

University of Catania
PhD in Geological, Biological and Environmental Sciences

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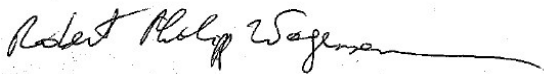
PhD thesis

**Phytosociological investigation on the thermo-chasmophilous
vegetation of the Eastern Mediterranean territories**

MIUR Area: 05 - Biological Sciences

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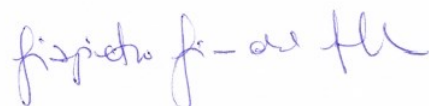
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Introduction

The chasmophilous vegetation of the Mediterranean territories is characterized by a remarkable floristic richness, for the occurrence of numerous endemic or rare species showing a very localized or punctiform distribution. Many of these species are represented by ancestral taxa, many of which having a Tertiary origin, and a clear relict character.

The phytosociological studies concerning the thermophilous plant communities belonging to this rupestrian vegetation are very numerous and regard several Mediterranean countries, such as the Iberian peninsula (Bolòs & Bolòs 1950, Bolòs & Molinier 1958, Bolòs 1962, 1967, Bolòs et al. 1970, Rivas-Martínez et al. 1992a, 1992b, Aguiar et al. 2003, Rivas-Martínez et al. 2011, Costa et al. 2012), France (Molinier 1934, Braun-Blanquet et al. 1952, Bardat et al. 2004), Corsica (Gamisans 1976, 1991), Sardinia (Arrigoni & Di Tommaso 1991), Sicily (Brullo & Marcenò 1979, Brullo et al. 2004), Italian peninsula (Lausi & Poldini 1962, Bianco et al. 1988; Brullo et al. 2001, Brullo & Spampinato 2003, Di Pietro & Wagensommer 2008, Terzi & D'Amico 2008, Terzi & Di Pietro 2016), Dalmatia (Horvatic 1934, 1939, 1963, Blečić 1958, Tomic-Stankovic 1970, Blečić & Lakušić 1976, Lakušić et al. 1978, Trinajstić 1965, 1980, 1987, 2008), Greece (Quezel 1964, Horvat et al. 1974, Ferro et al. 1975, Zaffran 1990, Dimopoulos et al. 1997, Georgiou et al. 2000, Theocharopoulos et al. 2004, Maroulis & Georgiadis 2005, Bergmeier et al. 2011), Israel (Zohary 1955, 1962, 1973), Libya (Brullo & Furnari 1994), Algeria (Pons & Quézel 1955) and Morocco (Deil & Galán de Mera 1996, Deil & Hammoumi 1997).

In many West-Mediterranean territories this kind of vegetation is quite good known, such as in the Iberian peninsula, France, Sicily and Italian peninsula, whereas concerning the East-Mediterranean and North-African territories (apart from Cyrenaica) the knowledges are scarce and very fragmentary.

From the syntaxonomical point of view, this vegetation is included in a well-distinguished class described in Meier & Braun-Blanquet (1934), represented by the *Asplenietea trichomanis* (Br.-Bl. in Meier & Br.-Bl. 1934) Oberd. 1977, within which numerous orders and alliances are described. This class is widespread in the Euro-Mediterranean territories, and groups plant communities growing on more or less vertical walls and cliffs, characterized by various substrata of carbonatic or siliceous origin. The plants featuring this vegetation grow usually in the rocky crevices and show a marked pioneer character, emphasizing an autecological behaviour.

In the Western Mediterranean area the thermophilous associations are attributed to the order *Asplenietalia glandulosi* Br.-Bl. & Meier in Meier & Br.-Bl. 1934, with several alliances circumscribed to geographically well-defined territories, such as *Asplenion glandulosi* Br.-Bl. & Meier in Meier & Br.-Bl. 1934 in the northwest-Mediterranean area (from Portugal to Italy), *Teucrium buxifolii* Rivas-Goday 1956 and *Campanulion mollis* Martínez-Parras & Peinado 1990 from Spain, *Brassicaceae-Helichryson rupestris* O. Bolòs & Molinier 1958 from Balearic Islands, *Dianthion rupicolae* Brullo & Marcenò 1979 from Sicily to Tyrrhenian southern Italy, *Centaureion pentadactylis* Brullo, Scelsi & Spampinato 2001 from south-Italy, the *Linarion caprariae* Foggi, Cartei, Pignotti, Signorini, Viciani, Dell'Olmo & Menicagli 2006 from the Tuscan archipelago, and *Centaureo filiformis-Micromerion cordatae* Arrigoni & Di Tommaso 1991 from Sardinia.

In this work, the chasmophilous plant communities of thermophilous type occurring in some countries of the East-Mediterranean area are examined. This study is based on numerous phytosociological relevés carried out especially in continental and insular stands of Greece, and also in Cyprus, Israel, Cyrenaica (Libya), Croatia and E-Italy. The data used for this investigation are represented by many unpublished relevés, as well as by literature ones, in part published in synoptical tables, or completely without relevés, since the authors sometimes provided only syntaxonomical lists.

Previously, the rupestrian associations recorded from some Greek localities were attributed to *Onosmetalia frutescentis* Quézel 1964, order originally including only a single alliance, named *Campanulion versicoloris* Quézel 1964, with four associations. All these syntaxa described by Quézel (1964) are validly published.

Later, Horvat (in Horvat et al. 1974) proposed a new order (*Cirsietalia chamaepeucis*) and four new alliances (*Polygonion icarici*, *Petromarulo pinnatae-Centaureion argenteae*, *Inulion heterolepidis* and *Capparo-Amaracion*), but all these syntaxa are invalid names, because they are indicated as provisional names (art. 3b of the ICPN, Weber et al. 2000). In each alliance, the author included one or two associations, using synoptical tables. Unfortunately, the various associations published in that work by Horvat (l.c.) must be considered very heterogenous, since every synoptical table groups relevés carried out in various Aegean islands, belonging to different syntaxa. Therefore, almost all these associations clearly are *nomina dubia* (art. 37 of the ICPN), representing everyone a complex of plant communities, that is not possible to assign to a distinct association. Therefore, these names proposed by Horvat (l.c.) must be rejected, except for a single association, *Teucrio-Inuletum*, that seems quite homogenous from a floristic and phytogeographical point of view. As a consequence, the attempt to validate these syntaxa (order and alliances) by Bergmeier et al. (2011) can not be accepted (art. 38 of the ICPN), because the associations chosen by these authors as nomenclatural types of the related higher syntaxa are *nomina dubia*. Therefore, according to art. 9 of the ICPN, the syntaxa aforesaid quoted (*Cirsietalia chamaepeucis*, *Polygonion icarici*, *Petromarulo pinnatae-Centaureion argenteae*, *Inulion heterolepidis* and *Capparo-Amaracion*) can not be validated. In particular, *Polygonion icarici* Horvat in Horvat et al. 1974 is invalid since proposed as provisional name (art. 3b), even if Bergmeier et al. (2011) attempted to validate this syntaxon using the synoptical tables published by Horvat et al. (1974), designating as holotype the *Polygonetum icarici* Horvat in Horvat et al. 1974 ex Bergmeier et al. 2011, but it is a *nomen dubium* (art. 37) since it is a very heterogeneous association, based on 4 relevés from the islands of Samothraki and Ikaria, certainly referable to at least two different associations. Therefore, it can not be used to validate a syntaxon (art. 38).

Successively, Zaffran (1990) described from Crete several syntaxa within the class *Asplenetia trichomanis*, and in particular two new orders, represented by *Petromaruletalia pinnatae*, grouping the associations of low altitude, and *Campanuletalia jacquinii*, regarding the associations of higher altitude. Within the *Petromaruletalia pinnatae*, the author recognized two new alliances, *Scutellarion sieberi*, with a western distribution, and *Asterion cretici*, with an eastern distribution, while only the alliance *Campanulion jacquinii* was referred to the second order. Several associations were included in these alliances. Unfortunately, these syntaxa proposed by Zaffran (l.c.) are all invalid, according to arts. 5 and 8 of the ICPN, since the author did not indicate the nomenclatural types for the associations and higher syntaxa (alliances and orders). As concerns these syntaxa, only the alliance *Asterion cretici* and the association *Anthemido-Staehelinetum fruticosae* were validated by Bergmeier et al. (2011).

Other associations of the *Campanulion versicoloris* were more recently described from Greece by Theocharopoulos et al. (2004) as *Inulo parnassicae-Ptilostemetum chamaepeucis* and by Maroulis & Georgiadis (2005) as *Saxifrago chrysospleniifoliae-Athamantetum macedonicae*.

This alliance were also recorded from Apulia, in southern Italy, by Bianco et al. (1988), who attributed to it two associations, the *Aurinio-Centaureetum apulae* (= *Aurinio megalocarphae-Centaureetum brullae*) and *Campanulo versicoloris-Aurinietum leucadeae*.

Later, Di Pietro & Wagensommer (2008) assigned these associations to a new alliance, with Apulian distribution, proposed as *Campanulo versicoloris-Dianthion japigici*, but this syntaxon is invalid (art. 5 of the ICPN).

Almost contemporaneously, Terzi & D'Amico (2008) described from the same area another new alliance, named *Caro multiflora-Aurinion megalocarphae*, within which the authors include two other new associations, the *Iberido carnosae-Athamantetum siculae* and *Piptathero holciformis-*

Campanuletum versicoloris. They included their new alliance in the order *Asplenetalia glandulosi*. In our opinion, this vegetation must clearly be attributed to the order *Onosmetalia frutescentis*. Nevertheless, this alliance is not differentiated by any species exclusive of this territory, but the characteristics proposed are also frequent in the Greek associations belonging to the *Campanulion versicoloris*. Therefore, the *Caro multiflori-Aurinion megalocarphae* is not supported by floristic and ecological differentiation and as a consequence it is a heterotypic synonym of the *Campanulion versicoloris*.

As concerns the amphi-Adriatic territory (Croatia and Italy), the rupestrian vegetation was included in a distinct order proposed primarily by Trinajstić (1980) as *Centaureo-Campanuletalia*, but according to arts. 3g and 5 of the ICPN this is an invalid name. An attempt of validation of this syntaxon was performed by Di Pietro & Wagensommer (2008), but these authors did not indicate the nomenclatural type (art. 5 of the ICPN). Later, the name has been correctly validated by Terzi & Di Pietro (2016), proposing it with the name *Centaureo dalmaticae-Campanuletalia pyramidalis*. Currently, in this order three alliances are included; the oldest is *Centaureo dalmaticae-Campanulion pyramidalis* Horvatić 1934, showing a north-Adriatic distribution (Horvatić 1934, 1963, Lausi & Poldini 1962, Trinajstić 1980, 2008). The second one is the *Centaureo-Portenschlagiellion*, invalidly described by Trinajstić (1980, 1987) and recently validated by Terzi & Di Pietro (2016), distributed in southern Croatia. The last one is the *Asperulion garganicae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988, distributed in the Gargano promontory (S-Italy).

These alliances group several associations, some of which validly described, while other, especially those from Croatia, are *nomina nuda* or *nomina invalida* (Horvatić 1934, 1963, Lausi & Poldini 1962, Trinajstić 1964, 1980, 1987, 2008, Pavletić, 1973, 1986, Hecimovic 1984, Bianco et al. 1988, Di Pietro & Wagensommer 2008).

Another poorly-known area of the East-Mediterranean is Israel, which is a very interesting territory for the occurrence of a rich rupestrian endemic flora. From a phytosociological point of view, this vegetation was arranged in an endemic class by Zohary (1955, 1962, 1973), proposed firstly as *Varthemietea iphionoidis* and successively as *Varthemietea montanae*. According to these author this class is represented by one order (*Varthemietalia*) and one alliance (*Varthemion*), with several associations. All these syntaxa are *nomina nuda*, since they are not supported by phytosociological relevés. Personal investigation carried out in this area allowed to identify several associations, some of which already indicated by the above mentioned author, and validated in the present work. Floristically, the surveyed associations can be included in an autonomous alliance and order, but as concerns the class, they can be included in the *Asplenetea trichomanis*, that in Israel is represented by several species, such as *Ceterach officinarum*, *Asplenium trichomanes*, *Allosorus pteridioides*, *Melica minuta*, *Arabis alpina* subsp. *caucasica*, *Ficus carica*. The correct names of these syntaxa are *Chiliadenetalia iphionoidis* and *Chiliadenion iphionoidis*.

Finally, the chasmophilous vegetation of the Cyrenaica (Libya), another phyto-geographically very important East-Mediterranean area, was studied by Brullo & Furnari (1994), that included the rupestrian communities in the endemic order *Chiliadenetalia candicantis*, belonging to the class *Asplenetea trichomanis* and characterized by two alliances, *Athamantion dellae-cellae* and *Teucrion cyrenaici*, with several associations.

In order to increase the knowledges on this vegetation in the east Mediterranean, phytosociological investigations were carried out in various territories of this area. These data, represented by relevés realized according to the sigmatistic method, allowed to reach more detailed and in-depth information on this very peculiar vegetation, and clarify many taxonomical and nomenclatural questions. Thus, the present work sets the goal to give a significant phytosociological contribution on this still poorly-known vegetation and often having a controverse arrangement, providing an overall view that better fits the environmental reality.

Material and Methods

The phytosociological investigation regarding the chasmophilous vegetation of the eastern Mediterranean area is based on 316 unpublished relevés, in part provided by Prof. S. Brullo and his collaborators, and in addition 548 relevés and 8 synoptical tables (composed by 89 further relevés) from literature, carried out in Italy, Croatia, Greece, Cyprus, Israel, and Libya (Fig. 1). The nomenclature used for the flora follows Meikle (1977, 1985), Pignatti (1982), Brullo & Furnari (1994), Freinbrun-Dothan & Danin (1998), Flora Croatica Database (FCD, 2004+), Conti et al. (2005), Dimopoulos et al. (2013, 2016), Nikolić (2015), Strid (2016). From the methodological approach, the phytosociological study was performed following the Zurich-Montpellier Sigmatist School approach (Braun-Blanquet 1964) and later integrations (Gèhu & Rivas-Martinez 1981, Gèhu 2006, Biondi 2011, Pott 2011). In addition, the syntaxonomic issue regarding the *Asplenetea trichomanis* class is tackled basing on the International Code of Phytosociological Nomenclature, ICPN (Weber et al., 2000).

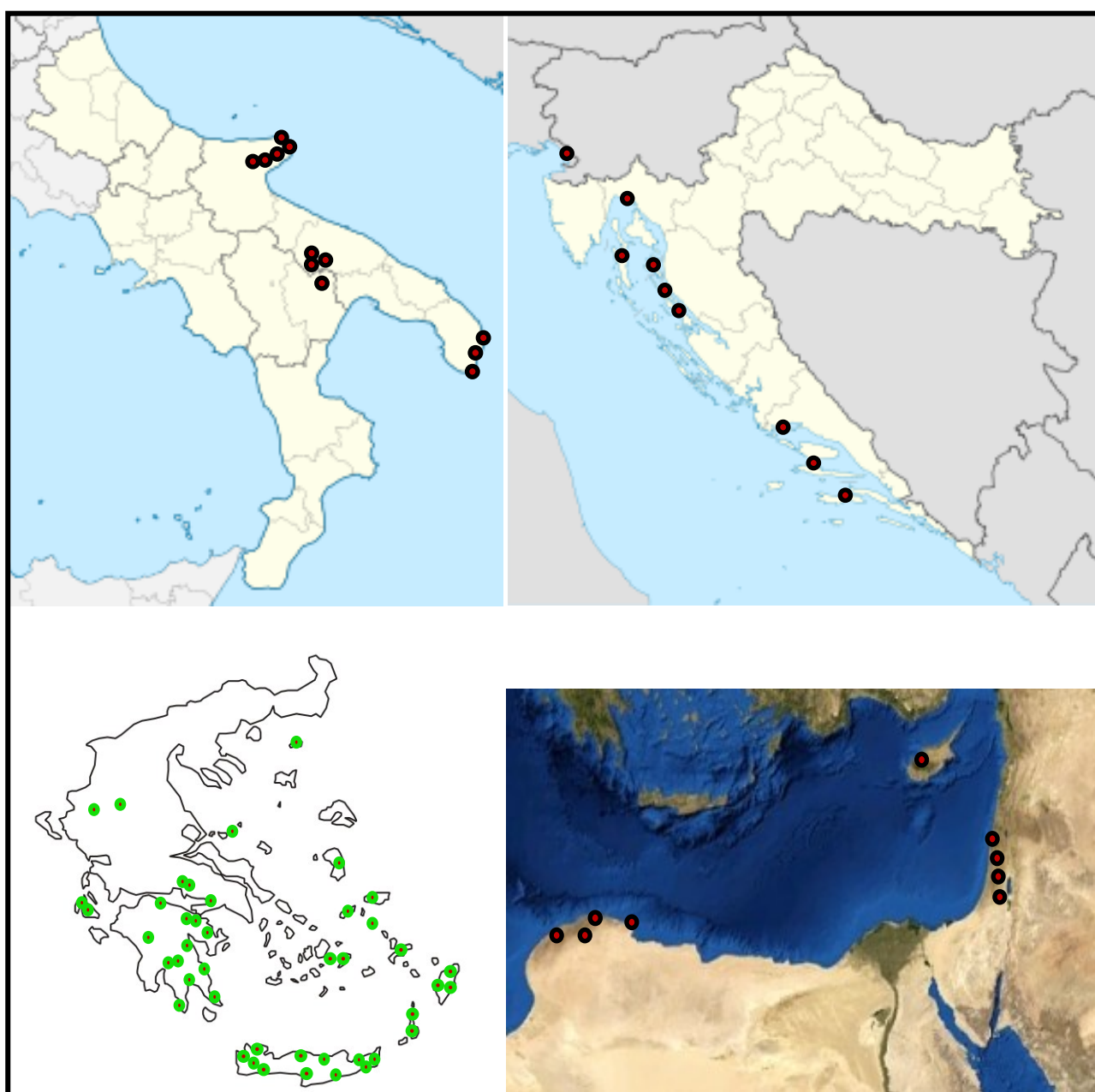


Fig. 1 – Location of the phytosociological relevés (unpublished and published relevés).

Results and Discussion

ASPLENIETEA TRICHOMANIS (Br.-Bl. in Meier & Br.-Bl. 1934) Oberd. 1977, Süddeutsche Pflanzenges. 1: 23

Holotypus: *Potentilletalia caulescentis* Br.-Bl. in Br.-Bl. & Jenny 1926, Denkschr. Schweiz. Naturforsch. Ges. 63: 183.

Syn.: *Asplenietea rupestris* Br.-Bl. in Meier & Br.-Bl. 1934 (*Asplenetales rupestres*), Prodr. Group. Veg. 2: 1

-: *Varthemietea iphionoidis* Zohary 1955, Geobotany: 323, *nom. nud.*

-: *Varthemietea iphionoidis* Zohary 1962, Pl. Life Palest.: 124, *nom. nud.*

-: *Varthemietea montanae* Zohary 1973, Geobot. Selec. 3: 547, *nom. nud.*

Characteristic species: *Arabis alpina* subsp. *caucasica*, *Asplenium trichomanes*, *Ceterach officinarum*, *Eryngium glomeratum*, *Ferula tingitana*, *Ficus carica*, *Melica minuta*, *M. rectiflora*, *Piptatherum coerulescens*, *Putoria calabrica*, *Rhamnus saxatilis* s.l., *Sedum dasyphyllum*, *Silene fruticosa*, *Teucrium flavum* subsp. *glaucum*, *Umbilicus horizontalis*, *U. intermedius*, *U. rupestris*.

Transgressive species: *Allosorus acrosticus*, *A. persicus*, *A. pteridioides*, *Arabis hirsuta*, *Asplenium ruta-muraria*, *Athamanta sicula*, *Capparis orientalis*, *C. spinosa*, *Centranthus ruber* subsp. *ruber*, *Cosentinia vellea*, *Cystopteris fragilis*, *Erysimum cheirifolium*, *Hypochaeris laevigata*, *Notholaena marantae*, *Pimpinella tragioides*, *Polypodium cambricum*, *Sedum magellense* subsp. *olympicum*, *S. ochroleucum*, *Teucrium flavum* subsp. *flavum*.

Ecology: The class gathers plant communities localized in rupestrian habitats, such as rocky walls, cliffs, gorge sides, very acclive slopes, etc. The flora featuring this vegetation is represented by typical chasmophytes and sometimes chomophytes, with predominance of nanophanerophytes, chamaephytes and hemicryptophytes. The more frequent species are Spermatophytes, or more rarely small ferns, with a root system developing inside the rocky crevices, using the air moisture and rainfalls for their physiological exigences. Most of the species are very specialized and show a marked pioneer behaviour, constituting very stable and floristically well-differentiated coenoses. In particular, the palaeoendemic component of this flora, mainly in the Mediterranean territories, is very significant, with numerous taxa belonging to old Tertiary flora. The chasmophilous vegetation is localized on different substrata, showing its optimum in the carbonatic rocks, with a lower floristic richness on the siliceous rocks, ranging in altitude from the sea level up to 2,500-3,000 m a.s.l. Thus, from the bioclimatic point of view, these plant communities occur from the infra- to the crio-oromediterranean belts, and within thermo-, meso- and orotemperate belts.

Distribution: Oloarctic, but it is widespread and well represented in the Euro-Mediterranean territory.

Notes: Within this class several orders are currently recognized (Fig. 2), linked to different bioclimatic as well as edaphic and environmental conditions. As concerns their distribution, these syntaxa show well defined phytogeographical boundaries (see, e.g., Rivas-Martínez et al. 2011, Costa et al. 2012, Biondi et al. 2014, Mucina et al. 2016).

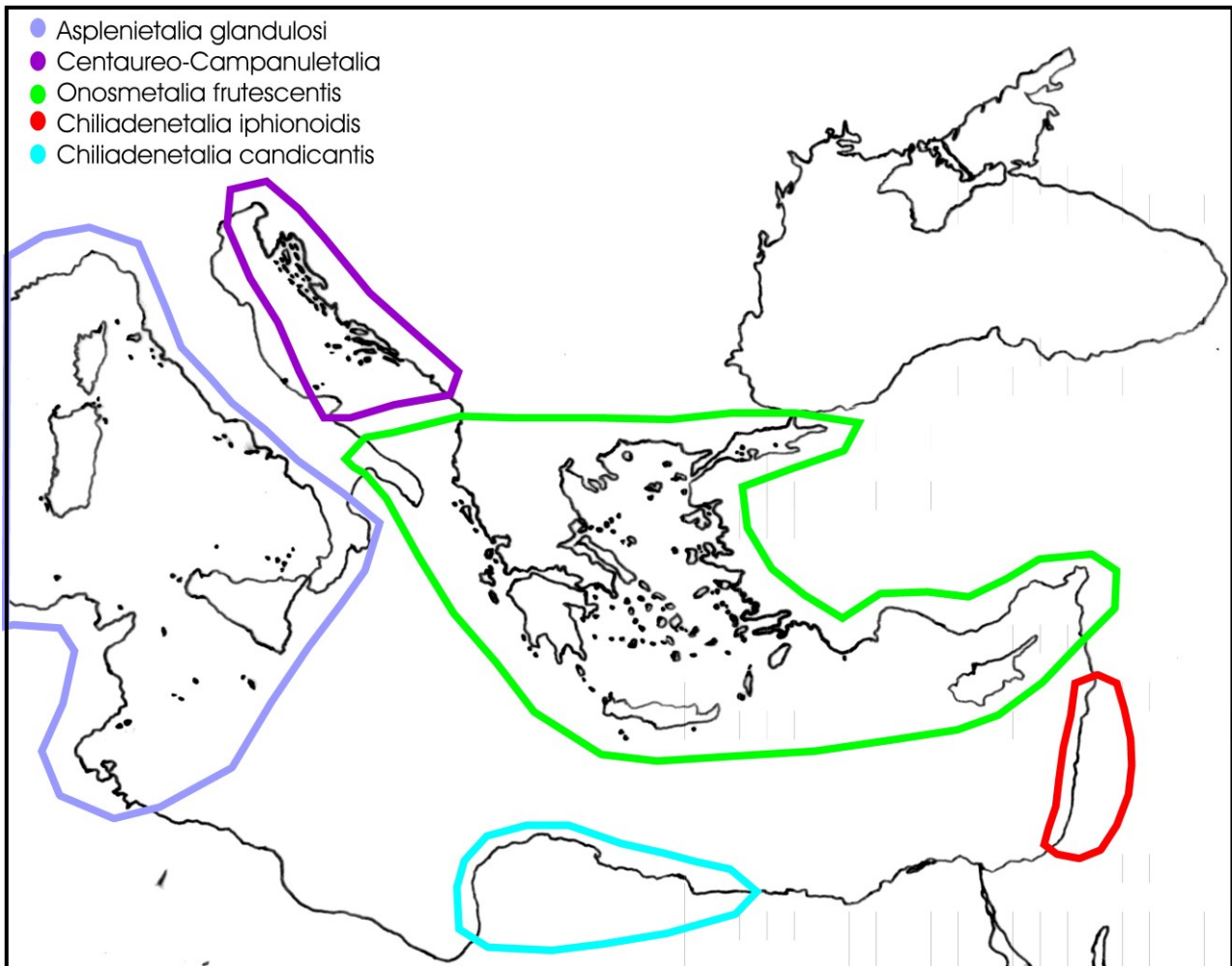


Fig. 2 – Distribution of the orders recognized in the class *Asplenieta trichomanis* in the eastern Mediterranean area.

A) CENTAUREO DALMATICAЕ-CAMPANULETALIA PYRAMIDALIS Trinajstić ex Terzi et Di Pietro 2016

Holotypus: *Centaureo dalmaticae-Campanulion* Horvatić 1934

Syn.: *Centaureo-Campanuletalia* Trinajstić 1980 *Studia Geobot.* 1(1): 206, *nom. inval.* (arts. 3g, 5)

-: *Centaureo-Campanuletalia* Trinajstić ex Bianco, Brullo, Pignatti E. & Pignatti S. 1988, *nom. inval.* (arts. 3g, 5)

-: *Centaureo kartschianae-Campanuletalia pyramidalis* Trinajstić ex Di Pietro et Wagensommer 2008, *nom. inval.* (art. 5)

Characteristic species: *Aurinia leucadea* s.l., *A. sinuata*, *Campanula pyramidalis*, *Cytisus spinescens*, *Ephedra foeminea*, *Inula verbascifolia* subsp. *verbascifolia*, *Phagnalon rupestre* subsp. *illyricum*, *Sesleria juncifolia* s.l.

Ecology: Chasmophilous order localized in the limestone cliffs of territories characterized by Thermo-mesomediterranean bioclimate. This order is differentiated by some species endemic to the Adriatic coasts.

Distribution: amphi-Adriatic (in the western Adriatic side, only in the Gargano promontory) (Fig. 2).

Notes: Currently, within this order three alliances can be distinguished, i.e. *Centaureo dalmaticae-Campanulion pyramidalis* from North-East Adriatic coast, *Centaureo cuspidatae-Portenschlagiellion ramosissimae* from South-East Adriatic coast, and *Asperulion garganicae* from Gargano (South Italy) (Fig. 3).

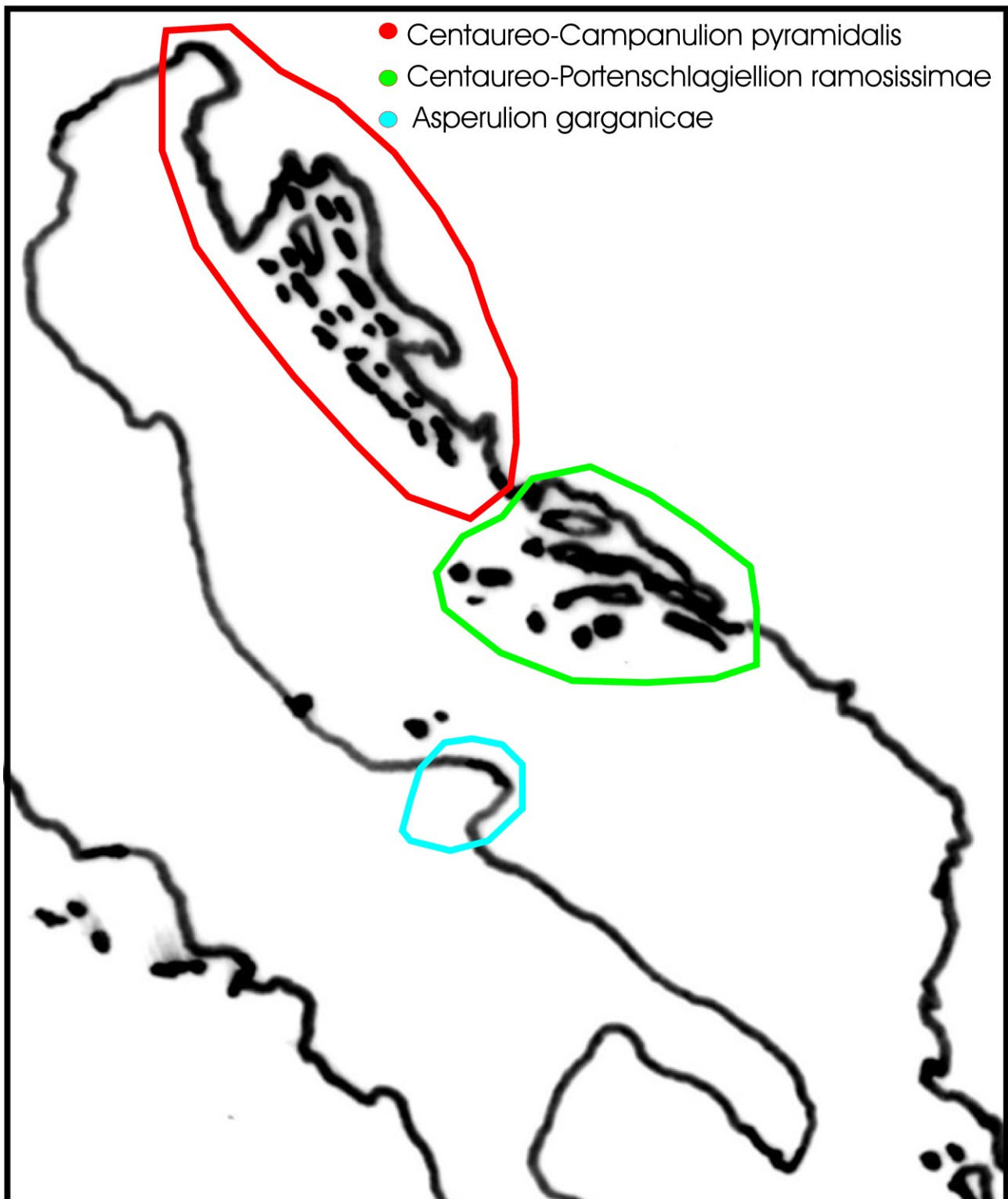


Fig. 3 – Distribution of the alliances recognized in the order *Centaureo dalmaticae-Campanuletaia pyramidalis*.

a) *Centaureo dalmaticae-Campanulion pyramidalis* Horvatić 1934 Prir. Istraž. Jug. Akad., Zagreb, 19: 183

Lectotypus: *Chritmo maritimi-Centaureetum dalmaticae* Horvatić 1934 Prir. Istraž. Jug. Akad., Zagreb, 19: 192 (designated by Terzi & Di Pietro 2016)

Syn.: *Centaureo-Campanulion* Horvatić 1934 Prir. Istraž. Jug. Akad., Zagreb, 19: 183

Characteristic species: *Aurinia petraea*, *Campanula istriaca*, *Centaurea kartschiana* subsp. *dalmatica*, *Euphorbia fragifera*, *Iris pallida* subsp. *illyrica*, *Picris hispidissima*, *Sedum maximum*.

