplenio-Ceterachetum officinalis Vives 1964 nom. illeg. (Art. 22, 23).
Oxalido-Parietarietum ramiflorae homalotecietosum Br.-Bl. 1966.
Encalypto-Asplenietum trichomanis Segal 1969 nom. illeg. (Art. 22, 23).
Sagino-Asplenietum trichomanis Segal 1969 nom. illeg. (Art. 22, 23).
Sedo dasyphylli-Asplenietum trichomanis Segal 1969 nom. illeg. (Art. 22, 23).
Asplenietum adianti-nigri-trichomanis Segal 1969 nom. illeg. (Art. 22, 23).
ECOLOGY: fresh and shady walls and disturbed rocky faces, preferring crumbling walls with a consistent humic soil accumulation.
DIFFERENTIAL SPECIES: *Asplenium ruta-muraria ssp. ruta-muraria* (dominant).
DISTRIBUTION: widespread in the Atlantic and Central Europe, mainly in the hilly and submountain belts. It occurs also in the Mediterranean area, but limitedly to territories having a temperate bioclimate.

2.3- ***Linario cymbalariae-Parietarietum ramiflorae*** Pignatti 1952, Arch. Bot. (Forlì) 28: 316. (Tab. 10).
Lectotype: to be designated
Syn.: *Cymbalaria muralis* ges. Görs 1966 nom inval. (Art. 3c).
Oxalido-Parietarietum ramiflorae Br.-Bl. 1966 pro parte.
Cymbalarietum muralis Görs ex Oberd. 1967 nom. illeg. (Art. 29).
Asplenio-Hederetum Segal 1969 nom. illeg. (Art. 29).
Oxali-Parietarietum diffusae Rivas-Martínez 1969 non Br.-Bl.1931.
ECOLOGY: oligotrophic association generally occurring on fresh walls, where it forms generally a belt in the middle part of the wall.
DIFFERENTIAL SPECIES: *Cymbalaria muralis* (dominant).
DISTRIBUTION: widespread in the Atlantic and Central Europe, mainly in the hilly and submountain belts.

2.4- ***Cheirantho-Parietarietum judaicae*** Oberdorfer 1957, Pflanzensoz.10: 80. (Tab. 11).
Lectotype: tab. 15, rel.1, Oberdorfer (1954), hoc loco.
Syn.: *Cheiranthus cheiri* aggr. Jouanne 1929 nom. inval. (Art. 3c).
Cheirantho-Parietarietum judaicae Oberd. 1949 nom.nud. (Art. 2b).
Cheirantho-Parietarietum ramiflorae Oberd. 1954 nom. inval.(Art. 3b).
Cheiranthetum cheiri Segal 1961 nom.nud. (Art. 2b).

Cheiranthetum cheiri Segal 1962 nom. illeg. (Art. 29).
Cheiranthetum cheiri Westhoff 1966 nom. nud. (Art. 2b).
Asplenio-Cheiranthetum cheiri Segal 1969 nom. illeg. (Art. 29).
Sedo-Cheiranthetum cheiri Segal 1969 nom. illeg. (Art. 29).
Cheiranthus cheiri Ges. Oberd. 1977 nom. inval. (Art. 3c).

ECOLOGY: Nitrophilous very mature association which generally occurs on strongly decomposed walls rich in fine-grained sediments and humus.
DIFFERENTIAL SPECIES: *Cheiranthus cheiri*.
DISTRIBUTION: Atlantic and Central Europe, mainly in the hilly and submountain belts. The association is present also in the Mediterranean area where it results impoverished in cryptogams and is localized in fresh or shady walls.

2.5- ***Asplenio-Parietarietum judaicae*** Segal 1969, Ecol. Not. Wall Veg.: 174. (Tab. 12).
Lectotype: tab. 21, rel. 5, Segal (1969), hoc loco.
Syn.: *Sedo-Parietarietum judaicae* Segal 1969 nom. illeg. (Art. 3a).
Anogrammo-Parietarietum judaicae Segal 1969 nom. illeg. (Art. 3a).
Parietarietum judaicae Arènes ex Oberd. 1977 nom. illeg. (Art. 29).

ECOLOGY: termophilous and nitrophilous association, which in its typical aspect grows on S. and S.W.-facing walls.
DIFFERENTIAL SPECIES: *Asplenium ruta-muraria ssp. ruta-muraria* and *Parietaria judaica* (dominant).
DISTRIBUTION: Central and Atlantic Europe; the association is present also in the Mediterranean area limitedly to the oro- and supra-mediterranean belt.

2.6- ***Linario cymbalariae-Soleirolietum soleirolii*** Segal 1969, Ecol. Not. Wall Veg: 218. (Tab. 8A).
Lectotype: tab. 45, rel.1, Segal (1969), hoc loco.

ECOLOGY: nitrophilous and higrophilous association typically localized on low walls or forming a belt on the lower part of the wall, where the humidity of the substratum is relatively high..
DIFFERENTIAL SPECIES: *Soleirolia soleirolii*.
DISTRIBUTION: known up to now from Great Britain.

2.7- ***Dryopterido-Saginetum procumbentis*** (Segal 1969) Brullo & Guarino nom. nov. (Tab. 8B).
Lectotype: tab. 39, rel. 6, Segal (1969), hoc loco.
Syn.: *Filici-Saginetum procumbentis* Segal 1969 nom. inval. (Art. 3f)

ECOLOGY: edapho-hygrophylous association linked to damp walls along the rivers, channels or in others sites receving sprayed water.
DIFFERENTIAL SPECIES: *Sagina procumbens, Dryopteris filix-mas* and *Athyrium filix-foemina*.
DISTRIBUTION: Widespread in the lowlands of Central Europe.

2.8- ***Sedo micranthi-Saxifragetum babianae*** Rivas-Martínez et al. in Puente García 1988. (Tab. 8I).
Holotype: tab.6, rel. 1, Puente García (1988).

ECOLOGY: thermo-heliophilous association occurring on urban walls made of siliceous stones.
DIFFERENTIAL SPECIES: *Sedum micranthum, Saxifraga babiana* var. *babiana* and var. *septentrionalis*.

DISTRIBUTION: inland mountain territories of N. Spain (Leon province).

2.9- ***Asplenio trichomanis-Cystopteridetum fragilis*** Brullo & Guarino ass. nova. (Tab. 8G).
Holotype: tab.30, rel. 16, Segal (1969), hoc loco.
Syn.: *Asplenio viridis-Cystopteridetum fragilis* D. & E. Brandes 1981 non Oberd. 1949.
Encalypto-Asplenietum trichomanis cystopteridetosum fragilis Segal 1969.
Asplenietum rutae-murariae-trichomanis var. with *Cystopteris fragilis* Segal 1969.
Asplenietum rutae-murariae-trichomanis form with *Cystopteris fragilis* Poldini & Vidali 1994.
ECOLOGY: this association represents the microthermic vicariant of the *Asplenietum rutae-murariae-trichomanis*. It prefers N.-facing walls and is well-adapted to intense seasonal thermic excursions and therefore it occurs in continental areas or in mountain sites.
DIFFERENTIAL SPECIES: *Cystopteris fragilis*.
DISTRIBUTION: inland areas of Central Europe.

2.10- ***Cymbalario-Asplenietum viridis*** Brullo & Guarino ass. nova. (Tab. 8C).
Holotype: tab. 36, rel.1, Segal (1969), hoc loco.
Syn.: *Asplenium viride-Linaria cymbalaria* comm. Segal 1969 nom. inval. (Art. 3c).
ECOLOGY: orophilous alpic association adapted to a short vegetative period. It prefers walls builted of limestone blocks.
DIFFERENTIAL SPECIES: *Asplenium viridis*.
DISTRIBUTION: konwn up to now from Tirol (Austria) and French Alps.

2.11- ***Cymbalario-Phyllitidetum scolopendrii*** Brullo & Guarino ass. nova. (Tab. 8F).
Holotype: tab. 1, rel. 1, Loriente Escallada (1976), hoc loco.
Syn.: *Oxali-Parietarietum diffusae phyllitetosum scolopendrii* Loriente Escallada 1976.
ECOLOGY: markedly edapho-hygrophilous and sciaphilous association growing on walls and rocky faces preferentially N. exposed, in habitats having a constantly high relative humidity, chatacterized by an Atlantic bioclimate.
DIFFERENTIAL SPECIES: *Phyllitis scolopendrium*.
DISTRIBUTION: known up to now from Cantabria (N. Spain).

2.12- ***Sedo dasyphylli-Ceterachetum officinarum*** Hruska ex Brullo & Guarino ass. nov. (Tab. 8H).
Holotype: tab. 1, rel. 2, Oberdorfer (1975), hoc loco.
Syn.: *Parietaria ramiflora* ass. Buchwald 1952 p.p.
Sedum dasyphyllum-Ceterach officinarum ges. Oberd. 1975 nom. inval. (Art. 3c).
Sedo dasyphylli-Ceterachetum officinarum Hruska 1985 nom. inval (Art. 5).
ECOLOGY: the association represent an orophilous Apennine vicariant of the *Asplenietum rutae-murariae-trichomanis*. As the latter it requires crumbling walls with a consistent humic soil accumulation.
DIFFERENTIAL SPECIES: dominance of *Sedum dasyphyllum* and *Ceterach officinarum*.
DISTRIBUTION: Apennine chain and N.-E. Sicily.

2.13- ***Asplenietum fontano-rutae-murariae*** Brullo & Guarino ass. nova. (Tab. 8D).
Holotype: tab. 1, rel. 8, Soriano (1996), hoc loco.
ECOLOGY: mesophilous and sciaphilous association growing on N.-facing basic walls made of limestone blocks.
DIFFERENTIAL SPECIES: *Asplenium fontanum*.
DISTRIBUTION: known up to now from the Pre-Pyrenean mountains (E. Spain); at 700 to 1300 m. of altitude.

3- ***Parietario judaicae-Hyoscyamion aurei*** Brullo & Guarino all. nova.
Holotype: *Parietario judaicae-Hyoscyametum aurei* Brullo & Guarino ass. nova, hoc loco.
ECOLOGY: strictly termoxerophilous vegetation linked to an aride termomediterranean bioclimate. The alliance is characterized by a pool of oriental chasmophytes which are partly vicariant of the western mediterranean ones; among them chamaephytes prevail.
CHARACTERISTIC SPECIES: *Hyoscyamus aureus,Capparis aegyptiaca, Capparis orientalis*.
DIFFERENTIAL SPECIES: *Phagnalon graecum, Umbilicus intermedius*.
DISTRIBUTION: South-Eastern Mediterranean area.

3.1- ***Parietario judaicae-Hyoscyametum aurei*** Brullo & Guarino ass. nova. (Tab. 13A).
Holotype: tab. 13, rel. 12, hoc loco.
ECOLOGY: halo-tolerant termophilous association mainly occurring on the upper part of cement or mortar-jointed walls.
DIFFERENTIAL SPECIES: *Hyosciamus aureus* (dominant).
DISTRIBUTION: known up to now from Crete and Rhodos (Aegean area).

3.2- ***Parietario judaicae-Cymbalarietum longipedis*** Brullo & Guarino ass. nova. (Tab. 13C).
Holotype: tab. 13, rel. 35, hoc loco.
ECOLOGY: Sciaphilous association generally occurring on crumbling mortar-jopinted walls, where it forms generally a belt in the lower part of the wall.
DIFFERENTIAL SPECIES: *Cymbalaria longipes*.
DISTRIBUTION: known up to now from Rhodos (Aegean area).

3.3- ***Hyoscyamo aurei-Podonosmetum orientalis*** Brullo & Guarino ass. nova. (Tab. 13B).
Holotype: tab. 13, rel. 27, hoc loco.
ECOLOGY: thermophilous association preferring ancient mortar-jointed walls chiefly having a N. exposure.
DIFFERENTIAL SPECIES: *Podonosma orientalis*.
DISTRIBUTION: known up to now from Palestine.

3.4- ***Hyoscyamo aurei-Capparidetum aegyptiacae*** Brullo & Guarino ass. nova. (Tab. 13D).
Holotype: tab. 13, rel. 41, hoc loco.
ECOLOGY: markedly thermo-xerophilous association occurring on inland sunny walls.
DIFFERENTIAL SPECIES: *Capparis aegyptiaca*.
DISTRIBUTION: known up to now from Palestine, probably having an Irano-Turanian areale.

3.5- ***Hyoscyamo aurei-Capparidetum orientalis*** Brullo & Guarino ass. nova. (Tab. 13E).
Holotype: tab. 13, rel. 44, hoc loco.
ECOLOGY: markedly thermo-xerophilous association occurring on exposed walls not too far from the coasts; for its ecology, it can be considered a South-oriental vicariant of the *Capparidetum rupestris*.
DIFFERENTIAL SPECIES: *Capparis orientalis*.
DISTRIBUTION: known op to now from Crete and Rhodos, probably having a S.E.-Mediterranean areale.