Ecology: Thermo-mesomediterranean chasmophylous vegetation on limestone cliffs, widespread mainly along the coast.

Distribution: North-East Adriatic (Italy near Trieste and Dalmatia) (Fig. 3).

1. *Crithmo maritimi-Centaureetum dalmaticae* Horvatić 1934 Prir. Istraž. Jug. Akad., Zagreb, 19: 192 (Tab. 1A)

Lectotypus: rel. 1, tab. II, Horvatić 1934 (designated by Terzi & Di Pietro 2016)

Syn.: *Crithmeto-Centaureetum dalmaticae* Horvatić 1934 Prir. Istraž. Jug. Akad., Zagreb, 19: 192

-: *Campanulo istriacae-Centaureetum dalmaticae* Horvatić ex Horvatić 1937 Ljet. Jug. Akad. Znan. Umjet., Zagreb, 49: 181, *nom. illeg.*

Characteristic species: *Centaurea kartschiana* subsp. *dalmatica*, *Centaurea kartschiana* subsp. *rabensis*.

Ecology: This association is developed on calcareous cliffs near the sea. It is characterized by the two endemics *Centaurea kartschiana* subsp. *dalmatica*, with very high frequency, and the sporadic occurring *Centaurea kartschiana* subsp. *rabensis*. The species of higher order are quite rare, with only *Campanula istriaca* occurring in more than 50% of the relevés.

Distribution: Quarnero Islands and Istria (Croatia).

2. *Seslerio juncifoliae-Scorzoneretum austriacae* Horvatić 1934 Prir. Istraž. Jug. Akad., Zagreb, 19: 185 (Tab. 1B)

Lectotypus: rel. 2, tab. I, Horvatić 1934

Syn.: *Seslerio-Scorzoneretum austriacae* Horvatić 1934 Prir. Istraž. Jug. Akad., Zagreb, 19: 185

Characteristic species: *Alyssum serpyllifolium* var. *metajne*, *Scorzonera austriaca*, *Seseli pallasii*.

Ecology: This association is developed on calcareous cliffs, more or less distant from the sea, influenced by wind. It is characterized by the widespread species *Scorzonera austriaca*, which grows together with *Sesleria juncifolia*, *Picris hispidissima*, *Campanula istriaca*, *Inula verbascifolia* subsp. *verbascifolia*, the rare endemic *Alyssum serpyllifolium* var. *metajne*, etc.

Distribution: Quarnero Islands (Croatia).

3. *Thalictro velebitici-Campanuletum fenestrellatae* Trinajstić ex Trinajstić 2008, Pl. Comm. Croatia: 19 (Tab. 2A)

Holotypus: rel. 7, tab. 1, Trinajstić 2008

Syn.: *Thalictro-Campanuletum fenestrellatae* Trinajstić 1980 Studia Geobot. 1(1): 207, *nom. inval.* (art. 5)

Characteristic species: *Arenaria orbicularis*, *Campanula fenestrellata*, *Thalictrum velebiticum*.

Ecology: This association is known to date only from the canyon Velika Paklenice, where it occurs on rocky walls constituted by hard limestone. It is characterized by the endemics *Thalictrum velebiticum*, *Campanula fenestrellata*, and *Arenaria orbicularis*, which grow together with several

chasmophytes, such as *Seseli globiferum*, *Melica minuta*, *Inula verbascifolia* subsp. *verbascifolia*, *Sesleria juncifolia*, *Campanula pyramidalis*, etc.
Distribution: central-southern Velebit (Croatia).

4. *Aurinio petraeae-Centaureetum lubenicensis* Trinajstić 2008, Pl. Comm. Croatia: 18 (Tab. 2B)
Holotypus: rel. 2, tab. 1, Trinajstić 2008

Characteristic species: *Aurinia petraea*, *Centaurea kartschiana* subsp. *lubenicensis*.

Ecology: This association was described from rocky walls near the village of Lubenice. It is characterized by *Centaurea kartschiana* subsp. *lubenicensis* and sometimes by *Aurinia petraea*, which grow together with *Aurinia sinuata*, *Euphorbia fragifera*, *Campanula pyramidalis*, etc.
Distribution: Cres Island (North Croatia).

5. *Seselio globiferi-Pseudofumarietum acaulis* Trinajstić 2008, Pl. Comm. Croatia: 19 (Tab. 2C)
Holotypus: rel. 10, tab. 1, Trinajstić 2008

Characteristic species: *Pseudofumaria acaulis*, *Seseli globiferum*.

Ecology: It is a stenoendemic association described from Cape Sv. Mihovil (St. Michael) on Ugljan Island, where it occurs on calcareous rocks with South exposure. It is characterized by the Dalmatian endemics *Seseli globiferum* and *Pseudofumaria acaulis*, which grow together with *Euphorbia fragifera*, *Iris pallida* subsp. *illyrica*, *Campanula pyramidalis*, etc.
Distribution: Ugljan Island (Croatia).

6. *Campanulo pyramidalis-Centaureetum kartschianae* Lausi & Poldini 1962 Boll. Soc. Adr. Sci. 52: 13 (Tab. 2D)
Lectotypus: rel. 6, tab. I, Lausi & Poldini 1962

Characteristic species: *Centaurea kartschiana* subsp. *kartschiana*, *Erysimum cheiri*.

Ecology: This association occurs on calcareous cliffs directly influenced by the sea. It is characterized by the endemic *Centaurea kartschiana* subsp. *kartschiana* and by *Erysimum cheiri*, which grow together with other chasmophytes, such as *Campanula pyramidalis*, *Sedum maximum*, *Teucrium flavum*, *Euphorbia fragifera*, etc.
Distribution: Duino and Sistiana (Trieste, North-East Italy).

7. *Saturejo thymifoliae-Euphorbietum wulfenii* Lausi & Poldini 1962 Boll. Soc. Adr. Sci. 52: 15 (Tab. 2E)
Lectotypus: rel. 1, tab. II, Lausi & Poldini 1962

Characteristic species: *Euphorbia wulfenii*, *Satureja thymifolia*.

Ecology: This association colonizes vertical cliffs along the coast, at an altitude of 200-300 m a.s.l., with mainly South and South-West exposure. It is characterized by *Satureja thymifolia* and

Euphorbia wulfenii, which grow together with few other chasmophytes, such as *Campanula pyramidalis*, *Asplenium ruta-muraria*, *A. trichomanes*, etc.

Distribution: Province of Trieste, along the coast (North-East Italy).

b) *Centaureo cuspidatae-Portenschlagiellion ramosissimae* Trinajstić ex Terzi et Di Pietro 2016
Holotypus: *Inulo verbascifoliae-Centaureetum cuspidatae* Trinajstić ex Terzi et Di Pietro 2016
Syn.: *Centaureo-Portenschlagiellion* Trinajstić 1980 *Studia Geobot.* 1(1): 207, *nom. inval.* (arts. 3f, 5)

-: *Centaureo-Portenschlagiellion* Trinajstić 1987 *Acta Biokovica* 4: 145, *nom. inval.* (art. 3f)

Characteristic species: *Alyssoides utriculata*, *Athamanta ramosissima*, *Campanula portenschlagiana*, *Centaurea cuspidata*, *Dianthus ciliatus* subsp. *dalmaticus*, *Galium firmum* var. *hercegovanicum*, *Iris pseudopallida*, *Seseli tomentosum*.

Ecology: This alliance can be considered the southern vicariant of the *Centaureo dalmaticae-Campanulion pyramidalis*.

Distribution: South-East Adriatic (Dalmatia) (Fig. 3).

8. *Inulo verbascifoliae-Centaureetum cuspidatae* Trinajstić ex Terzi et Di Pietro 2016 (Tab. 3A)

Holotypus: rel. 1, tab. 2, Trinajstić (1987)

Syn.: *Inulo-Centaureetum cuspidatae* Trinajstić 1980 *Studia Geobot.* 1(1): 210 *nom. inval.* (art. 5)

-: *Inulo-Centaureetum cuspidatae* Trinajstić 1987 *Acta Biokovica* 4: 148, *nom. inval.* (art. 3o)

Characteristic species: *Centaurea cuspidata*.

Ecology: It is a very rare association, occurring on rocky vertical walls and characterized by the rare endemic species *Centaurea cuspidata*. The species of alliance and order are well represented, such as *Inula verbascifolia* subsp. *verbascifolia*, *Campanula pyramidata*, *C. portenschlagiana*, *Athamanta ramosissima*, *Galium firmum* var. *hercegovanicum*, *Seseli tomentosum*, etc.

Distribution: Biokovo (Croatia).

Notes: This association was invalidly described (arts. 3o and 5) by Trinajstić (1980, 1987) and recently validated by Terzi & Di Pietro (2016).

9. *Melico minutae-Pseudofumarietum acaulis* Trinajstić ex Trinajstić 2008, Pl. Comm. Croatia: 19 (Tab. 3B)

Holotypus: rel. 16, tab. 1, Trinajstić 2008

Syn.: *Melico minutae-Corydaletum acaulis* Trinajstić 1980 *Studia Geobot.* 1(1): 205, *nom. inval.* (art. 5)

Characteristic species: *Melica minuta*, *Pseudofumaria acaulis*.

Ecology: This association occurs on the coastal rocky places, on slopes with southern exposure. This vegetation, very poor floristically, is characterized by *Melica minuta* and *Pseudofumaria acaulis*.

Distribution: Lastovo Island (South Croatia).

Notes: This association was invalidly described (art. 5) from Lastovo by Trinajstić (1980), and later validated by the same author (Trinajstić 2008).

10. *Campanulo pyramidalis-Moltkietum petraeae* Horvatić ex Trinajstić 1964 Acta Bot. Croat. 23: 158 (Tab. 3C)

Holotypus: rel. p. 158, Trinajstić (1964)

Syn.: *Campanulo-Moltkietum petraeae* Horvatić 1963 Acta Biol. 4: 10, *nom. inval.* (art. 7)

Characteristic species: *Moltkia petraea*.

Ecology: This vegetation occurs on calcareous rocks, from the sea level up to 500-600 m of altitude. It is characterized by *Moltkia petraea*, which grows together with several chasmophytes, such as *Inula verbascifolia* subsp. *verbascifolia*, *Athamanta ramosissima*, *Campanula pyramidata*, *C. portenschlagiana*, etc.

Distribution: Spread along the coast from Kozjak (Vučevica) and Split in the north to the island of Mljet in the south, both on the continent and on islands (Croatia).

Notes: This association, invalidly described by Horvatić (1963), was successively validated by Trinajstić (1964).

11. *Phagnalo graeci-Centaureetum ragusinae* Horvatić ass. nov. prov. (Tab. 4)

Neotypus: rel. 4, Tab. 5, Pavletic (1973)

Syn.: *Phagnalo-Centaureetum ragusinae* Horvatić 1963 Acta Biol. 4: 10, *nom. inval.* (art. 7)

-: *Centaureetum ragusinae* Horvat 1942 Biljni svijet Hrvatske, Zagreb, *nom nud.*

-: *Centaureetum ragusinae* Horvat 1949 Nauka o biljnim zajednicama, Zagreb, *nom. nud.*

Characteristic species: *Centaurea ragusina*, *Convolvulus cneorum* subsp. *latifolius*, *Phagnalon graecum*.

Ecology: This association is frequent in the cliffs and coastal stand mainly on the limestones not very acclives, with western and southern exposition. Floristically, it is differentiated by *Centaurea ragusina*, endemism localized in the rupestrian habitats, which grows together with other chasmophytes, such as *Convolvulus cneorum* subsp. *latifolius*, *Inula verbascifolia* subsp. *verbascifolia*, *Campanula pyramidalis*, etc., while the species of alliance are very rare.

Distribution: Central-southern Croatia.

Notes: This association was described by Horvatić (1942, 1949, 1963) as *nomen nudum* or without relevés and therefore it is invalid (art. 7). It is here validly proposed using relevés published by Pavletic (1973), Trinajstić (1980) and Hecimovic (1984). Besides, according art. 21 of the ICPN a neotype is designated.

Other invalid associations described from Croatia and included in the alliance *Centaureo cuspidatae-Portenschlagiellion ramosissimae*, which can not be validated, are the following: *Seslerio robustae-Putorietum calabricae* Horvatić 1963 Acta Biol. 4: 10, *nom. inval.* (art. 7), and *Portenschlagiello-Campanuletum portenschlagianae* Trinajstić 1980 Studia Geobot. 1(1): 210 *nom. inval.* (art. 5). The latter can not be validated with the single relevé published by Pavletić (1986), because *Athamanta ramosissima* [= *Portenschlagiella ramosissima* (Port. ex Spreng.) Tutin] is not present in the relevé (Tab. 3D).

c) ***Asperulion garganicae*** Bianco, Brullo, Pignatti E. & Pignatti S. 1988, Braun-Blanquetia 2: 136
Holotypus: *Aubrieto italicae-Campanuletum garganicae* Trinajstić ex Bianco, Brullo, Pignatti E. & Pignatti S. 1988

Characteristic species: *Asperula garganica*, *Dianthus tarentinus*, *Leontodon apulus*.

Ecology: According to Bianco et al. (1988) and Di Pietro & Wagensommer (2008), this alliance groups chasmophilous plant communities growing on limestones from the sea level up to 850 m, which are localized on rocky faces or sometimes also on the walls of ancient buildings.

Distribution: Gargano (South-East Italy) (Fig. 3).

12. *Aubrieto italicae-Campanuletum garganicae* Trinajstić ex Bianco, Brullo, Pignatti E. & Pignatti S. 1988, Braun-Blanquetia 2: 143 (Tab. 5)

Holotypus: rel. 83, tab. V, Bianco et al. (1988)

Syn.: *Aubrieto-Campanuletum garganicae* Trinajstić 1980 Studia Geobot. 1(1): 207 *nom. inval.* (art. 5)

-: *Aubrieto-Campanuletum garganicae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988, Braun-Blanquetia 2: 143

Characteristic species: *Aubrieta columnae* subsp. *italica*, *Campanula garganica* subsp. *garganica*.

Ecology: This association occurs on calcareous rocky walls, mainly having North exposure, from the sea level up to 850 m of altitude, on very acclive surfaces. It represents the more mesophilous association within the alliance *Asperulion garganicae*. It is differentiated by some rare endemics, i.e. *Campanula garganica* subsp. *garganica* and *Aubrieta columnae* subsp. *italica*, which grow with other chasmophytes, such as *Leontodon apulus*, *Inula verbascifolia* subsp. *verbascifolia*, *Dianthus tarentinus*, *Athamanta sicula*, etc.

Distribution: South and North-East Gargano promontory (SE-Italy).

Notes: This association was described by Bianco et al. (1988) for Monte S. Angelo and surroundings, in the southern Gargano. Later, Di Pietro & Wagensommer (2008) surveyed this association also in the northern Gargano, along the coast, describing a new subassociation of low altitude, named *picridetosum spinulosae*.

13. *Scabiosetum dallaportae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988, Braun-Blanquetia 2: 139 (Tab. 6)

Holotypus: rel. 72, tab. IV, Bianco et al. (1988)

Syn.: *Centaureetum subtilis* Bianco, Brullo, Pignatti E. & Pignatti S. 1988, Braun-Blanquetia 2: 139

Characteristic species: *Centaurea subtilis*, *Lomelosia crenata* subsp. *dallaportae*.

Ecology: This association occurs on firm calcareous rocks, sometimes not very acclive, on various exposure, at an altitude of 100-650 m a.s.l. It is characterized by the presence of *Lomelosia crenata* subsp. *dallaportae* and *Centaurea subtilis*, which grow together with other chasmophytes, such as *Asperula garganica*, *Leontodon apulus*, *Inula verbascifolia* subsp. *verbascifolia*, *Dianthus tarentinus*, etc.

Distribution: Southern Gargano (SE-Italy).

Notes: Bianco et al. (1988) described for the same area and in ecologically similar stands both the *Scabiosetum dallaportae* and the *Centaureetum subtilis*, recognizing in the latter association two

different subassociations, named *centaureetosum* and *scabiosetosum*. Later, Di Pietro & Wagensommer (2008) sustained the identity of the subass. *scabiosetosum dallaportae* with the association *Scabiosetum dallaportae*. In our opinion, from a floristic and ecological viewpoint, the *Centaureetum subtilis* must be considered a synonym of *Scabiosetum dallaportae*.

14. *Pimpinello tragii-Inuletum verbascifoliae* Di Pietro & Wagensommer 2008, Fitosociologia 45(1): 185 (Tab. 7)

Holotypus: rel. 88, tab. II, Di Pietro & Wagensommer (2008)

Characteristic species: *Clinopodium serpyllifolium* subsp. *fruticosum*, *Pimpinella tragium*.

Ecology: This association occurs on cracked calcareous rocks and walls, with various exposure (mainly South and East), and is widespread in the deep valleys of southern Gargano, from the sea level up to 850 m of altitude. It is differentiated by *Inula verbascifolia* subsp. *verbascifolia*, *Clinopodium serpyllifolium* subsp. *fruticosum*, and *Pimpinella tragium*, which grow with other chasmophytes, such as *Leontodon apulus*, *Dianthus tarentinus*, *Athamanta sicula*, etc.

Distribution: South Gargano (SE-Italy).

B) ONOSMETALIA (ONOSMETEA) FRUTESCENTIS Quézel 1964, Vegetatio 12: 299

Holotypus: *Campanulion versicoloris* Quézel 1964, Vegetatio 12: 299

Syn.: *Cirsietalia chamaepeucis* Horvat in Horvat et al. 1974 ord. prov., Veg. Südosteurop.: 103-104, nom. inval. (art. 3b)

-: *Cirsietalia chamaepeucis* Horvat et al. ex Bergmeier, Dimopoulos et Mucina 2011, Lazaroa 32: 183. nom. inval. (arts. 3e, 38). Holotypus: *Petromarulo pinnatae-Centaureion argenteae* Horvat ex Bergmeier, Dimopoulos et Mucina 2011, Lazaroa 32: 184, nom. inval. (arts. 8, 9, 38)

Characteristic species: *Asperula taygetea*, *Athamanta macedonica*, *Aurinia saxatilis* s.l., *Brassica cretica* s.l., *Capparis orientalis*, *Centranthus ruber* subsp. *sibthorpii*, *Cephalaria squamiflora*, *Crepis fraasii* subsp. *fraasii*, *Cymbalaria microcalyx* s.l., *Ephedra foeminea*, *Galium graecum* subsp. *graecum*, *Helichrysum orientale*, *Hellenocarum multiflorum*, *Lactuca acanthifolia*, *Linum arboreum*, *Lutzia cretica*, *Micromeria myrtifolia*, *Odontites linkii*, *Onosma frutescens*, *Petrorhagia armerioides*, *Ptilostemon chamaepeuce* var. *chamaepeuce*, *P. gnaphaloides* subsp. *pseudofruticosus*, *Ranunculus creticus*, *Rosularia serrata*, *Scrophularia heterophylla*, *S. lucida*, *Sedum creticum* var. *monocarpicum*, *Seseli crithmifolium*, *Silene congesta*, *S. gigantea* s.l., *Stachelina fruticosa*, *Teucrium divaricatum* s.l., *T. flavum* subsp. *hellenicum*, *Umbilicus chloranthus*, *U. luteus*, *Valeriana asarifolia*.

Ecology: This order replaces in the North-East Mediterranean area the *Asplenietalia glandulosi*, thermophilous chasmophilous syntaxon widely distributed in all the territories of the Western Mediterranean. The associations belonging to *Onosmetalia frutescentis* are usually localized on carbonate rocks, mainly limestones, dolomites, marls, calcarenites, etc., more rarely on siliceous substrata, as granites and schists. They have their maximum expression from sea level up to 1000 m of elevation, but sometimes in dry environmental conditions, they may even reach higher altitudes. This type of vegetation is spread within the thermo-oromediterranean bioclimatic belts, penetrating even in the thermo-mesotemperate ones, with arid to humid ombrotype.

Distribution: South-East Italy, Albania, continental and insular Greece (Crete included), western Anatolia, Cyprus (Fig. 2).

Notes: Previously, chasmophilous associations occurring in the Aegean Islands were included in other orders, such as *Cirsietalia chamaepeucis*, *Petromaruletalia pinnatae* and *Campanuletalia jacquinii*, but from the nomenclatural, floristical, ecological and phytogeographical viewpoint these syntaxa must be clearly considered as syntaxonomical synonyms of the order *Onosmetalia frutescentis* (see Horvat et al. 1974, Zaffran 1990, Bergmeier et al. 2011, Mucina et al. 2016). In addition, extensive phytosociological research on the rupestrian habitats of the eastern Mediterranean territories have further confirmed these results. As concerns the plant communities occurring in Crete, the syntaxonomical arrangement proposed by Zaffran (1990) seems to have its reliability, especially because this island for its remarkable extension and ancient geographic isolation shows a high floristic richness, especially in chasmophilous species. Based on that, three suborders can be discriminated within the *Onosmetalia frutescentis*, which are represented by *Onosmenalia frutescentis*, *Petromarulenalia pinnatae* and *Campanulenalia jacquinii*. The first syntaxon is distributed throughout the area of the order, except the island of Crete where the other two suborders occur. Currently, within this order eight alliances can be distinguished, i.e. *Campanulion versicoloris*, *Eryngio glomerati-Inulion heterolepidis*, *Inulion limonellae*, *Helichryson amorgini* and *Ptilostemion cyprii* in the suborder *Onosmenalia frutescentis*, *Verbasco arcturi-Campanulion creticae* and *Asterion cretici* in the suborder *Petromarulenalia pinnatae*, and *Campanulion jacquinii* in the suborder *Campanulenalia jacquinii* (Figs. 4-5).

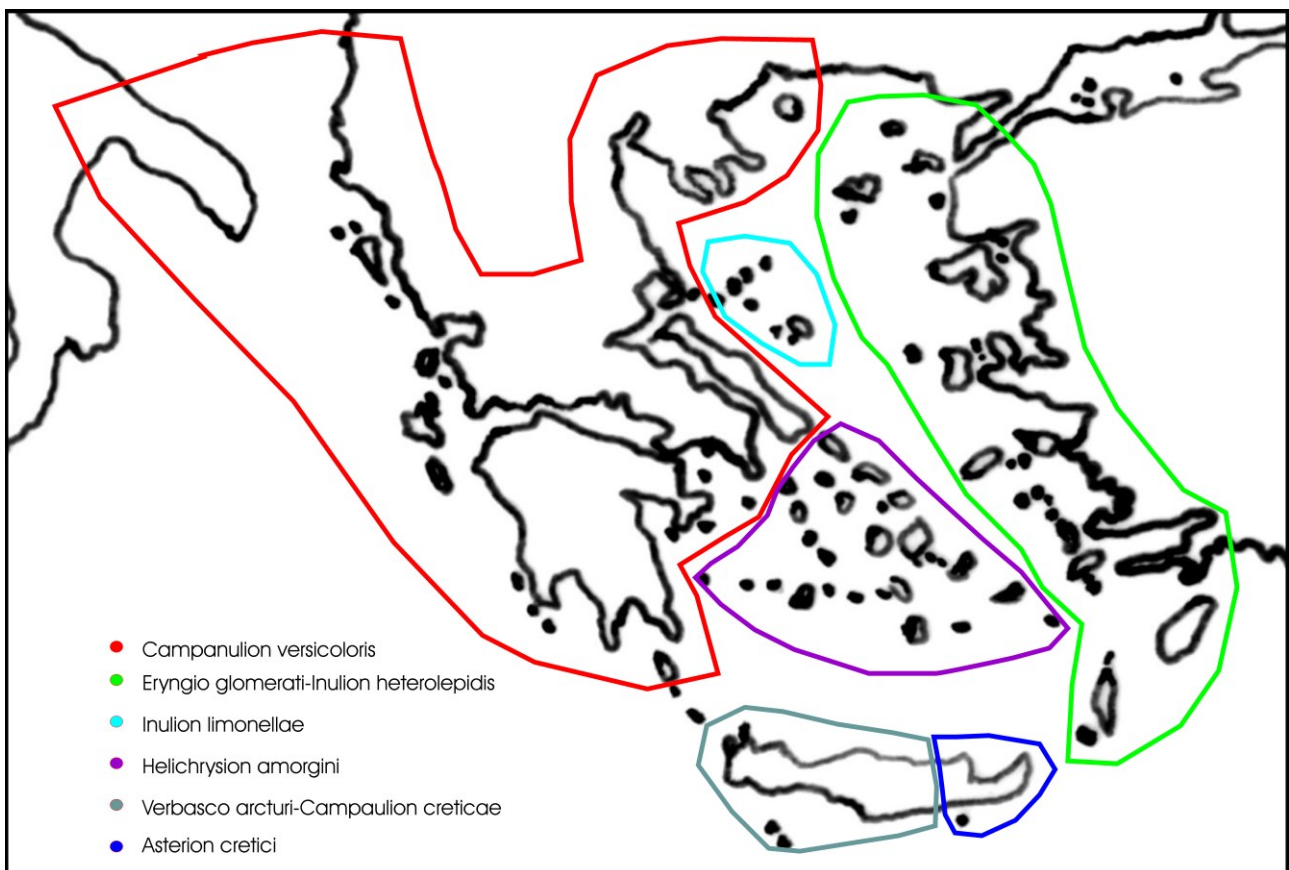


Fig. 4 – Distribution of the alliances recognized in the order *Onosmetalia frutescentis* (the alliances *Campanulion jacquinii*, occurring in Crete, and *Ptilostemion cyprii*, occurring in Cyprus, are not shown).

Ba) *ONOSMENALIA FRUTESCENTIS* subord. nov. prov.
Holotypus: *Campanulion versicoloris* Quézel 1964, Vegetatio 12: 299.

Characteristic species: see order.

Ecology: see order.

Distribution: see order (except Crete).

Notes: Basing on literature and unpublished data from several localities where this suborder is distributed, 5 alliances can be recognized within it, i.e. *Campanulion versicoloris*, *Eryngio glomerati-Inulion heterolepidis*, *Inulion limonellae*, *Helichryson amorgini*, and *Ptilostemion cyprii*. These alliances are well differentiated both for their chorology and floristic set, represented mainly by endemics.

d) *Campanulion versicoloris* Quézel 1964, Vegetatio 12: 299

Lectotypus: *Asperulo boryanae-Stachydetum candidae* Quézel 1964

Syn.: *Campanulo versicoloris-Dianthion japgici* Di Pietro et Wagensommer 2008, *nom. inval.* (art. 5)

-: *Caro multiflora-Aurinion megalocarpae* Terzi et D'Amico 2008. Holotypus: *Aurinio-Centaureetum apulae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988

Characteristic species: *Asperula boryana*, *A. lutea* subsp. *rigidula*, *Bolanthus laconicus*, *Campanula asperuloides* subsp. *taygetea*, *C. rupestris*, *C. topaliana* subsp. *topaliana*, *C. versicolor*, *Cephalaria ambrosioides*, *C. flava* subsp. *setulifera*, *Galium taygeteum*, *Inula verbascifolia* subsp. *methanaea*, *I. verbascifolia* subsp. *parnassica*, *Lomelosia hymettia*, *Minuartia pichleri*, *Sesleria taygetea*, *Silene congesta*, *Stachys canescens*, *S. chrysantha*, *Teucrium halacsyanum*.

Ecology: The alliance includes numerous termophilous associations localized on rocky faces constituted mainly by carbonate substrate or sometimes by siliceous rocks. From the ecological and structural point of view, it can be considered an oriental vicariant of the *Asplenion glandulosi* from the western Mediterranean area or of the *Dianthion rupicolae* from the Tyrrhenian area.

Distribution: It is widespread in south-eastern Italy (Apulia and Basilicata), Albania, Continental Greece and Ionian Greek Islands (Fig. 4).

15. *Asperulo boryanae-Stachydetum candidae* Quézel 1964, Vegetatio 12: 309, Tab. 8 (Tab. 8)

Lectotypus: rel. 8, tab. VIII, Quézel 1964

Syn.: Association à *Stachys candida* et *Galium boryanum* Quézel 1964, Vegetatio 12: 309, Tab. 8

Characteristic species: *Asperula boryana*, *Athamanta arachnoidea*, *Cymbalaria microcalyx*, *Hypericum taygeteum*, *Scaligeria moreana*, *Silene goulimyii*, *Stachys candida*.

Ecology: This association described by Quézel (1964) from Peloponnese, is localized on rocky faces of carbonate hills and mountains, from sea level up to 1250 m of altitude. It is frequent on various exposure, even if it is floristically richer especially in north facing stands. In this vegetation the more frequent chasmophytes are *Campanula topaliana* subsp. *topaliana*, *C. versicolor*, *Asperula boryana*, *Athamanta arachnoidea*, *Inula verbascifolia* subsp. *methanaea*, *Onosma frutescens*, *Odontites linkii*, etc.

Distribution: The association is distributed in almost all the Peloponnese, especially in the central and eastern part (Greece).

16. *Alkanno graecae-Sideridetum raeseri* Quézel 1964, Vegetatio 12: 305 (Tab. 9A)

Lectotypus: rel. 3, tab. IV, Quézel 1964

Syn.: Association à *Sideritis roeseri* et *Alkanna graeca* Quézel 1964, Vegetatio 12: 305, Tab. 4

Characteristic species: *Alkanna graeca* subsp. *graeca*, *Bolanthus graecus*, *Centaurea pelia*, *Sideritis raeseri*.

Ecology: It is a submontane association surveyed at 700-1200 m of altitude, usually on south facing rocky walls. This vegetation, linked to limestones, is characterized by some rare endemics, such as *Sideritis raeseri*, *Centaurea pelia*, *Alkanna graeca* subsp. *graeca*, and *Bolanthus graecus*, which grow together with *Campanula rupestris*, *Inula verbascifolia* subsp. *parnassica*, *Onosma frutescens*, *Silene congesta*, etc.

Distribution: In the basal part of the Massif of Giona and Parnassos, Sterea Hellas (southern Greece).

17. *Daphno jasminae-Asperuletum chloranthae* Quézel 1964, Vegetatio 12: 306 (Tab. 9B)

Lectotypus: rel. 6, tab. IV, Quézel 1964

Syn.: Association à *Asperula chlorantha* et *Daphne jasminea* Quézel 1964, Vegetatio 12: 306, Tab. 4

Characteristic species: *Asperula chlorantha*, *Daphne jasminea*.

Ecology: This association was recorded by Quézel (1964) from some calcareous gorges of Parnassos mountain, at an altitude of 1000-1350 m a.s.l. The author proposed as differential species *Asperula chlorantha* and *Daphne jasminea*, hypothesizing that probably the list of the characteristics has to be longer.

Distribution: Southern Sterea Hellas (Greece).

18. *Asperulo arcadiensis-Hypericetum vesiculosi* Quézel 1964, Vegetatio 12: 307, Tab. 6 (Tab. 9C)

Lectotypus: rel. 4, tab. VI, Quézel 1964

Syn.: Association à *Asperula arcadiensis* et *Hypericum vesiculosum* Quézel 1964, Vegetatio 12: 307, Tab. 6

-: *Inuletum rotundifoliae* ass. prov. Ferro et al. 1975, *nom. inval.* (art. 3b)

Characteristic species: *Asperula arcadiensis*, *Hypericum vesiculosum*.