NOMINA EXCLUDENDA

Asplenio-Sedion Br.-Bl. 1966: 133, 142. (typus: *Selaginello-Anogrammetum leptophyllae* Molinier 1937), belonging to the *Anomodonto-Polypodietalia* order.
Anogramnion leptophyllae Bellot & Casaseca 1959 ex Casaseca 1959, belonging to the *Anomodonto-Polypodietalia* order.
Asplenietum lepidi Boscaiu 1971, belonging to the *Moheringion muscosae* alliance (*Asplenietea trichomanis*).
Centrantho-Sedetum brevifolii Quézel 1953, belonging to the *Saxifragion camposii* alliance (*Asplenietea trichomanis*).
Gypsophiletum montserratii Fernandez Casas 1971, belonging to the *Teucrion buxifolii* alliance (*Asplenietea trichomanis*).
Moehringietum bavaricae Niklfeld ex Mucina 1993, belonging to the *Potentillion caulescentis* alliance (*Asplenietea trichomanis*).
Parietarietum mauritanicae-bethuricum Rivas-Goday 1964, belonging to the *Geranio-Anthriscion* alliance (*Stellarietea mediae*).
Sarcocapnetum enneaphyllae Rivas-Goday 1941, belonging to the *Teucrion buxifolii* alliance (*Asplenietea trichomanis*).
Sarcocapnetum integrifoliae Fernandez Casas & Molero in Fernandez Casas 1972, belonging to the *Teucrion buxifolii* alliance (*Asplenietea trichomanis*).
Scrophulario pyrenaicae-Antirrhinetum sempervirentis Quèzel 1956 em. Fernandez Casas 1972, belonging to the *Saxifragion mediae* alliance (*Asplenietea trichomanis*).
Stachydetum circinnatae Fernandez Casas 1972, belonging to the *Teucrion buxifolii* alliance (*Asplenietea trichomanis*).

AKNOWLEDGEMENTS

M.U.R.S.T. 60% financial support is gratefully aknowledged. Thanks are due to profs. G. Caneva and G. De Marco for their unpublished relevés kindly placed to our disposition. We are also grateful to prof. R. Pott and to all the staff working in the Tüxen's library (Institut für Geobotanik, Hannover) for their efficient politeness and to prof. B. Scammacca for his helpful assistance in the numerical analysis.

RIASSUNTO

Sulla base di dati di letteratura ed inediti, viene presentata una revisione della vegetazione casmofila sinantropica dei territorî europei e mediterranei. Si tratta di aspetti vegetazionali

prevalentemente legati ad ambienti murali e a pareti rocciose disturbate dall'attività umana, su cui si insedia una flora abbastanza specializzata in cui prevalgono emicriptofite, camefite e musci. Dal punto di vista sintassonomico, in accordo con la maggior parte degli autori che hanno indagato su questo tipo di vegetazione, si ritiene opportuno inquadrare le fitocenosi in questione in una classe autonoma, anziché, come proposto da altri, negli *Asplenietea trichomanis*. Sotto il profilo nomenclaturale il nome corretto per la classe è *Parietarietea judaicae* Oberd. 1977. In seno ad essa si è ritenuto opportuno distinguere un solo ordine, *Tortulo-Cymbalarietalia* Segal 1969, includente tre alleanze: *Parietarion judaicae* Segal 1969, *Cymbalario-Asplenion* Segal 1969 e *Parietario judaicae-Hyoscyamion aurei* all. nova. La prima di queste riunisce aspetti vegetazionali termofili legati prevalentemente al bioclima mediterraneo, caratterizzati soprattutto da camefite e presentanti una copertura crittogamica irrilevante; la seconda, distribuita prevalentemente nei territori a bioclima temperato, risulta invece caratterizzata da una abbondante copertura di nanopteridofite e musci; la terza infine, limitata ai territorî del Mediterraneo sud-orientale, risulta caratterizzata da un gruppo di camefite marcatamente xerotermofile e riunisce alcune associazioni che possono essere considerate vicarianti geografiche delle corrispondenti inquadrate nel *Parietarion judaicae*. Per ciascun sintaxon vengono indicati il tipo nomenclaturale, i sinonimi e le caratteristiche floristiche ecologiche e corologiche più rilevanti.

References

Arènes J., 1929 - Les associations végétales de la basse Provence. George Chassel, Mirecourt.

Anzalone B., 1951 - *Flora e vegetazione dei muri di Roma*. Ann. Bot. (Roma) **23** (3): 393-497.

Astolfi L., De Natale A. and La Valva V., 1994 - *Indagine preliminare sulla vegetazione delle mura di Napoli (Inquadramento sintassonomico)*. Giorn. Bot. Ital. **128** (1): 458.

Bartolo G. and Brullo S., 1986. *La classe Parietarietea judaicae in Sicilia*. Arch. Bot. Biogeogr. It. **62** (1-2): 31-50.

Biondi E., Blasi C, Brugiapaglia E., Fogu M.C. and Mossa L., 1994 - *La vegetazione nitrofila della città di Cagliari (Sardegna)*. Allionia **32**: 303-323.

Boscaiu N., 1971 - *Flora si vegetatia muntilor Tarcu, Godeanu si Cernei*. Acad. Rep. Soc. Romania, Bucarest.

Brandes D., 1979 - *Die Ruderalgesellschaften Osttirols*. Mitt.flor.-soz. Arbeitsgem N.F. **21**: 31-47.

Brandes D., 1987a - *Zur Ruderal- und Saumvegetation des Luxemburger Gutlandes*. Decheniana **140**: 1-10.

Brandes D., 1987b - *Die Mauervegetation im östlichen Niedersachsen*. Braunschw. Naturk. Schr. **2** (4): 607-627.

Brandes D., 1989a - *Die Siedlungs- und Ruderalvegetation der Wachau (Österreich)*. Tuexenia **9**: 183-197.

Brandes D., 1989b - *Spontane Vegetation von ligurischen Küstenorten*. Braun-Blanquetia **3** (2): 229-239.

Brandes D., 1989c - *Zur kenntnis der Ruderalvegetation von Mallorca*. Doc. Phytosoc. n.s. **11**: 112-123.

Brandes D., 1991 - *Soziologie und Ökologie von* Oxalis pes-caprae *L. im Mitterleergebiet unter besonderer Berück-fichtigung von Malta*. Pytocoenologia **19** (3): 285-306.

Brandes D., 1992 - Asplenietea-*Gesellschaften an sekündaren Standorten in Mitteleuropa*.

Ber. d. Reinh.- Tüxen - Ges. **4**: 73-93.

Brandes D. and Brandes E., 1981 - *Ruderal- und Saumgesellschaften des Etschtals zwischen Bozen und Rovereto*. Tuexenia n.s. **1**: 100-104.

Braun-Blanquet J., 1931. *Aperçu des groupements végétaux du Bas-Languedoc*. S.I.G.M.A. comm. **9**: 35-37.

Braun-Blanquet J., 1952 - Les groupements végétaux de la France méditerranéenne. C.N.R.S., Vaison-la-Romaine, Montpellier.

Braun-Blanquet J., 1964 - Pflanzensoziologie. Springer, Wien-New York.

Braun-Blanquet J. 1966 - *Vegetationsskizzen aus dem Baskenland mit ausbliken auf das Weitere Ibero-atlantikum*. Vegetatio **13** (3): 133-147.

Braun-Blanquet J., 1974 - *Die höheren Gesellschaftseinheiten der Vegetation des süeuropäisch-westmediterranen Raumes*. S.I.G.M.A. comm. **204**: 1-8.

Braun-Blanquet J. and Tüxen R. 1952: *Irische Pflanzengesellschaften*. Veröff. Geobot. Inst. Rübel Zürich **25**: 224-415.

Buchwald K., 1952 - Bericht über die Exkursion des Institutes für angewandte Botanik der Universität Tübingen vom 30.5 - 9.6.1952 an die oberitalienischen Seen und die Riviera Levante: 1-52.

Büker R., 1939 - *Die Pflanzengesellschaften des Masstischblattes Lengerich in Westfalen (Teutoburger Wald)*. Abh. Landesmuseum Prov. Westf. **8** (1): 1-108.

Caneva G., Dinelli A. and De Marco G., 1989 - *Vegetation of the upper parts of some archaeological structures in Rome and related monument conservation problems*. Braun-Blanquetia **3** (2): 299-302.

Caneva G., Dinelli A., De Marco G. and Vinci M., 1990 - *Halophylous vegetation in the deterioration of stone monuments in coastal environments*. Proceedings of the international symposium "Deterioration of monuments in the Mediterranean basin", Bari: 231-234.

Caneva G., De Marco G. and Pontrandolfi M.A., 1993 - *Plant communities on the walls of Venosa Castle (Basilicata, Italy) as biodeteriogens and bioindicators*. In: Thiel M.J. (editor). Proceedings of the international R.I.L.E.M./U.N.E.S.C.O. Congress "Conservation of stone and other matherials Research-Industry-Media", Paris. Vol. **1**: 263-270.

Caneva G., Dinelli A., De Marco G. and Vinci M., 1995 - *Le classi* Parietarietea diffusae *(Rivas-Martínez 1964) Oberd. 1977 e* Adiantetea *Br.-Bl. 1947 nelle aree archeologiche romane*. Fitosociologia **29**: 165-179.

Cantó P., Laorga S. and Belmonte D., 1986 - *Vegetacion y catalogo floristico del Peñon de Ifach (Alicante, España)*. Opusc. Bot. Pharm. Complutensis **3**: 4-88.

Crespo M.B. and Mateo G., 1988 - *Datos sobre algunas comunidades nitrófilas de la comarca de l'horta (València)*. Acta Bot. Barc. **37**: 95-104.

Cufodontis G., 1947 - *Die Gattung* Cymbalaria *Hill.; Nachträge und Zusammenfassung*. Bot. Notiser **107**: 135-156.

De Bolòs O., 1967 - *Comunidades vegetales de las comarcas proximas al litoral situadas entre los rios Llobregat y Segura*. Mem. R. Acad. Ciencias y Artes Barcelona **38** (1).

De Bolòs O. and Molinier R., 1958 - *Recherches phytosociologiques dans l'île de Majorque*. Collectanea Botanica **5** (3): 699-863.

De Bolòs O., Molinier R. and Montserrat P., 1970 - *Observations phytosociologiques dans l'île de Minorque*. Acta Geobot. Barcinon. **5**.

De Bolòs O. and Vigo J., 1972 - *Contribution à la géobotanique de l'île de Majorque*. Rapp. Comm. int. Mer Médit. **21** (3): 81-82.

De La Torre A., Vicedo M. and Alonso M.A., 1995 - *Flora y Vegetación de algunas islas de Alicante (SE España)*. Ecol. Medit. **21** (3/4): 113-126.

Díaz Gonzalez T.E., 1989 - *Biogeografia y sintaxonomia de comunidades rupicolas*. Proceedings of the international congress "9 jornadas internacionales de fitosociologia", Univ. De Alcala de Henares: 1-45.

Díaz Gonzalez T.E., Penas Merino A., Puente García E., Herrero Cembranos L., García González M.E., López Pacheco M.J. and Llamas García F. 1988 - *Síntesis de la vegetación nitrófila de la Provincia de León (NW de España)*. Acta Bot. Barc. **37**: 133-148.

Díaz Gonzalez T.E. and Fernández Prieto J.A., 1994 - *La vegetacion de Asturias*. Itinera Geobot. **8**: 243-528.

Esteve Chueca F., 1973 - *Vegetacion y flora de las regiones central y meridional de la provincia de Murcia*. BELMAR, Murcia.

Fernandez-Casas J., 1972 - *Notas fitosociologicas breves, II*. Trab. Dep. Bot. Univ. Granada **1**: 21-57.

Fernández Prieto J. A. and Herrera Gallastegui M., 1992 - Brassica oleracea *L.: distribución y ecología en las costas atlánticas ibéricas*. Lazaroa **13**: 121-128.

Folch i Guillèn R., 1981 - *La vegetació dels paisos catalans*. Institució Catalana d'Història Natural, Memoria n. **10**; Ketres, Barcelona.

Gil L., Llorens L., Tebar F.J. and Costa M., 1995 - *La vegetación de la isla de Cabrera*. Guía de la excursión geobotánica de las 15 Jornadas de Fitosociología: 51-66.

Gómez Mercado F. and Valle F., 1989 - *Sobre la clase* Parietarietea judaicae *en la provincia betica*. IX Jornadas de Fitosociologia (libro de resumenes): 43.

Gómez Mercado F. and Valle F., 1991 - *Novedades fotosociológicas del sector Subbético (provincia Bética)*. Rivasgodaya **6**: 137-144.

Görs S., 1966 - *Die Pflanzengesellschaften der Rebhänge am Spitzberg*. Die Natur- und Landschaftsschutzgebiete Baden-Württembergs **3**: 476-534.

Guitián J. and Guitián P., 1989 - *La influencia del las colonias de aves marinas en la vegetación de los acantilados del Noroeste ibérico*. Bol. Soc. Brot., s.3, **62**: 77-86.

Herrera Gallastegui M., 1995 - *Estudio de la vegetación y flora vascular de la cuenca del río Asón (Cantabria)*. Guineana **1**: 1-435.

Herrera M. and Fernández Prieto J.A., 1989 - *Vegetacion saxicola de la cuenca del rio Asón (Cantabria)*. IX Jornadas de Fitosociologia (libro de resumenes): 45-46.

Horvatic S., 1963 - *Vegetacijska karta otoka Paga s opcim pregledom vegetacijskih jedinica hrvatskog primorja*. Acta Biol. **4**: 1-187.

Hruska K., 1979 - *Sur la vegetation de la classe* Parietarietea muralis *Riv.-Mart. 1955 dans les Marches (Italie centrale)*. Doc. Phytosoc. n.s. **4**: 433-441.

Hruska K., 1982a - *La vegetation sinanthropique de Camerino et de ses alentours*. Guide de l'Excursion Internationale de Phytosociologie en Italie centrale, Univ. of Camerino: 285-304.

Hruska K., 1982b - *La vegetation des murs d'enceinte de Castiglione del Lago*. Guide de l'Excursion Internationale de Phytosociologie en Italie centrale, Univ. of Camerino: 479-483.

Hruska K., 1982c - *La vegetation d'une ferme abandonnee pres de Camerino*. Guide de l'Excursion Internationale de Phytosociologie en Italie centrale, Univ. of Camerino: 373-379.