Ecology: Quézel (1964) described from northern Peloponnese an association characterized by *Hypericum vesiculosum* and *Asperula arcadiensis*, observed on calcareous rocks at an altitude of 200-1000 m a.s.l. According to the author, this rupestrian vegetation could be characterized by a greater number of species, including in particular *Teucrium aroanium* Orph. ex Boiss. and *Trachelium asperuloides* (= *Campanula asperuloides*). The *Inuletum rotundifoliae*, syntaxon described as provisional by Ferro et al. (1975), must be included for its floristic and chorological characteristics within this association.

Distribution: Widespread in northern Peloponnese (Greece).

19. *Inula parnassicae-Ptilostemetum chamaepeucis* Theocharopoulos, Dimitrellos, Assimakopoulos & Georgiadis 2004, Coll. Phytosoc. 28: 1202 (Tab. 10)
Holotypus: Theocharopoulos et al. 2004, Tab. 4, rel. 5.

Characteristic species: *Centaurea niederi*, *Ptilostemon chamaepeuce* var. *chamaepeuce*, *Salvia pomifera* subsp. *calycina*, *Stachys swainsonii* subsp. *swainsonii*.

Ecology: It is a thermophilous association linked to calcareous rocky faces, often represented by cliffs near the sea. This vegetation, surveyed in coastal places and also in the inland up to 600 m a.s.l. by Theocharopoulos et al. (2004) and Maroulis & Georgiadis (2005), is characterized by the dominance of *Ptilostemon chamaepeuce* var. *chamaepeuce* and *Inula verbascifolia* subsp. *parnassica*. These species are usually associated to some significant endemics, such as *Centaurea niederi*, *Salvia pomifera* subsp. *calycina*, *Stachys swainsonii* subsp. *swainsonii*, as well as to many characteristics of the alliance and order.

Distribution: South Sterea Hellas and North Peloponnese (Gulf of Corinth - Greece).

20. *Saxifraga chrysoisplenifoliae-Athamantetum macedonicae* Maroulis & Georgiadis 2005, Fitosociologia 42(1): 48 (Tab.11)

Holotypus: Maroulis & Georgiadis (2005) Tab. 3, rel. 247.

Syn.: *Aubrieta deltoidea-Peucedanum achaicum* comm., by Maroulis & Georgiadis 2005, Fitosociologia 42(1): 47

Characteristic species: *Athamanta macedonica*, *Aubrieta deltoidea*, *Peucedanum achaicum*, *Saxifraga chrysoisplenifolia*.

Ecology: This association occurs in mountain places at 700-1450 m of altitude, where it is well developed in western and northern exposure of calcareous slopes. In this plant communities the dominant species are *Athamanta macedonica*, *Saxifraga chrysoisplenifolia*, *Campanula versicolor*, *Silene congesta*, *Asperula lutea* subsp. *rigidula*, *Onosma frutescens*, etc. Besides, the *Aubrieta deltoidea-Peucedanum achaicum* community described as well by Maroulis & Georgiadis (2005) from the same territory must be included in this association.

Distribution: Mount Erimanthos (North Peloponnese - Greece).

21. *Erysimo corinthii-Campanuletum celsii* ass. nov. prov. (Tab. 12)

Holotypus: rel. 2, tab. 12

Characteristic species: *Campanula celsii*, *Erysimum corinthium*, *Stachys swainsonii* subsp. *melangavica*.

Ecology: This association is localized in the calcareous cliffs near the sea, with North-West exposure, directly affected by marine moisture. The vegetation is quite scattered with low coverage values, and is differentiated by the occurrence of some rare endemics, as *Campanula celsii*, *Erysimum corinthium*, and *Stachys swainsonii* subsp. *melangavica*. The characteristic species of alliance and order are rather rare too.

Distribution: South-East Gulf of Korinthos (Sterea Hellas - Greece).

22. *Sileno spinescentis-Campanuletum andrewsii* ass. nov. prov. (Tab. 13)

Holotypus: rel. 6, tab. 13

Characteristic species: *Campanula andrewsii* subsp. *andrewsii*, *Galium melanantherum*, *Silene spinescens*, *Stachys swainsonii* subsp. *argolica*.

Ecology: This association colonizes the calcareous rocky faces of low altitude (30-400 m a.s.l.) with various exposure. Usually, it shows discrete coverage values and floristically it is characterized by several chasmophytes, some of them endemic of these stands. The more frequent species are *Campanula andrewsii* subsp. *andrewsii*, *Silene spinescens*, *Stachys swainsonii* subsp. *argolica*, *Inula verbascifolia* subsp. *methanaea*, *Ptilostemon gnaphaloides* subsp. *pseudofruticosus*, *Onosma frutescens*, *Aurinia saxatilis*, etc.

Distribution: North-East Peloponnese near Korinthos and Argos (Greece).

23. *Stachydo virellae-Campanuletum hirsutulae* ass. nov. prov. (Tab.14)

Holotypus: rel. 9, tab. 14

Characteristic species: *Campanula andrewsii* subsp. *hirsutula*, *Stachys spreitzenhoferi* subsp. *virella*.

Ecology: This association shows marked thermophilous requirements, localizing in the coastal habitats at altitudes not exceeding 200-300 m a.s.l. It is developed on calcareous rocky slopes with mostly southern exposure. In this plant community the more frequent chasmophytes are *Campanula andrewsii* subsp. *hirsutula*, *Stachys spreitzenhoferi* subsp. *virella*, *Inula verbascifolia* subsp. *methanaea*, *Ptilostemon chamaepeuce* var. *chamaepeuce*, *Onosma frutescens*, etc.

Distribution: Lakonia, surroundings of Monemvasia (South-East Peloponnese - Greece).

24. *Petrorhagio grandiflorae-Stachydetum chrysanthae* ass. nov. prov. (Tab. 15)

Holotypus: rel. 23, tab. 15

Characteristic species: *Asperula elonea*, *Campanula asperuloides* subsp. *asperuloides*, *Inula candida* subsp. *limonella*, *Petrorhagia grandiflora*, *Potentilla arcadiensis*, *Stachys chrysantha*, *S. spreitzenhoferi* subsp. *spreitzenhoferi*, *Teucrium francisci-wernerii*.

Ecology: It is a rupestrian association, floristically very rich in remarkable endemic species, which is usually spread on the limestone vertical walls of the gorges, at an altitude of 50-600 m a.s.l. The chasmophytes physiognomically dominant are *Stachys chrysantha*, *Petrorhagia grandiflora*, *Inula candida* subsp. *limonella*, *Asperula elonea*, *A. boryana*, and *Galium taygeteum*.

Distribution: Dafnon Gorges near Leonido and surroundings (East Peloponnese - Greece).

25. *Dianthio occidentalis-Stachydetum ionicae* ass. nov. prov. (Tab. 16)

Holotypus: rel. 4, tab. 16

Characteristic species: *Dianthus fruticosus* subsp. *occidentalis*, *Inula verbascifolia* subsp. *verbascifolia*, *Stachys ionica*.

Ecology: This association occurs on the calcareous rocky faces of insular stands from sea level up to 600 m of altitude. Floristically, it is rather poor, only a few chasmophytes show a certain frequency, as *Stachys ionica*, *Dianthus fruticosus* subsp. *occidentalis*, *Inula verbascifolia* subsp. *verbascifolia*, *Ptilostemon chamaepeuce* var. *chamaepeuce*, *Ephedra foeminea*, and *Brassica cretica* subsp. *cretica*.

Distribution: Ionian island of Cephalonia (Greece).

26. *Asperulo chloranthae-Moltkietum petraeae* ass. nov. prov. (Tab.17)

Holotypus: Georgiou, Dimitrellos & Georgiadis 2000, Tab. 3, rel. 14.

Syn.: *Moltkia petraea* and *Asperula chlorantha* community, by Georgiou, Dimitrellos & Georgiadis 2000, Phytion 40(1): 64.

Characteristic species: *Asperula chlorantha*, *Centaurea graeca*, *Lomelosia epirota*, *Moltkia petraea*, *Silene cephalenia* subsp. *epirotica*, *Stachys mollissima*.

Ecology: It is a mesophilous association linked to vertical walls of river valleys, showing low coverage values. This vegetation is distributed at an altitude of 150-260 m a.s.l. and is characterized by the occurrence of *Moltkia petraea*, which grows together with *Asperula chlorantha*, *Campanula versicolor*, *Athamanta macedonica* and several other chasmophytes. Previously, this plant community was proposed by Georgiou et al. (2000) as *Moltkia petraea* and *Asperula chlorantha* community, but for its floristic and structural peculiarity it can be recognized as a well distinct association.

Distribution: Epyrus (North-East Greece).

27. *Campanulo versicoloris-Aurinetum leucadeae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988 Braun-Blanquetia 2: 136 (Tab. 18)

Holotypus: rel. 8, tab. I, Bianco et al. (1988)

Syn.: *Campanulo-Aurinetum leucadeae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988 Braun-Blanquetia 2: 136

Characteristic species: *Aurinia leucadea* subsp. *leucadea*, *Dianthus japygicus*, *Centaurea leucadea*, *C. japygica*, *C. tenacissima*, *C. nobilis*.

Ecology: This association is localized on calcareous cliffs near the sea and is differentiated by several rare endemics. The more frequent and physiognomically more relevant species are *Aurinia leucadea* subsp. *leucadea*, *Dianthus japygicus*, *Campanula versicolor*, *Scrophularia lucida*, *Hellenocarum multiflorum*.

Distribution: Between Gallipoli and Otranto in southern Salento (Apulia, South-East Italy).

28. *Aurinio megalocarphae-Centaureetum brullae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988 Braun-Blanquetia 2: 139 corr. (Tab. 19A)

Holotypus: rel. 27, tab. II, Bianco et al. (1988)

Syn.: *Aurinio-Centaureetum apulae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988 Braun-Blanquetia 2: 139

Characteristic species: *Aurinia saxatilis* subsp. *megalocarpha*, *Centaurea brulla*.

Ecology: The association was observed on the walls of deep calcareous valleys in fairly mesic environmental conditions. It is characterized by *Centaurea brulla* (= *C. apula* Bianco & Brullo), endemic species growing together with other chasmophytes, as *Aurinia saxatilis* subsp. *megalocarpa*, *Campanula versicolor*, *Scrophularia lucida*, *Hellenocarum multiflorum*, etc.

Distribution: Bassa Murgia in Central Apulia (South-East Italy).

29. *Iberido violaceae-Athamantetum siculae* Terzi et D'Amico 2008, Acta Bot. Croat. 67(2): 153 corr. (Tab. 19B)

Holotypus: rel. 26, Tab. III, Terzi & D'Amico (2008)

Syn.: *Iberido carnosae-Athamantetum siculi* Terzi et D'Amico 2008, Acta Bot. Croat. 67(2): 153

Characteristic species: *Acinos suaveolens*, *Iberis violacea*.

Ecology: It can be considered a more mesic vicariant of *Aurinio megalocarpace-Centaureetum brullae*, which occurs in very similar habitats represented by walls of deep valleys (locally named "gravine"). Floristically, it is characterized by *Athamanta sicula*, *Aurinia saxatilis* subsp. *megalocarpa*, *Iberis violacea*, *Acinos suaveolens*, etc.

Distribution: Alta Murgia in Central Apulia (South-East Italy).

Notes: The species occurring in Apulia is *Iberis violacea*, not *I. carnosae* Willd.

30. *Piptathero holciformis-Campanuletum versicoloris* Terzi et D'Amico 2008, Acta Bot. Croat. 67(2): 152 (Tab. 19C)

Holotypus: rel. 9, Tab. II, Terzi & D'Amico (2008)

Characteristic species: *Leontodon intermedius*, *Piptatherum holciforme*.

Ecology: Compared to the previous association, it is linked to a greater thermic continentality with a marked decrease in Mediterranean species with more thermophilic requirements. The more frequent species are *Leontodon intermedius*, *Piptatherum holciforme*, *Campanula versicolor*, *Athamanta sicula*, etc.

Distribution: Matera (Basilicata) and probably Laterza (Apulia) (South-East Italy).

e) ***Eryngio glomerati-Inulion heterolepidis*** all. nov. prov.

Holotypus: *Diantho rhodii-Campanuletum hagielliae* ass. nov. prov.

Syn.: *Inulion heterolepidis* Horvat in Horvat et al. 1974, Veg. Südosteurop.: 104, nom. inval. (art. 3b)

-: *Inulion heterolepidis* Horvat in Horvat et al. ex Bergmeier, Dimopoulos et Mucina 2011, Lazaroa 32: 186, nom. inval. (arts. 8, 9, 38); Holotypus: *Campanulo-Inuletum* Horvat in Horvat et al. 1974, nom. dubium (art. 37) (= *Campanulo hagielliae-Inuletum heterolepidis* Horvat in Horvat et al. 1974 corr. Bergmeier, Dimopoulos et Mucina 2011, nom. dubium, art. 37)

Characteristic species: *Arenaria deflexa* subsp. *deflexa*, *Campanula carpatha*, *Cymbalaria microcalyx* subsp. *dodekanesi*, *Dianthus elegans*, *Galium canum* subsp. *ovatum*, *G. incurvum*, *Hypericum cuisinii*, *Inula verbascifolia* subsp. *heterolepis*, *Lomelosia variifolia*, *Silene fabaria*.

Ecology: This alliance replaces in the eastern Aegean islands the *Campanulion versicoloris*, mainly distributed in the mainland stands of Greece and south-eastern Italy. It gathers chasmophilous

associations linked usually to limestones, more rarely on other substrata, which are very rich of endemic species, a lot of them exclusive of this area.

Distribution: Islands of Dodecanese and eastern Aegean (Chios, Ikaria, Lesvos, Samos), near the Turkish coast (Fig. 4).

Notes: Previously, another alliance was described for this Aegean area by Horvat (in Horvat et al. 1974) and named *Inulion heterolepidis*, but it is invalid since proposed as provisional name (art. 3b). Afterwards, Bergmeier et al. (2011) attempted to validate this syntaxon using the synoptical tables published by Horvat et al. (1974), designating as holotype the *Campanulo-Inuletum*, very heterogeneous association, based on relevés from various islands (Rhodos, Samos and Ikaria), referable to at least three different associations. Therefore, it must be clearly considered a *nomen dubium* (art. 37) and not usable to validate a syntaxon (art. 38).

31. *Centaureo acicularis-Campanuletum icaricae* ass. nov. prov. (Tab. 20A)

Holotypus: rel. 2, tab. 20

Characteristic species: *Campanula calaminthifolia*, *C. lyrata* subsp. *icarica*, *Centaurea acicularis*, *Linum gyaricum* subsp. *icaricum*.

Ecology: This association was surveyed at an altitude of 500-600 m a.s.l., on crystalline limestone (marble), with very cracked surfaces. It prefers the southern exposure of insular habitats and is differentiated by several and well circumscribed endemic species. The more frequent chasmophytes are *Cephalaria squamiflora*, *Helichrysum orientale*, *Inula verbascifolia* subsp. *heterolepis*, *Dianthus elegans*, *Hypericum cuisinii*, *Campanula calaminthifolia*, *C. lyrata* subsp. *icaria*, *Centaurea acicularis*, etc.

Distribution: Ikaria island, Eastern Aegean (Greece).

32. *Johrenio dichotomae-Cephalarietum squamiflorae* ass. nov. prov. (Tab. 20B)

Holotypus: rel. 4, tab. 20

Characteristic species: *Cephalaria squamiflora*, *Johrenia dichotoma*.

Ecology: It is a chasmophilous association occurring on the calcareous mountain ridges, at an altitude of 800-1000 m a.s.l. This vegetation is localized on northern faces of insular habitats, usually affected by a fog regime. Floristically, it is characterized by several species, some of them endemic, such as *Cephalaria squamiflora*, *Johrenia dichotoma*, *Inula verbascifolia* subsp. *heterolepis*, *Dianthus elegans*, *Crepis fraasii* subsp. *fraasii*, *Arenaria deflexa* subsp. *deflexa*.

Distribution: Chios island, Eastern Aegean (Greece).

33. *Brassico aegaeae-Campanuletum lyratae* ass. nov. prov. (Tab. 20C)

Holotypus: rel. 14, tab. 20

Characteristic species: *Brassica cretica* subsp. *aegaea*, *Campanula lyrata* subsp. *lyrata*.

Ecology: This association replaces the previous one at lower altitude, on calcareous walls often near the sea, having usually a northern exposure. The more frequent chasmophytes are *Campanula lyrata* subsp. *lyrata*, *Inula verbascifolia* subsp. *heterolepis*, *Ptilostemon chamaepeuce*, *Scrophularia heterophylla*, *Helichrysum orientale*, *Brassica cretica* subsp. *aegaea*.

Distribution: Chios and Samos islands, Eastern Aegean (Greece).

34. *Helichryso pichleri-Cephalarietum squamiflorae* ass. nov. prov. (Tab. 21A)

Holotypus: rel. 1, tab. 21

Characteristic species: *Cephalaria squamiflora*, *Helichrysum pichleri*, *Origanum vetteri*, *Pimpinella pretenderis*.

Ecology: This association shows close relationships with *Johrenio dichotomae-Cephalarietum squamiflorae*, both from the structural-floristic and ecological viewpoint. In fact, the two plant communities have in common the dominance of *Cephalaria squamiflora*, and their localization on mountains top limited to calcareous northern faces. In addition, for its environmental peculiarity, also this vegetation benefits of the moisture due to the fog that for most of the year shrouds these high insular peaks. The association, surveyed at an altitude over 1100 m, is characterized by several casmophytes, some of them are very rare endemics, such as *Helichrysum pichleri*, *Origanum vetteri*, *Pimpinella pretenderis*, *Campanula carpatha*, *Seseli gummiferum* subsp. *crithmifolius*, etc.

Distribution: Kali Limni Mount, Karpathos island (Greece).

35. *Galio ovati-Caroxyletum carpathi* ass. nov. prov. (Tab. 21B)

Holotypus: rel. 4, tab. 21

Characteristic species: *Caroxylon carpathum*, *Dianthus fruticosus* subsp. *carpathus*.

Ecology: This association is localized on high calcareous cliffs, markedly affected by the sea aerosol. It is a vegetation with clear subhalophilous requirements, which is confirmed by the occurrence of several species linked to coastal habitats, such as *Caroxylon carpathum*, *Crithmum maritimum*, *Cichorium spinosum*, etc. Besides, the chasmophilous set is represented by *Dianthus fruticosus* subsp. *carpathus*, *Eryngium glomeratum*, *Campanula carpatha*, *Lactuca acanthifolia* and *Galium canum* subsp. *ovatum*.

Distribution: Northern part of Karpathos island (Greece).

36. *Teucrio heliotropiifolii-Inuletum heterolepidis* Horvat in Horvat et al. 1974, Veg. Südosteurop.: 104 (Tab. 21C)

Neotypus: rel. 15, tab. 21

Syn.: *Teucrio-Inuletum* Horvat in Horvat et al. 1974, Veg. Südosteurop.: 104

Characteristic species: *Teucrium montbretii* subsp. *heliotropiifolium*.

Ecology: This association can be considered a thermophilous vicariant of the *Helichryso pichleri-Cephalarietum squamiflorae*, since it is spread from the sea level to c. 700 m of altitude. It is localized on vertical walls constituted by limestones or sometimes by siliceous rocks, with various exposure. The more frequent chasmophytes are *Lomelosia variifolia*, *Teucrium montbretii* subsp. *heliotropiifolium*, *Inula verbascifolia* subsp. *heterolepis*, *Linum arboreum*, *Ptilostemon chamaepeuce*, *Hypericum cuisinii*, etc.

Distribution: Karpathos island (Greece).

Notes: The syntaxon was described from Karpathos by Horvat (see Horvat et al. 1974), using a synoptical table based on six unpublished relevés, quite omogeneous floristically. Therefore, according to art. 21 of the ICPN as neotype is here designated a relevé carried out in this island, which is very similar for its floristic set to the synoptical table.

37. *Diantho rhodii-Campauletum hagieliae* ass. nov. prov. (Tab. 22)

Holotypus: rel. 3, tab. 22

Characteristic species: *Asperula tournefortii*, *Campanula hagielia*, *Centaurea lactucifolia* subsp. *halkensis*, *Cymbalaria microcalyx* subsp. *dodekanesi*, *Dianthus fruticosus* subsp. *rhodius*, *Erysimum rhodium*, *Ferula chiliantha*, *Scorzonera sublanata*.

Ecology: This association, very rich in local endemics, is spread on calcareous walls with various exposure. It was surveyed from the sea level up to 600 m of altitude in insular stands. In particular, *Campanula hagielia*, *Dianthus fruticosus* subsp. *rhodius*, *Centaurea lactucifolia* subsp. *halkensis*, *Inula verbascifolia* subsp. *heterolepis*, *Eryngium glomeratum*, *Galium canum* subsp. *ovatum*, *Lactuca acanthifolia* and *Ptilostemon chamaepeuce* are the chasmophytes more frequent.

Distribution: Rhodos island (Greece).

f) *Inulion limonellae* all. nov. prov.

Holotypus: *Galio reiseri-Cephalarietum squamiflorae* ass. nov. prov.

Syn.: *Capparo-Amaracion* Horvat in Horvat et al. 1974 *all. prov.*, Veg. Südosteurop.: 104, *nom. inval.* (art. 3b) p.p.

–: *Capparo-Amaracion tournefortii* Horvat in Horvat et al. ex Bergmeier, Dimopoulos et Mucina 2011, *Lazaroa* 32: 185, *nom. inval.* (arts. 8, 9, 38) p.p. Holotypus: *Cirsio-Scrophularietum* Horvat in Horvat et al. 1974, *nom. dubium* (art. 37) (= *Cirsio chamaepeucis-Scrophularietum heterophyllae* Horvat in Horvat et al. 1974 corr. Bergmeier, Dimopoulos et Mucina 2011, *nom. dubium*, art. 37).

Characteristic species: *Campanula reiseri*, *Centaurea rechingeri*, *Inula candida* subsp. *limonella*.

Ecology: This alliance can be considered a northern vicariant of the *Eryngio glomerati-Inulion heterolepidis*. It groups calcicolous associations linked to submediterranean bioclimate, usually characterized by a rather impoverished floristic set.

Distribution: Northern Aegean, mainly Sporades islands (Greece) (Fig. 4).

Notes: Basing on literature data, an alliance described by Horvat (see Horvat et al. 1974) from Aegean area, named *Capparo-Amaracion*, can be included pro parte within this syntaxon. In fact, in the *Cirsio-Scrophularietum*, the only association attributed to this alliance, this author listed in the related synoptical table among the characteristics of the association and alliance, endemic species both of Sporades and Cyclades. From this, it is clearly assumed that the eight relevés used for the synoptical table come from the islands of these two archipelagos. From our phytosociological investigations, it was verified that the rupestrian plant communities of the central Aegean islands have in common with those ones of the northern Aegean islands only characteristic species of the order, but not of an eventual alliance or let alone of association. Therefore, the two syntaxa described by Horvat represent both *nomina dubia* and must be rejected (arts. 37-38).

38. *Galio reiseri-Cephalarietum squamiflorae* ass. nov. prov. (Tab. 23)

Holotypus: rel. 1, tab. 23

Characteristic species: *Cephalaria squamiflora*, *Galium reiseri*.

Ecology: This is for the moment the only association referring to the aforesaid alliance of which we have phytosociological relevés. It occurs at low altitude on calcareous walls facing the sea and is differentiated by some peculiar chasmophytes. In particular, the species more frequent are *Cephalaria squamiflora*, *Galium reiseri*, *Inula candida* subsp. *limonella*, *Campanula reiseri*, *Centaurea rechingeri*, *Ptilostemon chamaepeuce* var. *chamaepeuce*, *Brassica cretica* subsp. *cretica*.
Distribution: Alonissos island (Sporades archipelago - Greece).

g) *Helichryson amorgini* all. nov. prov.

Holotypus: *Diantho amorgini-Centaureetum amorginae* ass. nov. prov.

Syn.: *Capparo-Amaracion* Horvat in Horvat et al. 1974 *all. prov.*, Veg. Südosteurop.: 104, *nom. inval.* (art. 3b) p.p.

-: *Capparo-Amaracion tournefortii* Horvat in Horvat et al. ex Bergmeier, Dimopoulos et Mucina 2011, Lazaroa 32: 185, *nom. inval.* (arts. 8, 9, 38) p.p. Holotypus: *Cirsio-Scrophularietum* Horvat in Horvat et al. 1974, *nom. dubium* (art. 37) (= *Cirsio chamaepeucis-Scrophularietum heterophyllae* Horvat in Horvat et al. 1974 corr. Bergmeier, Dimopoulos et Mucina 2011, *nom. dubium*, art. 37).

Characteristic species: *Helichrysum amorginum*, *Origanum calcaratum*.

Ecology: This syntaxon replaces the previous alliances of the *Onosmetalia frutescentis* in the islands of the central Aegean. It gathers the plant communities occurring mainly on limestones of rupestrian stands, often represented by facing sea cliffs, which are very rich in endemic species.

Distribution: Central Aegean, including mainly the Cyclades islands (Greece) (Fig. 4).

Note: From the nomenclatural point of view, the considerations given for the previous alliance (*Inulion limonellae*) are also valid for this syntaxon.

39. *Diantho amorgini-Centaureetum amorginae* ass. nov. prov. (Tab. 24)

Holotypus: rel. 3, tab. 24

Characteristic species: *Campanula amorgina*, *Centaurea oliveriana* var. *amorgina*, *Dianthus fruticosus* subsp. *amorginus*, *Erysimum senoneri* subsp. *amorginum*, *Galium amorginum*, *Lactuca amorgina*.

Ecology: This association is spread on high sea facing cliffs, constituting by limestones. It is very rich in rare endemics, which are proposed as its characteristics, while the characteristics of alliance and order are represented by *Helichrysum amorginum*, *Origanum calcaratum*, *Brassica cretica* subsp. *aegaea*, *Ptilostemon chamaepeuce*, *Cymbalaria microcalyx* subsp. *microcalyx*, *Teucrium divaricatum* subsp. *divaricatum*, *Seseli crithmifolium*, etc.

Distribution: Amorgos island (Cyclades - Greece).

h) *Ptilostemion cyprii* all. nov. prov.

Holotypus: *Galio cani-Dianthetum cyprii* ass. nov. prov.

Characteristic species: *Asperula stricta*, *Erica sicula* subsp. *libanotica*, *Ptilostemon chamaepeuce* var. *cyprius*.

Ecology: This alliance is the most eastern one among those known within the order *Onosmetalia frutescentis*. In fact, this order in Cyprus is represented by few species, while the rupestrian habitats where the chasmophilous vegetation occurs are very rich of endemics. The alliance gathers plant communities linked mainly on limestones, more spread in the northern part of the island.

Distribution: Cyprus (Fig. 5).

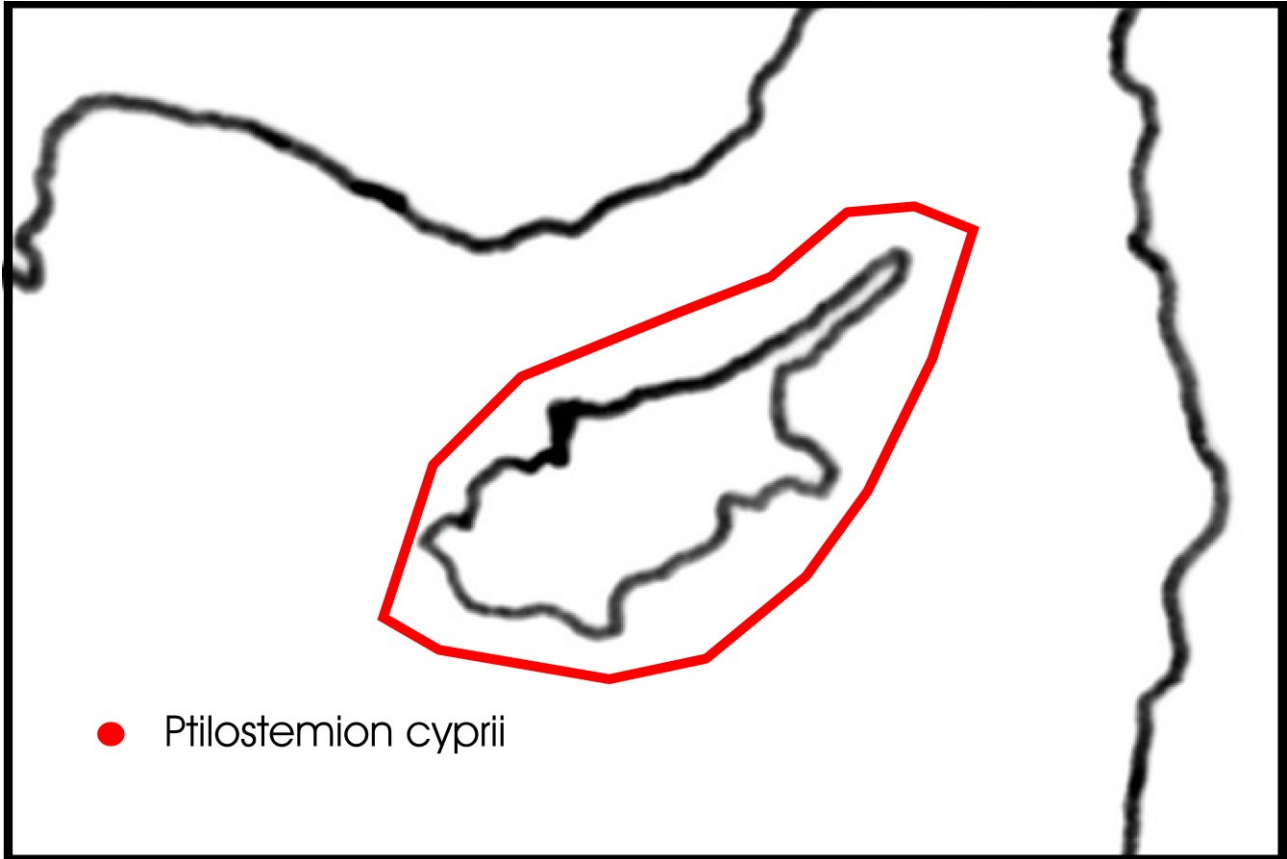


Fig. 5 – Distribution of the alliance *Ptilostemion cyprii*.

40. *Galio cani-Dianthetum cyprii* ass. nov. prov. (Tab.25)

Holotypus: rel. 5, tab. 25

Characteristic species: *Allium kyrenium*, *Arabis cypria*, *Bituminaria kyreniae*, *Brassica hilarionis*, *Dianthus cyprius*, *Galium canum* subsp. *canum*, *Micromeria cypria*, *Pimpinella cypria*, *Rosularia cypria*, *Sideritis cypria*, *Teucrium cyprium* subsp. *kyreniae*.

Ecology: This association is localized on vertical calcareous walls with mainly southern exposure. It is spread at an altitude of 500-1000 m a.s.l. and is very rich in local endemics. The more frequent chasmophytes are *Ptilostemon chamaepeuce* subsp. *cyprius*, *Bituminaria kyreniae*, *Brassica hilarionis*, *Dianthus cyprius*, *Galium canum* subsp. *canum*, *Micromeria cypria*, *Pimpinella cypria*, *Rosularia cypria*, *Sideritis cypria*, and *Silene gigantea* subsp. *gigantea*.

Distribution: Kyrenia range (Northern Cyprus).

Bb) PETROMARULENALIA PINNATAE Zaffran subord. nov. prov.

Holotypus: *Verbasco arcturi-Campanulion creticae* all. nov. prov.