Hruska K., 1985 - *La vegetazione delle mura in Umbria*. Arch. Bot. e Biogeogr. Ital. **61** (1-2): 82-92.

Hruska K., 1987 - *Syntaxonomical study of italian wall vegetation*. Vegetatio **73**: 13-20.

Hübschmann A., 1967 - *Über die Moosgesellschaften und das Vorkommen der Moose in den übrigen Pflanzengeselschaften des Moseltales*. Schr. Reihe Vegetationskde **2**: 63-122.

JOUANNE P., 1929 - *Essai de géographie botanique sur les forêts de l'Aisne*. Bull. Soc. Bot. Fr. **66**: 972-1005.

KAISER E., 1926 - *Die Pflanzenwelt des Hennebergisch-Fränkischen Muschelkalkgebietes*. Feddes Repert. Beih. **44**: 1-280.

LANG G., 1973 - Die Vegetation des westlichen Bodenseegebietes. Pflanzensoz. **17**. Gustav Fischer, Jena.

LOPEZ G., 1978 - *Contribucion al conocimiento fitosociologico de la serrania de cuenca, II*. Anal. Inst. Bot. Cavanilles **34** (2): 597-702.

LORENZONI G.G., 1961 - *Ricerche sulle stazioni a* Ceterach officinarum *Lam. et DC. delle valli del Natisone*. Accad. Scienze Lettere Arti Udine, Ser. **8** (1): 5-29.

LORIENTE-ESCALLADA E., 1976 - *La Cymbalario-Parietarietea diffusae en Cantabria*. Anal. Inst. Est. Ind. Econ. Ciencias **1**: 73-91.

MEERTENS M.H. and SCHAMINÉE J.H.J., 1991 - *Plantengemeenschappen van Nederland; 7:* Asplenietea trichomanis. Intern rapport 91/33, Inst. Voor Bos- en Natuuronderzoek, Leersum: 1-36.

MENNEMA J. and SEGAL S., 1967 - *Het geslacht* Parietaria *L. in Nederland*. Gorteria **3**: 96-102.

MOLINA ABRIL J.A., 1993 - *Resumen sintaxonómico de las comunidades vegetales de Francia y España hasta el rango de alianza*. Coll. Phytosoc. **23**: 55-110.

MUCINA, L. 1987 - Cymbalarietum muralis *v Piestanoch*. Zpr. Cs. Bot. Spolec. **22**: 53-55.

MUCINA, L. 1993 - *Asplenietea trichomanis*. In: GRABHERR G. & MUCINA L. (eds.): Die Pflanzengesellschaften Österreichs; Natürliche waldfreie Vegetation, vol. 2: 241-275.

NAVARRO ANDRES F. 1974 - *La vegetación de la sierra del Aramo y sus estribaciones (Asturias)*. Rev.Fac. Cienc. Oviedo, **15** (1): 111-243.

NIKLFELD H., 1979 - *Vegetationsmuster und Arealtypen der montanen Trokenflora in den nordöstlichen Alpen*. Stapfia **4**: 1-229.

OBERDORFER E., 1954 - *Über Unkrautgesellschaften der Balkanhalbinsel*. Vegetatio **4** (5): 379-410.

OBERDORFER E., 1957 - Süddeutsche Pflanzengesellschafte, 1. Gustav Fischer, Stuttgart.

OBERDORFER E., 1967 - *Systematische Ubersicht der westdeutschen Phanerogamen- und Gefässkryptogamen-Gesellschaften*. Schr. Reihe Vegetationskde. **2**: 7-62.

OBERDORFER E., 1969 - *Zur Soziologie der* Cymbalario-Parietarietea*, am Beispiel der Mauerteppich-Gesellschaften Italiens*. Vegetatio **12**: 208-213.

OBERDORFER E., 1975 - *Die Mauerfugen-Vegetation Siziliens*. Phytocoenologia **2** (1/2): 146-153.

OBERDORFER E., 1977 - Süddeutsche Pflanzengesellschafte, 1. Gustav Fischer, Stuttgart.

OBERDORFER E., 1949 - Pflanzensoziologische Exkursionflora für Süddeutschland und die angrenzenden Gebiete. Eugen Ulmer, Stuttgart.

ORTIZ S., 1988: *La vegetacion de los muros calizos del centro del Portugal*. Doc. Phytosoc. **11**: 505-512.

ORTIZ S. and RODRIGUEZ-OUBIÑA, 1993 - *Synopsis of the rupicolous vegetation of Galicia (NW Spain)*. Folia Geobot Phytotax. **28**: 15-47.

PASSARGE H., 1964 - *Pflanzengesellschaften des nordostdeutschen Flachlandes*. Pflanzensoziologie **13**: 1-324.

PEDROTTI F., 1988 - *Observations preliminaires sur la flore et la végétation de la ville de Trente (Italie du nord)*. Braun-Blanquetia **3**: 121-126.

PEINADO M., ALCARAZ F. and MARTINEZ-PARRAS J.M., 1992 - Vegetation of Southeastern Spain. Flora et Vegetatio Mundi **10**: J. Cramer; Berlin, Stuttgart.

PIGNATTI S., 1952 - *Introduzione allo studio fitosociologico della pianura veneta orientale*

con particolare riguardo alla vegetazione litoranea. Arch. Bot. **28***:* 265-329.

PIGNATTI S., 1960 - *Il significato delle specie poliploidi nelle associazioni vegetali*. Atti Ist. Ven. Sci. Lett. Arti **118**: 75-98.

PIGNATTI S., 1961 - *Il ruolo delle specie poliploidi nella vegetazione europea*. Arch. Bot. Biogeogr. Ital. **37**: 1-3.

POLDINI L., 1989 - La vegetazione del Carso isontino e triestino. LINT, Trieste.

POLDINI L. and VIDALI M., 1994 - *La vegetazione dei muri del Friuli-Venezia Giulia (NE Italia) e suo inquadramento nel contesto europeo*. Studia Geobot. **14** (1): 49-69.

POTT R., 1995 - Die Pflanzengesellschaften Deutschlands (2nd ed.). Eugen Ulmer, Stuttgart.

PUENTE GARCÍA E., 1988 - *Flora y vagetación de la cuenca alta del río Sil (Leon)*. Diput. Prov. Leon: 1-536.

QUEZEL P., 1953 - *Contribution a l'étude phytosociologique et géobotanique de la Sierra Nevada*. Mem. Soc. Brot. **9**: 5-77.

QUEZEL P., 1956 - *A propos de quelques groupements végètaux rupicoles des Pyrénées centrales espagnoles*. Collect. Bot. **5** (1): 173-190.

RIGUAL MAGALLON A., 1972 - Flora y vegetacion de la provincia de Alicante. Instituto de studios alicantinos, Alicante.

RIVAS-GODAY S., 1955 - *Aportaciones a la fitosociología hispánica*. Anal. Inst. Bot. Cavanilles **13**: 335-422.

RIVAS-GODAY S., 1964 - Vegetacion y flórula de la cuenca extremeña del Guadiana. Publ. Dip. Prov. Badajoz. Badajoz (Madrid).

RIVAS-MARTÍNEZ S., 1960 - *Roca, clima y comunidades rupícolas*. Anal. Real Acad. de Farmacía **2**: 153-168.

RIVAS-MARTÍNEZ S., 1969 - *Vegetatio Hispaniae. Notula I*. Publ. Inst. Biol. Apl. **46**: 5-34.

RIVAS-MARTÍNEZ S., 1971 - *Vegetacion potencial de la provincia de Granada*.Trab Dep. Botànica y F. Veg. **4**: 3-85.

RIVAS-MARTÍNEZ S., 1975 - *Mapa de vegetacion de la provincia de Avila* Anal. Inst. Bot. Cavanilles **32** (2): 1343-1556.

RIVAS-MARTÍNEZ S., 1980 - *Sinopsis de la vegetacion nitrofila rupestre (Parietarietea judaicae)*. Anal. Inst. Bot. Cavanilles **35**: 225-233.

RIVAS-MARTÍNEZ S., 1981 - *Sobre la vegetación de la Serra de Estrela (Portugal)*. Anal. Real Acad. de Farmacía **47** (4): 435-380.

RIVAS-MARTÍNEZ S., COSTA M., CASTROVIEJO S. and VALDÉS E., 1980 - *Vegetación de Doñana (Huelva, España)*. Lazaroa, **2**: 5-190.

RIVAS-MARTÍNEZ S., DÍAZ-GONZÁLEZ T., FERNÁNDEZ PRIETO J.A., LOIDI J. and PENAS A., 1984 - Los Picos de Europa. Ediciones Leonesas, Madrid.

RIVAS-MARTÍNEZ S., FERNÁNDEZ-GONZÁLEZ F. and SÁNCHEZ-MATA D., 1986 - *Datos sobre la vegetacion del sistema central y Sierra Nevada*. Opusc. Bot. Pharm. Complutensis **2**: 3-130.

RIVAS-MARTÍNEZ S., BÁSCONES J.C., DÍAZ-GONZÁLEZ T., FERNÁNDEZ-GONZÁLEZ F. and LOIDI J., 1991 - *Vegetación del Pirineo occidental y Navarra*. Itinera Geobot. **5**: 5-456.

RIVAS-MARTÍNEZ S., COSTA M., SORIANO P., PÉREZ R., LLORENS L. and ROSELLÓ J.A., 1992 - *Datos sobre el paisaje vegetal de Mallorca e Ibiza (Islas Baleares, España)*. Itinera Geobot., **6**: 5-98.

RIVAS-MARTÍNEZ S., ASENSI A., COSTA M., FERNÁNDEZ-GONZÁLEZ F., LLORENS L., MASALLES R., MOLERO MESA J., PENAS A. and PÉREZ DE PAZ P.L., 1994 - *El proyecto de cartografía y Inventariación de los tipos de hábitats de la directiva 92/43/CEE en España*. Coll. Phytosoc. **22**: 612-661.

RIVAS-MARTÍNEZ S., WILDPRET DE LA TORRE W., DEL ARCO AGUILAR M., RODRÍGUEZ O., PÉREZ DE PAZ P.L., GARCÍA-GALLO A., ACEBES GINOVÉS J.R., DÍAZ-GONZÁLEZ T. and FERNÁNDEZ-GONZÁLEZ F., 1993 - *Las comunidades vegetales de la isla de Tenerife (Islas Canarias)*. Itinera Geobotanica **7**: 5-167.

ROMO I DÍEZ A.M., 1989 - *Flora y vegetació del Montsec (pre-Pirineus central)*. Inst. Estud. Catal. Arx. Sec. Ciènc **90**; Barcelona.

ROSSI G., 1989 - *Wall vegetation of some fortresses in the south-eastern Po plain (Italy)*. Braun-Blanquetia **3** (2): 303-306.

RUIZ-TÉLLEZ T., 1988 - Vegetacion del tramo medio del valle del Tietar y el campo Arañuelo. Univ. Extremadura Fac. Ciènc. Grafica Extremeña; Badajoz.

RUIZ-TÉLLEZ T., 1991 - *Contribución al conocimiento de las comunidades de* Oryzopsi-Anthirrinetum granitici *corr. Rivas-Martínez 1969, del centro y sur del Portugal*. Acta Botanica Malacitana **16** (2): 391-403.

RUNGE F, 1966 - Die Pflanzengesellschaften Westfalens und Niedersachsens. Aschendorff, Münster.

RUNGE F., 1980 - Die Pflanzengesellschaften Mitteleuropas. Aschendorff, Münster.

SÁNCHEZ-MATA D., 1989 - Flora y vegetacion del macizo oriental del la sierra de Gredos (Avila). Inst. Gran Duque D'Alba; Excma. Diput. Prov. Avila; C. Martín Avila.

SCHMID H., 1980 - *Über einige Felspaltengesellschaften der umgebung von Regensburg*. Hoppea, Denkschr. Regensb. Bot. Ges. **39**: 235-249.

SCHWICKERATH M., 1944: *Das Hohe Venn und seine Randgebiete*. Pflanzensoziologie **6**: 1:297.

SEGAL S., 1963 - *Over het* Sagino- *en het* Filici-Bryetum argentei. Jaarb. Kon. Ned. Bot. Ver. **1963**: 41-42.

SEGAL S., 1969 - Ecological notes on wall vegetation. Junk, The Hague (NL).

SINISCALCO C. and MONTACCHINI F., 1989 - *Relation between ruderal and turfgrass vegetation in the city of Torino (Italy)*. Braun-Blanquetia **3**: 127-136.

SORIANO, I. 1996 - *La Vegetació de la serra de Moixeró, el massís de la Tosa d'Alp i àrees adjacents (Pirineus orientals) I: comunitats rupícoles i glareícoles*. Fol. Bot. Misc. **10**: 141-173.

TÜXEN R., 1937 - *Die Pflanzengesellschaften Nordwestdeutschlands*. Mitt. Flor.-soz. Arbeitsgem. Niedersachsen **3**: 1-170.

TÜXEN R. and OBERDORFER E., 1958 - *Die Pflanzenwelt Spaniens*; Teil II: *Eurosibirische Phanerogamen-Gesellschaften Spaniens*. Veröff. Geobot. Inst. Rübel Zürich **32**: 1-328.

TÜXEN R., 1977 - *Asplenietea rupestria, Parietarietea muralis*. Bibl. Phytosoc.. Syntax. **29**: 1-173.

VALACHOVIC M., 1995 - *Asplenietea trichomanis*. In: VALACHOVIC M. (ed.) *Rastlinné spolocenstvá Slovenska*; *Pionierska vegetácia* **1**: 15-41. Bratislava.

VIGO J. and TERRADAS J., 1969 - *Sobre la vegetación de la zona de acantilados triásicos del baix Llobregat*. Acta Geobot. Barcinon. **4**.

VIVES J., 1964 - *Vegetación de la alta cuenca del Cardener*. Acta Geobot. Barcinon. **1**.

WESTHOFF V., 1975 - Plantengemeenschappen in Nederland. B.V. W. J. Thieme & Cie, Zutphen.

TABLE 1

SYNTAXONOMIC SCHEME FOLLOWED BY THE AUTHORS OF THE CONSULTED BIBLIOGRAPHY

Rivas-Martínez in Rivas-Goday 1955:
Asplenietea rupestris
Parietarienea rupestris
Parietarietalia

Rivas-Martínez 1960:
Asplenietea rupestris
Parietarietalia muralis
Parietario-Galion muralis.
Parietario-Centranthion rubri

Braun-Blanquet 1964:
Asplenietea rupestris
Parietarietalia diffusae
Linario-Parietarion diffusae

Rivas-Goday 1964:
Parietarietea
Parietarietalia
Parietario-Galion muralis

Braun-Blanquet, 1966:
Asplenietea rupestris
Parietarietalia muralis
Asplenio-Sedion
Parietario-Galion muralis.

Oberdorfer et al. 1967, Oberdorfer 1975:
Cymbalario-Parietarietea diffusae
Parietarietalia muralis
Parietario-Galion muralis.

Segal 1969, Westhoff & Den Held 1975:
Asplenietea rupestris
Tortulo-Cymbalarietalia
Parietarion judaicae
Cymbalario-Asplenion

Oberdorfer 1969:
Cymbalario-Parietarietea diffusae
Parietarietalia muralis
Galio-Parietarion muralis.

Rivas-Martínez 1969:
Asplenietea rupestria
Parietarietalia muralis
Galio-Parietarion mauritanicae
Parietario-Centranthion rubri

Rivas-Martínez 1975:
Asplenietea rupestria
Parietarietalia muralis
Centrantho-Parietarion judaicae

Loriente Escallada 1976:
Cymbalario-Parietarietea diffusae
Parietarietalia muralis
Parietario-Centranthion rubri

Oberdorfer 1977, Rivas-Martínez 1980, Rivas-Martínez et al. 1980, Hruska 1982, Rivas-Martínez et al. 1984, Bartolo & Brullo 1986, Cantò et al. 1986, Rivas-Martínez et al. 1986, Crespo & Mateo, 1988, Díaz Gonzalez et a. 1988, Ruiz-Téllez 1988, Pedrotti 1989, Poldini 1989, Rossi 1989, Sanchez-Mata 1989, Molina et al. 1991, Ruiz-Téllez 1991, Astolfi et al. 1994, Biondi et al. 1994, Caneva et al. 1995:
Parietarietea judaicae.
Parietarietalia judaicae
Centrantho-Parietarion judaicae

Díaz Gonzalez, 1989, Rivas-Martínez et al. 1991, 1992, 1993, Ortiz & Rodriguez Oubiña 1993, Díaz Gonzalez & Fernandez Prieto 1994, Molina Abril 1994, Soriano 1996:
Asplenietea trichomanis
Parietarietalia
Parietario-Galion muralis.

Romo I Díez 1989:
Asplenietea rupestria
Parietarietalia judaicae
Parietario-Centranthion rubri

Peinado et al. 1992, Herrera, 1995:
Asplenietea trichomanis
Parietarietalia judaicae
Parietario-Galion muralis.

Mucina 1993, Valachovic 1995:
Asplenietea trichomanis
Tortulo-Cymbalarietalia
Cymbalario-Asplenion

Poldini & Vidali 1994:
Asplenietea trichomanis
Tortulo-Cymbalarietalia
Cymbalario-Asplenion
Parietarietea judaicae.
Parietarietalia judaicae

Brullo & Guarino 1997:
Parietarietea judaicae.
Tortulo-Cymbalarietalia
Parietarion judaicae
Cymbalario-Asplenion
Parietario judaicae-Hyoscyamion aurei

TABLE 2

A OXALIDO-PARIETARIETUM JUDAICAE TYPICUM

B OXALIDO-PARIETARIETUM JUDAICAE CYMBALARIETOSUM MURALIS

Type of association	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B
Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Number of relevés	5	3	3	23	14	1	3	3	10	8	9	2	8	23	3	4	3	20	12	8	6	20	9	1	3	2	5	6	4	2	4	1	11	1	9
Diff. of association																																			
Parietaria judaica	V	3	3	V	V	1	3	3	V	V	V	2	V	V	3	4	3	V	V	V	V	V	V	1	1	2	IV	V	4	1	4	1	V	1	IV
Char. *Parietarion judaicae*																																			
Ficus carica	.	.	.	I	II	.	.	1	I	.	.	.	.	III	.	.	2	II	II	II	.	.	I	.	.	.	.	.	.	.	.	I	.	.
Hyoseris radiata	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	IV	II	IV	.	I	II	.	2	.	.	.	.	.	.	.	II	.	.
Reichardia picroides	.	.	2	.	V	.	1	.	.	.	I	.	.	.	.	.	.	.	III	II	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Centranthus ruber	II	.	.	I	.	.	.	.	.	.	.	.	.	I	.	.	2	IV	IV	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.
Cheiranthus cheiri	.	.	.	.	.	.	.	.	I	I	.	.	I	I	.	.	.	I	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Capparis spinosa	.	.	1	.	.	.	.	.	I	.	.	.	IV	.	.	.	.	.	I	IV	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.
Hyoscyamus albus	I	.	.	.	.	.	.	.	.	.	.	.	.	III	.	.	.	I	.	II	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.
Antirrhinum tortuosum	.	.	.	.	.	.	.	.	I	.	.	.	.	I	.	.	.	.	.	II	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.
Antirrhinum siculum	.	.	.	.	.	.	.	.	.	IV	.	.	.	.	.	.	.	II	.	IV	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.
Matthiola incana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	II	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Umbilicus horizontalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Phagnalon sordidum	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cicerbita tenerrima	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Petroselinum crispum	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. *Tortulo-Cymbalarietalia* & *Parietarietea judaicae*																																			
Cymbalaria muralis	I	.	1	I	III	.	.	3	II	I	II	1	IV	III	.	1	1	I	.	.	.	.	V	1	3	2	V	V	4	2	4	1	V	1	V
Sonchus tenerrimus	.	.	1	.	V	1	2	2	IV	V	II	.	.	.	.	3	2	V	III	IV	V	.	IV	.	1	.	I	II	.	.	.	1	.	.	II
Sedum dasyphyllum	I	.	1	IV	.	1	.	.	.	.	I	.	.	.	2	.	.	II	I	.	.	.	.	.	.	.	.	.	1	.	1	.	.	.	.
Antirrhinum majus	.	1	3	.	.	.	1	.	.	.	I	.	.	.	.	.	.	III	I	.	.	.	I	.	1	1	.	.	1	.	.	.	I	.	.
Asplenium trichomanes ssp. quadrivalens	.	.	.	II	I	1	.	1	.	.	I	.	.	.	.	.	.	.	.	.	.	I	.	1	.	.	.	.	1	.	.	.	I	.	.
Ceterach officinarum	.	.	.	IV	.	1	.	.	.	.	.	.	.	IV	1	.	.	II	.	.	I	.	.	1	.	.	.	.	.	.	.	.	.	.	.
Umbilicus rupestris	I	.	.	IV	.	.	.	.	.	I	.	.	.	V	.	.	.	III	I	.	.	.	I	.	.	.	V	.	.	2	.	.	.	.	.
Erigeron karwinskianus	.	.	.	I	.	.	.	.	.	.	II	.	.	III	.	.	.	I	.	.	.	I	I	.	.	.	.	.	.	.	.	.	.	.	.

1 Arènes, 1929. Ass. 47
2 Soriano, 1996. Tab. 1, rel. 1, 2, 5.
3 Biondi et al.,1994. Tab.15, rel.15-17.
4 Braun-Blanquet, 1952. Tab. pag. 27
5 Hruska, 1985. Tab. 1, 4.
6 Bolos, 1967. Tab. 6, rel. 4.
7 Hruska, 1982a. Tab. 2, rel. 1-3.
8 Hruska, 1982b. Tab. 1, rel.3-5.
9 Caneva et al., 1995. Tab. 5, rel.1-10.
10 Oberdorfer, 1975. Tab. 1, rel. 5-12.
11 Oberdorfer, 1969.Tab. 1, rel.1-5; 10-13.
12 Ortiz & Rodriguez-Oubina, 1993. Tab. 3, 13.
13 Rossi, 1989. Tab.1, rel. 6, 7, 9, 10, 12-15.
14 Ruiz-Tellez, 1991. Tab. 1a, rel. 1-10, 12-14, 16, 17, 19-21, 24-28.
15 Vives, 1964. Tab. 2, rel. 10-12.
16 Crespo & Mateo, 1988. Tab. 1, rel.1-4.
17 De Marco & Caneva, Cilento (S.Italy), unpubl.
18 Bartolo & Brullo, 1986. Tab. 1.
19 Brullo, Scelsi & Spampinato; Aspromonte (S.Italy), unpubl.
20 Brullo, Pavone & Ronsisvalle; Malta, unpubl.
21 Brandes, 1989c. Tab. 5 rel.1, 3-7.
22 Brandes, 1989b. Tab. 1, 4.
23 Bartolo & Brullo, 1986. Tab. 6.
24 Bolos, 1967. Tab. 6, rel. 1.
25 Hruska, 1982a. Tab. 2, rel. 4-6.
26 Rivas-Martinez, 1993. Tab. 45, rel. 7, 9.
27 Caneva et al., 1995. Tab. 2.
28 Caneva et al., 1995. Tab.4, ril 1-6.
29 Oberdorfer, 1969. Tab. 1, rel. 6-9.
30 Ruiz-Tellez, 1991. Tab. 1a, rel. 15, 18.
31 Vives, 1964. Tab. 2, rel. 13-16.
32 Crespo & Mateo , 1988. Tab. 1, rel.5.
33 Brandes, 1989b. Tab. 1, 5.
34 Soriano, 1996. Tab. 1, rel.3.
35 Brandes, 1989c. Tab. 6.

TABLE 3

CAPPARIDETUM RUPESTRIS

Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Number of relevés	4	2	3	13	27	7	10	14	7	3	4	4	3	7	11	1
Diff. of association																
Capparis spinosa	4	2	3	V	V	V	V	V	V	3	2	4	3	V	V	1
Char. *Parietarion judaicae*																
Ficus carica	1	.	.	I	II	.	IV	I	IV	1	.	4	.	I	II	.
Centranthus ruber	4	2	1	II	II	II	IV	.	.	.	.	.	.	.	.	.
Reichardia picroides	2	1	3	.	I	IV	.	I	I	.	.	.	.	.	.	.
Hyoscyamus albus	.	.	.	.	.	II	II	I	.	1	.	.	2	.	II	.
Cheiranthus cheiri	.	1	.	.	.	.	.	I	I	.	.	1	3	III	.	.
Hyoseris radiata	.	.	2	.	.	.	IV	.	III	.	.	.	.	.	II	.
Umbilicus horizontalis	2	.	.	.	.	.	.	II	.	.	1	.	.	.	.	.
Antirrhinum tortuosum	.	.	.	III	I	.	.	.	.	.	.	.	.	.	III	.
Antirrhinum siculum	.	.	.	.	.	II	.	.	.	.	.	.	.	.	III	.
Phagnalon sordidum	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.
Cicerbita tenerrima	.	.	.	.	.	.	.	.	.	2	1	.	.	.	.	.
Matthiola incana	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. *Tortulo-Cymbalarietalia* & *Parietarietea judaicae*																
Parietaria judaica	4	2	2	II	V	IV	V	III	II	3	3	3	3	V	V	1
Sonchus tenerrimus	3	.	1	III	IV	.	IV	IV	V	2	4	2	1	.	V	.
Antirrhinum majus	2	.	.	.	I	.	II	II	IV	1	1	2	.	III	.	.
Cymbalaria muralis	.	.	.	I	IV	.	.	I	II	.	.	2	1	III	.	.
Umbilicus rupestris	.	.	.	.	I	.	II	.	.	1	1	.	.	.	.	.
Sedum dasyphyllum	.	.	.	.	II	.	I	I	.	.	.	.	.	.	.	.
Ceterach officinarum	.	.	.	.	.	.	.	.	I	.	1	1	.	.	.	.
Erigeron karwinskianus	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.