Syn.: *Petromaruletalia pinnatae* Zaffran 1990, Contr. fl. veg. Crete: 424, *nom. inval.* (arts. 5, 8).

Characteristic species: *Asperula pubescens*, *A. rigida*, *Centaurea argentea* subsp. *argentea*, *Crepis auriculifolia*, *C. fraasii* subsp. *mungieri*, *Dianthus fruticosus* subsp. *creticus*, *Ebenus cretica*, *Erysimum candicum* subsp. *candicum*, *Micromeria hispida*, *Odontites creticus*, *Origanum dictamnus*, *Petromarula pinnata*, *Ricotia cretica*, *Scutellaria sieberi*, *Sedum creticum* var. *creticum*, *Silene sieberi*, *Symphytum creticum*, *Stachelina petiolata*.

Ecology: This suborder groups the more thermophilous plant communities linked to thermo- and mesomediterranean belts, usually occurring from sea level to 1000 m of altitude. It is a strictly calcicolous syntaxon and floristically well differentiated by a rich endemic set.

Distribution: Crete island (Greece).

Notes: According to Zaffran (1990), within this syntaxon, initially described by the author as order, two alliances can be differentiated, which have a well distinct distribution. They are *Verbasco arcturi-Campanulion creticae* and *Asterion cretici*.

i) *Verbasco arcturi-Campanulion creticae* all. nov. prov.

Holotypus: *Campanulo creticae-Centaureetum macrothysanae* ass. nov. prov.

Syn.: *Petromarulo-Centaureion argenteae* Horvat in Horvat et al. 1974 *all. prov.*, Veg. Südosteurop.: 104-105, *nom. inval.* (art. 3b).

-: *Petromarulo pinnatae-Centaureion argenteae* Horvat in Horvat et al. ex Bergmeier, Dimopoulos et Mucina 2011, Lazaroa 32: 184, *nom. inval.* (arts. 8, 9, 38). Holotypus: *Inulo candidae-Celsietum arcturi* Horvat in Horvat et al. 1974, *nom. dubium* (art. 37).

-: *Scutellarion sieberi* Zaffran 1990, Contr. fl. veg. Crete: 425, *nom. inval.* (arts. 5, 8).

Characteristic species: *Achillea cretica*, *Calamintha cretica*, *Campanula cretica*, *Eryngium ternatum*, *Ferulago thyrsiflora*, *Galium fruticosum*, *Inula candida* subsp. *candida*, *Petrorhagia dianthoides*, *Sanguisorba cretica*, *Verbascum arcturus*.

Ecology: This alliance gathers the associations occurring on the calcareous rocks from sea level to about 1000 m a.s.l., rarely at higher altitudes. The plant communities are localized on well-exposed and often sunny rocky faces and also on the shaded walls of deep gorges.

Distribution: Western and central Crete island (Greece) (Fig. 4).

Notes: According to literature data, Horvat (see Horvat et al. 1974) described from Crete an endemic alliance named *Petromarulo-Centaureion argenteae*, including two new associations. It is a provisional alliance whose validation was attempted by Bergmeier et al. (2011), but they designated *Inulo candidae-Celsietum arcturi* as holotype of this syntaxon. Unfortunately, this association is a *nomem dubium* (art. 37), since it includes more plant communities, and consequently also the alliance is invalid (art. 38). Previously Zaffran (1990) proposed to include the thermophilous rupestrian associations from Crete in the new alliance *Scutellarion sieberi*, but also this syntaxon is invalid (arts. 5, 8).

41. *Campanulo creticae-Centaureetum macrothysanae* ass. nov. prov. (Tab. 26)

Holotypus: rel. 2, tab. 26

Syn.: *Eryngio-Calaminthetum creticae* Zaffran 1990, Contr. fl. veg. Crete: 444, *nom. inval.* (arts. 5, 8), *subass.* à *Lomelosia albocinta et Sanguisorba cretica* Zaffran 1990, Contr. fl. veg. Crete: 447, *nom. inval.* (arts. 5, 8), Tab. XI

-: *Eryngio-Calaminthetum creticae* Zaffran 1990, Contr. fl. veg. Crete: 444, *nom. inval.* (arts. 5, 8), *subass.* à *Petrorhagia dianthoides et Pimpinella cretica* Zaffran 1990, Zaffran 1990, Contr. fl. veg. Crete: 444, *nom. inval.* (arts. 5, 8), Tab. XI

Characteristic species: *Centaurea argentea* subsp. *macrothysana*, *C. poculatoris*, *Euphorbia sultanhassei*, *Helichrysum heldreichii*, *Micromeria sphaciotica*, *Sesleria doerfleri*.

Ecology: This association, very rich in endemic species, is localized mainly on the high vertical walls of limestone gorges. It is widespread on rupestrian stands well shady and fresh, where woody chasmophytes quite old and of big dimension occur. The more frequent species are *Campanula cretica*, *Centaurea argentea* subsp. *macrothysana*, *Verbascum arcturus*, *Petrorhagia dianthoides*, *Galium graecum* subsp. *graecum*, *Ebenus cretica*, *Asperula rigida*, *Linum arboreum*. They grow often together with several punctiform endemics, such as *Centaurea poculatoris*, *Euphorbia sultanhassei*, *Helichrysum heldreichii*, *Micromeria sphaciotica*, *Sesleria doerfleri*, *Sanguisorba cretica*, etc.

Distribution: Gorges of southern slopes of Lefka Ori (West Crete - Greece).

Notes: Zaffran (1990) described from Crete an association named *Eryngio-Calaminthetum creticae*, which floristically and ecologically can be referred to that one at issue, but it is invalid nomenclaturally (arts. 5,8).

42. *Origanetum dictamni* ass. nov. prov. (Tab. 27)

Holotypus: rel. 7, tab. 27

Syn.: *Origano-Staehelinetum fruticosae* Zaffran 1990, Contr. fl. veg. Crete: 413, Tab. V, *nom. inval.* (arts. 5, 8)

-: *Teucro-Stachydetum tournefortii* Zaffran 1990, Contr. fl. veg. Crete: 426, Tab. VII, *nom. inval.* (arts. 5, 8)

-: *Teucro-Lutzietum creticae* Zaffran 1990, Contr. fl. veg. Crete: 438, Tab. X, *nom. inval.* (arts. 5, 8) p.p.

Characteristic species: *Campanula saxatilis* subsp. *saxatilis*, *Origanum dictamnus*, *Saxifraga chrysosplenifolia*, *Teucrium cuneifolium*.

Ecology: This association colonizes the vertical walls mainly in the more fresh and shady stands. It is spread from the sea level up to 1900 m of altitude and is characterized by the occurrence and often dominance of *Origanum dictamnus*, which grows with several other endemic species, such as *Verbascum arcturus*, *Galium fruticosum*, *Ebenus cretica*, *Asperula rigida*, etc. Within this association two variants can be recognized, the first one, proposed as *subass. typicum* (rels. 1-16), is localized at low altitude and is rich in thermophilous species of alliance and higher orders, while the second one is exclusive of higher altitude (1400-1900 m a.s.l.) and is differentiated by orophilous species, such as *Draba cretica*, *Silene antri-jovis*, *Phagnalon pygmaeum*, *Bromus tomentellus*, *Arenaria fragillima*, *Arabis cretica*, etc. The latter, proposed as *drabetosum creticae* *subass nov.* (rels. 17-24, holotypus rel. 30 Tab. 5 in Zaffran 1990), shows a floristic set very impoverished especially in characteristics of higher order.

Distribution: Scattered in West and Central Crete (Greece).

Notes: This syntaxon includes some associations described by Zaffran (1990) from Crete: *Teucrio-Stachydetum tournefortii*, *Teucrio-Lutziatum creticae* p.p., and *Origano-Staehelinetum fruticosae*, that according to arts. 5 and 8 are invalid. In particular, the first two can be considered synonyms of the subass. *typicum*, while the third one is a synonym of the subass. *drabetosum creticae*.

43. *Dianthetum xylorrhizi* ass. nov. prov. (Tab. 28A)

Holotypus: rel. 2, tab. 28

Characteristic species: *Dianthus xylorrhizus*.

Ecology: This association occurs on the calcareous outcrops characterized by small walls at c. 300 m of altitude. It is differentiated by *Dianthus xylorrhizus*, rare endemic species, which grows together with few other chasmophytes, such as *Campanula cretica*, *Asperula pubescens*, *Ranunculus creticus*, *Verbascum arcturus*, etc.

Distribution: North-West Crete (Greece).

44. *Asperulo rigidae-Putorietum calabrica* ass. nov. prov. (Tab. 28B)

Holotypus: rel. 3, tab. 28

Characteristic species: *Putoria calabrica*.

Ecology: It is a very rare association, linked to vertical shady walls, constituted by limestone. In this community *Putoria calabrica* is the dominant species, growing with few other chasmophytes, among them *Asperula rigida*.

Distribution: Basal part of Lefka Ori (West Crete - Greece).

45. *Petromarulo pinnatae-Centaureetum argenteae* ass. nov. prov. (Tab. 28C)

Holotypus: rel. 11, tab. 28

Syn.: *Teucrio-Centaureetum redemptae* Zaffran 1990, Contr. fl. veg. Crete: 431, Tab. VIII, *nom. inval.* (arts. 5, 8)

-: *Inulo-Asperuletum taygeteae* Zaffran 1990, Contr. fl. veg. Crete: 435, Tab. IX, *nom. inval.* (arts. 5, 8)

Characteristic species: *Centaurea argentea* subsp. *argentea*, *C. redempta*.

Ecology: This association is frequent on calcareous walls from sea level to about 300 m of altitude. It occurs mainly in east and north facing slopes of gorges and hills. Floristically, it is differentiated by *Centaurea argentea* subsp. *argentea* and *Centaurea redempta*, which grows with many other chasmophytes, such as *Petromarula pinnata*, *Inula candida*, *Galium graecum* subsp. *graecum*, *Ebenus cretica*, *Asperula rigida*, *A. pubescens*, *Scutellaria sieberi*, etc.

Distribution: West Crete (Greece).

Notes: Previously, Zaffran (1990) described from Crete two chasmophilous associations, *Teucrio-Centaureetum redemptae* and *Inulo-Asperuletum taygeteae*. Both associations, invalid from the nomenclatural point of view (arts. 5, 8), can be attributed for their floristic and ecological features to *Petromarulo pinnatae-Centaureetum argenteae*.

46. *Galio graeci-Staehelinetum fruticosae* ass. nov. prov. (Tab. 29A)

Holotypus: rel. 1, tab. 29

Characteristic species: *Asperula taygetea*, *Ricotia cretica*, *Sedum creticum*, *Staehelina fruticosa*.

Ecology: This association occurs on calcareous walls with various exposure. It was mainly surveyed on gorges at an altitude of 200-500 m a. s. l. and is characterized by the dominance of *Staehelina fruticosa*. Several other chasmophytes are frequent in the stands colonized by this association, such as *Sedum creticum*, *Ricotia cretica*, *Asperula taygetea*, *Verbascum arcturus*, *Petromarula pinnata*, *Galium graecum* subsp. *graecum*, *Ptilostemon chamaepeuce*, *Brassica cretica* subsp. *cretica*, *Silene gigantea* subsp. *gigantea*, etc.

Distribution: Central Crete (Greece).

47. *Galio fruticosi-Campanuletum creticae* ass. nov. prov. (Tab. 29B)

Holotypus: rel. 12, tab. 29

Characteristic species: *Campanula cretica*, *Galium fruticosum*.

Ecology: This association is localized in the calcareous walls with East or North exposure, from sea level to 300 m of altitude. Floristically, it is differentiated by the dominance of some endemic species, such as *Campanula cretica*, *Inula candida*, *Galium fruticosum*, which grow together with other chasmophytes, among them *Ptilostemon chamaepeuce*, *Galium graecum* subsp. *graecum*, *Ebenus cretica*, *Scrophularia lucida*, etc.

Distribution: North-West Crete (Greece).

j) *Asterion cretici* Zaffran ex Bergmeier, Dimopoulos et Mucina 2011, Lazaroa 32: 185.

Holotypus: *Anthemido tomentellae-Staehelinetum fruticosae* Zaffran ex Bergmeier, Dimopoulos et Mucina 2011: 185.

Syn.: *Asterion cretici* Zaffran 1990, Contr. fl. veg. Crete: 451, *nom. inval.* (arts. 5, 8).

Characteristic species: *Aster creticus*, *Campanula pelviformis*, *C. spatulata* subsp. *filicaulis*, *Galium graecum* subsp. *pseudocanum*, *Hypericum amblycalyx*, *Inula candida* subsp. *decalvans*.

Ecology: This alliance must be considered a geographical vicariant of the *Verbascum arcturi-Campanulion creticae*.

Distribution: Eastern Crete island (Greece) (Fig. 4).

Notes: This syntaxon was described by Zaffran (1990) from the rupestrian stands of Eastern Crete. It was an invalid name (arts. 5, 8), successively validated by Bergmeier et al. (2011).

48. *Anthemido paleaceae-Violetum scorpiuroidis* Zaffran ass. nov. prov. (Tab. 30A)

Holotypus: Zaffran 1990, Tab. XII, rel. 41

Syn.: *Anthemido paleaceae-Violetum scorpiuroidis* Zaffran 1990, Contr. fl. veg. Crete: 452, *nom. inval.* (arts. 5, 8).

Characteristic species: *Anthemis ammanthus* subsp. *paleacea*, *Viola scorpiuroides*.

Ecology: It is an association linked to coastal stands, where it is localized on calcareous or marly walls at an altitude of 50-100 m a. s. l. This vegetation is quite poor floristically, especially in species of higher order. The more frequent chasmophytes are *Viola scorpiuroides*, *Anthemis ammanthus* subsp. *paleacea*, *Campanula pelviformis*, *Galium graecum* subsp. *pseudocanum*, *Petromarula pinnata*, etc.

Distribution: North-East Crete (Greece).

Notes: This association was described by Zaffran (1990), but it is a *nomen invalidum* (arts. 5, 8). Therefore it is here validated.

49. *Anthemido tomentellae-Staehelinetum fruticosae* Zaffran ex Bergmeier, Dimopoulos et Mucina 2011: 185 (Tab. 30B)

Holotypus: Zaffran 1990, Tab. XIII, rel. 50 (designated by Bergmeier, Dimopoulos et Mucina 2011: 185).

Syn.: *Anthemido-Staehelinetum fruticosae* Zaffran 1990, Contr. fl. veg. Crete: 456, *nom. inval.* (arts. 5, 8).

Characteristic species: *Anthemis tomentella*, *Staehelina fruticosa*.

Ecology: This association is localized on calcareous and dolomitic walls at an altitude of 300-1000 m a. s. l., rarely at lower stands. It is frequent mainly in the gorges or on northern exposure slopes. Dominant species is *Staehelina fruticosa*, which grows together with other chasmophytes, such as *Aster creticus*, *Hypericum amblicalyx*, *Inula candida* subsp. *decalvans*, *Petromarula pinnata*, *Galium graecum* subsp. *graecum*, *Asperula rigida*, etc.

Distribution: North-East Crete (Greece).

Notes: This association was described by Zaffran (1990), but being a *nomen invalidum* (arts. 5, 8) it was successively validated by Bergmeier et al. (2011). Besides, in this association can be included p.p. the *Hyperico-Staehelinetum fruticosae* Horvat in Horvat et al. 1974, which is a *nom. inval.* (art. 3f), because in the table there are no species of genus *Hypericum*, and also a *nom. dubium* (art. 37), since it is a heterogeneous vegetation based on 11 relevés, surely to be referred to more than one association.

50. *Asperulo tournefortii-Valerianetum asarifoliae* ass. nov. prov. (Tab. 31)

Holotypus: Zaffran 1990, Tab. XIV, rel. 58

Syn.: *Serratulo-Valerianetum asarifoliae* Zaffran 1990, Contr. fl. veg. Crete: 461, *nom. inval.* (arts. 5, 8).

Characteristic species: *Asperula tournefortii*, *Jacobaea gnaphalioides*, *Klasea cretica*, *Ranunculus cupreus*, *Valeriana asarifolia*.

Ecology: According to Zaffran (1990), it is an association quite thermo-xerophilous localized on calcareous rocky walls with various exposure. It shows its optimum at 300-700 m of altitude. Floristically, this vegetation is differentiated by *Valeriana asarifolia*, *Jacobaea gnaphalioides*, *Asperula tournefortii*, which grow with numerous other chasmophytes, such as *Galium graecum* subsp. *pseudocanum*, *Aster creticus*, *Petromarula pinnata*, *Symphytum creticum*, *Ptilostemon chamaepeuce*, *Ranunculus creticus*, etc.

Distribution: South-East Crete (Greece).

Notes: The association was described by Zaffran (1990) and named *Serratulo-Valerianetum asarifoliae*, *nomen invalidum* (arts. 5, 8). It is here validated but proposing a different name, since

Klasea cretica [*Serratula cichoracea* (L.) DC. subsp. *cretica* Turrill] used by Zaffran to characterize the association is extremely rare in the association, occurring in only 1 out of 13 relevés published by Zaffran (l.c.).

51. *Staehelino fruticosae-Dianthetum sitiaci* ass. nov. prov. (Tab. 32A)

Holotypus: rel. 1, tab. 32

Characteristic species: *Dianthus fruticosus* subsp. *sitiacus*, *Paronychia macrosepala* subsp. *insularum*.

Ecology: This association shows a marked thermophily, since it is localized in small calcareous valleys of areas affected by very arid climatic conditions. Usually, this vegetation occurs in stands near the sea at very low altitude, and is very poor floristically. Among the chasmophytes, only *Dianthus fruticosus* subsp. *sitiacus*, *Paronychia macrosepala* subsp. *insularum*, *Staehelina fruticosa*, *Lactuca acanthifolia*, and *Galium graecum* subsp. *graecum* are frequent.

Distribution: South-East Crete (Greece).

52. *Campanulo creutzburgii-Centaureetum chionanthae* ass. nov. prov. (Tab. 32B)

Holotypus: rel. 5, tab. 32

Characteristic species: *Campanula creutzburgii*, *Centaurea argentea* subsp. *chionantha*.

Ecology: This association was surveyed on calcareous vertical walls on various exposure in the inland stands, at an altitude of 200-400 m a.s.l. It is differentiated by some rare endemics, such as *Centaurea argentea* subsp. *chionantha* and *Campanula creutzburgeri*, which grow together with *Galium graecum* subsp. *pseudocanum*, *Lactuca acanthifolia*, *Ptilostemon chamaepeuce*, etc.

Distribution: North-East Crete (Greece).

53. *Campanuletum hierapetrae* ass. nov. prov. (Tab. 32C)

Holotypus: rel. 9, tab. 32

Characteristic species: *Arenaria fragillima*, *Campanula hierapetrae*, *Galium citraceum*.

Ecology: This association is localized at the top of mountain stands, on dolomitic rocky walls at an altitude of 1300-1450 m a.s.l. It is an orophilous rupestrian vegetation, characterized by *Arenaria fragillima*, *Campanula hierapetrae*, and *Galium citraceum*, very rare endemics. Other chasmophytes quite frequent in this association are *Inula candida* subsp. *decalvans*, *Galium graecum* subsp. *graecum*, *Asperula rigida*, *Crepis fraasii* subsp. *mungieri*, *Crepis auriculifolia*, *Micromeria hispida*, *Aster creticus*, etc.

Distribution: Afendi Kavousi mount (East Crete - Greece).

Bc) *CAMPANULENALIA JACQUINII* Zaffran subord. nov. prov.

Holotypus: *Campanulion jacquini* Zaffran all. nov. prov.

Syn.: *Campanulentalia (Campanuletalia) jacquini* Zaffran 1990, Contr. fl. veg. Crete: 391, *nom. inval.* (arts. 5, 8).

Characteristic species: *Arabis cretica*, *Arenaria cretica*, *Asplenium aegaeum*, *A. creticum*, *Brachypodium sylvaticum* subsp. *creticum*, *Campanula aizoides*, *C. jacquini*, *Draba cretica*, *Gypsophila nana*, *Potentilla speciosa*.

Ecology: This is an orophilous suborder, gathering chasmophilous plant communities occurring above 1400-1500 m of altitude, up to 2300-2400 m, on carbonate substrates.

Distribution: High mountains of Crete island (Greece).

Notes: This syntaxon (sub *Campanuletalia jacquini*) was described from Crete by Zaffran (1990) as suborder of *Potentilletalia speciosae* Quézel 1964, but it is invalid like all other syntaxa by him described in that work, since not typified (arts. 5 and 8 of the Code). Within this suborder the only alliance *Campanulion jacquini* is included.

k) *Campanulion jacquini* Zaffran all. nov. prov.

Holotypus: *Hieracio cretici-Gypsophiletum nanae* Zaffran ass. nov. prov.

Syn.: *Campanulion jacquini* Zaffran 1990, Contr. fl. veg. Crete: 391, *nom. inval.* (arts. 5, 8).

Characteristic species: see suborder.

Ecology: see suborder.

Distribution: see suborder.

Notes: From the nomenclatural viewpoint, it is valid what has been said for the previous syntaxon (suborder).

54. *Hieracio cretici-Gypsophiletum nanae* Zaffran ass. nov. prov. (Tab. 33)

Holotypus: Zaffran 1990, Tab. I, rel. 4

Syn.: *Hieracio-Gypsophiletum nanae* Zaffran 1990, Contr. fl. veg. Crete: 392, Tab. I, *nom. inval.* (arts. 5, 8)

-: *Hieracio-Arenarietum creticae* Zaffran 1990, Contr. fl. veg. Crete: 397, Tab. II, *nom. inval.* (arts. 5, 8)

-: *Nepeto-Arabidetum creticae* Zaffran 1990, Contr. fl. veg. Crete: 408, Tab. IV, *nom. inval.* (arts. 5, 8)

Characteristic species: *Asplenium* × *javorkae*, *Gypsophila nana*, *Hieracium schmidtii* subsp. *creticum*.

Ecology: According to Zaffran (1990), it is an orophilous association occurring on calcareous and dolomitic rocky walls. It is spread at an altitude of 1700-2300 m and is differentiated by several orophilous chasmophytes. The more frequent species are *Gypsophila nana*, *Hieracium schmidtii* subsp. *creticum*, *Potentilla speciosa*, *Campanula jacquini*, *Draba cretica*, *Arenaria cretica*, *Arabis cretica*, *Asplenium aegaeum*, etc. The thermophilous characteristic of *Onosmetalia frutescentis* are usually very rare.

Distribution: Lefka Ori (West Crete - Greece).

Notes: This association described by Zaffran (1990) from Crete is invalid (arts. 5, 8), and is here validated. Besides, within this syntaxon other two associations invalidly described by the same author can be included, such as *Hieracio-Arenarietum creticae* and *Nepeto-Arabidetum creticae*. In particular, they were described from the same territory and habitats, showing in addition a very similar floristic set.

55. *Campanulo jacquinii-Cephalarietum squamiflorae* ass. nov. prov. (Tab. 34A)

Holotypus: rel. 3, tab. 34

Characteristic species: *Bupleurum kakiskalae*, *Cephalaria squamiflora* subsp. *squamiflora*, *Lomelosia albocinta*, *Onobrychis sphaciotica*.

Ecology: This association replaces the *Hieracio cretici-Gypsophiletum nanae* at lower altitude (1500-1700 m), on various exposure. Its more thermophilous requirements are emphasized by the occurrence in the stands by it colonized of several characteristics of the *Onosmetalia frutescentis*. Floristically, it is differentiated by some rare and taxonomically relevant endemics, such as *Bupleurum kakiskalae*, *Lomelosia albocinta*, *Onobrychis sphaciotica*. Besides, some peculiar chasmophytes are also frequent, among them *Cephalaria squamiflora* subsp. *squamiflora*, *Potentilla speciosa*, *Campanula jacquinii*, *Galium graecum* subsp. *graecum*, *Staehelina petiolata*, *Campanula cretica*, etc.

Distribution: Lefka Ori (West Crete - Greece).

56. *Asplenio lepidi-Centaureetum lancifoliae* Zaffran ass. nov. prov. (Tab. 34B)

Holotypus: Zaffran 1990, Tab. III, rel. 21

Syn.: *Asplenio-Centaureetum lancifoliae* Zaffran 1990, Contr. fl. veg. Crete: 403, Tab. III, *nom. inval.* (arts. 5, 8)

Characteristic species: *Asplenium lepidum* subsp. *lepidum*, *A. scolopendrium* subsp. *antri-jovis*, *Bellis longifolia*, *Campanula spatulata* subsp. *filicaulis*, *Centaurea lancifolia*, *Myosotis solange*.

Ecology: As emphasized by Zaffran (1990), this association is localized on the calcareous and dolomitic walls placed near the top of the mountain ridges, usually at 1600-1800 m of altitude. The vegetation shows low value of coverage, since the chasmophytes featuring it are very scattered and not frequent. Several ferns occur in this association (*Asplenium lepidum* subsp. *lepidum*, *A. scolopendrium* subsp. *antri-jovis*, *A. aegaeum*, *A. trichomanes*, *Cystopteris fragilis*), while the other chasmophytes are more rare. The latter are represented by *Bellis longifolia*, *Campanula spatulata* subsp. *filicaulis*, *Arenaria cretica*, *Potentilla speciosa*, *Campanula jacquinii*, etc.

Distribution: Lefka Ori (West Crete - Greece).

Notes: This syntaxon was described by Zaffran (1990) from Crete, but according to arts. 5 and 8 it is invalid. Therefore it is here validated.

57. *Arenario fragillimae-Silenetum antri-jovis* ass. nov. prov. (Tab. 34C)

Holotypus: Zaffran 1990, Tab. VI, rel. 32

Syn.: *Asplenio-Alysetum lassitici* Zaffran 1990, Contr. fl. veg. Crete: 417, Tab. VI, *nom. inval.* (arts. 5, 8)

Characteristic species: *Alyssum lassiticum*, *Arenaria fragillima*, *Asplenium lepidum* subsp. *haussknechtii*, *Euphorbia deflexa*, *Galium incanum* subsp. *creticum*, *Silene antri-jovis*.

Ecology: This association can be considered a geographical vicariant of the previous ones. In particular, it occurs on the rocky walls, constituted by limestones and dolomites at an altitude of 1600-2100 m a.s.l., on various exposure. The more frequent species are *Silene antri-jovis*, *Arenaria fragillima*, *Asplenium lepidum* subsp. *haussknechtii*, *Euphorbia deflexa*, *Campanula jacquini*, *Draba cretica*, *Potentilla speciosa*, etc.

Distribution: Psiloritis and Dikti Ori (Central Crete - Greece).

Notes: The association was described by Zaffran (1990) and named *Asplenio-Alysetum lassitici*, *nomen invalidum* (arts. 5, 8). It is here validated but proposing a different name, since the species used by Zaffran to characterize the association are not floristically significant.

C) CHILIADENETALIA IPHIONOIDIS Zohary ord. nov. prov.

Holotypus: *Chiliadenion iphionoidis* Zohary all. nov. prov.

Syn.: *Varthemietalia* Zohary 1955, Geobotany: 326, *nom. nud.*

-: *Varthemietalia* Zohary 1962, Pl. Life Palest.: 124, *nom. nud.*

-: *Varthemietalia montanae mediterranea* Zohary 1973, Geobot. Selec. 3: 547, *nom. nud.*

Characteristic species: *Ballota undulata*, *Centaurea eryngioides*, *Chiliadenus iphionoides*, *Dianthus strictus*, *Echinops polyceras*, *Hyoscyamus aureus*, *Podonosma orientalis*.

Ecology: This order replaces the *Onosmetalia frutescentis* in the Middle East and groups rupestrian plant communities with marked thermoxerophilous requirements. The habitats colonized by this type of vegetation are represented by rocky walls, mainly limestones, of territories affected by infra-thermomediterranean bioclimate. Floristically, it is differentiated by a rich set of oriental species, many of them endemic.

Distribution: Israel, Lebanon, Syria, Jordan, and maybe Egypt (Sinai) (Fig. 2).

Notes: This order was described as *Varthemietalia* *nom. nud.* by Zohary (1955), and attributed to a distinct class *Varthemietea*, which is floristically differentiated by *Varthemia iphionoides* Boiss. & Blanche (= *Chiliadenus iphionoides*). Successively, this syntaxon was published also by Zohary (1962), while Zohary (1973) proposed for it a new name *Varthemietalia montanae mediterranea*, but both are *nomina nuda*. This syntaxon is here validated.

I) Chiliadenion iphionoidis Zohary all. nov. prov.

Holotypus: *Origanetum dayi* Zohary ass. nov. prov.

Syn.: *Varthemion iphionoidis* Zohary 1955, Geobotany: 326, *nom. nud.*

-: *Varthemion* Zohary 1962, Pl. Life Palest.: 124, *nom. nud.*

-: *Varthemion montanae mediterraneum* Zohary 1973, Geobot. Selec. 3: 547, *nom. nud.*

Characteristic species: see order.

Ecology: see order.

Distribution: see order (Fig. 6).

Notes: This syntaxon likewise the relative order, was described by Zohary (1955) and later by Zohary (1962, 1973), always as *nomen nudum*. Currently, it is the only alliance known for the order.

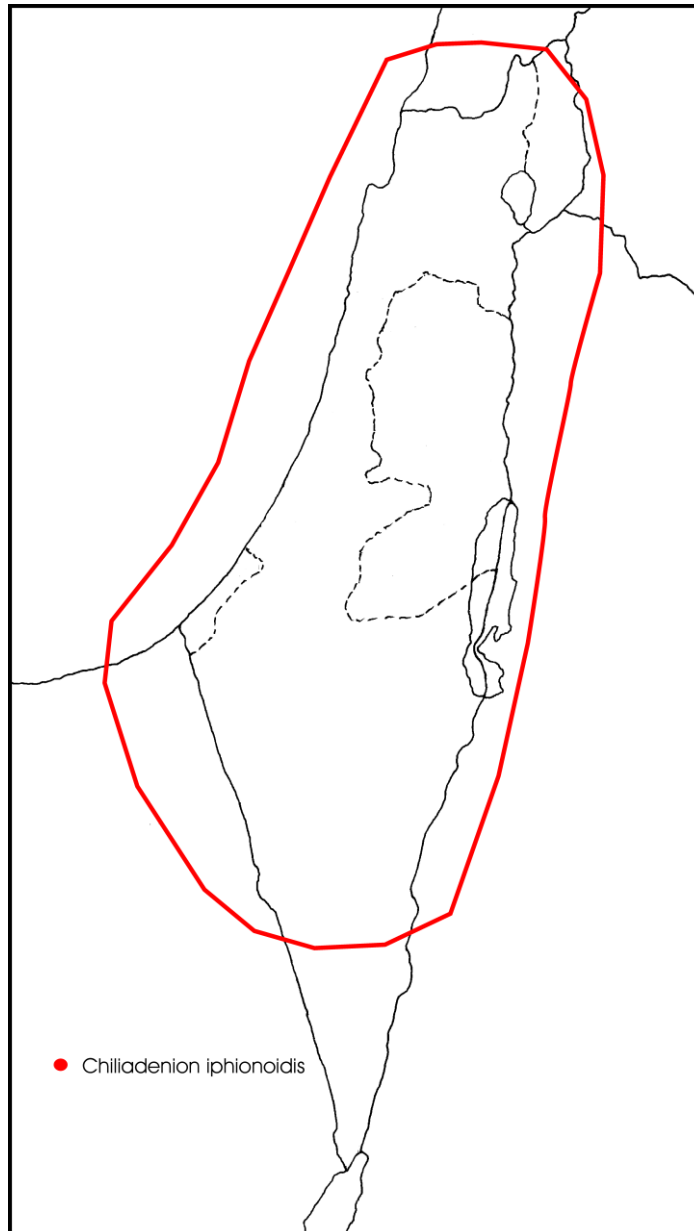


Fig. 6 – Distribution of the single alliance recognized in the order *Chiliadenetalia iphionoidis*.