1 De Marco & Caneva; Cilento (S.Italy), unpubl.
2 Brandes, 1989b. Tab. 1,1.
3 Hruska, 1979. Tab.1, rel. 23-25.
4 Caneva et al., 1995. Tab. 10.
5 Segal, 1969. Tab. 10.
6 Guarino; Peloritani mount. (Sicily), unpubl.
7 Bartolo & Brullo, 1986. Tab. 6.
8 Biondi et al.,1994. Tab.15, rel.1-14.
9 Hruska, 1985. Tab. 1, 8.
10 Bolos & Molinier, 1958. Tab. 18.
11 Bolos, 1967. Tab. 1, Bc. 11.
12 Hruska, 1982b. Tab. 1, rel. 6-9.
13 Rivas-Martìnez et al., 1992. Tab. 37.
14 Rossi, 1989. Tab.1, rel. 1,2,4,5,8,11,16.
15 Brullo, Pavone & Ronsisvalle; Malta, unpubl.
16 Brandes 1989c. Tab. 4, rel. 1

TABLE 4

A HYOSCYAMO ALBI-PARIETARIETUM JUDAICAE
B CYMBALARIO-CRITHMETUM MARITIMI
C CYMBALARIO-TRACHELIETUM COERULEI
D CENTRANTHO-HYPERICETUM MAJORIS
E ADIANTO-PARIETARIETUM JUDAICAE
F SONCHO DIANAE-PARIETARIETUM MAURITANICAE
G ORYZOPSIO MILIACEAE-ANTIRRHINETUM GRANITICI
H CALENDULO ALGARBIENSIS-PARIETARIETUM DIFFUSAE

Type of association	A	A	A	A	A	A	A	B	B	B	C	C	C	C	C	C	D	D	E	E	E	E	E	E	F	F	F	G	G	G	H
Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Number of relevés	6	2	4	11	7	7	1	9	3	7	4	13	3	3	3	7	7	8	4	9	10	3	1	5	3	4	2	2	4	3	3	4
Diff. of association																															
Hyosciamus albus	V	2	4	V	V	V	1	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Crithmum maritimum	.	.	.	.	.	.	.	V	3	V	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Matricaria maritima	.	.	.	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Asplenium marinum	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trachelium caeruleum	.	.	.	.	.	.	.	.	.	.	4	V	3	3	3	V	V	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hypericum hircinum ssp. majus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	V	4	.	.	.	.	.	.	.	.	.	.	.	.
Adiantum capillus-veneris	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	V	V	3	1	V	3	.	.	.	.	.	.
Sonchus dianae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	2	2	.	.	.
Parietaria mauritanica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	.	.	.	.	.
Lavatera maritima	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	2	.	.	.	.
Ballota hispanica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.
Antirrhinum graniticum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	3	3	.
Oryzopsis miliacea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	.	.
Calendula algarbiensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4
Char. *Parietarion judaicae*																															
Centranthus ruber	.	.	2	.	II	.	.	III	.	.	4	.	2	2	2	II	III	V	4	.	I	.	.	.	.	.	.	.	2	1	.	.
Ficus carica	.	.	1	.	.	I	.	.	.	.	.	.	.	.	.	I	I	.	.	.	II	.	.	.	.	2	1	.	1	1	.	.
Capparis spinosa	II	2	.	.	II	IV	.	.	.	.	.	I	.	.	2	I	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.
Hyoseris radiata	III	.	.	.	.	.	.	.	.	.	1	.	.	.	.	I	I	.	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Cicerbita tenerrima	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III	2	.	.	.	.	.	.	4	.	.	.	.	3	.
Reichardia picroides	.	.	.	.	.	II	.	.	2	.	.	I	.	.	.	.	V	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Antirrhinum siculum	.	.	.	.	.	II	.	.	.	.	3	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Umbilicus horizontalis	.	.	.	.	.	.	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	.	.	1	.	.	.
Antirrhinum tortuosum	.	.	.	.	.	.	.	2	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Matthiola incana	.	.	.	.	II	.	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cheiranthus cheiri	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Petroselinum crispum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Phagnalon sordidum	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. *Tortulo-Cymbalarietalia* & *Parietarietea judaicae*																															
Parietaria judaica	V	2	4	V	V	V	1	IV	3	V	.	V	2	2	3	V	V	V	3	V	III	3	1	V	3	2	2	2	.	3	3	4
Cymbalaria muralis	.	2	1	I	.	.	.	IV	3	IV	4	IV	3	3	.	III	.	V	.	III	I	.	1	III	3	.	.	.	4	2	1	.
Umbilicus rupestris	II	.	.	.	III	.	.	.	.	.	.	.	.	.	.	IV	II	III	4	.	I	.	.	.	.	.	2	.	3	3	3	2
Sonchus tenerrimus	IV	2	.	III	II	II	1	III	.	V	2	IV	.	.	2	III	III	.	.	I	.	1	.	.	.	.	.	.	.	.	.	.
Ceterach officinarum	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	V	III	IV	2	.	.	.	.	.	.	3	.	.	.	2	1	.
Asplenium trichomanes ssp. quadrivalens	.	.	.	.	.	.	.	.	1	.	.	.	3	3	.	I	.	IV	4	.	.	.	.	.	.	.	.	.	1	1	1	.
Erigeron karwinskianus	.	.	1	.	.	.	.	I	.	.	.	.	.	.	.	I	.	.	.	I	.	.	.	.	.	.	.	.	.	3	.	.
Antirrhinum majus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sedum dasyphyllum	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	V	.	II	.	.	II	.	.	.	.	4	.	.	.	.	.	.

1 Bartolo & Brullo, 1986. Tab. 8.
2 Caneva et al., 1995. rel. pag. 174.
3 Ruiz-Tellez, 1991. Tab. 1b, rel. 30-33.
4 Segal, 1969. Tab. 12.
5 De Marco & Caneva; Cilento (S.Italy), unpubl.
6 Guarino; Peloritani mount. (Sicily), unpubl.
7 Brullo, Scelsi & Spampinato; Aspromonte (S.Italy), unpubl.
8 Segal, 1969. Tab. 17.
9 Rivas-Martinez, 1969. Tab. 1, rel. 5-7.
10 De Marco & Caneva; Cilento (S.Italy), unpubl.
11 Bartolo & Brullo, 1986. Tab.7.
12 Caneva et al., 1995. Tab.3, rel.1-13.
13 Ortiz & Rodriguez-Oubina, 1993. Tab. 3, 14.
14 Rivas-Martinez, 1969. Tab. 3.
15 De Marco & Caneva; Cilento (S.Italy), unpubl.
16 Guarino; Peloritani mount. (Sicily), unpubl.
17 Brullo, Scelsi & Spampinato; Aspromonte (S.Italy), unpubl.
18 Rivas-Martinez,1969. Tab. 2
19 Brullo & Guarino; Etna (Sicily), unpubl.
20 Rivas Martinez et al., 1993. Tab. 46.
21 Segal, 1969. Tab. 6.
22 Crespo & Mateo, 1988. Tab. 1, rel.6-8.
23 De Marco & Caneva; Cilento (S.Italy), unpubl.
24 Brandes, 1989b. Tab. 1, 6.
25 Caneva et al., 1995. Tab.4, ril 7-9.
26 Esteve Chueca, 1973. Tab. pag. 85.
27 Rigual Magallon, 1973. Tab. pag. 52.
28 Cantò et al., 1986. Tab. 3, rel. 1-2.
29 Rivas-Goday, 1964. Pag. 106, cuadro 2, rel. 6-7; tab. pag. 107.
30 Ruiz-Tellez, 1991. Tab. 1c, rel. 36, 37; tab. 1a, rel. 23.
31 Sànchez Mata, 1989. Tab. 29 rel. 1, 2, 8.
32 Guitiàn & Guitiàn, 1989. Tab. 1.

TABLE 5

A CENTRANTHETUM RUBRI TYPICUM

B CENTRANTHETUM RUBRI ASPLENIETOSUM TRICHOMANIS

Type of association	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B
Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Number of relevés	10	5	3	2	3	4	4	2	4	7	11	5	4	2	4	5	6	1	1	16	2	2
Diff. of association																						
Centranthus ruber	V	5	3	2	3	4	4	2	4	V	V	V	4	2	4	V	V	1	1	V	2	2
Diff. subassociation																						
Asplenium trichomanes ssp. quadrivalens	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III	1	1	I	2	2
Asplenium ruta-muraria	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	IV	1	1	.	1	.
Tortula muralis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	IV	2	.
Homalotecium sericeum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I	.	1
Barbula vinealis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	1	2
Bryum caespiticium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	1	2
Bryum capillare	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	1	.
Char. *Parietarion judaicae*																						
Reichardia picroides	.	5	1	.	2	.	.	.	1	IV	I	I	.	.	.	III	.	.	.	II	.	2
Hyoseris radiata	IV	3	3	.	2	.	.	.	.	II	III	I	.	.	.	II	.	.	.	.	.	.
Ficus carica	III	.	.	.	.	.	.	2	1	II	.	I	.	.	.	.	I	.	.	II	.	.
Capparis spinosa	IV	.	.	.	.	.	.	.	.	.	.	I	.	.	.	I	.	.	.	.	.	.
Cheiranthus cheiri	.	.	.	.	.	.	.	1	.	.	I	.	.	2	.	.	.	.	.	.	.	.
Umbilicus horizontalis	.	.	.	.	.	1	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	2
Antirrhinum siculum	III	.	.	.	.	.	.	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.
Phagnalon sordidum	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II	.	.
Matthiola incana	.	.	.	.	.	.	.	.	2	II	.	.	.	.	.	.	.	.	.	.	.	.
Hyoscyamus albus	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Antirrhinum tortuosum	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Char. *Tortulo-Cymbalarietalia* & *Parietarietea judaicae*																						
Parietaria judaica	V	.	2	2	1	4	4	2	4	V	V	III	4	2	4	IV	V	.	1	V	2	2
Sonchus tenerrimus	V	.	2	2	1	1	3	.	.	III	.	III	3	.	.	I	.	.	.	V	2	1
Antirrhinum majus	I	3	1	1	.	.	.	.	1	I	.	.	.	.	.	I	I	.	.	I	1	.
Cymbalaria muralis	.	.	.	2	.	.	2	1	1	.	.	.	.	.	3	I	IV	.	1	II	2	.
Sedum dasyphylium	I	.	.	1	.	.	.	.	.	I	.	I	.	.	.	IV	II	.	.	IV	.	.
Umbilicus rupestris	III	.	.	.	.	.	.	2	.	II	.	I	.	.	.	.	.	.	1	IV	1	2
Ceterach officinarum	I	.	1	.	.	.	.	2	.	.	.	II	.	.	.	.	.	.	1	III	.	2
Erigeron karwinskianus	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	II	I	.	.	1	.	.

1 Bartolo & Brullo, 1986. Tab. 2.
2 Hruska, 1985. Tab.1, 7.
3 Hruska, 1979. Tab. 1, rel.20-22.
4 Bolos, 1967.Tab. 6, rel. 2-3.
5 Hruska, 1982a. Tab. 2, rel. 9-11.
6 Rivas Martìnez et al., 1993. Tab. 45, rel.1-4.
7 Caneva et al., 1995. Tab. 7.
8 Ruiz-Tellez, 1991. Tab. 1a, rel. 11, 22.
9 De Marco & Caneva, unpubl.
10 Brullo, Scelsi & Spampinato; Aspromonte (S.Italy), unpubl.
11 Brandes, 1989b. Tab. 1, 2.
12 Guarino; Peloritani mount. (Sicily), unpubl.
13 Brandes, 1989c. Tab.4, rel.2-4; rel.1 pag. 114.
14 Lopez, 1978. Tab.4.
15 Brandes & Brandes, 1981. Tab. 2, rel. 1-4.
16 Oberdorfer, 1969. Tab. 1 rel.14-18.
17 Brullo, Guarino & Scelsi; Garda lake (N.Italy), unpubl.
18 Brandes, 1987a. rel. pag. 3.
19 Braun-Blanquet, 1966. Tab. 3, rel. 3.
20 Segal, 1969. Tab. 3, a2-1.
21 Segal, 1969. Tab. 21, rel. 2-3.
22 Brullo & Guarino; Etna (Sicily), unpubl.

TABLE 6

LINARIO-ERIGERONETUM MUCRONATI

Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12
Number of relevés	5	1	8	8	1	9	5	1	5	2	26	3
Diff. of association												
Erigeron karwinskianus	V	1	V	V	1	V	V	1	V	2	V	3
Polygonum capitatum	.	.	.	.	.	.	V	.	.	.	.	.
Char. *Parietarion judaicae* & *Parietarietea judaicae*												
Parietaria judaica	III	1	V	V	1	III	IV	1	V	1	III	3
Cymbalaria muralis	I	1	III	I	1	II	IV	1	.	2	IV	3
Asplenium trichomanes ssp. quadrivalens	.	.	.	.	.	II	I	1	V	2	III	3
Centranthus ruber	.	.	.	II	.	.	.	1	V	1	III	.
Ceterach officinarum	.	.	.	.	II	II	.	.	II	1	.	1
Umbilicus rupestris	.	.	.	.	1	.	III	1	.	.	I	.
Sonchus tenerrimus	III	.	II	.	.	.	.	.	.	.	III	.
Antirrhinum majus	.	.	.	.	.	.	.	.	III	.	I	.
Sedum dasyphyllum	.	.	.	.	.	III	.	.	.	.	I	2
Asplenium ruta-muraria	.	.	.	.	.	.	.	.	I	.	I	1
Ficus carica	.	.	.	.	.	.	.	.	III	.	II	.
Hyoseris radiata	I	.	.	I	.	.	.	.	.	.	.	.
Reichardia picroides	III	.	.	I	.	.	.	.	.	.	.	.
Capparis spinosa	.	.	I	.	.	.	.	.	.	.	.	.
Matthiola incana	.	.	.	.	.	.	.	.	.	.	I	.
Phagnalon sordidum	.	.	.	.	.	.	.	.	.	.	I	.

1 Hruska, 1985. Tab.1, 6.
2 Rivas Martìnez et al., 1993. Tab. 45, rel. 8.
3 Caneva et al., 1995. Tab.6.
4 Brandes, 1989b. Tab. 1, 3.
5 Braun-Blanquet, 1966. rel. pag.144.
6 Oberdorfer, 1969. Tab. 1, rel.19-27.
7 Ortiz & Rodrìguez-Oubina, 1993. Tab. 8.
8 Ruiz-Téllez, 1991. Tab. 1c, rel. 34.
9 Brullo, Guarino & Scelsi; Garda lake (N.Italy), unpubl.
10 Herrera, 1995. Tab. 10, rel. 13, 14.
11 Segal, 1969. Tab. 19.
12 Guarino; Garda lake (N.Italy), unpubl.