58. *Origanetum dayi* Zohary ass. nov. prov. (Tab. 35A)

Holotypus: rel. 5, tab. 35

Syn.: *Origanetum dayi* Zohary 1955, Geobotany: 326, *nom. nud.*

Characteristic species: *Astragalus amalecitanus*, *Centaurea aegyptiaca*, *Dianthus monadelphus* subsp. *judaicus*, *Origanum dayi*.

Ecology: This association is localized on smooth rocky walls, mainly with northern exposure and at an altitude of 300-350 m a.s.l. It is linked to calcareous outcrops of territories with very dry bioclimate of desert zones. Floristically, it is characterized by the dominance of *Origanum dayi*, *Astragalus amalecitanus*, and *Centaurea aegyptiaca*, which grow together with *Chiliadenus iphionoides*, *Centaurea eryngioides*, *Ballota undulata*, *Echinops polyceras*, etc.

Distribution: Negev Highlands near Yerokham (Israel).

Notes: This syntaxon, described by Zohary (1955) as *nomen nudum*, is here validated.

59. *Dianthio sinaici-Origanetum ramonensis* ass. nov. prov. (Tab. 35B)

Holotypus: rel. 7, tab. 35

Characteristic species: *Astragalus bethlehemiticus*, *Centaurea damascena*, *Dianthus sinaicus*, *Origanum ramonense*, *Scrophularia xylorrhiza*.

Ecology: This association occurs on high rocky walls, mainly of wadis, at an altitude of 900-1000 m a.s.l. It is linked to very dry bioclimate of subdesertic zones. It is differentiated by numerous endemic species, such as *Scrophularia xylorrhiza*, *Dianthus sinaicus*, *Origanum ramonense*, *Astragalus bethlehemiticus*, and *Centaurea damascena*. The chasmophytes of higher order are also quite frequent, among them *Chiliadenus iphionoides*, *Centaurea eryngioides*, *Echinops polyceras*, *Podonosma orientalis*, *Eryngium glomeratum*, etc.

Distribution: Negev Highlands, Nahal Elot (Israel).

60. *Saturejetum thymbrifoliae* ass. nov. prov. (Tab. 35C)

Holotypus: rel. 15, tab. 35

Characteristic species: *Hypericum lanuginosum*, *Satureja thymbrifolia*.

Ecology: This association was surveyed on calcareous rocky walls at an altitude of about 220 m a.s.l. It is linked to thermomediterranean bioclimate with dry ombrotype. It is differentiated by *Satureja thymbrifolia* and *Hypericum lanuginosum*, which grow with *Chiliadenus iphionoides*.

Distribution: Judean Foothills near Sedot Micha (Israel).

61. *Salvietum hierosolymitanae* ass. nov. prov. (Tab. 35D)

Holotypus: rel. 18, tab. 35

Characteristic species: *Salvia hierosolymitana*.

Ecology: This association occurs in shady and fresh rocky walls at about 800 m of altitude, in an area characterized by a thermo-mediterranean sub-humid bioclimate. In these stands *Salvia hierosolymitana* is frequent, growing with several other chasmophytes, such as *Chiliadenus iphionoides*, *Podonosma orientalis*, *Hyoscyamus aureus*, *Echinops polyceras*, *Dianthus strictus*, and *Ballota undulata*.

Distribution: Jerusalem, Gethsemane (Israel).

62. *Brassico creticae-Podonosmetum orientalis* ass. nov. prov. (Tab. 35E)

Holotypus: rel. 20, tab. 35

Characteristic species: *Allium carmeli*, *Brassica cretica*, *Rosularia libanotica*.

Ecology: This association was surveyed on rocky walls of calcareous outcrops near the sea (50-70 m a.s.l.), in an area affected by thermomediterranean bioclimate. The surfaces are characterized by deep cracks and caves, that testify karstic phenomena, where several chasmophytes settle down. The more frequent species are *Brassica cretica*, *Podonosma orientalis*, *Rosularia libanotica*, *Dianthus strictus*, *Ballota undulata*, *Ferula tingitana*, etc.

Distribution: Mount Carmel (Israel).

63. *Stachydetum palaestinae* Zohary ass. nov. prov. (Tab. 35F)

Holotypus: rel. 28, tab. 35

Syn.: *Stachydetum palaestinae* Zohary 1955, Geobotany: 326, *nom. nud.*

-: *Stachydetum palaestinae* Zohary 1962, Pl. Life Palest.: 125, *nom. nud.*

-: *Stachydetum palaestinae* Zohary 1973, Geobot. Selec. 3: 548, *nom. nud.*

Characteristic species: *Stachys palaestina*.

Ecology: This association is linked to mesic bioclimatic conditions, within the thermomediterranean subhumid belt, at an altitude ranging from sea level up to c. 1000 m a.s.l. It occurs on limestones and arenaceous limestones of cliffs and rocky walls of gorges. Floristically, it is differentiated by *Stachys palaestina* and, according to Zohary (1962), also by *Micromeria serpyllifolia*, which grow together with *Chiliadenus iphionoides* and *Podonosma orientalis*.

Distribution: Northern Israel.

Notes: Previously, this association was described by Zohary (1955, 1962, 1973), but it is invalid from the nomenclature viewpoint, since *nomen nudum* (arts. 2b, 46d, 46f). Therefore, it is here validated.

64. *Chiliadenetum iphionoidis* Zohary ass. nov. prov. (Tab. 35G)

Holotypus: rel. 30, tab. 35

Syn.: *Varthemietum iphionoidis* Zohary 1955, Geobotany: 326, *nom. nud.*

-: *Varthemietum iphionoidis* Zohary 1962, Pl. Life Palest.: 124, *nom. nud.*

-: *Varthemietum montanae* Zohary 1973, Geobot. Selec. 3: 548, *nom. nud.*

Characteristic species: *Chiliadenus iphionoides*.

Ecology: This is a very pioneer association, linked to soft or moderately hard rocky walls, represented mainly by limestones. From the bioclimatic viewpoint, it is not related to well-defined climatic conditions. In particular, it can be considered as an inops vegetation, dominated by *Chiliadenus iphionoides*, which grows mainly with *Podonosma orientalis*.

Distribution: Widely distributed in Israel.

Notes: Similarly to the other syntaxa described by Zohary (1955, 1962, 1973), also this one is a *nomen nudum*, therefore invalid from the nomenclature viewpoint (arts. 2b, 46d, 46f), and here validated.

Other invalid associations described by Zohary (l.c.) from Israel, which can not be validated, are the following: *Podonosmetum syriacae* Zohary 1955, Geobotany: 326, *nom. nud.* (= *Onosmetum orientalis* Zohary 1973, Geobot. Selec. 3: 548, *nom. nud.*), *Chamaepeucetum muticae* Zohary 1973, Geobot. Selec. 3: 548, *nom. nud.*, *Micromerietum fruticosae* Zohary 1973, Geobot. Selec. 3: 548, *nom. nud.*, *Centaureetum speciosae* Zohary 1973, Geobot. Selec. 3: 548, *nom. nud.*

D) CHILIADENETALIA CANDICANTIS Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 258

Holotypus: *Athamantion dellae-cellae* Brullo et Furnari 1994

Characteristic species: *Chiliadenus candicans*, *Ephedra alte*, *Euphorbia gebelica*, *Hypericum aegypticum*, *Petrorhagia illyrica* subsp. *angustifolia*, *Sedum laconicum* subsp. *pentapolitanum*.

Ecology: This order can be considered a vicariant of *Chiliadenetalia iphionoidis*, and is represented by plant communities linked to calcareous rocky walls occurring in territories characterized by thermomediterranean bioclimate. The chasmophilous vegetation belonging to this syntaxon is spread from sea level up to 800-900 m of altitude.

Distribution: Cyrenaica (Libya), probably also in Tripolitania and North Egypt (Fig. 2).

Notes: Currently, within this order two alliances can be distinguished, i.e. *Athamantion dellae-cellae* from North Cyrenaica, and *Teucrion cyrenaici* from North-West Cyrenaica (Fig. 7).

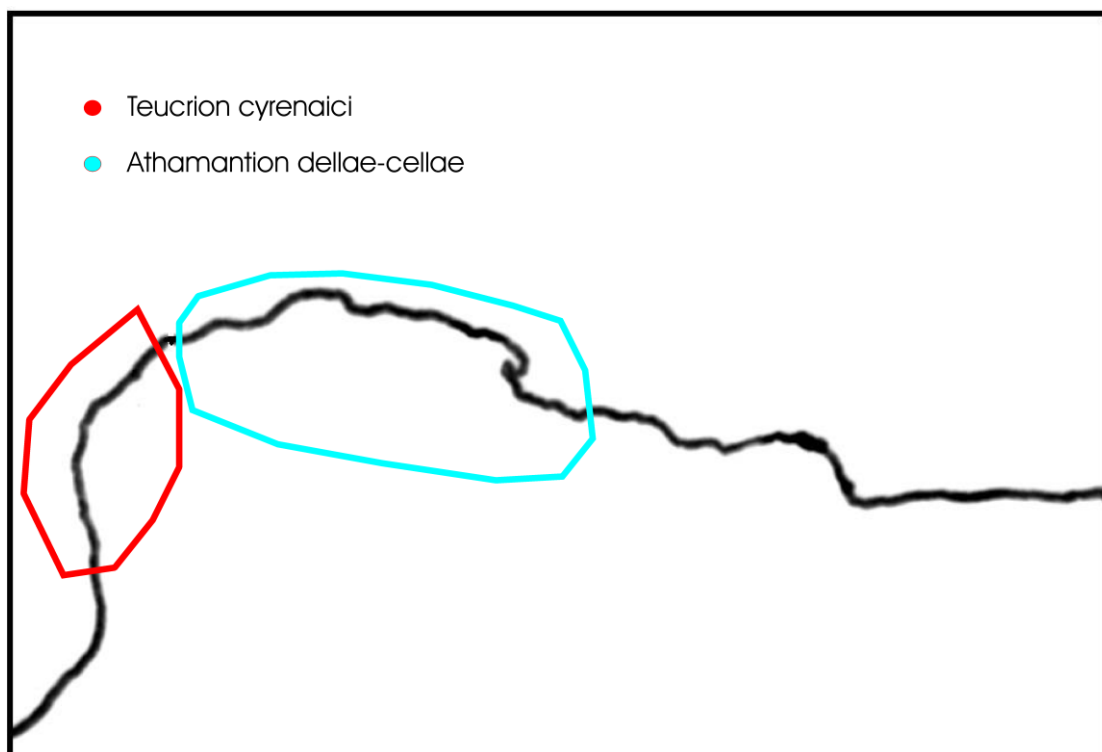


Fig. 7 – Distribution of the alliances recognized in the order *Chiliadenetalia candicantis*.

m) Athamantion dellae-cellae Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 259

Holotypus: *Telephio-Darnielletum cyrenaicae* Brullo et Furnari 1994

Characteristic species: *Asperula cyrenaica*, *Athamanta della-cellae*, *Daphne jasminea*, *Erica sicula* subsp. *cyrenaica*, *Hypericum decaisneanum*, *Micromeria conferta*, *Origanum cyrenaicum*, *Ptilostemon gnaphaloides* subsp. *gnaphaloides*, *Sedum cyrenaicum*, *Stachys rosea*.

Ecology: This alliance groups the more mesophilous associations of the order *Chiliadenetalia candicantis*, distributed in the thermomediterranean dry belt at an altitude of 100-550 m a.s.l. These communities are frequent mainly in the wadis, often very deep, or on the cliffs, constituted mainly by limestone.

Distribution: Higher part of Jebel el-Akhdar (Cyrenaica - Libya) (Fig. 7).

65. *Telephio barbeyani-Darnielletum cyrenaicae* Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 264 (Tab. 36A)

Holotypus: rel. 3, Tab. 13, Brullo & Furnari (1994)

Syn.: *Telephio-Darnielletum cyrenaicae* Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 264

Characteristic species: *Petrorhagia cyrenaica*, *Salsola cyrenaica* (*Darniella cyrenaica*), *Telephium barbeyanum*.

Ecology: This association occurs on the calcareous rocky walls of deep wadis, mainly having North and East exposure, at an altitude of 100-300 m a.s.l. Differential species are some rare endemics such as *Telephium barbeyanum*, *Salsola cyrenaica*, and *Petrorhagia cyrenaica*, which grow with many significant other chasmophytes. The latter are represented mainly by *Athamanta della-cellae*, *Asperula cyrenaica*, *Micromeria conferta*, *Chiliadenus candicans*, *Stachys rosea*, etc.

Distribution: Derna, North-East Cyrenaica (Libya).

66. *Origano cyrenaici-Putorietum calabricae* Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 262 (Tab. 36B)

Holotypus: rel. 9, Tab. 11, Brullo & Furnari (1994)

Characteristic species: *Antirrhinum gebelicum*, *Matthiola incana* subsp. *cyrenaica*, *Origanum cyrenaicum*, *Putoria calabrica*.

Ecology: This association is the more spread of the alliance at issue and is localized on the calcareous rocky walls of very deep wadis, characterized by a quite fresh microclimate. Floristically, it is dominated by *Putoria calabrica*, which grows with several endemic species, among them *Micromeria conferta*, *Stachys rosea*, *Athamanta della-cellae*, *Origanum cyrenaicum*, *Asperula cyrenaica*, etc.

Distribution: Central and East of Jebel el-Akhdar (Cyrenaica - Libya).

67. *Origanetum akhdarensis* Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 262 (Tab. 36C)

Holotypus: rel. 5, Tab. 12, Brullo & Furnari (1994)

Characteristic species: *Origanum akhdarense*, *Petrorhagia rupestris*.

Ecology: It is a very mesophilous association, localized on the bottom of deep Wadis. The limestones colonized by this chasmophilous vegetation are usually covered by moss carpet, since the walls are very shady. Floristically, it is characterized by the occurrence of *Origanum akhdarense*, rare endemic species, growing together with *Petrorhagia rupestris*, *Stachys rosea*, *Micromeria conferta*, *Sedum cyrenaicum*, *Asperula cyrenaica*, etc.

Distribution: Wadi el-Kuf (North Cyrenaica - Libya).

68. *Sedo micranthi-Hypericetum decaisneani* Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 264 (Tab. 36D)

Holotypus: rel. 2, Tab. 14, Brullo & Furnari (1994)

Syn.: *Sedo-Hypericetum decaisneani* Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 264

Characteristic species: *Hypericum decaisneanum*, *Sedum album* var. *micranthum*.

Ecology: This association occurs on calcareous outcrops with not very acclive surfaces, often mixed with the garrigues colonizing the high plateaux. This vegetation is usually exclusive of sunny and windy habitats and is differentiated by *Hypericum decaisneanum*, often associated with small tufts of *Sedum album* var. *micranthum*. Well represented are here the chasmophytes belonging to the alliance and to the order, such as *Micromeria conferta*, *Stachys rosea*, *Chiliadenus candicans*, and *Petrorhagia illyrica* subsp. *angustifolia*.

Distribution: Central part of Jebel el-Akhdar (Cyrenaica - Libya).

n) ***Teucrium cyrenaici*** Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 259

Holotypus: *Euhesperidetum linearifoliae* Brullo et Furnari 1994

Characteristic species: *Sedum barcense*, *Silene fruticosa* subsp. *cyrenaica*, *Teucrium cyrenaicum*.

Ecology: This alliance replaces the *Athamantion dellae-cellae* in the territories characterized by an infra-mediterranean bioclimate. It gathers markedly thermophilous associations, floristically differentiated by xerophilous chasmophytes.

Distribution: North-West Cyrenaica (Libya) (Fig. 7).

69. *Euhesperidetum linearifoliae* Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 267 (Tab. 37A)

Holotypus: rel. 6, Tab. 16, Brullo & Furnari (1994)

Characteristic species: *Euhesperida linearifolia*.

Ecology: This association is localized on the rocky slopes, usually not very acclive, with a prevalently northern exposure. It is linked to very dry bioclimatic conditions and to substrata represented by hard and smooth limestones. The more relevant species is *Euhesperida linearifolia*, which grows together with *Teucrium cyrenaicum*, *Chiliadenus candicans*, *Petrorhagia illyrica* subsp. *angustifolia*, *Silene fruticosa* subsp. *cyrenaica*, etc.

Distribution: Between Tocra and Benina, North-West part of Jebel el-Akhdar (Cyrenaica - Libya).

70. *Micromerio guichardii-Origanetum pampaninii* Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 267 (Tab. 37B)

Holotypus: rel. 10, Tab. 15, Brullo & Furnari (1994)

Syn.: *Micromerio-Origanetum pampaninii* Brullo et Furnari 1994, Boll. Acc. Gioenia Sci. Nat. 27(347): 267

Characteristic species: *Micromeria guichardii*, *Origanum pampaninii*.

Ecology: This association colonizes the calcareous rocky walls with northern exposure of not many deep wadis, at an altitude of 300-400 m a.s.l. In this vegetation two rare endemics are localized, *Micromeria guichardii* and *Origanum pampaninii*. Other chasmophytes are very frequent in these

stands, such as *Chiliadenus candicans*, *Sedum laconicum* subsp. *pentapolitanum*, *Euphorbia gebelica*, *Silene fruticosa* subsp. *cyrenaica*, etc.

Distribution: Jebel el-Akhdar, near Barce (Cyrenaica - Libya).

Conclusion

The investigation carried out on the vegetation colonizing the rupestrian habitats, represented by rocky walls, cliffs, gorges, and usually the stands characterized by vertical or very acclive surfaces, regarding the territories of the eastern Mediterranean within the thermo- and meso-Mediterranean bioclimate, have emphasized their remarkable floristic richness. Basing on the checklist obtained from the species listed in the phytosociological tables, the surveyed vegetation is composed by about 950 different taxa (at the rank of species, subspecies and variety). The rupestrian species linked to these habitats, which characterize the surveyed syntaxa, are about 400 (they are indicated with an asterisk in the floristic checklist), while the other about 550 taxa are represented by accidental species. The taxa are included in 80 different families. The most represented families are Asteraceae (142 taxa), Lamiaceae (99 taxa), Caryophyllaceae (74 taxa), Brassicaceae (61 taxa), Poaceae (60 taxa), Apiaceae (43 taxa), Fabaceae (42 taxa), Rubiaceae (42 taxa), Campanulaceae (35 taxa), Crassulaceae (34 taxa), and Caprifoliaceae (26 taxa). According to the current knowledges, the recognized associations are 70, arranged in 14 alliances and 4 orders, all belonging to the class *Asplenieta trichomanis*. Many of these syntaxa are described as new in this work, some of which validated provisionally, and in particular 39 new associations, 7 new alliances and 1 new order are proposed. The highest number of associations (38) occurs in Greece (17 of them in Crete), all belonging to the order *Onosmetalia frutescentis*, while 9 are located in Croatia, 9 in Italy, 7 in Israel, 6 in Cyrenaica (Libya) and 1 in Cyprus. As concerns the eastern Mediterranean, there is still a lack of data on the rupestrian vegetation regarding Albania, Turkey, Egypt, and some territories of the Middle East (Lebanon, Syria, Jordan).

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Syntaxonomical scheme

ASPLENIETEA TRICHOMANIS (Br.-Bl. in Meier & Br.-Bl. 1934) Oberd. 1977

A) *CENTAUREO DALMATICAЕ-CAMPANULETALIA PYRAMIDALIS* Trinajstić ex Terzi et Di Pietro 2016

a) *Centaureo dalmaticae-Campanulion pyramidalis* Horvatić 1934

1. *Crithmo maritimi-Centaureetum dalmaticae* Horvatić 1934

2. *Seslerio juncifoliae-Scorzoneretum austriacae* Horvatić 1934

3. *Thalictro velebitici-Campanuletum fenestrellatae* Trinajstić ex Trinajstić 2008

4. *Aurinio petraeae-Centaureetum lubenicensis* Trinajstić 2008

5. *Seselio globiferi-Pseudofumarietum acaulis* Trinajstić 2008

6. *Campanulo pyramidalis-Centaureetum kartschianae* Lausi & Poldini 1962

7. *Saturejo thymifoliae-Euphorbietum wulfenii* Lausi & Poldini 1962

b) *Centaureo cuspidatae-Portenschlagiellion ramosissimae* Trinajstić ex Terzi et Di Pietro 2016

8. *Inulo verbascifoliae-Centaureetum cuspidatae* Trinajstić ex Terzi et Di Pietro 2016
9. *Melico minutae-Pseudofumarietum acaulis* Trinajstić ex Trinajstić 2008
10. *Campanulo pyramidalis-Moltkietum petraeae* Horvatić ex Trinajstić 1964
11. *Phagnalo graeci-Centaureetum ragusinae* Horvatić ass. nov. prov.
- c) *Asperulion garganicae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988
12. *Aubrieto italicae-Campanuletum garganicae* Trinajstić ex Bianco, Brullo, Pignatti E. & Pignatti S. 1988
13. *Scabiosetum dallaportae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988
14. *Pimpinello tragii-Inuletum verbascifoliae* Di Pietro & Wagensommer 2008
- B) **ONOSMETALIA (ONOSMETEA) FRUTESCENTIS** Quézel 1964
- Ba) **ONOSMENALIA FRUTESCENTIS** subord. nov. prov.
- d) *Campanulion versicoloris* Quézel 1964
15. *Asperulo boryanae-Stachydetum candicae* Quézel 1964
16. *Alkanno graecae-Sideridetum raeseri* Quézel 1964
17. *Daphno jasminaeae-Asperuletum chloranthae* Quézel 1964
18. *Asperulo arcadiensis-Hypericetum vesiculosi* Quézel 1964
19. *Inulo parnassicae-Ptilostemetum chamaepeucis* Theocharopoulos, Dimitrellos, Assimakopoulos & Georgiadis 2004
20. *Saxifrago chryso spleniifoliae-Athamantetum macedonicae* Maroulis & Georgiadis 2005
21. *Erysimo corinthii-Campanuletum celsii* ass. nov. prov.
22. *Sileno spinescentis-Campanuletum andrewsii* ass. nov. prov.
23. *Stachydo virellae-Campanuletum hirsutulae* ass. nov. prov.
24. *Petrorragio grandiflorae-Stachydetum chrysanthae* ass. nov. prov.
25. *Dianthio occidentalis-Stachydetum ionicae* ass. nov. prov.
26. *Asperulo chloranthae-Moltkietum petraeae* ass. nov. prov.
27. *Campanulo versicoloris-Aurinetum leucadeae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988
28. *Aurinio megalocarpae-Centaureetum brullae* Bianco, Brullo, Pignatti E. & Pignatti S. 1988 corr.
29. *Iberido violaceae-Athamantetum siculae* Terzi et D'Amico 2008 corr.
30. *Piptathero holciformis-Campanuletum versicoloris* Terzi et D'Amico 2008
- e) *Eryngio glomerati-Inulion heterolepidis* all. nov. prov.
31. *Centaureo acicularis-Campanuletum icariae* ass. nov. prov.
32. *Johrenio dichotomae-Cephalarietum squamiflorae* ass. nov. prov.
33. *Brassico aegaeae-Campanuletum lyratae* ass. nov. prov.
34. *Helichryso pichleri-Cephalarietum squamiflorae* ass. nov. prov.
35. *Galio ovati-Caroxyletum carpathi* ass. nov. prov.
36. *Teucrio heliotropiifolii-Inuletum heterolepidis* Horvat in Horvat et al. 1974
37. *Diantho rhodii-Campuletum hagielliae* ass. nov. prov.
- f) *Inulion limonellae* all. nov. prov.
38. *Galio reiseri-Cephalarietum squamiflorae* ass. nov. prov.
- g) *Helichryson amorgini* all. nov. prov.
39. *Diantho amorgini-Centaureetum amorginae* ass. nov. prov.
- h) *Ptilostemion cyprii* all. nov. prov.
40. *Galio cani-Dianthetum cyprii* ass. nov. prov.
- Bb) **PETROMARULENALIA PINNATAE** Zaffran subord. nov. prov.
- i) *Verbasco arcturi-Campanulion creticae* all. nov. prov.
41. *Campanulo creticae-Centaureetum macrothysanae* ass. nov. prov.
42. *Origanetum dictamni* ass. nov. prov.

43. *Dianthetum xylorrhizi* ass. nov. prov.
 44. *Asperulo rigidae-Putorietum calabricae* ass. nov. prov.
 45. *Petromarulo pinnatae-Centaureetum argenteae* ass. nov. prov.
 46. *Galio graeci-Staehelinetum fruticosae* ass. nov. prov.
 47. *Galio fruticosi-Campanuletum creticae* ass. nov. prov.
- j) *Asterion cretici* Zaffran ex Bergmeier, Dimopoulos et Mucina 2011
 48. *Anthemido paleaceae-Violetum scorpiuroidis* Zaffran ass. nov. prov.
 49. *Anthemido tomentellae-Staehelinetum fruticosae* Zaffran ex Bergmeier, Dimopoulos et Mucina 2011
 50. *Asperulo tournefortii-Valerianetum asarifoliae* ass. nov. prov.
 51. *Staehelino fruticosae-Dianthetum sitiaci* ass. nov. prov.
 52. *Campanulo creutzburgeri-Centaureetum chionanthae* ass. nov. prov.
 53. *Campanuletum hierapetrae* ass. nov. prov.
- Bc) *CAMPANULENALIA JACQUINII* Zaffran subord. nov. prov.
 k) *Campanulion jacquini* Zaffran all. nov. prov.
 54. *Hieracio cretici-Gypsophiletum nanae* Zaffran ass. nov. prov.
 55. *Campanulo jacquini-Cephalarietum squamiflorae* ass. nov. prov.
 56. *Asplenio lepidi-Centaureetum lancifoliae* Zaffran ass. nov. prov.
 57. *Arenario fragillimae-Silenetum antri-jovis* ass. nov. prov.
- C) *CHILIADENETALIA IPHIONOIDIS* Zohary ord. nov. prov.
 l) *Chiliadenion iphionoidis* Zohary all. nov. prov.
 58. *Origanetum dayi* Zohary ass. nov. prov.
 59. *Dianthio sinaici-Origanetum ramonensis* ass. nov. prov.
 60. *Saturejetum thymbrifoliae* ass. nov. prov.
 61. *Salvietum hierosolymitanae* ass. nov. prov.
 62. *Brassico creticae-Podonosmetum orientalis* ass. nov. prov.
 63. *Stachydetum palaestinae* Zohary ass. nov. prov.
 64. *Chiliadenetum iphionoidis* Zohary ass. nov. prov.
- D) *CHILIADENETALIA CANDICANTIS* Brullo et Furnari 1994
 m) *Athamantion dellae-cellae* Brullo et Furnari 1994
 65. *Telephio barbeyani-Darnielletum cyrenaicae* Brullo et Furnari 1994
 66. *Origano cyrenaici-Putorietum calabricae* Brullo et Furnari 1994
 67. *Origanetum akhdarensis* Brullo et Furnari 1994
 68. *Sedo micranthi-Hypericetum decaisneani* Brullo et Furnari 1994
 n) *Teucrium cyrenaici* Brullo et Furnari 1994
 69. *Euhesperidetum linearifoliae* Brullo et Furnari 1994
 70. *Micromerio guichardii-Origanetum pampaninii* Brullo et Furnari 1994

**Other syntaxa quoted in the text
 (not included in the taxonomical scheme nor in the synonymies)**

Asplenietalia glandulosi Br.-Bl. & Meier in Meier & Br.-Bl. 1934
Asplenion glandulosi Br.-Bl. & Meier in Meier & Br.-Bl. 1934
Brassico balearicae-Helichryson rupestris O. Boldòs & Molinier 1958
Campanulion mollis Martínez-Parras & Peinado 1990
Centaureion pentadactylis Brullo, Scelsi & Spampinato 2001
Centaureo filiformis-Micromerion cordatae Arrigoni & Di Tommaso 1991
Dianthion rupicolae Brullo & Marcenò 1979
Linarion caprariae Foggi, Cartei, Pignotti, Signorini, Viciani, Dell'Olmo & Menicagli 2006

Potentilletalia speciosae Quézel 1964
Teucrion buxifolii Rivas-Goday 1956

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Floristic checklist

The following checklist groups all the taxa listed in the phytosociological tables.

The taxa that are characteristic of association, alliance, order, suborder or class, are indicated with an asterisk.

ASPLENIACEAE

- * *Asplenium aegaeum* Lovis, Reichst. & Greuter in Reichst. & al.
- * *Asplenium creticum* Lovis, Reichst. & Zaffran in Reichst. & al.
- * *Asplenium lepidum* C.Presl subsp. *hausknechtii* (Godet & Reut.) Brownsey
- * *Asplenium lepidum* C.Presl subsp. *lepidum*
- Asplenium onopteris* L.
- * *Asplenium ruta-muraria* L.
- * *Asplenium scolopendrium* L. subsp. *antri-jovis* (Kümmerle) Brownsey & Jermy
- * *Asplenium trichomanes* L.
- Asplenium viride* Huds.
- * *Asplenium* x *javorkae* Kümmerle
- * *Ceterach officinarum* Willd.

CYSTOPTERIDACEAE

- * *Cystopteris fragilis* (L.) Bernh.

DRYOPTERIDACEAE

- Dryopteris pallida* (Bory) Maire & Petitm.
- Polystichum lonchitis* (L.) Roth

POLYPODIACEAE

- * *Polypodium cambricum* L.

PTERIDACEAE

- Adiantum capillus-veneris* L.
- * *Allosorus acrosticus* (Balb.) Christenh.
- * *Allosorus persicus* (Bory) Christenh.
- * *Allosorus pteridioides* (Reichard) Christenh.
- Anogramma leptophylla* (L.) Link
- * *Cosentinia vellea* (Aiton) Tod.
- * *Notholaena marantae* (L.) Desv.

SELAGINELLACEAE

- Selaginella denticulata* (L.) Spring

CUPRESSACEAE

- Cupressus sempervirens* L.
- Juniperus foetidissima* Willd.
- Juniperus oxycedrus* L.
- Juniperus turbinata* Guss.

EPHEDRACEAE

- * *Ephedra alte* C.A.Mey.
- * *Ephedra foeminea* Forssk.

PINACEAE

- Pinus halepensis* Mill.

ACANTHACEAE

- Acanthus mollis* L.

AMARYLLIDACEAE

- Allium ampeloprasum* L.
- Allium artemisietorum* Eig & Feinbrun
- Allium bourgeauii* Rech.f.
- * *Allium carmeli* Boiss.
- Allium chamaespathum* Boiss.
- Allium commutatum* Guss.
- Allium daninianum* Brullo, Pavone & Salmeri
- Allium exile* Boiss. & Orph. in Boiss.

- Allium guttatum* Steven
Allium junceum Sm. in Sibth. & Sm.
 * *Allium kyrenium* Giusso, C.Brullo, Brullo & Salmeri
Allium rubrovittatum Boiss. & Heldr. in Boiss.
Allium saxatile M.Bieb.
Allium subhirsutum L.
Allium tardands Greuter & Zahar. in Zahar.
Allium trifoliatum Cyr. subsp. *hirsutum* (Regel) Kollmann

ANACARDIACEAE

- Cotinus coggygria* Scop.
Pistacia lentiscus L.
Pistacia terebinthus L.

APIACEAE

- * *Athamanta arachnoidea* Boiss. & Orph.
 * *Athamanta della-cellae* Asch. & Barneby ex E.A.Durand & Barratte
 * *Athamanta macedonica* (L.) Spreng.
 * *Athamanta ramosissima* Port.
 * *Athamanta sicula* L.
Bupleurum flavum Forssk.
Bupleurum fruticosum L.
 * *Bupleurum kakiskalae* Greuter
Bupleurum veronense Turra
Cachrys libanotis L.
Carum graecum Boiss. & Heldr. in Boiss.
Crithmum maritimum L.
Daucus carota L. aggr.
Daucus hispanicus Gouan
Deverra tortuosa (Desf.) DC.
Elaeoselinum asclepium (L.) Bertol.
 * *Eryngium glomeratum* Lam.
 * *Eryngium ternatum* Poir.
 * *Ferula chiliantha* Rech.f.
Ferula communis L.
 * *Ferula tingitana* L.
Ferulago nodosa (L.) Boiss.
 * *Ferulago thyrsoflora* (Sm.) W.D.J. Koch
Foeniculum piperitum (Ucria) Sweet
 * *Hellenocarum multiflorum* (Sm.) H. Wolff
 * *Johrenia dichotoma* DC.
Opopanax hispidus (Friv.) Griseb.
 * *Peucedanum achaicum* Halácsy
Pimpinella cretica Poir. in Lam. & Poir.
 * *Pimpinella cypria* Boiss.
Pimpinella depressa DC.
Pimpinella peregrina L.
 * *Pimpinella pretenderis* (Heldr.) Halácsy
 * *Pimpinella tragium* Vill.
 * *Scaligeria moreana* Engstrand
Scaligeria napiformis (Spreng.) Grande
 * *Seseli crithmifolium* (DC.) Boiss.
 * *Seseli globiferum* Vis.
Seseli gouanii W.D.J.Koch
 * *Seseli pallasii* Besser
 * *Seseli tomentosum* Vis.
Seseli tortuosum L.
Thapsia garganica L.

ARACEAE

- Arum italicum* Mill.

ARALIACEAE

Hedera helix L.

ARISTOLOCHIACEAE

Aristolochia cretica Lam.

ASPARAGACEAE

Asparagus acutifolius L.

Asparagus aphyllus L. subsp. *orientalis* (Baker) P.H. Davis

Bellevalia mosheovii Feinbrun

Charybdis aphylla (Forssk.) Speta

Charybdis maritima (L.) Speta s.l.

Charybdis pancration (Steinh.) Speta

Loncomelos narbonensis (L.) Raf.

Muscari comosum (L.) Mill.

Muscari neglectum Guss. ex Ten.

Ornithogalum comosum L.

Ornithogalum gussonei Ten.

Ornithogalum montanum Cirillo

* *Scilla nana* (Schult. & Schult.f.) Speta

ASPHODELACEAE

Asphodeline liburnica (Scop.) Rchb.

Asphodeline lutea (L.) Reichenb.

Asphodelus ramosus L.

ASTERACEAE

* *Achillea cretica* L.

Achillea holosericea Sm. in Sibth. & Sm.

Achillea umbellata Sm. in Sibth. & Sm.

* *Anthemis ammanthus* Greuter subsp. *paleacea* Greuter

Anthemis cretica L.

Anthemis cfr. *orientalis* (L.) Degen

* *Anthemis tomentella* Greuter

Artemisia herba-alba Asso

Artemisia sieberi Besser

* *Aster creticus* (Gand.) Rech.f.

* *Bellis longifolia* Boiss. & Heldr. in Boiss.

Bellium minutum (L.) L.

Carlina corymbosa L.

Carlina graeca Boiss.

Carlina tragacanthifolia Klatt

* *Centaurea acicularis* Sm. in Sibth. & Sm.

* *Centaurea aegyptiaca* L.

Centaurea affinis Friv. subsp. *laconiae* Prodan

* *Centaurea argentea* L. subsp. *argentea*

* *Centaurea argentea* L. subsp. *chionantha* (Turland & L.Chilton) Greuter

* *Centaurea argentea* L. subsp. *macrothysana* (Rech.f.) Turland & L. Chilton

* *Centaurea brulla* Greuter

* *Centaurea cuspidata* Vis.

* *Centaurea damascena* Boiss.

Centaurea deusta Ten.

* *Centaurea eryngioides* Lam.

* *Centaurea graeca* Griseb.

* *Centaurea iapygica* (Lacaita) Brullo

Centaurea idaea Boiss. & Heldr.

* *Centaurea kartschiana* Scop. subsp. *dalmatica* Nyman

* *Centaurea kartschiana* Scop. subsp. *kartschiana*

* *Centaurea kartschiana* Scop. subsp. *lubenicensis* (Trinajstić & Zi. Pavletić) Greuter

* *Centaurea kartschiana* Scop. subsp. *rabensis* (Horvatić) Lovrić

* *Centaurea lactucifolia* Boiss. subsp. *halkensis* (Fors.-Major & Barbey) Rech.f.

* *Centaurea lancifolia* Spreng.

* *Centaurea leucadea* Lacaita

* *Centaurea niederi* Heldr.

- * *Centaurea nobilis* (E.Groves) Brullo
- * *Centaurea oliveriana* DC. var. *amorgina* (Boiss. & Orph.) Boiss.
- * *Centaurea pelia* DC.
- * *Centaurea poculatoris* Greuter
- * *Centaurea ragusina* L.
Centaurea raphanina Sm. subsp. *mixta* (DC.) Runemark
Centaurea raphanina Sm. subsp. *raphanina*
- * *Centaurea rechingeri* Phitos
- * *Centaurea redempta* Heldr.
Centaurea solstitialis L.
- * *Centaurea subtilis* Bertol.
- * *Centaurea tenacissima* (E.Groves) Brullo
- * *Chiliadenus candicans* (Delile) Brullo
- * *Chiliadenus iphionoides* (Boiss. & Blanche) Brullo
Cichorium spinosum L.
- * *Crepis auriculifolia* Spreng.
- * *Crepis fraasii* Sch.-Bip. subsp. *fraasii*
- * *Crepis fraasii* Sch.-Bip. subsp. *mungieri* (Boiss. & Heldr.) P.D.Sell
Crepis multiflora Sm. in Sibth. & Sm.
Crepis neglecta L. subsp. *cretica* (Boiss.) Hayek
Crepis sibthorpiana Boiss. & Heldr. in Boiss.
Crepis tybakiensis Vierh.
Crupina crupinastrum (Moris) Vis.
Crupina vulgaris Cass.
Dittrichia orientalis Brullo & De Marco
Dittrichia viscosa (L.) Greuter
- * *Doronicum columnae* Ten.
- * *Echinops polyceras* Boiss.
Echinops spinosissimus Turra
Filago cretensis Gand.
- * *Helichrysum amorginum* Boiss. & Orph. in Boiss.
Helichrysum barrelieri (Ten.) Greuter
- * *Helichrysum heldreichii* Boiss.
Helichrysum italicum (Roth) G.Don
Helichrysum microphyllum (Willd.) Cambess.
- * *Helichrysum orientale* (L.) Vaill.
- * *Helichrysum pichleri* Barbey
Helichrysum rupestre aggr.
- * *Hieracium pannosum* Boiss.
- * *Hieracium schmidtii* Tausch subsp. *creticum* (Zahn) Greuter
Hyoseris radiata L. subsp. *radiata*
Hypochaeris achyrophorus L.
- * *Hypochaeris laevigata* (L.) Ces., Pass. & Gibelli
Hypochaeris tenuiflora (Boiss.) Boiss.
- * *Inula candida* (L.) Cass. subsp. *candida*
- * *Inula candida* (L.) Cass. subsp. *decalvans* (Halácsy) Tutin
- * *Inula candida* (L.) Cass. subsp. *limonella* (Heldr.) Rech.f.
- * *Inula verbascifolia* (Willd.) Hausskn. subsp. *heterolepis* (Boiss.) Tutin
- * *Inula verbascifolia* (Willd.) Hausskn. subsp. *methanaea* (Hausskn.) Tutin
- * *Inula verbascifolia* (Willd.) Hausskn. subsp. *parnassica* (Boiss. & Heldr.) Tutin
- * *Inula verbascifolia* (Willd.) Hausskn. subsp. *verbascifolia*
- * *Jacobaea gnaphalioides* (Spreng.) Veldkamp
Jurinea mollis (L.) Rchb. subsp. *anatolica* (Boiss.) Stoj. & Stef.
Jurinea mollis (L.) Rchb. subsp. *mollis*
- * *Klasea cretica* (Turrill) Holub
- * *Lactuca acanthifolia* (Willd.) Boiss.
- * *Lactuca amorgina* Heldr. & Orph. ex Halácsy
Lactuca muralis (L.) Gaertn.
Lactuca serriola L.

- Lactuca tuberosa* Jacq.
Lactuca viminea (L.) J.Presl & C.Presl
- * *Leontodon apulus* (Fiori) Brullo
Leontodon crispus Vill. subsp. *asper* (Waldst. & Kit.) Rohlena
Leontodon graecus Boiss. & Heldr. in Boiss.
 - * *Leontodon intermedius* Huter, Porta & Rigo ex Rigo
Leucanthemum croaticum (Horvatić) Horvatić
Leucanthemum liburnicum (Fiori) Horvatić
Pallenis spinosa (L.) Cass.
Phagnalon graecum Boiss. & Heldr.
 - * *Phagnalon pygmaeum* (Sieber) Greuter
Phagnalon rupestre (L.) DC. s.l.
 - * *Phagnalon rupestre* (L.) DC. subsp. *illyricum* (H.Lindb.) Ginzb.
Phagnalon rupestre (L.) DC. subsp. *mauritanicum* Pignatti
Phagnalon saxatile (L.) Cass.
Picris hieracioides L. s.l.
Picris hieracioides L. subsp. *spinulosa* (Bertol. ex Guss.) Arcang.
 - * *Picris hispidissima* (Bartl.) W.D.J.Koch
Picris mauginiana Pamp.
Podospermum canum C.A.Mey.
Ptilostemon afer (Jacq.) Greuter
 - * *Ptilostemon chamaepeuce* (L.) Less. s.l.
 - * *Ptilostemon chamaepeuce* (L.) Less. var. *chamaepeuce*
 - * *Ptilostemon chamaepeuce* (L.) Less. var. *cyprius* Greuter
 - * *Ptilostemon gnaphaloides* (Cirillo) Soják subsp. *gnaphaloides*
 - * *Ptilostemon gnaphaloides* (Cyr.) Soják subsp. *pseudofruticosus* (Pamp.) Greuter
Reichardia picroides (L.) Roth
 - * *Scorzonera austriaca* Willd.
Scorzonera cretica Willd.
 - * *Scorzonera sublanata* Lipsch.
Scorzonera villosa Scop. subsp. *columnae* (Guss.) Nyman
Senecio fruticulosus Sm. in Sibth. & Sm.
Senecio gallicus Vill.
Senecio rupestris Waldst. & Kit.
Senecio vulgaris L.
Sonchus asper (L.) Hill s.l.
Sonchus asper (L.) Hill subsp. *glaucescens* (Jord.) Ball
Sonchus oleraceus L.
Sonchus tenerrimus L.
 - * *Staehelina fruticosa* (L.) L.
 - * *Staehelina petiolata* (L.) Hilliard & B.L.Burt
Tanacetum cinerariifolium (Trevir.) Sch.Bip.
Taraxacum sp.
Tolpis virgata (Desf.) Bertol. s.l.
Tolpis virgata (Desf.) Bertol. subsp. *apolloniae* Brullo & Furnari
Urospermum picroides (L.) Scop. ex F.W.Schmidt

BERBERIDACEAE

Berberis cretica L.

BETULACEAE

Ostrya carpinifolia Scop.

BORAGINACEAE

- * *Alkanna graeca* Boiss. & Spruner in Boiss. subsp. *graeca*
Cerinthe lamprocarpa Murb.
Cynoglossum lithospermifolium Lam. subsp. *cariense* (Boiss.) Greuter & Burdet
Echium parviflorum Moench
Echium plantagineum L.
Echium vulgare L.
Lithodora zahnii (Halácsy) I.M.Johnst.
- * *Moltkia petraea* (Tratt.) Griseb.

- * *Myosotis solange* Greuter & Zaffran in Greuter
Onosma echioides (L.) L. subsp. *angustifolia* (Lehm.) Peruzzi & N.G.Passal.
Onosma erecta Sm. in Sibth. & Sm.
- * *Onosma frutescens* Lam.
Onosma graeca Boiss.
- * *Podonosma orientalis* (L.) Feinbrun
- * *Symphytum creticum* (Willd.) Runem. ex Greuter & Rech.f.

BRASSICACEAE

- Aethionema saxatile* (L.) R.Br. s.l.
- Aethionema saxatile* (L.) R.Br. subsp. *creticum* (Boiss. & Heldr.) A.Andersson & al.
- * *Aethionema saxatile* (L.) R.Br. subsp. *graecum* (Boiss. & Spruner) Hayek
Aethionema saxatile (L.) R.Br. subsp. *oreophilum* A.Andersson & al.
- * *Alyssoides utriculata* (L.) Medik.
Alyssum diffusum Ten. s.l.
Alyssum diffusum Ten. subsp. *garganicum* Španiel, Marhold, N.G.Passal. & Lihová
Alyssum fragillimum (Bald.) Rech.f.
- * *Alyssum lassiticum* Halácsy
Alyssum montanum L. subsp. *repens* (Baumg.) Schmalh.
- * *Alyssum serpyllifolium* Desf. var. *metajne* Plazibat
Alyssum sphacioticum Boiss. & Heldr. in Boiss.
- * *Arabis alpina* L. subsp. *caucasica* (Willd.) Briq.
Arabis auriculata Lam.
Arabis collina Ten.
- * *Arabis cretica* Boiss. & Heldr.
- * *Arabis cypria* Holmboe
- * *Arabis hirsuta* (L.) Scop.
Arabis muralis Bertol.
Arabis turrita L.
- * *Aubrieta columnae* Guss. subsp. *italica* (Boiss.) Mattf.
- * *Aubrieta deltoidea* (L.) DC.
- * *Aurinia leucadea* (Guss.) K.Koch s.l.
Aurinia moreana Tzanoud. & Iatrou
- * *Aurinia petraea* (Ard.) Schur
- * *Aurinia saxatilis* (L.) Desv. subsp. *megalocarpa* (Hauskn.) T.R.Dudley
- * *Aurinia saxatilis* (L.) Desv. subsp. *orientalis* (Ard.) T. R. Dudley
- * *Aurinia sinuata* (L.) Griseb.
Biscutella hispida DC.
- * *Brassica cretica* Lam. subsp. *aegaea* (Heldr. & Halácsy) Snogerup, M.A.Gust. & Bothmer
- * *Brassica cretica* Lam. subsp. *cretica*
- * *Brassica cretica* Lam. subsp. *nivea* (Boiss. & Spruner) M.A.Gust. & Snogerup
- * *Brassica hilarionis* Post
Clypeola jonthlaspi L.
Diploxaxis harra (Forssk.) Boiss.
- * *Draba cretica* Boiss. & Heldr. in Boiss.
- * *Erysimum candicum* Snogerup subsp. *candicum*
Erysimum cephalonicum Polatschek
- * *Erysimum cheiri* (L.) Crantz
- * *Erysimum cheirifolium* Wallr.
- * *Erysimum corinthium* (Boiss.) Wettst.
Erysimum crassistylum C.Presl subsp. *garganicum* Peccenini & Polatschek
- * *Erysimum rhodium* Snogerup
- * *Erysimum senoneri* (Heldr. & Sartori) Wettst. subsp. *amorginum* Snogerup
Fibigia clypeata (L.) Medik.
- * *Fibigia triquetra* (DC.) Boiss. ex Prantl
Hesperis glutinosa Vis.
Hesperis laciniata All.
- * *Iberis violacea* R.Br.
Isatis tinctoria L.
Lepidium hirtum (L.) Sm. subsp. *oxyotum* (DC.) Thell.

- * *Lutzia cretica* (L.) Greuter & Burdet
- Malcolmia chia* (L.) DC.
- Matthiola fruticulosa* (L.) Maire subsp. *fruticulosa*
- * *Matthiola incana* (L.) R. Br. subsp. *cyrenaica* Brullo & Furnari
- Matthiola incana* (L.) R. Br. subsp. *incana*
- Microthlaspi perfoliatum* (L.) F.K.Mey.
- Moricandia nitens* (Viv.) E.A. Durand & Barratte
- Noccaea praecox* (Wulfen) F.K.Mey.
- * *Ricotia cretica* Boiss. & Heldr. in Boiss.
- Sinapis arvensis* L.

CACTACEAE

Opuntia sp.

CAMPANULACEAE

- Asyneuma limonifolium* (L.) Janch.
- * *Campanula aizoides* Zaffran ex Greuter
- * *Campanula amorgina* Rech.f.
- Campanula* cfr. *anchusiflora* Sm. in Sibth. & Sm.
- * *Campanula andrewsii* A.DC. subsp. *andrewsii*
- * *Campanula andrewsii* A.DC. subsp. *hirsutula* Phitos
- * *Campanula asperuloides* (Boiss. & Orph.) Engl. subsp. *asperuloides*
- * *Campanula asperuloides* (Boiss. & Orph.) Engl. subsp. *taygetea* (Quézel & Contandr.) Greuter & Burdet
- * *Campanula calaminthifolia* Lam.
- * *Campanula carpatha* Halácsy
- * *Campanula celsii* A.DC.
- * *Campanula cretica* (A. DC.) D. Dietr.
- * *Campanula creutzburgii* Greuter
- Campanula erinus* L.
- * *Campanula fenestrellata* Feer
- * *Campanula garganica* Ten. subsp. *garganica*
- * *Campanula hagielia* Boiss.
- * *Campanula hierapetrae* Rech.f.
- * *Campanula istriaca* Feer
- * *Campanula jacquinii* (Sieber) A. DC.
- * *Campanula laciniata* L.
- * *Campanula lyrata* Lam. subsp. *icarica* Phitos
- * *Campanula lyrata* Lam. subsp. *lyrata*
- * *Campanula pelviformis* Lam.
- * *Campanula portenschlagiana* Schult.
- * *Campanula pyramidalis* L.
- * *Campanula reiseri* Halácsy
- * *Campanula rupestris* Sm.
- * *Campanula saxatilis* L. subsp. *saxatilis*
- * *Campanula spatulata* Sm. subsp. *filicaulis* (Halácsy) Phitos
- * *Campanula topaliana* Beauverd subsp. *topaliana*
- Campanula tubulosa* Lam.
- * *Campanula versicolor* Andrews
- * *Petromarula pinnata* (L.) A.DC.
- Solenopsis laurentia* (L.) C.Presl

CAPPARACEAE

- Capparis aegyptia* Lam.
- * *Capparis orientalis* Veill.
- * *Capparis spinosa* L.

CAPRIFOLIACEAE

- Centranthus calcitrapae* (L.) Dufr.
- * *Centranthus ruber* (L.) DC. subsp. *ruber*
- * *Centranthus ruber* (L.) DC. subsp. *sibthorpii* (Heldr. & Sart. ex Boiss.) Hayek
- * *Cephalaria ambrosioides* (Sm.) Roem. & Schult.
- * *Cephalaria* cfr. *flava* (Sm.) Szabó subsp. *setulifera* (Boiss. & Heldr.) Kokkini
- Cephalaria leucantha* (L.) Roem. & Schult.

- * *Cephalaria squamiflora* (Sieber) Greuter
Knautia hybrida (All.) Coult.
Knautia integrifolia (L.) Bertol. subsp. *mimica* (Borbás) Greuter
- * *Lomelosia albocincta* (Greuter) Greuter & Burdet
Lomelosia crenata (Cirillo) Greuter & Burdet subsp. *breviscapa* (Boiss. & Heldr.) Greuter & Burdet
- * *Lomelosia crenata* (Cirillo) Greuter & Burdet subsp. *dallaportae* (Boiss.) Greuter & Burdet
- * *Lomelosia epirota* (Halácsy & Bald.) Greuter & Burdet
- * *Lomelosia hymettia* (Boiss. & Spruner) Greuter & Burdet
Lomelosia sphaciotica (Roem. & Schult.) Greuter & Burdet
- * *Lomelosia variifolia* (Boiss.) Greuter & Burdet
Lonicera implexa Aiton
Pterocephalus multiflorus Poech subsp. *obtusifolius* Holmboe
Pterocephalus perennis Coult.
Scabiosa taygetea Boiss. & Heldr. subsp. *garganica* (Porta & Rigo) Hayek
- * *Valeriana asarifolia* Dufur.
Valeriana dioscoridis Sm.
Valeriana italica Lam.
Valerianella discoidea (L.) Loisel.
Valerianella echinata (L.) DC.
Valerianella pumila (L.) DC.

CARYOPHYLLACEAE

- * *Arenaria cretica* Spreng
- * *Arenaria deflexa* Decne. subsp. *deflexa*
- * *Arenaria fragillima* Rech. f.
Arenaria leptoclados (Rchb.) Guss.
Arenaria muralis (Link) Spreng.
- * *Arenaria orbicularis* Vis.
Arenaria serpyllifolia L.
- * *Bolanthus graecus* (Schreb.) Barkoudah
- * *Bolanthus laconicus* (Boiss.) Barkoudah
Bufonia stricta (Sm.) Gürke in K.Richt.
- * *Cerastium grandiflorum* Gilib.
- * *Dianthus ciliatus* Guss. subsp. *dalmaticus* (Čelak.) Hayek
- * *Dianthus cyprius* A.K.Jacks. & Turrill
- * *Dianthus elegans* d'Urv.
- * *Dianthus fruticosus* L. subsp. *amarginus* Runemark
- * *Dianthus fruticosus* L. subsp. *carpathus* Runemark
- * *Dianthus fruticosus* L. subsp. *creticus* (Tausch) Runemark
- * *Dianthus fruticosus* L. subsp. *occidentalis* Runemark
- * *Dianthus fruticosus* L. subsp. *rhodius* (Rech.f.) Runemark
- * *Dianthus fruticosus* L. subsp. *sitiacus* Runemark
- * *Dianthus japigicus* Bianco & Brullo
Dianthus longicaulis Ten.
- * *Dianthus monadelphus* Vent. subsp. *judaicus* (Boiss.) Greuter & Burdet
Dianthus pinifolius Sm. in Sibth. & Sm.
- * *Dianthus sinaicus* Boiss.
- * *Dianthus strictus* Banks & Solander in Russell
Dianthus sylvestris Wulfen subsp. *tergestinus* (Rchb.) Hayek
- * *Dianthus tarentinus* Lacaita
- * *Dianthus xylorrhizus* Boiss. & Heldr.
Gymnocarpos decander Forssk.
- * *Gypsophila nana* Bory & Chaub. In Bory
Herniaria parnassica Heldr. & Sartori ex Boiss. subsp. *cretica* Chaudhri
Minuartia mesogitana (Boiss.) Hand.-Mazz. subsp. *velenovskiyi* (Rohlena) McNeill
- * *Minuartia pichleri* (Boiss.) Maire & Petitm.
Minuartia verna (L.) Hiern subsp. *attica* (Boiss. & Spruner) Graebn.
- * *Moehringia muscosa* L.
Paronychia capitata (L.) Lam.
Paronychia macrosepala Boiss. s.l.

- * *Paronychia macrosepala* Boiss. subsp. *insularum* (Gand.) Greuter
Paronychia sinaica Fresen.
- * *Petrorhagia armerioides* (Ser.) P.W.Ball & Heywood
Petrorhagia cretica (L.) P.W.Ball & Heywood
- * *Petrorhagia cyrenaica* (E.A.Durand & Barratte) P.W.Ball & Heywood
- * *Petrorhagia dianthoides* (Sm.) P.W. Ball & Heywood
- * *Petrorhagia grandiflora* Iatrou
Petrorhagia illyrica (L.) P.W.Ball & Heywood s.l.
- * *Petrorhagia illyrica* (L.) P.W.Ball & Heywood subsp. *angustifolia* (Poir.) Ball. & Heywood
- * *Petrorhagia rupestris* Brullo & Furnari
Petrorhagia saxifraga (L.) Link s.l.
Petrorhagia saxifraga (L.) Link subsp. *gasparrinii* (Guss.) Greuter & Burdet
- * *Silene antri-jovis* Greuter & Burdet
- * *Silene cephalenia* Heldr. subsp. *epirotica* Melzh.
- * *Silene congesta* Sm.
Silene cretica L.
Silene cyrenaica Maire & Weiller
- * *Silene fabaria* (L.) Sm. in Sibth. & Sm.
- * *Silene fruticosa* L. s.l.
- * *Silene fruticosa* L. subsp. *cyrenaica* Bég. & Vacc.
- * *Silene gigantea* L. subsp. *gigantea*
- * *Silene gigantea* L. subsp. *hellenica* Greuter
- * *Silene goulimyi* Turrill
Silene italica (L.) Pers. subsp. *italica*
Silene italica (L.) Pers. subsp. *peloponnesiaca* Greuter
Silene radicata Boiss. & Heldr. in Boiss.
Silene sedoides Poir.
- * *Silene sieberi* Fenzl
- * *Silene spinescens* Sm. in Sibth. & Sm.
Silene variegata (Desf.) Steud.
Silene vulgaris (Moench) Garcke s.l.
Silene vulgaris (Moench) Garcke subsp. *tenoreana* (Colla) Soldano & F.Conti
- * *Stellaria media* (L.) Vill.
- * *Telephium barbeyanum* Bornm.
Telephium imperati L. subsp. *pauciflorum* (Greuter) Greuter & Burdet
Velezia rigida L.

CHENOPODIACEAE

- Atriplex portulacoides* L.
- * *Caroxylon carpathum* (P.H.Davis) Akhani & Roalson
- * *Salsola cyrenaica* (Maire & Weiller) Brullo
Salsola damascena Botsch.

CISTACEAE

- Cistus creticus* L. subsp. *creticus*
- Fumana arabica* (L.) Spach
- Fumana ericoides* (Cav.) Gand.
- Fumana procumbens* (Dunal) Gren. & Godr.
- Fumana thymifolia* (L.) Spach ex Webb
- Helianthemum hymettium* Boiss. & Heldr. in Boiss.
- Helianthemum jonium* Lacaita
- Helianthemum nummularium* (L.) Mill. subsp. *obscurum* (Čelak.) Holub
- Helianthemum oelandicum* (L.) Dum.Cours. subsp. *incanum* (Willk.) G.López
- Helianthemum salicifolium* (L.) Mill.
- Helianthemum vesicarium* Boiss.

CONVOLVULACEAE

- Convolvulus althaeoides* L.
- Convolvulus cantabrica* L.
- * *Convolvulus cneorum* L. subsp. *latifolius* (Rchb.) Sa'ad
- Convolvulus elegantissimus* Mill.
- Convolvulus oleifolius* Desr.

Cuscuta epithymum (L.) L.

CRASSULACEAE

- * *Rosularia cypria* (Holmboe) Meikle
- * *Rosularia libanotica* (Labill.) Muirhead
- * *Rosularia serrata* (L.) A. Berger
- Sedum acre* L.
- Sedum album* L. s.l.
- * *Sedum album* L. var. *micranthum* (Bast.) DC.
- Sedum amplexicaule* DC.
- Sedum* cfr. *atratum* L.
- * *Sedum barcense* Maire & Weiller
- Sedum caespitosum* (Cav.) DC.
- Sedum cepaea* L.
- * *Sedum creticum* C.Presl in Boiss. var. *creticum*
- * *Sedum creticum* C.Presl in Boiss. var. *monocarpicum* 't Hart
- * *Sedum cyrenaicum* Brullo & Furnari
- * *Sedum dasyphyllum* L.
- Sedum glaucum* Sm.
- * *Sedum hispanicum* L.
- Sedum laconicum* Boiss. & Heldr. in Boiss. s.l.
- Sedum laconicum* Boiss. & Heldr. in Boiss. subsp. *insulare* (Rech.f.) Greuter & Rech.f.
- * *Sedum laconicum* Boiss. & Heldr. in Boiss. subsp. *pentapolitanum* Brullo & Furnari
- Sedum litoreum* Guss.
- * *Sedum magellense* Ten. subsp. *olympicum* (Boiss.) Greuter & Burdet
- * *Sedum maximum* (L.) Suter
- * *Sedum ochroleucum* Chaix
- Sedum rubens* L.
- Sedum rupestre* L.
- Sedum sediforme* (Jacq.) Pau
- Sedum stellatum* L.
- Sedum tristriatum* Boiss. & Heldr. in Boiss.
- * *Umbilicus chloranthus* Heldr. & Sart. ex Boiss.
- * *Umbilicus horizontalis* (Guss.) DC.
- * *Umbilicus intermedius* Boiss.
- * *Umbilicus luteus* (Huds.) Webb & Berthel.
- * *Umbilicus rupestris* (Salisb.) Dandy

CUCURBITACEAE

Bryonia cretica L.
Ecballium elaterium (L.) A.Rich.

CYPERACEAE

Carex extensa Gooden.
Carex liparocarpos Gaudin
Carex olbiensis Jord.
Schoenus nigricans L.

DIOSCOREACEAE

Dioscorea communis (L.) Caddick & Wilkin

ERICACEAE

- Arbutus andrachne* L.
- Erica forskalii* Vitm.
- Erica multiflora* L.
- * *Erica sicula* Guss. subsp. *cyrenaica* Brullo & Furnari
- * *Erica sicula* Guss. subsp. *libanotica* (Barb.-Boiss & Barbey) P.F.Stevens

EUPHORBIACEAE

- Euphorbia acanthothamnus* Heldr. & Sartori ex Boiss.
- Euphorbia* cfr. *bivonae* Steud.
- Euphorbia characias* L.
- * *Euphorbia deflexa* Sm. in Sibth. & Sm.
- Euphorbia dendroides* L.
- Euphorbia exigua* L.

- * *Euphorbia fragifera* Jan
- * *Euphorbia gebelica* Brullo
- Euphorbia herniariifolia* Willd.
- Euphorbia pinea* L.
- Euphorbia rigida* M.Bieb.
- Euphorbia spinosa* L.
- * *Euphorbia sultan-hassei* Strid, Bentzer, Bothmer, Engstrand & M.A. Gust.
- * *Euphorbia wulfenii* Hoppe
- Mercurialis annua* L.

FABACEAE

- Anagyris foetida* L.
- Anthyllis hermanniae* L. subsp. *hermanniae*
- Anthyllis vulneraria* L. s.l.
- Anthyllis vulneraria* L. subsp. *rubriflora* (DC.) Arcang.
- * *Astragalus amalecitanus* Boiss.
- Astragalus angustifolius* Lam. subsp. *echinoides* (L'Hér.) Brullo, Giusso & Musarella
- * *Astragalus bethlehemiticus* Boiss.
- Bituminaria bituminosa* (L.) C.H.Stirt.
- * *Bituminaria kyreniae* Giusso, C.Brullo, Brullo, Cambria & Miniss.
- Calicotome villosa* (Poir.) Link
- Ceratonia siliqua* L.
- Coronilla vaginalis* Lam.
- Coronilla valentina* L.
- * *Cytisus spinescens* C.Presl
- * *Ebenus cretica* L.
- Emerus major* Mill. subsp. *emeroides* (Boiss. & Spruner) Soldano & F.Conti
- Genista acanthoclada* DC.
- Genista michelii* Spach
- Hippocrepis comosa* L.
- Hippocrepis glauca* Ten.
- Hippocrepis multisiliquosa* L.
- Lotus allionii* Desv.
- Lotus creticus* L.
- Lotus cytisoides* L.
- Lotus edulis* L.
- Lotus hirsutus* L.
- Medicago arborea* L.
- Medicago coronata* (L.) Bartal.
- Medicago lupulina* L.
- Medicago minima* (L.) L.
- Medicago scutellata* (L.) Mill.
- Melilotus sulcatus* Desf.
- Onobrychis aequidentata* (Sm.) d'Urv.
- Onobrychis alba* (Waldst. & Kit.) Desv.
- * *Onobrychis sphaciotica* Greuter
- Ononis pusilla* L.
- Ononis reclinata* L.
- Petteria ramentacea* (Sieber) C.Presl
- Securigera globosa* (Lam.) Lassen
- Spartium junceum* L.
- Trifolium boissieri* Guss.
- Trifolium stellatum* L.