TABLE 7

A ANTIRRHINO LINKIANI-PARIETARIETUM JUDAICAE
B CHAENORRHINO CRASSIFOLII-SARCOCAPNETUM ENNEAPHYLLAE
C PARIETARIO-MATTHIOLETUM INCANAE
D CHAENORRHINO GRANATENSIS-PARIETARIETUM JUDAICAE
E ANTIRRHINETUM BARRELIERI
F PARIETARIO JUDAICAE-BRASSICETUM OLERACEAE
G ANTIRRHINETUM SICULI
H MAJORANETUM ONITAE
I ANTIRRHINETUM TORTUOSI
L UMBILICETUM HORIZONTALIS
M UMBILICETUM RUPESTRI-NEGLECTI
N PARIETARIO JUDAICAE-PHYLLITIDETUM SAGITTATAE

Type of association	A	A	B	C	C	D	E	F	G	G	G	G	G	H	I	L	L	L	L	L	L	M	N	N	N
Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Number of relevés	13	2	11	1	1	7	1	1	7	8	1	5	18	11	14	2	1	13	1	6	?	7	1	2	1
Diff. of association																									
Antirrhinum majus ssp. linkianum	V	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sarcocapnus enneaphyllus	.	.	V	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Chaenorrhinum crassifolium	.	.	V	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Matthiola incana	.	.	.	1	1	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.
Hyoscyamus albus var. majus	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Chaenorrhinum granatensis	.	.	.	.	.	V	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Antirrhinum australe	.	.	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Antirrhinum barrelieri	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Brassica oleracea	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Antirrhinum siculum	.	.	.	.	.	.	.	.	V	V	1	V	V	V	.	.	.	.	.	.	.	.	.	.	.
Majorana onites	.	.	.	.	.	.	.	.	.	.	.	.	.	V	.	.	.	.	.	.	.	.	.	.	.
Antirrhinum tortuosum	.	.	.	.	.	.	.	.	.	.	.	III	.	.	V	.	.	.	.	.	.	.	.	.	.
Umbilicus horizontalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	V	1	V	X	.	.	.	.
Umbilicus neglectus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	V	.	.	.
Phyllitis sagittata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	1
Char. *Parietarion judaicae*																									
Ficus carica	I	1	.	1	.	I	.	.	II	.	.	I	II	V	I	.	.	II	.	III	.	.	.	.	.
Capparis spinosa	.	.	.	.	.	.	.	.	IV	IV	.	III	III	V	III	.	.	.	.	.	X	.	.	.	.
Centranthus ruber	I	.	I	.	.	.	.	1	IV	.	.	.	.	III	I	.	.	.	.	.	.	.	.	.	.
Hyoseris radiata	.	.	.	1	.	.	.	.	II	.	1	III	.	IV	.	.	.	.	.	.	.	.	.	.	.
Hyoscyamus albus	.	.	.	.	.	I	.	.	II	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.
Reichardia picroides	.	.	.	.	.	.	.	.	.	IV	1	.	.	IV	.	.	.	.	.	.	.	.	.	.	.
Petroselinum crispum	I	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phagnalon sordidum	.	.	II	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cheiranthus cheiri	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.
Cicerbita tenerrima	.	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. *Tortulo-Cymbalarietalia* & *Parietarietea judaicae*																									
Parietaria judaica	V	2	III	.	1	V	1	1	V	V	1	V	III	IV	IV	2	1	V	1	V	X	II	1	2	1
Sonchus tenerrimus	.	.	.	.	1	III	.	.	IV	IV	1	V	II	V	IV	.	.	.	1	I	.	.	1	.	1
Umbilicus rupestris	II	2	II	1	.	III	.	.	I	I	.	.	.	II	I	.	.	.	.	.	.	III	1	.	.
Ceterach officinarum	I	1	.	1	.	.	.	.	.	i	.	.	.	.	.	.	.	.	.	.	.	.	1	.	1
Cymbalaria muralis	III	.	.	.	.	.	1	.	.	.	.	.	.	.	II	.	.	.	.	.	X	.	1	.	.
Sedum dasyphyllum	.	.	.	.	.	.	.	.	I	IV	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.
Antirrhinum majus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	IV	X	.	.	.	.
Erigeron karwinskianus	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

1 Ortiz, 1988. Tab.1
2 Ruiz Tellez 1991. Tab 1d, ril 41-42.
3 Lopez, 1978. Tab.5.
4 Bolos, Molinier & Monserrat, 1970. rel. pag. 97.
5 Vigo & Terradas, 1969. rel. pag. 13.
6 Gomez Mercado & Valle, 1991. Tab. 1.
7 Esteve Chueca 1973. rel. pag. 86.
8 Fernandez Prieto & Herrera Gallastegui, 1992. rel. pag. 122.
9 Bartolo & Brullo, 1986. Tab. 3.
10 Guarino; Peloritani mount. (Sicily), unpubl.
11 Brullo, Scelsi & Spampinato; Aspromonte (S.Italy), unpubl.
12 Brullo, Pavone & Ronsisvalle; Malta, unpubl.
13 Brandes, 1991. Tab.3.
14 Bartolo & Brullo, 1986. Tab. 4.
15 Caneva et al., 1995. Tab.9.
16 Rivas Martinez et al., 1993. Tab. 45, rel. 5-6.
17 Cantò et al., 1986. Tab. 3, rel. 3.
18 De Marco et al., 1993. Tab. 1, rel. 7-15, 17-20.
19 Bolos, 1967. rel. pag. 15.
20 De Marco & Caneva; Cilento (S.Italy), unpubl.
21 Horvatic, 1963. Ass. pag. 11.
22 Rivas Martinez et al., 1980. Tab. 37.
23 Bolos & Molinier, 1958. rel. pag. 801.
24 Rivas-Martinez et al., 1992. Tab. 38.
25 Brandes, 1989c. Tab 5, rel.2.

A LINARIO CYMBALARIAE-SOLEIROLIETUM SOLEIROLII
B DRYOPTERIDO-SAGINETUM PROCUMBENTIS
C CYMBALARIO-ASPLENIETUM VIRIDIS
D ASPLENIETUM FONTANO-RUTAE-MURARIAE
E CORYDALIDETUM LUTEAE
F CYMBALARIO MURALIS-PHYLLITIDETUM SCOLOPENDRII
G ASPLENIO TRICHOMANIS-CYSTOPTERIDETUM FRAGILIS
H SEDO DASYPHYLLI-CETERACHETUM OFFICINARUM
I SEDO MICRANTHI-SAXIFRAGETUM BABIANAE

Type of association	A	B	B	B	C	D	D	D	E	E	E	E	E	E	E	E	F	F	F	F	G	G	G	G	G	G	G	H	H	H	H	H	H	I
Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Number of relevés	17	219	1	136	6	1	1	3	7	1	60	6	1	1	2	1	9	17	1	14	2	1	7	4	24	1	8	2	3	15	4	5	5	5	2	1	1	3
Diff. of association																																						
Soleirolia soleirolii	V	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sagina procumbens	.	V	1	IV	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.
Dryopteris filix-mas	.	IV	1	IV	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.
Athyrium filix-foemina	.	II	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Asplenium viride	.	.	.	.	V	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Asplenium fontanum	.	.	.	.	.	1	1	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Corydalis lutea	.	.	.	I	.	.	.	.	V	1	V	V	1	1	2	1	V	V	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phyllitis scolopendrium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	V	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cystopteris fragilis	.	I	1	I	.	.	.	.	.	.	.	.	.	.	1	.	.	I	.	.	.	.	V	4	V	1	V	2	3	V	.	.	.	.	.	.	.	.
Moheringia muscosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Moehringia trinervia	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	I	.	.	.	.	.	.	.	.
Epilobium montanum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	III	.	.	.	.	.	.	.	.	.	.	.	.	.
Sedum dasyphyllum	.	.	1	.	.	1	.	.	.	.	I	V	.	.	.	.	.	.	.	.	.	.	II	.	.	.	.	.	.	.	4	IV	V	V	2	1	1	.
Sedum micranthum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3
Saxifraga bablana var. septentrionalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3
Saxifraga bablana var. bablana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Char. *Cymbalario-Asplenion*																																						
Asplenium trichomanes ssp. quadrivalens	I	II	1	I	.	1	1	.	.	.	II	V	.	.	2	1	.	.	1	V	.	1	V	4	V	1	.	1	3	IV	3	.	II	I	.	1	.	1
Asplenium ruta-muraria	I	III	1	III	V	1	.	1	III	1	V	IV	1	.	2	.	I	IV	1	I	1	.	III	3	III	.	V	2	3	II	.	.	.	.	.	.	1	1	2
Tortula muralis	III	IV	.	V	IV	.	.	.	.	1	IV	V	.	.	1	.	V	III	.	.	2	.	IV	2	IV	.	IV	.	3	I	.	.	.	.	.	.	.	.
Homalothecium sericeum	II	I	.	I	II	1	.	.	.	.	II	.	.	.	.	.	.	.	.	.	1	.	.	.	II	.	II	.	.	I	.	.	.	.	.	1	.	.
Bryum caespiticium	I	III	.	III	II	.	.	.	.	.	II	V	.	.	.	.	.	.	.	.	1	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.
Sedum album	.	.	.	.	.	.	1	.	.	.	I	.	.	.	.	1	.	.	.	.	.	.	IV	1	.	.	.	.	.	.	2	.	.	.	.	.	1	.
Hypnum cupressiforme	II	I	.	.	.	.	.	.	.	.	I	V	.	.	.	.	.	.	.	.	1	.	.	.	II	.	.	.	.	II	.	.	.	.	.	1	.	.
Chelidonium majus	.	I	.	I	.	.	.	.	II	.	I	.	.	1	1	1	III	II	1	.	.	.	.	2	I	.	II	.	.	.	.	.	.	.	.	.	.	.
Barbula vinealis	II	.	1	.	I	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.
Bryum capillare	II	II	.	II	.	.	.	.	.	.	I	.	.	.	.	.	.	II	.	.	1	.	.	.	II	.	.	.	3	.	.	.	.	.	.	.	.	.
Ceratodon purpureus	II	IV	.	IV	.	.	.	.	.	.	I	.	.	.	.	.	.	I	.	.	2	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.
Barbula unguiculata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	I	III	I	.	.	.	.
Asplenium adiantum-nigrum	II	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Polypodium cambricum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
MUSCI (und.)	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	V	.	.	.	.	.	1	II	1	.	.	.	.	.	.	.	.	.	.
Char. *Tortulo-Cymbalarietalia* & *Parietarietea judaicae*																																						
Cymbalaria muralis	V	III	.	III	V	.	.	.	.	1	III	V	.	.	1	1	.	III	.	V	2	.	.	.	III	1	.	.	.	I	.	.	.	.	.	.	.	.
Parietaria judaica	I	.	.	.	.	.	1	.	.	.	I	V	.	.	.	1	.	.	.	II	2	1	.	.	.	.	.	.	.	.	.	I	.	V	.	.	1	.
Umbilicus rupestris	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.	.	IV	III	IV	2	1	.	2
Ceterach officinarum	.	.	.	.	.	1	1	.	.	.	I	.	.	.	.	1	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2
Centranthus ruber (transgr.)	I	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Antirrhinum majus	.	.	.	.	.	.	.	1	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Erigeron karwinskianus	I	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ficus carica	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	1	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sonchus tenerrimus	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hyoseris radiata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	IV	I	.	.	.	.	.	.
Sedum dasyphyllum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	1

1 Segal, 1969. Tab. 45.
2 Segal, 1969. Tab. 39.
3 Segal 1969. rel. pag. 215
4 Meertens & Schaminée, 1991. Tab. 7.1, 8.
5 Segal, 1969. Tab. 36.
6 Vives, 1964. Tab. 2, rel. 5.
7 Romo, 1989. Tab. 8, rel. 1.
8 Soriano, 1996. Tab. 1, rel.8-10.
9 Kaiser, 1926. Tab. 83.
10 Görs, 1966. Tab.16, rel.3.
11 Segal, 1969. Tab. 29.
12 Brullo, Guarino & Scelsi; Garda lake (N.Italy), unpubl.
13 Brandes, 1987a. Tab 1, 7.
14 Brandes & Brandes, 1981. Rel. pag. 103.
15 Buker, 1939. Tab. pag. 9, rel. 1-2.
16 Buchwald, 1952. Tab. 1, rel. 5.
17 Brandes, 1987b. Tab. 3, 12.
18 Meertens & Schaminée, 1991. Tab.7.1, 6.
19 Brandes 1989a. Tab. 1, rel. 5.
20 Loriente Escallada, 1976. Tab. 1.
21 Segal, 1969. Tab. 21, rel. 1, 11.
22 Brandes, 1989b. rel. 6.
23 Brandes & Brandes, 1981. Tab. 1, 1.
24 Poldini & Vidali, 1994. Tab. 1, 1a.
25 Segal, 1969. Tab 30, d2.
26 Brandes, 1989a. Tab. 1, rel. 1.
27 Brandes, 1987b. Tab. 1, 6.
28 Brandes, 1979. Tab 1 rel. 5-6.
29 Passarge, 1964. Tab. 76, b.
30 Schmid, 1980. Tab. 2, rel. 44-58.
31 Hruska, 1985. Tab.1, 2.
32 Brandes, 1989b. Tab. 2, 1.
33 Brandes, 1989b. Tab. 2, 2.
34 Brandes, 1989b. Tab. 2, 3.
35 Oberdorfer, 1975. Tab. 1 rel.1, 2.
36 Braun-Blanquet, 1966. Tab. 3, rel. 19.
37 Buchwald, 1952. Tab. 1, rel. 3.
38 Puente Garc a, 1988. Tab. 6.