FAGACEAE

- Quercus coccifera* L.
- Quercus ilex* L.
- Quercus virgiliana* (Ten.) Ten.

GENTIANACEAE

- Blackstonia acuminata* (W.D.J.Koch & Ziz) Domin
- Blackstonia perfoliata* (L.) Huds.

Centaureum erythraea Rafn

GERANIACEAE

Erodium cicutarium (L.) L'Hér.

Geranium cfr. *columbinum* L.

Geranium lucidum L.

Geranium molle L.

Geranium purpureum Vill.

Geranium robertianum L.

Geranium rotundifolium L.

GESNERIACEAE

Ramonda serbica Pančić

GROSSULARIACEAE

Ribes uva-crispa L.

HYPERICACEAE

* *Hypericum aegypticum* L.

* *Hypericum amblycalyx* Coustur. & Gand.

* *Hypericum cuisinii* Barbey

* *Hypericum decaisneanum* Coss. & Daveau

Hypericum empetrifolium Willd.

* *Hypericum lanuginosum* Lam.

Hypericum perforatum L.

* *Hypericum taygeteum* Quézel & Conrand.

* *Hypericum vesiculosum* Griseb.

IRIDACEAE

* *Iris pallida* Lam. subsp. *illyrica* (Tomm. ex Vis.) K.Richt.

* *Iris pseudopallida* Trinajstić

LAMIACEAE

Acinos alpinus (L.) Moench subsp. *meridionalis* (Nyman) P.W.Ball

Acinos arvensis (L.) Dandy

* *Acinos suaveolens* (Sm.) Loudon

Ajuga chamaepitys (L.) Schreb.

Ajuga iva (L.) Schreb.

Ballota acetabulosa (L.) Benth.

Ballota pseudodictamnus (L.) Benth.

* *Ballota undulata* (Fresen.) Bentham

* *Calamintha cretica* (L.) Lam.

Calamintha nepeta (L.) Savi

* *Clinopodium serpyllifolium* (M.Bieb.) Kuntze subsp. *fruticosum* (L.) Bräuchler

* *Euhesperida linearifolia* Brullo & Furnari

Lamium garganicum L. subsp. *garganicum*

Lamium garganicum L. subsp. *striatum* (Sm.) Hayek

Majorana syriaca (L.) Raf.

* *Micromeria conferta* (Coss. & Daveau) Stefani

Micromeria cremnophylla Boiss. & Heldr. in Boiss.

* *Micromeria cypria* Kotschy

Micromeria fruticulosa (Bertol.) Šilic

Micromeria graeca (L.) Benth. ex Rchb.

* *Micromeria guichardii* (Quézel & Zaffran) Brullo & Furnari

* *Micromeria hispida* Boiss. & Heldr. ex Benth. in A.DC.

Micromeria juliana (L.) Benth. ex Rchb.

* *Micromeria myrtifolia* Boiss. & Hohen. in Boiss.

Micromeria nervosa (Desf.) Bentham

* *Micromeria sphaciotica* Boiss & Heldr. ex Benth.

Nepeta sphaciotica P.H.Davis

* *Origanum akhdarensense* Letsw. & Boulos

* *Origanum calcaratum* Juss.

* *Origanum cyrenaicum* Bég & Vacc.

* *Origanum dayi* Post

* *Origanum dictamnus* L.

- Origanum onites* L.
- * *Origanum pampaninii* (Brullo & Furnari) Ietsw.
 - * *Origanum ramonense* Danin
 - * *Origanum vetteri* Briq. & Barbey
 - Phlomis cretica* C.Presl in J. & C.Presl
 - Phlomis fruticosa* L.
 - Prasium majus* L.
 - Rosmarinus officinalis* L.
 - Salvia fruticosa* Mill.
 - * *Salvia hierosolymitana* Boiss.
 - Salvia lanigera* Poir.
 - Salvia officinalis* L.
 - * *Salvia pomifera* L. subsp. *calycina* (Sm.) Hayek
 - Satureja cuneifolia* Ten.
 - Satureja montana* L.
 - Satureja spinosa* L.
 - Satureja thymbra* L.
 - * *Satureja thymbrifolia* Hedge & Feinbrun
 - * *Satureja thymifolia* Scop.
 - Scutellaria hirta* Sm. in Sibth. & Sm.
 - Scutellaria rupestris* Boiss. & Heldr. subsp. *caroli-henrici* Bothmer
 - Scutellaria rupestris* Boiss. & Heldr. subsp. *parnassica* (Boiss.) Greuter & Burdet
 - * *Scutellaria sieberi* Benth.
 - Sideritis curvidens* Stapf
 - * *Sideritis cypria* Post
 - * *Sideritis raeseri* Boiss. & Heldr.
 - Sideritis romana* L.
 - Sideritis syriaca* L.
 - * *Stachys candida* Bory & Chaub. in Bory
 - * *Stachys canescens* Bory & Chaub. in Bory
 - * *Stachys chrysantha* Boiss. & Heldr. in Boiss.
 - Stachys* cfr. *distans* Benth.
 - Stachys germanica* L. subsp. *salviifolia* (Ten.) Gams
 - * *Stachys ionica* Halácsy
 - * *Stachys mollissima* Willd.
 - Stachys mucronata* Spreng.
 - * *Stachys palaestina* L.
 - Stachys recta* L.
 - * *Stachys rosea* (Desf.) Boiss.
 - * *Stachys spreitzenhoferi* Heldr. subsp. *spreitzenhoferi*
 - * *Stachys spreitzenhoferi* Heldr. subsp. *virella* D.Perss.
 - * *Stachys swainsonii* Benth. subsp. *argolica* (Boiss.) Phitos & Damboldt
 - * *Stachys swainsonii* Benth. subsp. *melangavica* D.Perss.
 - * *Stachys swainsonii* Benth. subsp. *swainsonii*
 - Stachys tournefortii* Poir. in Lam. & Poir.
 - Teucrium brevifolium* Schreb.
 - Teucrium capitatum* L. s.l.
 - Teucrium capitatum* L. subsp. *capitatum*
 - * *Teucrium cuneifolium* Sm. in Sibth. & Sm.
 - * *Teucrium cypricum* Boiss. subsp. *kyreniae* P.H.Davis
 - * *Teucrium cyrenaicum* (Maire & Weiller) Brullo & Furnari
 - * *Teucrium divaricatum* Sieber ex Heldr. subsp. *canescens* (Celak.) Holmboe
 - * *Teucrium divaricatum* Sieber ex Heldr. subsp. *divaricatum*
 - * *Teucrium divaricatum* Sieber ex Heldr. subsp. *graecum* (Čelak) Bornm.
 - * *Teucrium flavum* L. subsp. *flavum*
 - * *Teucrium flavum* L. subsp. *glaucum* (Jord. & Fourr.) Ronniger
 - * *Teucrium flavum* L. subsp. *hellenicum* Rech.f.
 - * *Teucrium francisci-wernerii* Rech.f.
 - Teucrium fruticans* L. subsp. *fruticans*

- * *Teucrium halacsyanum* Heldr.
- Teucrium microphyllum* Desf.
- Teucrium montanum* L.
- * *Teucrium montbretii* Benth. subsp. *heliotropiifolium* (Barbey) P.H.Davis
- Thymbra capitata* (L.) Cav.
- Thymus longicaulis* C.Presl subsp. *chaubardii* (Rchb.f.) Jalas
- Thymus spinulosus* Ten.
- Vitex agnus-castus* L.

LAURACEAE

Laurus nobilis L.

LILIACEAE

Gagea graeca (L.) Irmisch

Tulipa saxatilis Sieber ex Spreng.

LINACEAE

- * *Linum arboreum* L.

Linum bienne Mill.

Linum collinum Guss.

- * *Linum gyaricum* Vierh. subsp. *icaricum* Christod.

Linum strictum L.

Linum tenuifolium L.

Linum tommasinii (Rchb.) Nyman

MALVACEAE

Malva unguiculata (Desf.) Alef.

Malva veneta (Mill.) Soldano, Banfi & Galasso

Tilia cordata Mill.

MORACEAE

- * *Ficus carica* L.

MYRTACEAE

Myrtus communis L. subsp. *communis*

OLEACEAE

Fraxinus ornus L.

Olea europaea L. var. *sylvestris* Brot.

Phillyrea latifolia L.

OROBANCHACEAE

Bartsia trixago L.

- * *Odontites creticus* Boiss.

Odontites cyprius Boiss.

- * *Odontites linkii* Boiss.

Odontites luteus (L.) Clairv.

Orobanche ramosa L. subsp. *nana* (Reut.) Cout.

PAPAVERACEAE

Fumaria capreolata L. subsp. *capreolata*

Fumaria gaillardotii Boiss.

Glaucium flavum Crantz

- * *Pseudofumaria acaulis* (Wulfen) Holub

PHYLLANTHACEAE

Andrachne telephioides L.

PLANTAGINACEAE

- * *Antirrhinum gebelicum* Brullo & Furnari

Antirrhinum majus L. var. *angustifolium* Chav.

Chaenorhinum litorale (Willd.) Rouy

- * *Cymbalaria microcalyx* (Boiss.) Wettst. subsp. *dodekanesi* Greuter

- * *Cymbalaria microcalyx* (Boiss.) Wettst. subsp. *microcalyx*

Cymbalaria muralis G.Gaertn., B.Mey. & Scherb.

Globularia alypum L.

Globularia arabica Jaub. & Spach

Globularia cordifolia L.

Kickxia commutata (Rchb.) Fritsch subsp. *graeca* (Bory & Chaub.) R.Fern.

Linaria simplex Desf.

Misopates orontium (L.) Raf.
Plantago holosteum Scop. subsp. *scopulorum* (Degen) H-ic'
Plantago lagopus L.
Plantago lanceolata L.
Veronica hederifolia L.
Veronica thymifolia Sm. in Sibth. & Sm.

PLATANACEAE

Platanus orientalis L.

PLUMBAGINACEAE

Acantholimon aegaeum F.K.Mey.
Limonium anfractum (C.E.Salmon) C.E.Salmon
Limonium cancellatum (Bertol.) Kuntze
Limonium corinthiacum (Boiss. & Heldr.) Kuntze
Limonium japygicum (E.Groves) Pignatti ex Pignatti, Galasso & Nicoletta
Limonium narbonense Mill.
Limonium sieberi (Boiss.) Kuntze
Limonium virgatum (Willd.) Fourr.

POACEAE

Achnatherum bromoides (L.) P. Beauv.
Achnatherum calamagrostis (L.) P.Beauv.
Andropogon distachyos L.
Aristida adscensionis L.
Avena barbata Pott ex Link
Avenochloa cycladum (Rech.f. & Scheff.) Holub
Bothriochloa ischaemum (L.) Keng
Brachypodium retusum (Pers.) P. Beauv.
* *Brachypodium sylvaticum* (Huds.) P.Beauv. subsp. *creticum* H.Scholz & Greuter
Briza maxima L.
Bromus cfr. *diandrus* Roth
Bromus erectus Huds.
Bromus fasciculatus C.Presl
Bromus madritensis L.
Bromus rubens L.
Bromus scoparius L.
* *Bromus tomentellus* Boiss.
Catapodium rigidum (L.) C.E.Hubb.
Cynosurus echinatus L.
Dactylis glomerata L.
Dactylis hispanica Roth
Dactylis rigida Boiss. & Heldr.
Dasyphyrum villosum (L.) P.Candargy
Elytrigia atherica (Link) Kerguélen
Elytrigia repens (L.) Nevski
Festuca circummediterranea Patzke
* *Festuca jeanpertia* (St.-Yves) Markgr.-Dann.
Festuca pseudosupina J.Vetter in Rech.f.
Festuca sipylea (Hack.) Markgr.-Dann.
Helictotrichon convolutum (C.Presl) Henrard
Hordeum murinum L. subsp. *leporinum* (Link) Arcang.
Hyparrhenia hirta (L.) Stapf
Koeleria splendens C.Presl s.l.
Lagurus ovatus L.
Melica arrecta Kuntze
Melica ciliata L. s.l.
* *Melica minuta* L.
* *Melica rectiflora* Boiss. & Heldr.
Melica transsilvanica Schur
Pennisetum setaceum (Forssk.) Chiov.
* *Piptatherum coeruleascens* (Desf.) P.Beauv.

- * *Piptatherum holciforme* (M. Bieb.) Roem. & Schult.
- Piptatherum miliaceum* (L.) Coss.
- Poa bulbosa* L.
- Poa cenisia* All. subsp. *contracta* (Nyár.) Nyár.
- Poa thessala* Boiss. & Orph. in Boiss.
- Poa trivialis* L. subsp. *sylvicola* (Guss.) H.Lindb.
- Rostraria cristata* (L.) Tzvelev
- * *Sesleria doerfleri* Hayek
- * *Sesleria juncifolia* Wulfen ex Suffren
- Sesleria robusta* Schott, Nyman & Kotschy
- * *Sesleria taygetea* Hayek
- Sesleria vaginalis* Boiss. & Orph. in Boiss.
- Stipa austroitalica* Martinovský
- Stipa capensis* Thunb.
- Stipa parviflora* Desf.
- Trachynia distachya* (L.) Link
- Trisetaria macrochaeta* (Boiss.) Maire
- Triticum ovatum* (L.) Raspail
- Vulpia myuros* (L.) C.C.Gmel.

POLYGALACEAE

- Polygala monspeliaca* L.
- Polygala nicaeensis* Risso ex W.D.J.Koch

POLYGONACEAE

- Polygonum litorale* Meisn.
- Rumex scutatus* L.

PRIMULACEAE

- Anagallis arvensis* L.
- Lysimachia serpyllifolia* Schreb.

RANUNCULACEAE

- Clematis flammula* L.
- Clematis vitalba* L.
- Ranunculus asiaticus* L.
- Ranunculus brevifolius* Ten.
- * *Ranunculus creticus* L.
- * *Ranunculus cupreus* Boiss. & Heldr. in Boiss.
- * *Thalictrum velebiticum* Degen

RESEDACEAE

- Reseda alba* L.
- Reseda lutea* L. subsp. *lutea*
- Reseda odorata* L.

RHAMNACEAE

- Frangula rupestris* (Scop.) Schur
- Rhamnus alaternus* L.
- Rhamnus graeca* Boiss. & Reut.
- Rhamnus intermedia* Steud. & Hochst.
- Rhamnus oleoides* L. subsp. *libycus* (Asch. & Schw.) Brullo & Furnari
- Rhamnus* cfr. *oleoides* L. subsp. *oleoides*
- * *Rhamnus saxatilis* Jacq. s.l.
- * *Rhamnus saxatilis* Jacq. subsp. *infectoria* (L.) P.Fourn.
- * *Rhamnus saxatilis* Jacq. subsp. *prunifolia* (Sm.) Aldén in Strid
- Rhamnus sibthorpiana* Schult. in Roem. & Schult.

ROSACEAE

- Amelanchier ovalis* Medik. subsp. *cretica* (Willd.) Maire & Petitm.
- * *Potentilla arcadiensis* Iatroú
- * *Potentilla speciosa* Willd.
- Prunus prostrata* Labill.
- Prunus webbii* (Spach) Vierh.
- Pyrus spinosa* Forssk.
- Rubus dalmaticus* Tratt

Rubus ulmifolius Schott

- * *Sanguisorba cretica* Hayek
- Sanguisorba minor* Scop. s.l.
- Sanguisorba minor* Scop. subsp. *muricata* (Gremli) Briq.
- Sarcopoterium spinosum* (L.) Spach
- Sorbus aria* (L.) Crantz

RUBIACEAE

- * *Asperula arcadiensis* Sims
- Asperula aristata* L.f. subsp. *thessala* (Boiss. & Heldr.) Hayek
- * *Asperula boryana* (Walp.) Ehrend.
- * *Asperula chlorantha* Boiss. & Heldr.
- * *Asperula cyrenaica* (E.A.Durand & Barratte) Pamp.
- * *Asperula elonea* Iatrou & Georgiadis
- * *Asperula garganica* Huter ex Ehrend. & Krendl
- Asperula idaea* Halácsy
- * *Asperula lutea* Sm. in Sibth. & Sm. subsp. *rigidula* (Halácsy) Ehrend.
- * *Asperula pubescens* (Willd.) Ehrend. & Schönb.-Tem.
- Asperula purpurea* (L.) Ehrend. subsp. *apiculata* (Sm.) Ehrend.
- * *Asperula rigida* Sibth. & Sm.
- * *Asperula stricta* Boiss.
- * *Asperula taygetea* Boiss. & Heldr. in Boiss.
- * *Asperula tournefortii* Spreng.
- Crucianella latifolia* L.
- Crucianella rupestris* Guss.
- * *Galium amorginum* Halácsy
- * *Galium canum* Req. ex DC. subsp. *canum*
- * *Galium canum* Req. ex DC. subsp. *ovatum* Ehrend.
- * *Galium citraceum* Boiss.
- Galium corrudifolium* Vill.
- * *Galium firmum* Tausch var. *hercegovanicum*
- * *Galium fruticosum* Willd.
- * *Galium graecum* L. subsp. *graecum*
- * *Galium graecum* L. subsp. *pseudocanum* Ehrend.
- Galium heldreichii* Halácsy
- * *Galium incanum* Sm. in Sibth. & Sm. subsp. *creticum* Ehrend.
- * *Galium incurvum* Sm. in Sibth. & Sm.
- Galium lucidum* All.
- * *Galium melanantherum* Boiss.
- Galium murale* (L.) All.
- * *Galium reiseri* Halácsy
- Galium setaceum* Lam.
- * *Galium taygeteum* Krendl
- Galium thymifolium* Boiss. & Heldr. in Boiss.
- Galium verum* L.
- * *Putoria calabrica* (L. f.) DC.
- Rubia peregrina* L.
- Theligonum cynocrambe* L.
- Valantia hispida* L.
- Valantia muralis* L.

RUTACEAE

Ruta chalepensis L.
Ruta graveolens L.

SANTALACEAE

Osyris alba L.
Thesium humifusum DC.

SAPINDACEAE

Acer monspessulanum L.

SAXIFRAGACEAE

- * *Saxifraga chrysosplenifolia* Boiss.

Saxifraga hederacea L.
Saxifraga paniculata Mill.
Saxifraga tridactylites L.

SCROPHULARIACEAE

- * *Scrophularia heterophylla* Willd.
Scrophularia laciniata Waldst. & Kit.
- * *Scrophularia lucida* L.
Scrophularia peyronii Post
- * *Scrophularia xylorrhiza* Boiss. & Hausskn.
- * *Verbascum arcturus* L.
Verbascum levanticum I.K.Ferguson
Verbascum sinuatum L.
Verbascum spinosum L.

SIMABOURACEAE

Ailanthus altissima (Mill.) Swingle

SMILACACEAE

Smilax aspera L.

SOLANACEAE

Hyoscyamus albus L.

- * *Hyoscyamus aureus* L.

THYMELAEACEAE

- * *Daphne alpina* L.
- * *Daphne jasminea* Sm. in Sibth. & Sm. s.l.
Daphne jasminea Sm. in Sibth. & Sm. subsp. *jarmilae* Halda
Daphne oleoides Schreb.

URTICACEAE

Forsskaolea tenacissima L.
Parietaria alsinifolia Delile
Parietaria cretica L.
Parietaria judaica L.
Parietaria lusitanica L.

VIOLACEAE

- Viola chelmea* Boiss. & Heldr. in Boiss.
Viola fragrans Sieber
- * *Viola scorpiuroides* Coss.

ZYGOPHYLLACEAE

Zygophyllum cfr. *coccineum* L.

Tab. 3 - A) Inulo verbascifoliae-Centaureetum cuspidatae; B) Melico minutae-Pseudofumarietum acaulis; C) Campanulo pyramidalis-Moltkietum petraeeae; D) Portenschlagiello ramosissimae-Campanuletum portenschlagianae nom. inval.																	
Relevés number	*								*								17
Altitude (m a.s.l.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	320
Aspect	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Slope (°)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Area (m ²)	.	.	.	.	.	.	.	.	.	.	100	.	.	.	.	.	200
Cover (%)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Association	A	A	A	A	A	A	B	B	B	C	C	C	C	C	C	D	D
N. of relevés (synoptical tables)	2	.	.	.	.	.	.	.	.	18	.	.	.	.	.	.	4
Char. Association																	
<i>Centaurea cuspidata</i>	2	2	2	1	2	1	.	.	.	.	.	.	.	.	.	.	.
<i>Melico minuta</i>	.	.	.	.	.	.	.	1	+	1	.	.	.	.	.	.	.
<i>Pseudofumaria acaulis</i>	.	.	.	.	.	.	.	1	+	+	.	.	.	.	.	.	.
<i>Moltkia petraea</i>	.	.	.	.	.	.	.	.	.	.	V	3	2	2	2	2	.
<i>Fibigia triquetra</i>	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	3
Char. All. (Centaureo cuspidatae-Portenschlagiellion ramosissimae)																	
<i>Athamanta ramosissima</i>	2	+	+	.	+	3	.	.	.	V	.	1	1	+	1	3	.
<i>Campanula portenschlagiana</i>	2	+	1	.	.	+	.	.	.	I	.	2	+	.	.	3	+
<i>Seseli tomentosum</i>	1	.	.	1	+	.	.	.	.	I	.	.	.	.	.	1	+
<i>Alyssoides ultriculata</i>	1	.	+	.	.	.	.	.	.	II	.	+	+	.	.	.	.
<i>Galium firmum</i> var. <i>hercegovinicum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Iris pseudopallide</i>	.	.	.	.	.	.	.	.	.	I	.	.	.	.	2	.	.
<i>Dianthus ciliatus</i> subsp. <i>dalmaticus</i>	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.
Char. Ord. (Centaureo dalmaticae-Campanuletalia pyramidalis)																	
<i>Inula verbascifolia</i> subsp. <i>verbascifolia</i>	2	1	1	1	1	1	.	.	.	III	2	3	1	2	2	4	2
<i>Campanula pyramidalis</i>	2	1	+	+	+	+	.	.	.	V	1	+	.	+	.	2	+
<i>Aurinia sinuata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ephedra foeminea</i>	.	.	.	.	.	.	.	.	.	III	.	1	.	.	.	3	+
<i>Sesleria junceifolia</i>	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	4	1
<i>Aurinia leucadea</i> s.l.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	1	.
Char. Class (Asplenietea trichomanis)																	
<i>Ceterach officinarum</i>	2	+	+	.	+	+	+	+	+	IV	.	+	+	.	+	3	+
<i>Asplenium trichomanes</i>	1	.	1	.	.	+	1	+	+	III	.	+	+	.	.	3	+
<i>Cerastium grandiflorum</i>	1	.	2	.	.	.	.	.	.	I	.	.	.	.	.	.	.
<i>Polypodium cambricum</i>	1	.	+	.	.	.	.	.	.	I	.	.	.	.	.	.	.
<i>Sedum dasycarpum</i>	.	.	.	.	.	.	.	.	2	I	.	+	.	.	.	2	.
<i>Sedum ochroleucum</i>	.	.	+	.	.	.	.	.	.	.	.	.	.	.	+	+	.
<i>Asplenium ruta-muraria</i>	.	.	.	.	.	.	.	.	.	I	.	.	.	.	+	.	.
<i>Ficus carica</i>	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	+
<i>Arabis alpina</i> subsp. <i>caucasica</i>	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.
<i>Teucrium flavum</i>	.	.	.	.	.	.	.	.	.	II	.	.	.	.	.	.	.
Other species																	
<i>Tanacetum cinerariifolium</i>	1	.	+	+	.	+	.	.	.	III	2	+	.	.	+	1	+
<i>Cephalaria leucantha</i> (+ <i>C. leucantha</i> f. <i>scopolii</i>)	2	1	+	1	1	1	.	.	.	I	.	.	.	+	.	.	.
<i>Satureja montana</i>	1	1	.	+	1	.	.	.	.	II	.	1	.	1	.	1	+
<i>Salvia officinalis</i>	1	.	+	.	.	.	.	.	.	IV	.	2	1	1	.	1	.
<i>Frangula rupestris</i>	1	.	+	.	.	.	.	.	.	III	.	1	+	+	+	.	+
<i>Brachypodium retusum</i>	.	+	+	.	.	.	.	.	+	I	3	.	.	.	.	4	+
<i>Bromus erectus</i>	1	.	2	+	+	.	.	.	.	IV	.	.	.	1	.	.	.
<i>Galium lucidum</i> (+ <i>G. corrudifolium</i>)	2	.	.	.	.	.	.	1	+	IV	.	.	.	.	+	.	.
<i>Euphorbia spinosa</i>	.	.	.	+	.	.	.	.	.	II	.	.	.	1	+	2	.
<i>Hesperis glutinosa</i>	1	.	+	.	.	.	.	.	.	I	.	1	.	.	.	.	.
<i>Emerus major</i> subsp. <i>emeroides</i>	.	.	.	.	.	.	.	.	.	IV	.	.	.	.	+	+	2
<i>Parietaria judaica</i>	.	.	.	.	.	.	1	.	+	I	.	.	.	.	.	.	.
<i>Pistacia terebinthus</i>	.	.	.	.	.	.	.	.	.	IV	.	1	.	.	+	.	.
<i>Micromeria juliana</i>	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
<i>Aethionema saxatile</i>	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.	.
<i>Erica forskalii</i>	.	.	.	.	.	.	.	.	.	.	1	.	.	.	3	.	.
<i>Sesleria robusta</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	.	.
<i>Geranium rotundifolium</i>	.	.	.	.	.	.	.	.	+	1	+	.	.	.	.	.	.
<i>Rhamnus intermedia</i>	.	.	.	.	.	.	.	.	.	II	.	.	.	.	.	2	+
<i>Silene vulgaris</i> subsp. <i>tenoreana</i> (+ <i>S. vulgaris</i> subsp. <i>angustifolia</i>)	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia wulfenii</i>	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Trachymia distachya</i>	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.
<i>Phillyrea latifolia</i> (+ <i>P. media</i>)	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.
<i>Globularia cordifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.
<i>Helictotrichon convolutum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.
<i>Fraxinus ornus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1
<i>Arabis turrita</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Cerithe lamprocarpa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Reichardia picroides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Achnatherum calamagrostis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rubus dalmaticus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sedum album</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Senecio rupestris</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Selaginella denticulata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Prasium majus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Allium subhirsutum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Convolvulus cneorum</i> subsp. <i>latifolius</i>	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.
<i>Euphorbia fragifera</i>	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.
<i>Petrorhagia saxifraga</i>	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.
<i>Picris hispidissima</i>	.	.	.	.	.	.	.	.	.	.	I	.	.	.	.	.	.
<i>Arum italicum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Biscutella hispida</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Clematis flammula</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Coronilla vaginalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Crucianella latifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia dendroides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Helichrysum italicum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Arabis muralis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Coronilla valentina</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Hedera helix</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Laurus nobilis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Lonicera implexa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Quercus virgiliana</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Juniperus turbinata</i> (+ <i>J. phoenicea</i>)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Petteria rametacea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
<i>Fumana ericoides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Centaurea ragusina</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3
<i>Dianthus sylvestris</i> subsp. <i>tergestinus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+

Column 1: Croatia, Biokovo, near Makarska (Trinajstić 1980: 208-209)
 Rels. 2-6: Croatia, Biokovo (Tab. 2 in Trinajstić 1987)
 Rels. 7-9: Croatia, Lastovo Island (Rels. 14-16 of Tab. 1 in Trinajstić 2008)
 Column 10: Croatia (Trinajstić 1980: 208-209)
 Rel. 11: Croatia, Korcula Island (Trinajstić 1964: 158)
 Rels. 12-15: Croatia (Tab. 1 in Trinajstić 1987)
 Column 16: Croatia, Brac & Hvar Islands (Trinajstić 1980: 208-209)
 Rel. 17: Croatia, Brac Island, near the abbey of Blaca (Pavletić 1986: 32)

Tab. 4 - Phagnalo graeci-Centaureetum ragusinae

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Relevés number					*																
Altitude (m a.s.l.)	.	.	.	.	.	.	.	.	.	.	.	20	20	30	25	30	40	40	30	40	40
Aspect	.	S	S	S	W	W	W	W	W	NW	E	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Slope (°)	.	.	.	.	.	.	.	.	.	.	.	80	80	90	75	80	80	60	60	70	70
Area (m²)	.	16	25	25	25	25	25	25	25	25	25	3	10	10	10	15	10	10	20	10	20
Cover (%)	.	.	.	.	.	.	.	.	.	.	.	20	20	30	20	20	20	40	40	20	20
N. of relevés (synoptical table)	19	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Association																					
<i>Centaurea ragusina</i>	V	3	3	3	3	3	2	3	3	3	3	+	1	1	1	+	1	2	2	1	1
<i>Convolvulus cneorum</i> subsp. <i>latifolius</i>	III	.	+	.	.	+	+	+	.	+	.	+	+	.	+	.	+	.	+	+	.
<i>Phagnalon graecum</i>	II	.	.	+	+	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.
Char. All. (<i>Centaureo cuspidatae-Portenschlagiellion ramosissima</i>)																					
<i>Athamanta ramosissima</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Iris pseudopallida</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Seseli tomentosum</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Ord. (<i>Centaureo dalmaticae-Campanuletalia pyramidalis</i>)																					
<i>Inula verbascifolia</i> subsp. <i>verbascifolia</i>	IV	+	+	.	1	+	1	.	+	+	.	.	.	+	+	.	.	.	.	+	.
<i>Ephedra foeminea</i>	I	.	.	.	.	.	.	.	.	.	.	+	+	+	.	+	.	+	.	+	.
<i>Campanula pyramidalis</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	+	.	.	.
<i>Aurinia leucadea</i> s.l.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sesleria juncifolia</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Class (<i>Asplenetia trichomanis</i>)																					
<i>Teucrium flavum</i>	II	.	.	+	.	+	.	.	+	+	.	.	.	.	.	.	.	.	.	+	+
<i>Ficus carica</i>	II	.	.	.	+	+	.	.	.	+	+	.	.	.	.	.	.	.	.	+	+
<i>Capparis orientalis</i> (+ <i>C. spinosa</i> subsp. <i>rupestris</i>)	.	+	+	+	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ceterach officinarum</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sedum dasyphyllum</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Other species																					
<i>Crithmum maritimum</i>	IV	1	+	+	+	1	+	1	1	1	+	+	.	+	+	+	.	.	+	+	.
<i>Allium ampeloprasum</i> (+ <i>A. commutatum</i>)	.	1	.	.	.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1	+
<i>Silene vulgaris</i> subsp. <i>tenoreana</i> (+ <i>S. vulgaris</i> subsp. <i>angustifolia</i>)	II	+	.	+	.	+	.	.	.	.	.	+	+	+	+	+	+	1	+	.	+
<i>Lotus allionii</i>	.	.	.	.	.	.	.	.	.	.	.	+	1	1	+	+	+	+	+	.	+
<i>Reichardia picroides</i>	.	+	+	.	+	+	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.
<i>Juniperus turbinata</i> (+ <i>J. phoenicea</i>)	.	+	+	.	+	+	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.
<i>Limonium cancellatum</i>	.	+	.	.	+	+	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Helichrysum italicum</i>	.	1	.	.	+	+	.	.	.	.	.	.	.	.	.	+	.	.	.	+	.
<i>Elytrigia atherica</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	+	.	.	.	+	.
<i>Limonium anfractum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	+	+
<i>Daucus hispanicus</i>	.	+	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pinus halepensis</i>	.	+	.	+	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.
<i>Sonchus asper</i> subsp. <i>glaucescens</i>	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	+	.	.	+
<i>Asparagus acutifolius</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	+
<i>Malva veneta</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	+
<i>Parietaria judaica</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Iris pallida</i> subsp. <i>illyrica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.
<i>Schoenus nigricans</i>	.	.	.	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Fumaria gaillardotii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.
<i>Euphorbia dendroides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Aethionema saxatile</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Brachypodium retusum</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia spinosa</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Galium lucidum</i> (+ <i>G. corrudifolium</i>)	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rhamnus intermedia</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Salvia officinalis</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Satureja montana</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Tanacetum cinerariifolium</i>	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Silene sedoides</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Column 1: Croatia, Bisevo Island & other Adriatic Islands (Trinajstić 1980: 208-209)																					
Relev. 2-11: Croatia, Biseva (Tab. 5 in Pavletić 1973)																					
Relev. 12-16: Croatia, Bobara Island (Tab. 1 in Hecimović 1984: 113)																					
Relev. 17-21: Croatia, Mrkan Island (Tab. 1 in Hecimović 1984: 113)																					