TABLE 9

Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Number of relevés	4	?	26	2	3	17	9	14	196	9	5	7	5	9	4	63	9	11	6	4	1	6	2	3	1	13	14	1	7	6	6	1	11	3	6	8	7	1
Diff. of association																																						
Asplenium ruta-muraria	4	V	V	2	3	IV	V	V	IV	V	III	V	V	V	4	V	V	V	IV	4	1	IV	2	3	1	V	V	1	IV	IV	V	1	IV	3	V	V	V	1
Hieracium amplexicale	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hieracium murorum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	II	II	.	.	.	.	.	.	.	.	.	.	.
Hieracium maculatum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Hieracium umbellatum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Encalypta contorta	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	IV	.	.	III	.	.	.	.	.	.	.	.	.
Trichostomum crispulum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III	.	.	.	.	.	.	.	.	.
Char. *Cymbalario-Asplenion*																																						
Asplenium trichomanes ssp. quadrivalens	4	IV	V	1	3	IV	IV	V	V	V	V	I	III	V	3	V	I	IV	V	4	1	IV	2	3	1	V	V	.	V	V	V	1	IV	3	I	I	I	1
Tortula muralis	3	IV	III	2	3	III	IV	.	V	V	.	.	III	IV	2	IV	III	III	II	.	.	.	.	2	1	III	II	1	.	.	.	1	.	.	.	V	II	.
Sedum album	.	.	II	.	.	I	1	II	I	IV	.	I	I	II	2	.	.	II	.	.	1	.	.	.	.	II	.	.	I	II	.	.	1	.	.	.	.	.
Chelidonium majus	I	.	.	.	2	.	IV	I	I	.	.	.	V	.	.	I	II	1	.	.	.	.	.	2	1	I	II	.	.	I	II	.	III	2	.	.	V	.
Homalothecium sericeum	.	IV	.	.	.	.	.	.	III	II	.	.	.	.	.	I	I	.	.	.	.	II	1	1	.	.	II	.	I	.	.	.	.	.	I	.	II	.
Cystopteris fragilis	.	.	.	1	.	II	.	.	I	.	I	.	.	.	.	I	.	.	.	.	.	II	.	.	.	II	.	.	.	II	.	1	.	.	.	.	.	.
Ceratodon purpureus	.	.	.	.	.	.	.	.	I	III	.	.	.	.	.	II	.	.	.	.	.	.	.	1	1	II	.	.	.	.	.	.	.	.	.	.	.	.
Bryum caespiticium	.	.	.	.	.	.	.	.	II	III	.	.	.	.	.	II	II	.	.	.	.	.	.	1	.	I	.	.	.	.	.	.	.	.	.	.	.	.
Barbula unguiculata	.	.	.	.	.	.	.	.	I	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Hypnum cupressiforme	.	.	.	.	.	.	.	.	I	IV	III	.	.	.	.	.	II	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.
Asplenium adiantum-nigrum	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	II	.	.	.	.	.	.	III	.	.	.	.	.	.	.	.	.
Polypodium cambricum	.	.	.	.	.	.	.	.	.	.	III	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	II	.	.	.	.	.	.	.	.	.
Bryum capillare	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	II	.	.	.	.	.	.	.	1	.	I	.	.	.	.	.	.	.	.	.	.	.	.
Corydalis lutea	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.
Barbula vinealis	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scorpiurum circinnatum	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
MUSCI (und.)	.	.	.	.	.	.	.	.	.	.	.	III	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.
Char. *Tortulo-Cymbalarietalia & Parietarietea judaicae*																																						
Cymbalaria muralis	.	III	I	2	2	.	.	IV	III	V	V	I	.	.	.	II	IV	IV	.	2	.	.	.	2	.	II	I	.	II	.	.	1	IV	.	.	.	.	.
Ceterach officinarum	.	.	III	.	.	.	.	I	II	V	V	.	.	.	.	I	II	I	II	4	.	IV	.	.	.	II	.	.	V	V	.	.	.	1	.	.	.	.
Parietaria judaica	.	.	II	.	3	.	.	IV	I	V	II	.	.	II	.	I	.	.	.	4	.	I	2	.	.	.	.	.	.	I	.	.	.	3	.	.	.	.
Sedum dasyphyllum	.	.	.	.	.	.	.	II	I	V	II	.	I	I	.	.	.	.	IV	1	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.
Umbilicus rupestris	4	.	.	.	.	.	.	.	I	.	III	.	.	.	.	.	.	.	.	4	.	IV	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Antirrhinum majus	.	.	I	.	.	.	.	III	I	.	V	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sonchus tenerrimus	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Centranthus ruber	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.

1 Hruska, 1985. Tab.1, 1.
2 Runge, 1980. Tab. pag. 138.
3 Poldini & Vidali. Tab. 1, 1b-1e.
4 Görs, 1966. Tab. 16, rel.1-2.
5 Hruska, 1982. Tab.1.
6 Valachovic et al., 1995. Tab. 1, 7a.
7 Valachovic et al., 1995. Tab. 1, 7b.
8 Pedrotti, 1989. Tab. 2.
9 Segal, 1969. Tab. 30.
10 Brullo, Guarino & Scelsi; Garda lake (N.Italy), unpubl.
11 Braun-Blanquet, 1966. Tab. 3, rel. 14-18.
12 Brandes, 1987a. Tab.3.
13 Brandes & Brandes, 1981. Tab. 1, 2.
14 Brandes & Brandes, 1981. Tab. 1, 3.
15 Brandes, 1979. Tab 1, rel. 1-4.
16 Meertens & Schaminée, 1991. Tab. 7.1, 7.
17 Lang, 1973. Tab. 33.
18 Oberdorfer, 1957. Tab. pag. 4.
19 Vives, 1964. Tab. 2, rel. 1-4, 6, 7.
20 Herrera, 1995. Tab. 10, rel. 1, 5, 8, 9.
21 Romo, 1989. Tab. 8.
22 Braun-Blanquet & Tüxen, 1952. Tab. 4.
23 Soriano, 1996. Tab. 1, rel. 6, 7.
24 Segal, 1969. Tab. 27, rel.1-3.
25 Segal, 1969. Tab. 27, rel.4.
26 Hubschmann 1967. Tab. 27.
27 Tüxen, 1937. pag. 13.
28 Segal, 1969. Tab. 27, rel.5.
29 Tüxen & Oberdorfer, 1958. Tab. 2.
30 Boscaiu, 1971. Tab.7.
31 Brandes, 1989a. Tab. 1, rel. 2-4, 6-8.
32 Buker, 1939. Tab. pag. 9, rel. 3.
33 Passarge, 1964. Tab. 76, a.
34 Buchwald, 1952. Tab.1, rel. 1, 2, 4.
35 Brandes, 1987b. Tab. 1, 1.
36 Brandes, 1987b. Tab. 1, 2.
37 Brandes, 1987b. Tab. 1, 4.
38 Siniscalco & Montacchini, 1989. Tab. 4, rel. 8.

Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Number of relevés	10	1	5	4	30	7	9	6	8	12	5	6	21	7	4	2	4	15	3	124	81	5	2	26	25	1	8	9	9	21	13	7	5	7
Diff. of association																																		
Cymbalaria muralis	V	1	V	4	V	V	V	V	V	V	V	V	V	V	4	2	4	IV	3	V	V	V	2	V	III	1	V	V	V	V	V	V	V	V
Char. *Cymbalario-Asplenion*																																		
Asplenium ruta-muraria	I	.	.	1	.	II	I	IV	IV	I	I	II	I	II	1	2	.	III	.	I	I	II	1	II	II	1	V	III	I	I	II	II	.	I
Tortula muralis	.	.	III	.	I	IV	III	V	V	.	.	I	II	III	.	2	.	IV	.	I	I	.	.	II	III	.	III	.	.	II	I	III	.	.
Chelidonium majus	III	1	.	.	III	.	II	.	.	.	I	.	I	III	3	.	.	.	.	II	II	I	.	III	.	1	II	.	I	II	II	III	III	.
Asplenium trichomanes ssp. quadrivalens	.	.	III	3	I	III	.	.	V	V	.	.	.	.	.	2	2	IV	.	I	II	II	2	IV	II	.	.	.	.	.	.	.	.	.
Sedum album	I	.	.	.	.	I	.	.	IV	.	.	.	.	.	1	1	.	III	1	I	I	.	.	I	I	.	.	.	.	.	.	.	.	.
Homalotecium sericeum	.	.	.	.	I	.	.	III	I	III	.	.	.	.	.	.	.	.	.	I	.	.	1	.	I	.	II	.	.	.	.	.	.	.
Hypnum cupressiforme	.	.	.	.	.	.	II	.	I	.	.	.	.	.	.	.	.	III	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.
Ceratodon purpureus	.	.	.	.	.	.	.	V	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.
Corydalis lutea	.	.	.	.	.	.	.	.	.	.	.	I	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II	.	.
Polypodium cambricum	.	.	.	4	.	.	.	.	.	II	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Bryum caespiticium	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.
Grimmia pulvinata	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.
Cystopteris fragilis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	I	.	.	.	.	.	.	.
Anomodon viticulosus	.	.	.	.	.	.	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Asplenium adiantum-nigrum	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. *Tortulo-Cymbalarietalia & Parietarietea judaicae*																																		
Parietaria judaica	.	.	II	4	.	V	.	V	V	V	I	IV	.	.	4	1	2	V	.	.	V	III	.	V	III	.	.	.	.	.	.	.	.	.
Antirrhinum majus	I	.	III	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	I	I	IV	.	I	.	.	.	II	.	.	.	.	.	.
Ceterach officinarum	.	1	.	3	.	.	.	.	II	IV	.	.	.	.	.	.	2	.	.	.	.	.	2	.	II	.	.	.	.	.	.	.	.	.
Sedum dasyphyllum	.	.	.	.	.	.	.	.	V	II	.	.	.	.	.	.	.	.	.	.	I	III	1	I	.	.	.	.	.	.	.	.	.	.
Umbilicus rupestris	.	1	III	1	.	.	.	.	.	III	.	.	.	.	.	.	4	.	.	.	.	.	.	.	II	.	.	.	.	.	.	.	.	.
Centranthus ruber	.	.	.	2	.	.	.	.	II	II	.	.	.	.	.	.	.	.	.	.	I	.	.	.	II	.	.	.	.	.	.	.	.	.
Sonchus tenerrimus	.	.	III	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III	.	.	I	.	.	.	.	.	.	.	.	.
Reichardia picroides	.	.	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.
Ficus carica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.
Hyoseris radiata	.	.	.	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Erigeron karwinskianus	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

1 Brandes, 1989a. Tab.2.
2 Puente Garcia, 1988. Tab.5.
3 Hruska, 1985. Tab. 1, 3.
4 Rivas-Martinez, 1969. Tab. 1, rel. 1-4.
5 Hruska, 1979. Tab.1, rel. 9-15.
6 Valachovic et al., 1995. Tab. 1, 8.
7 Pedrotti, 1989. Tab. 3, rel. 3, 5, 11, 21, 32.
8 Poldini & Vidali, 1994. Tab. 1: 31-50, 55-60.
9 Brullo, Guarino & Scelsi; Garda lake (N.Italy), unpubl.
10 Braun-Blanquet, 1966. Tab. 3, rel. 1,2, 4-13.
11 Brandes, 1987a. Tab. 1, rel. 2-6.
12 Brandes, 1987a. Tab. 2 , 1.
13 Brandes, 1987a. Tab. 2 , 3.
14 Brandes, 1987a. Tab. 2 , 4.
15 Brandes & Brandes, 1981. Tab. 2, rel. 5-8.
16 Brandes & Brandes, 1981. Tab. 1, 4.
17 Herrera, 1995. Tab. 10, rel. 4, 6, 15, 16.
18 Pignatti, 1952. Ass. 30.
19 Görs, 1966. Tab. 15 rel. 1-3.
20 Brandes, 1992 da Poldini & Vidali, 1994. Tab 6: 16.
21 Brandes, 1992 da Poldini & Vidali, 1994. Tab 6: 18.
22 Segal, 1969. Tab. 22, rel. 2-7.
23 Vives, 1964. Tab. 2, rel. 8, 9.
24 Oberdorfer, 1977. Tab. 7, 3.
25 Segal, 1969. Tab. 24.
26 Brandes 1979. Rel. pag. 33.
27 Brandes, 1987b. Tab. 1, 5.
28 Brandes, 1987b. Tab. 3, 5.
29 Brandes, 1987b. Tab. 3, 6.
30 Brandes, 1987b. Tab. 3, 7.
31 Brandes, 1987b. Tab. 3, 8.
32 Brandes, 1987b. Tab. 3, 9.
33 Brandes, 1987b. Tab. 3, 10.
34 Siniscalco & Montacchini, 1989. Tab. 4, rel. 1-7.

TABLE 11

CHEIRANTHO-PARIETARIETUM JUDAICAE

Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Number of relevés	10	4	15	75	3	2	?	12	6	12	3	5	2	2	5	1	2	1	1	1	3
Diff. of association																					
Cheiranthus cheiri	V	3	V	V	3	2	X	V	V	V	3	V	2	2	V	1	2	1	1	1	2
Char. *Cymbalario-Asplenion*																					
Tortula muralis	II	1	III	V	1	1	.	III	V	V	.	.	.	.	.	.	.	.	.	.	.
Asplenium trichomanes ssp. quadrivalens	I	1	II	II	.	.	X	.	.	I	1	.	.	.	.	.	.	.	.	.	.
Sedum album	III	1	I	I	.	.	X	.	.	I	.	.	.	.	.	.	.	.	.	.	.
Asplenium ruta-muraria	.	.	.	III	1	.	X	III	II	.	.	.	.	.	.	.	.	.	.	.	.
Homalotecium sericeum	III	.	I	III	.	.	.	I	V	V	.	.	.	.	.	.	.	.	.	.	.
Barbula acuta	.	.	II	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Barbula vinealis	.	.	.	II	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ceratodon purpureus	.	.	.	II	1	.	.	II	.	.	.	.	.	.	.	.	.	.	.	.	.
Bryum caespiticium	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.
Chelidonium majus	.	.	.	.	.	.	.	I	II	I	.	.	.	.	.	.	.	.	.	.	.
Char. *Tortulo-Cymbalarietalia* & *Parietarietea judaicae*																					
Parietaria judaica	.	4	V	II	2	2	X	I	III	II	2	III	2	2	I	1	2	1	1	1	3
Cymbalaria muralis	I	1	II	IV	.	1	.	III	II	III	2	II	.	2	I	.	.	.	.	1	2
Antirrhinum majus	I	2	I	II	.	.	X	.	III	I	1	II	1	2	.	1	.	.	.	.	1
Ceterach officinarum	.	.	III	I	.	.	X	.	.	.	3	.	.	.	.	.	.	1	.	.	.
Sedum dasyphyllum	.	.	IV	.	.	.	.	.	.	.	2	II	.	1	III	.	.	.	.	.	.
Centranthus ruber	.	.	II	III	.	.	.	.	.	V	1	.	.	.	.	1	.	.	.	.	.
Ficus carica	.	1	I	I	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.
Sonchus tenerrimus	.	.	III	II	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.
Hyoseris radiata	.	1	.	.	.	.	.	.	.	.	.	II	2	.	.	.	.	.	.	.	.
Matthiola incana	.	.	.	.	1	.	.	.	.	.	3	.	.	.	.	.	.	1	.	.	.
Antirrhinum tortuosum	.	.	I	.	.	.	.	.	.	.	1	.	.	.	I	.	.	.	.	.	.
Umbilicus rupestris	.	.	II	I	.	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.
Capparis spinosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	1	.	.	.	.	.
Phagnalon sordidum	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Chaenorrhinum origanifolium	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Umbilicus horizontalis	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.

1 Oberdorfer, 1977. Tab. 7, 2.
2 Hruska, 1979. Tab.1, rel. 16-19.
3 Segal, 1969. Tab. 14a.
4 Segal, 1969. Tab. 14b.
5 Segal, 1969. Tab. 16.
6 Oberdorfer, 1954. Tab.15, rel. 1, 2.
7 Jouanne, 1929. Veg. 54.
8 Meertens & Schaminée, 199. Tab 7.1, 5.
9 Brandes, 1992. Tab. 7, 3.
10 Brandes, 1992. Tab. 7, 4.
11 Segal, 1969. Tab. 14a.
12 Hruska, 1985. Tab. 1, 5.
13 Hruska, 1982a. Tab. 2, rel. 7-8.
14 Hruska, 1982b. Tab. 1, rel.1-2.
15 Caneva et al., 1995. Tab. 8.
16 Rossi, 1989. Tab.1, rel. 3.
17 Caneva et al., 1993. Tab. 1, rel. 16, 21.
18 Brullo, Scelsi & Spampinato; Aspromonte (S.Italy), unpubl.
19 Soriano, 1996. Tab. 1, rel. 4.
20 Brandes, 1987a. Tab 1, 1.
21 Oberdorfer 1957. Ass. 10, pag. 80.

TABLE 12

ASPLENIO-PARIETARIETUM JUDAICAE

Number of the reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Number of relevés	42	8	7	56	32	9	7	2	3	6	5	37	5	33	?	29	6	12	2	19
Diff. of association																				
Parietaria judaica	V	V	V	V	V	V	V	2	3	V	V	V	V	V	V	V	V	V	2	V
Char. *Cymbalario-Asplenion*																				
Tortula muralis	II	III	.	II	IV	III	III	.	2	.	I	IV	.	IV	III	V	V	III	.	I
Asplenium trichomanes ssp. quadrivalens	I	II	III	.	III	.	IV	.	.	.	V	.	IV	IV	II	I	.	.	2	I
Asplenium ruta-muraria	.	.	I	.	I	III	II	1	.	III	.	III	.	I	.	IV	I	.	.	II
Chelidonium majus	II	II	I	I	.	II	.	.	1	.	IV	I	.	.	.	II	.	III	.	II
Homalotecium sericeum	I	.	.	.	I	I	II	.	.	.	.	I	.	II	II	III	I	I	2	.
Bryum caespiticium	.	.	.	I	I	II	.	.	.	.	.	I	.	I	II	I	II	I	1	.
Bryum capillare	.	.	.	.	I	I	.	.	.	.	.	II	.	I	II	II	IV	I	.	.
Sedum album	I	.	.	.	I	.	.	.	.	II	.	.	.	I	.	.	.	III	.	.
Hypnum cupressiforme	.	.	.	.	I	.	II	.	.	.	.	.	.	I	II	I	.	I	.	.
Barbula vinealis	.	.	.	.	I	I	.	.	.	.	.	.	.	I	I	I	.	.	2	.
Ceratodon purpureus	.	.	.	.	.	II	I	.	.	.	.	II	.	.	.	III	IV	I	.	.
Polypodium cambricum	.	.	.	.	I	.	.	.	.	IV	.	.	.	I	III	.	.	.	1	.
Barbula acuta	.	.	.	II	II	.	.	.	.	.	.	.	.	II	II	.	.	.	.	.
Corydalis lutea	.	.	.	.	.	.	.	.	2	.	.	I	.	.	.	.	.	.	.	I
Scorpiurum circinnatum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III	.	.	.	.	.
Asplenium adiantum-nigrum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.
Transgr. *Parietarion judaicae*																				
Ficus carica	.	.	I	II	I	.	I	.	.	.	.		.	I	.	.	.	.	.	.
Centranthus ruber	.	I	.	II	II	.	III	.	.	.	.	.	.	.	.	.	.	.	1	.
Reichardia picroides	.	II	.	I	I	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Phagnalon sordidum	.	.	.	II	I	.	.	.	.	I	.	.	.	.	I	.	.	.	.	.
Cheiranthus cheiri	II	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.	.	I
Hyoseris radiata	.	II	.	.	.	.	.	.	.	.	.	.	.	.	II	.	.	.	2	.
Antirrhinum tortuosum	.	.	.	I	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cicerbita tenerrima	.	.	.	.	.	.	.	.	.	I	.	.	III	.	.	.	.	.	.	.
Matthiola incana	.	.	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Umbilicus horizontalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Char. *Tortulo-Cymbalarietalia* & *Parietarietea judaicae*																				
Cymbalaria muralis	IV	IV	V	II	II	IV	V	.	2	IV	II	IV	.	II	II	IV	IV	V	.	V
Sonchus tenerrimus	.	I	III	III	III	II	.	.	.	.	.	.	.	II	II	III	I	.	1	.
Antirrhinum majus	I	I	III	I	I	I	III	.	.	.	.	.	.	I	.	I	.	.	.	.
Ceterach officinarum	.	.	.	I	V	.	I	.	.	III	.	.	IV	IV	II	.	.	.	2	.
Umbilicus rupestris	.	.	.	I	IV	.	.	.	.	III	.	.	V	IV	V	.	.	.	1	.
Sedum dasyphyllum	.	.	I	.	II	.	IV	1	.	.	.	.	.	IV	II	.	.	.	.	.
Erigeron karwinskianus	.	.	.	I	I	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.

1 Oberdorfer, 1977. Tab. 7, 1.
2 Hruska, 1979. Tab. 1, rel.1-8.
3 Pedrotti, 1989. Tab. 3, rel. 13, 19, 26, 28, 30, 36, 38.
4 Segal, 1969. Tab. 3, a1.
5 Segal, 1969. Tab. 3, a2-2.
6 Segal, 1969. Tab 21, d.
7 Brullo, Guarino & Scelsi; Garda lake (N.Italy), unpubl.
8 Brandes & Brandes, 1981. Tab. 2, rel. 9-10.
9 Oberdorfer, 1954. Tab.15, rel. 3-5.
10 Herrera, 1995. Tab. 10 rel. 2, 3, 7, 10-12.
11 Poldini & Vidali. Tab. 1: 51-54, 61.
12 Meertens & Schaminée, 1991. Tab. 7.1, 4.
13 Sanchez Mata, 1989. Tab.29, rel.3-7.
14 Segal, 1969. Tab. 3, b.
15 Segal, 1969. Tab. 8.
16 Segal, 1969. Tab 21, b.
17 Segal, 1969. Tab 21, c.
18 Hubschmann 1967. Tab. 29.
19 Brullo & Guarino; Etna (Sicily), unpubl.
20 Brandes, 1987b. Tab. 3, 2.

A PARIETARIO JUDAICAE-HYOSCYAMETUM AUREI
B HYOSCYAMO AUREI-PODONOSMETUM ORIENTALIS
C PARIETARIO JUDAICAE-CYMBALARIETUM LONGIPEDIS
D HYOSCYAMO AUREI-CAPPARIDETUM AEGYPTIACAE
E HYOSCYAMO AUREI-CAPPARIDETUM ORIENTALIS

Type of association	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	D	D	D	D	D	E	E	E	E	E	E	E
Ordinal number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Number of the relevé	1	3	4	5	7	12	13	14	20	21	23	26	27	15	22	2	25	16	6	32	33	34	35	36	37	38	39	40	41	44	49	50	51	28	29	30	31	42	43	45	46	47	48	24	19	8	9	10	11	17	18
Locality	C	C	C	C	C	C	C	C	R	R	R	R	R	C	R	C	R	C	C	J	J	J	J	J	J	J	J	J	J	B	B	B	R	R	R	R	J	J	J	J	J	R	R	C	C	C	C	C	R
Plot size (m²)	20	10	15	20	20	20	25	25	20	15	10	15	20	10	15	20	14	15	20	30	30	50	50	20	10	30	50	50	20	20	20	10	40	30	25	20	10	10	50	10	40	50	50	10	20	10	30	15	10	15	10
Plant cover (%)	30	30	40	20	40	50	50	50	40	20	30	30	30	40	40	30	40	60	60	40	50	20	30	40	25	25	50	40	25	30	40	30	20	20	30	30	30	30	20	25	20	30	20	40	30	30	20	60	50	50	30
Sloping (°)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Exposition	E	E	N	E	N	O	O	O	E	E	S	E	E	N	E	NE	SE	N	N	E	E	NE	N	N	NE	E	N	N	N	N	N	NE	NE	N	N	N	N	S	S	SE	SE	S	S	S	E	O	E	N	E	E	SE
Char. Associazione																																																			
Podonosma orientalis (L.) Feinbr.																				1	1	2	2	3	3	2	3	3	2	2	2	1	1																			
Cymbalaria longipes (Boiss.& Heldr.) A. Cheval.																																		2	3	3	3															
Char. *Parietario-Hyoscyamion aurei*																																																			
Hyoscyamus aureus L.	2	2	3	2	3	3	2	2	2	2	3	3	3	+	2	1	2	1	1	2	3	1	2	1	1	2	2	1	1	+	2	3	2	+	+	.	1	1	1	2	2	1	1	3	2	+	1	+	2	2	2
Phagnalon graecum Boiss.& Heldr.	.	1	+	.	.	.	.	.	.	.	1	+	+	.	1	.	1	.	.	.	+	.	.	+	1	1	1	1	.	1	.	+	.	.	1	.	.	.	.	+	.	.	1	.	.	.	.	.	.	.	+
Capparis aegyptiaca Lam.	.	.	.	.	.	.	.	.	+	+	.	1	+	.	.	.	.	.	.	.	.	.	.	+	.	+	1	.	.	+	.	.	.	.	.	.	3	2	2	2	3	2	1	+	.	.	.	.	.	.
Capparis orientalis Veillard	.	.	.	.	.	1	.	1	1	1	1	1	.	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	2	2	3	2	3	3	3	2
Umbilicus intermedius Boiss.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. *Tortulo-Cymbalarietalia* & *Parietarietea judaicae*																																																		
Parietaria judaica L.	2	2	2	1	2	2	+	+	+	.	+	+	+	3	3	3	3	4	4	2	1	1	+	1	+	1	1	+	1	3	2	1	+	1	1	1	1	.	+	1	1	+	+	.	+	1	1	3	1	1	1
Sonchus tenerrimus L.	.	+	1	.	+	.	+	1	.	.	.	.	.	+	.	+	.	+	.	.	+	.	.	+	.	.	.	.	+	+	+	+	.	+	.	.	.	.	.	.	.	+	+	.	.	.	.	+	1	1	1	.
Antirrhinum majus L.	.	.	.	.	.	.	.	.	2	.	+	.	1	.	.	.	.	.	.	2	1	+	.	1	.	1	2	.	2	+	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.
Ficus carica L.	.	.	1	.	.	.	.	.	1	.	+	+	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.
Reichardia picroides (L.) Roth	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
Other species																																																		
Nicotiana glauca R.C. Graham	+	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	+	.	.	.	+	.	1	.	.	.	.	.	.	.	.	.	+	.	1	+	.	+	.	.	.	1	.	.	.	.	.	.
Suaeda vera Forskaal ex J.F. Gmelin	.	.	.	.	.	.	3	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.
Urospermum picroides (L.) Scop. ex F.W. Schmidt	.	1	+	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mercurialis annua L.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lactuca serriola L.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.
Knautia integrifolia (L.) Bertol.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Ephedra foemina Forskaal	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Bromus sterilis L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ecballium elaterium (L.) A. Richard	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Oryzopsis miliacea (L.) Asch. & Schweinf.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.
Cheilanthes acrostica (Balbis) Tod.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Polygonum equisetiforme Sm.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pennisetum sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.

C = Crete (Heraklyon), 3-9-1996.
R = Rhodos (Rhodos Town) 26-8-1989.
J = Jerusalem (old town), 20-3-1989.
B = Betlem, 25-3-1989.

TABLE 13