Tab. 7 - Pimpinello fragii-Inuletum verbascifoliae																			
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Altitude (m a.s.l.)	800	810	800	590	440	430	400	380	440	380	400	290	830	430	260	410	420	420	250
Aspect	SW	SW	ESE	SSW	W	SW	NE	NE	S	W	NE	SW	SSW	SE	SE	ESE	E	NE	E
Slope (°)	80	85	80	88	80	75	75	75	80	90	85	85	85	85	80	70	80	80	80
Area (m ²)	30	35	25	50	18	35	15	32	40	25	55	80	30	22	40	8	18	15	60
Cover (%)	65	30	8	15	15	45	30	50	30	50	50	35	35	35	35	25	45	20	20
Char. Association																			
<i>Pimpinella tragium</i>	.	.	.	.	1	+	+	2	+	+	1	+	+	1	1	+	1	+	.
<i>Athemanta sicula</i>	2	+	+	.	.	.	.	.	.	+	2	+	.	.	.	.	1	1	.
<i>Clinopodium serpyllifolium</i> subsp. <i>fruticosum</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	.	1	+	.	.	.
Char. All. (Asperulion gargaricae)																			
<i>Leontodon apulus</i>	1	.	.	+	1	+	+	1	+	+	+	.	.	1	1	.	+	+	.
<i>Dianthus tarentinus</i>	.	.	.	.	.	.	1	2	.	.	+	+	.	1	1	.	+	+	.
<i>Asperula gargarica</i> (+ <i>A. cfr. gargarica</i>)	.	.	.	+	+	+	+	2	.	.	.	+	+	1	.	.	.	.	.
<i>Aubrieta columnae</i> subsp. <i>italica</i>	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Campanula gargarica</i> subsp. <i>gargarica</i>	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Ord. (Centaureo dalmaticae-Campanuletalia pyramidalis)																			
<i>Inula verbascifolia</i> subsp. <i>verbascifolia</i>	3	3	1	2	1	2	2	2	1	2	2	2	3	3	3	2	2	1	2
<i>Phagnalon rupestre</i> subsp. <i>illyricum</i>	+	.	.	+	.	1	.	.	.	.	.	.	+	.	.	.	.	+	.
<i>Aurinia sinuata</i>	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	+	1	.	.
Char. Class (Asplenietea trichomanis)																			
<i>Rhamnus saxatilis</i> subsp. <i>infectoria</i>	.	.	.	.	+	+	.	.	+	1	1	.	.	+	.	.	.	.	.
<i>Sedum ochroleucum</i>	.	.	.	.	+	+	.	.	.	.	.	.	+	.	.	.	+	.	+
<i>Ficus carica</i>	.	.	.	+	.	.	.	.	.	.	.	+	+	.	.	.	.	.	+
<i>Centranthus ruber</i> subsp. <i>ruber</i>	+	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Teucrium flavum</i> subsp. <i>flavum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	1	.
<i>Ceterach officinarum</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Asplenium trichomanes</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sedum dasyphyllum</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.
Other species																			
<i>Galium lucidum</i>	+	.	.	.	.	+	+	+	+	+	+	+	+	2	1	1	2	1	1
<i>Allium subhirsutum</i>	.	.	.	.	.	+	.	+	.	+	+	.	.	.	.	.	+	+	+
<i>Hyoseris radiata</i> subsp. <i>radiata</i>	+	+	+	+	.	.	.	.	.	.	.	.	+	.	.	.	1	+	.
<i>Satureja montana</i>	.	.	.	+	+	+	.	+	.	.	.	.	.	.	.	.	.	.	+
<i>Koeleria splendens</i> s.l.	+	.	.	+	+	1	+	.	.	.	.	.	.	.	.	.	.	.	+
<i>Thymra capitata</i>	+	.	+	1	.	+	.	.	+	.	.	.	.	.	1	1	.	.	+
<i>Thesium humifusum</i>	.	.	.	+	1	1	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Verbascum</i> sp.	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Avens barbata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Fraxinus ornus</i> subsp. <i>ornus</i>	.	.	.	.	.	.	2	1	1	2	+	.	.	.	.	.	.	.	+
<i>Pistacia terebinthus</i> subsp. <i>terebinthus</i>	.	.	.	.	.	.	.	.	.	2	2	.	.	.	.	+	.	+	.
<i>Parietaria judaica</i>	+	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Micromeria juliana</i>	1	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Prasium majus</i>	.	.	.	.	.	.	+	.	.	+	1	.	.	.	.	.	.	.	+
<i>Silene italica</i> subsp. <i>italica</i>	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	+
<i>Dasyphyrum villosum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Festuca circummediterranea</i>	+	+	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
<i>Reichardia picroides</i>	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Reseda alba</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia spinosa</i> subsp. <i>spinosa</i>	.	.	.	.	.	+	1	.	.	.	.	.	.	.	.	.	.	.	.
<i>Onosma echioides</i> subsp. <i>angustifolia</i>	.	.	.	.	.	+	1	.	.	.	.	.	.	.	.	.	.	.	+
<i>Ornithogalum</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Erysimum crassistylum</i> subsp. <i>gargaricum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Osyris alba</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Coronilla valentina</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
<i>Emerus major</i> subsp. <i>emeroides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Micromeria graeca</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	.
<i>Bromus madritensis</i>	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sedum hispanicum</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Dittrichia viscosa</i>	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Fumana thymifolia</i>	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.
<i>Jurinea mollis</i> subsp. <i>mollis</i>	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.
<i>Centaurea deusta</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Ruta graveolens</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Stipa austroitalica</i>	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	1	.
<i>Briza maxima</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ornithogalum gussonei</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sonchus tenerrimus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Helianthemum nummularium</i> subsp. <i>obscurum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Valantia muralis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Silene vulgaris</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Reseda lutea</i> subsp. <i>lutea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Cymbalaria muralis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Scabiosa</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Helianthemum oelandicum</i> subsp. <i>incanum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Scorzonera villosa</i> subsp. <i>columnae</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ajuga chamaeepitys</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Anagallis arvensis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Anthyllis vulneraria</i> subsp. <i>rubriflora</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Convolvulus elegantissimus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Linum strictum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Medicago scutellata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pistacia lentiscus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Teucrium capitatum</i> subsp. <i>capitatum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Thapsia gargarica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Crupina crupinastrum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Thymus spinulosus</i>	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
<i>Crupina vulgaris</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Bromus cfr. diandrus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Bartsia trixago</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Odontites luteus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ornithogalum comosum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rosmarinus officinalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
<i>Brachypodium retusum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Cephalaria leucantha</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2
<i>Erodium cicutarium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Muscari neglectum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Trachynia distachya</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Cistus creticus</i> subsp. <i>creticus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Helianthemum</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Minuartia verna</i> subsp. <i>attica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Piptatherum miliaceum</i> subsp. <i>miliaceum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Rubia perigrina</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Sonchus oleraceus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+

Reis. 1-19: Italy, Gargano promontory (Tab. 2 in Di Pietro & Wagensommer 2008)

Tab. 9 - A) *Alkanno graecae-Sideridetum raeseri*; B) *Daphno jasminae-Asperuletum chloranthae*;
C) *Asperulo arcadiensis-Hypericetum vesiculosi*

	*																				
	*										*										
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Altitude (m a.s.l.)	700	950	1100	800	700	1350	1000	900	1000	700	350	200	90	500	530	30	100	120	30	30	660
Aspect	S	S	SE	S	S	S	S	S	NE	E	N	N	NW	W	W	E	W	W	NW	W	E
Slope (°)	90	80	100	85	90	100	100	90	80	100	100	100	90	90	90	90	90	90	90	90	90
Area (m²)	200	200	100	200	200	100	100	200	100	200	200	200	100	100	100	100	100	100	150	100	100
Cover (%)	30	30	25	20	30	20	15	15	15	10	15	20	15	30	25	20	20	20	20	35	25
Association	A	A	A	A	A	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Char. Association																					
<i>Sideritis raeseri</i>	1	1	2	2	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Centaurea pelia</i>	1	.	+	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Alkanno graecae</i> subsp. <i>graecae</i>	.	2	+	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Bolanthus graecus</i>	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Asperula chlorantha</i>	.	.	.	.	.	2	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Daphne jasminea</i>	.	.	.	.	.	3	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Asperula arcadiensis</i>	.	.	.	.	.	.	.	.	.	1	1	2	1	1	1	1	2	1	1	2	1
<i>Hypericum vesiculosum</i>	.	.	.	.	.	.	.	.	1	1	1	1	+	.	.	.	.	.	.	.	.
Char. All. (<i>Campanulion vesicoloris</i>)																					
<i>Inula verbascifolia</i> subsp. <i>parmassica</i>	1	2	1	1	.	+	1	2	.	1	1	1	.	.	.	1	1	1	1	1	+
<i>Campanula vesicolor</i>	.	.	1	+	.	1	+	+	+	+	1	.	.	2	1	.	.	.	.	.	1
<i>Campanula rupestris</i>	1	1	+	2	1	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Campanula topaliana</i> subsp. <i>topaliana</i>	.	.	.	.	.	.	.	1	1	1	1	+	.	.	.	.	.	.	.	.	1
<i>Asperula lutea</i> subsp. <i>rigidula</i>	+	.	.	1	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Teucrium halacsyanum</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	+	1	.	.
<i>Cephalaria ambrosioides</i>	.	.	.	.	.	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Ord. (<i>Onosmetalia frutescentis</i>)																					
<i>Onosma frutescens</i>	1	1	2	2	1	2	2	1	1	1	1	2	.	.	1	2	.	.	+	1	1
<i>Aurinia saxatilis</i> subsp. <i>orientalis</i>	+	+	.	1	+	+	+	1	.	+	1	.	1	1	.	.	.	.	+	+	1
<i>Centranthus ruber</i> subsp. <i>sibthorpii</i>	.	1	1	+	.	1	+	.	+	.	+	1	.	.	1	.	1	.	.	1	1
<i>Silene gigantea</i> subsp. <i>hellenica</i>	+	2	.	1	.	1	.	.	.	.	.	.	.	1	1	1	.	.	.	1	1
<i>Silene congesta</i>	1	+	1	1	1	1	1	1	.	.	1	1	.	.	.	.	.	.	.	.	.
<i>Ephedra foeminea</i>	1	1	+	.	.	+	.	+	1	.	+	1	.	.	.	.	.	.	.	.	.
<i>Ptilostemon chamaepeuce</i> var. <i>chamaepeuce</i>	.	1	.	1	.	.	.	.	.	.	1	1	.	.	+	+	.	.	1	.	1
<i>Scrophularia heterophylla</i>	.	.	1	+	.	.	1	1	.	1	.	+	1	.	.	.	1	.	.	.	.
<i>Odontites linkii</i>	+	.	+	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Athamanta macedonica</i>	.	.	.	+	.	+	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.
<i>Hellenocarum multiflorum</i>	1	.	+	.	.	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.
<i>Teucrium divaricatum</i> subsp. <i>divaricatum</i>	.	+	.	1	.	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	1	.	+	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Brassica cretica</i> subsp. <i>cretica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
<i>Capparis orientalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Teucrium flavum</i> subsp. <i>hellenicum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
Char. Class (<i>Asplenietea trichomanis</i>)																					
<i>Ceterach officinarum</i>	+	+	+	.	+	+	1	+	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Teucrium flavum</i> subsp. <i>glaucum</i>	.	.	1	.	+	.	+	.	+	1	1	+	1	.	+	.	.	.	.	.	.
<i>Umbilicus horizontalis</i>	.	+	.	.	+	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.
<i>Asplenium trichomanes</i>	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
<i>Putoria calabrica</i>	.	.	.	1	.	.	.	.	+	.	.	.	.	.	.	.	.	.	1	.	.
<i>Melica minuta</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	+	1
<i>Ficus carica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+
<i>Capparis spinosa</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Other species																					
<i>Micromeria graeca</i>	1	1	.	1	+	.	+	1	1	.	+	1	.	+	1	+	1	+	.	.	1
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	.	.	+	.	+	.	.	.	.	.	.	.	.	1	1	1	+	+	+	1	+
<i>Phagnalon graecum</i>	+	1	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	+	+
<i>Melica ciliata</i> s.l.	1	1	+	.	.	.	+	1	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Parietaria judaica</i>	.	.	1	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Ballota acetabulosa</i>	1	+	+	2	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Minuartia verna</i> subsp. <i>attica</i>	.	.	.	1	.	+	.	+	1	.	.	.	.	.	.	.	.	.	.	.	.
<i>Emerus major</i> subsp. <i>emeroides</i>	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Aubrieta deltoidea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1
<i>Thymra capitata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	+	1	.
<i>Pterocephalus perennis</i>	+	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pistacia terebinthus</i>	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Hypericum empetrifolium</i>	.	.	.	.	.	.	.	.	.	1	.	1	+	.	.	.	.	.	.	.	.
<i>Festuca</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1	.	.	.	+
<i>Phlomis fruticosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Sedum acre</i>	+	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia acanthothamnus</i>	.	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Campanula</i> cfr. <i>anchusiflora</i>	.	1	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Medicago arborea</i>	.	.	1	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pistacia lentiscus</i>	.	.	.	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sedum stellatum</i>	.	.	.	.	.	.	.	.	.	.	+	1	.	.	.	.	.	.	.	.	.
<i>Helianthemum hymettium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Hedera helix</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Bupleurum fruticosum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Fraxinus ornus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Quercus coccifera</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pallenis spinosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Salvia fruticosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Leontodon crispus</i> subsp. <i>asper</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Helictotrichon convolutum</i> (<i>Avena filifolia</i>)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Dactylis hispanica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Adiantum capillus-veneris</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
<i>Smilax aspera</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Prasium majus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Verbascum</i> sp.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Asperula purpurea</i> subsp. <i>apiculata</i> (<i>Galium apiculatum</i>)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Piptatherum</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Saxifraga triadactylites</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Achillea umbellata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1

Rel. 1: Delphi (Tab. 4 in Quezel 1964)
 Rel. 2: Arachova (Tab. 4 in Quezel 1964)
 Rel. 3: Between Amphissa and Bralios (Tab. 4 in Quezel 1964)
 Rel. 4: Between Amphissa and Lidhorkhion (Tab. 4 in Quezel 1964)
 Rel. 5: Between Delphi and Arachova (Tab. 4 in Quezel 1964)
 Rel. 6-7: Gorges de Reka (Tab. 4 in Quezel 1964)
 Rel. 8: Between Olympia and Tripoli, near Langadia (Tab. 6 in Quezel 1964)
 Rel. 9: Between Olympia and Tripoli, near Vithinia (Tab. 6 in Quezel 1964)
 Rel. 10: Near Megaspoleon (Tab. 6 in Quezel 1964)
 Rel. 11-12: Between Megaspoleon and Diakopton (Tab. 6 in Quezel 1964)
 Rel. 13-21: Peloponnese, Voyraikos River and Foiniz River (Tab. 1 in Ferro et al. 1975)

Tab. 10 - Inulo parnassicae-Ptilostemetum chamaepeucis												
					*							
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12
Altitude (m a.s.l.)	65	25	15	10	7	18	600	600	600	550	570	570
Aspect	SW	N	SE	SW	S	W	.	.	.	.	.	.
Slope (°)	90	90	80	90	90	80	.	.	.	.	.	.
Area (m ²)	.	.	.	.	.	.	.	.	.	.	.	.
Cover (%)	50	45	65	30	35	45	.	.	.	.	.	.
Char. Association												
<i>Ptilostemon chamaepeuce</i> var. <i>chamaepeuce</i>	2	2	3	2	2	2	2	2	1	1	2	2
<i>Stachys swainsonii</i> subsp. <i>swainsonii</i>	+	1	1	1	1	1	.	.	.	.	.	.
<i>Salvia pomifera</i> subsp. <i>calycina</i>	.	.	.	.	.	.	+	+	+	.	.	2
<i>Centaurea niederi</i>	.	.	.	.	.	.	.	1	1	.	.	.
Char. All. (<i>Campanulion versicoloris</i>)												
<i>Inula verbascifolia</i> subsp. <i>parnassica</i>	1	1	2	1	2	2	1	.	2	2	3	3
<i>Campanula topaliana</i> subsp. <i>topaliana</i>	1	+	.	1	+	1	.	.	.	.	.	.
<i>Campanula versicolor</i>	+	.	.	.	.	.	2	1	.	+	1	.
<i>Campanula rupestris</i>	.	.	.	+	+	.	.	.	.	.	.	.
<i>Galium taygeteum</i> (G. <i>violaceum</i>)	.	.	.	.	.	.	.	.	.	.	+	+
Char. Ord. (<i>Onosmetalia frutescentis</i>)												
<i>Aurinia saxatilis</i> subsp. <i>orientalis</i>	1	1	1	+	1	1	1	2	1	+	1	1
<i>Onosma frutescens</i>	1	1	+	.	1	1	1	1	+	+	1	.
<i>Centranthus ruber</i> subsp. <i>sibthorpii</i>	+	1	1	.	.	1	1	+	+	+	+	.
<i>Silene congesta</i>	.	+	+	+	1	1	.	1	1	2	2	.
<i>Ephedra foeminea</i>	1	1	1	+	+	1	1	2	.	.	.	.
<i>Hellenocarum multiflorum</i>	.	.	.	.	.	.	1	1	+	.	.	.
<i>Silene gigantea</i> subsp. <i>gigantea</i>	+	.	.	.	.	+	.	.	.	.	.	.
<i>Teucrium flavum</i> subsp. <i>hellenicum</i>	.	.	.	.	.	.	.	.	.	.	+	1
<i>Umbilicus chloranthus</i>	.	.	.	.	.	.	.	.	.	.	+	.
Char. Class (<i>Asplenietea trichomanis</i>)												
<i>Ceterach officinarum</i>	+	+	+	+	.	+	+	1	.	.	.	+
<i>Piptatherum coerulescens</i>	.	.	.	+	+	.	1	1	1	.	.	2
<i>Cystopteris fragilis</i>	+	.	+	1	1	+	.	.	.	.	.	.
<i>Capparis spinosa</i>	.	.	.	.	+	.	.	.	.	.	.	.
<i>Sedum ochroleucum</i>	.	.	.	.	+	.	.	.	.	.	.	.
Other species												
<i>Pistacia terebinthus</i>	+	.	.	+	+	+	1	+	1	+	+	1
<i>Phlomis fruticosa</i>	+	+	2	.	1	1	2	.	1	.	1	1
<i>Micromeria juliana</i>	1	+	+	+	.	+	.	+	.	2	.	1
<i>Phagnalon graecum</i>	.	+	+	1	+	+	.	.	.	1	1	+
<i>Rhamnus graeca</i>	+	+	1	+	+	1	.	.	.	.	.	.
<i>Emerus major</i> subsp. <i>emeroides</i>	1	1	.	+	.	.	+	.	+	.	+	.
<i>Olea europaea</i>	.	+	+	+	+	1	.	.	.	.	.	.
<i>Euphorbia acanthothamnus</i>	+	1	1	.	+	.	.	.	.	.	.	.
<i>Juniperus turbinata</i>	+	+	.	+	+	.	.	.	.	.	.	.
<i>Ruta graveolens</i>	+	1	.	+	+	.	.	.	.	.	.	.
<i>Euphorbia dendroides</i>	.	.	1	2	2	2	.	.	.	.	.	.
<i>Salvia officinalis</i>	2	2	+	.	.	.	.	.	.	.	.	.
<i>Minuartia verna</i> subsp. <i>attica</i>	1	1	.	.	.	+	.	.	.	.	.	.
<i>Hypericum empetrifolium</i>	+	.	.	.	.	.	.	.	.	+	.	2
<i>Verbascum sinuatum</i>	.	+	1	.	.	+	.	.	.	.	.	.
<i>Quercus coccifera</i>	.	.	+	.	.	.	1	+	.	.	.	.
<i>Euphorbia characias</i>	+	1	.	.	.	.	.	.	.	.	.	.
<i>Daphne jasminea</i>	+	.	.	1	.	.	.	.	.	.	.	.
<i>Geranium robertianum</i>	.	+	+	.	.	.	.	.	.	.	.	.
<i>Asparagus acutifolius</i>	.	.	+	.	.	+	.	.	.	.	.	.
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	.	.	.	+	1	.	.	.	.	.	.	.
<i>Arbutus andrachne</i>	+	.	.	.	.	.	.	.	.	.	.	.
<i>Calicotome villosa</i>	.	.	1	.	.	.	.	.	.	.	.	.
<i>Charybdis maritima</i> s.l.	.	.	+	.	.	.	.	.	.	.	.	.
<i>Podospermum canum</i>	.	.	.	+	.	.	.	.	.	.	.	.
<i>Scaligeria napiformis</i>	.	.	.	+	.	.	.	.	.	.	.	.
<i>Sedum amplexicaule</i>	.	.	.	+	.	.	.	.	.	.	.	.
<i>Teucrium capitatum</i>	.	.	.	+	.	.	.	.	.	.	.	.
<i>Ballota acetabulosa</i>	.	.	.	.	.	+	.	.	.	.	.	.
<i>Bituminaria bituminosa</i>	.	.	.	.	.	+	.	.	.	.	.	.
<i>Geranium purpureum</i>	.	.	.	.	.	+	.	.	.	.	.	.
<i>Hedera helix</i>	.	.	.	.	.	.	.	1	.	.	.	.
<i>Sedum</i> sp.	.	.	.	.	.	.	.	.	.	.	1	.
<i>Muscari comosum</i>	.	.	.	.	.	.	.	.	.	.	.	+
<i>Prunus webbii</i>	.	.	.	.	.	.	.	.	.	.	.	1

Relev. 1-6: Greece, Korinthos Gulf (Relev. 1-6 of Tab. 4 in Theocharopoulos et al. 2004)
Relev. 7-12: Greece, NW Peloponnese (N. 80-85 of Tab. 3 in Maroulis & Georgiadis 2005)

Tab. 12 - <i>Erysimo corinthii</i> - <i>Campanuletum celsii</i>				
		*		
Relevés number	1	2	3	4
Altitude (m a.s.l.)	10	10	10	10
Aspect	NW	NW	NW	NW
Slope (°)	90	90	90	90
Area (m ²)	50	50	50	40
Cover (%)	30	40	50	30
Char. Association				
<i>Campanula celsii</i>	+	1	+	+
<i>Erysimum corinthium</i>	+	+	+	.
<i>Stachys swainsonii</i> subsp. <i>melangavica</i>	.	.	.	+
Char. All. (<i>Campanulion versicoloris</i>)				
<i>Inula verbascifolia</i> subsp. <i>methanaea</i>	.	.	+	+
<i>Lomelosia hymettia</i>	.	.	+	2
<i>Campanula versicolor</i>	.	.	.	1
Char. Ord. (<i>Onosmetalia frutescentis</i>)				
<i>Capparis orientalis</i>	2	1	+	.
<i>Scrophularia heterophylla</i>	2	1	.	+
<i>Brassica cretica</i> subsp. <i>aegaea</i>	1	.	+	+
<i>Centranthus ruber</i> subsp. <i>sibthorpii</i>	.	1	1	1
<i>Ptilostemon chamaepeuce</i> var. <i>chamaepeuce</i>	.	3	2	2
<i>Onosma frutescens</i>	.	+	.	+
<i>Odontites linkii</i>	.	.	+	+
Char. Class (<i>Asplenietea trichomanis</i>)				
<i>Putoria calabrica</i>	.	.	.	1
Other species				
<i>Phagnalon graecum</i>	1	1	.	1
<i>Piptatherum miliaceum</i> subsp. <i>miliaceum</i>	.	1	+	+
<i>Medicago arborea</i>	+	1	.	.
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	.	+	.	+
<i>Reichardia picroides</i>	.	.	1	1
<i>Rhamnus alaternus</i>	.	.	+	+
<i>Parietaria judaica</i>	+	.	.	.
<i>Ballota acetabulosa</i>	.	+	.	.
<i>Coronilla valentina</i>	.	.	1	.
<i>Euphorbia pinea</i>	.	.	+	.
<i>Limonium corinthiacum</i>	.	.	+	.
<i>Phlomis fruticosa</i>	.	.	1	.
<i>Thymra capitata</i>	.	.	2	.
<i>Daphne jasminea</i> subsp. <i>jarmilae</i>	.	.	.	+
<i>Prasium majus</i>	.	.	.	+
<i>Ruta chalepensis</i>	.	.	.	1

Rels. 1-4: Greece, Psátha (NW of Megara, on the coast of Kòlpos Alkyonidon), UTM ED50 34 S 0693/94 E 4218/19 N, limestones near the sea (10.06.2015)

Tab. 13 - *Sileno spinescentis*-*Campanuletum andrewsii*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Altitude (m a.s.l.)	300	300	380	380	390	390	385	380	370	130	130	130	30	30	30	30	30	215	210	220	210	160
Aspect	N	NNW	W	W	W	W	W	W	W	W	W	W	E	E	E	E	E	E	E	W	N	N
Slope (°)	80	85	85	85	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	85	80
Area (m ²)	40	40	40	70	50	50	50	50	50	50	50	50	50	50	50	50	50	20	20	20	40	50
Cover (%)	40	40	40	40	60	70	60	70	50	60	50	60	70	60	70	40	40	40	50	40	40	50
Char. Association																						
<i>Campanula andrewsii</i> subsp. <i>andrewsii</i>	+	1	1	+	+	1	1	1	+	2	2	2	2	1	+	2	1	2	2	1	1	1
<i>Silene spinescens</i>	.	.	+	1	2	2	1	1	1	+	+	+	2	1	+	1	+	.	+	1	1	1
<i>Stachys swainsonii</i> subsp. <i>argolica</i>	.	.	+	1	1	2	1	+	2	3	2	3	1	+	+	+	1	.	.	+	.	.
<i>Galium melanantherum</i>	1	.	+	+	2	2	2	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. All. (<i>Campanulion versicoloris</i>)																						
<i>Inula verbascifolia</i> subsp. <i>methanaea</i>	2	1	1	1	+	1	2	2	1	3	2	2	3	3	1	2	2	+	3	2	3	3
<i>Cephalaria</i> cfr. <i>flava</i> subsp. <i>setulifera</i>	1	+	+	.	1	2	1	2	2	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Silene congesta</i>	.	.	.	.	.	.	.	.	.	.	.	.	2	1	.	+	1	.	.	.	.	.
Char. Ord. (<i>Onosmetalia frutescens</i>)																						
<i>Ptilostemon gnaphaloides</i> subsp. <i>pseudofruticosus</i>	1	2	1	3	2	3	2	3	2	2	3	2	1	2	4	2	2	+	2	1	.	.
<i>Onosma frutescens</i>	.	.	1	+	2	1	2	1	1	1	1	1	1	+	+	1	2	2	1	1	+	.
<i>Aurinia saxatilis</i>	.	.	1	+	2	2	2	1	2	.	.	.	.	1	+	1	2	2	1	2	2	1
<i>Centranthus ruber</i> subsp. <i>sibthorpii</i>	.	.	+	+	.	+	2	2	1	.	.	.	3	2	2	2	1	.	+	1	.	.
<i>Brassica cretica</i> subsp. <i>nivea</i>	.	.	2	1	2	2	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ephedra foeminea</i>	.	.	.	+	2	1	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Scrophularia heterophylla</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	+	.	.	.	.	.
<i>Capparis orientalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.	.
Char. Class (<i>Asplenietea trichomanis</i>)																						
<i>Ceterach officinarum</i>	.	.	+	.	+	+	+	+	.	+	+	+	1	1	+	+	1	.	+	+	+	.
<i>Umbilicus</i> cfr. <i>horizontalis</i>	.	.	.	.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	.
<i>Sedum ochroleucum</i>	.	.	+	2	.	1	1	.	1	.	.	.	.	.	.	.	.	.	.	1	+	.
<i>Melica minuta</i>	.	.	.	.	.	.	.	.	.	+	+	1	+	+	+	+	.	.	.	.	.	.
<i>Piptatherum coerulescens</i>	.	.	.	.	1	1	2	1	.	.	.	.	.	.	.	.	.	.	.	2	2	.
<i>Rhamnus saxatilis</i>	1	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Teucrium flavum</i> subsp. <i>glaucum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.	.	.	.	.	.
<i>Allosorus acrosticus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	.	.	.	.	.	+
<i>Erysimum cheirifolium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.	.	.	.	.	.
<i>Ficus carica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
Other species																						
<i>Phagnalon graecum</i>	1	+	+	.	+	1	2	1	1	.	.	.	1	+	1	+	1	2	2	2	1	.
<i>Micromeria juliana</i>	.	+	+	.	.	.	.	.	.	+	+	+	1	1	+	1	1	+	1	+	1	+
<i>Origanum onites</i>	.	.	+	+	.	+	1	.	1	.	.	.	1	1	+	1	1	.	1	1	1	1
<i>Phlomis fruticosa</i>	1	+	+	1	.	1	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Piptatherum miliaceum</i> subsp. <i>miliaceum</i>	+	1	1	1	.	.	.	.	.	1	1	+	.	.	.	.	.	.	.	.	.	.
<i>Ballota acetabulosa</i>	.	+	.	.	1	+	1	+	+	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	.	.	1	.	1	+	+	+	+	.	.	.	.	.	.	.	.	.	+	.	.	.
<i>Reichardia picroides</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	.	.	.	.	1	+
<i>Onosma graeca</i>	.	.	.	.	2	1	2	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sedum laconicum</i>	.	.	.	.	1	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Scutellaria rupestris</i> subsp. <i>parmassica</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	+	.	.	.	.	.	.
<i>Helichrysum barrelieri</i>	.	.	.	.	.	.	.	.	.	1	1	1	.	.	.	.	.	.	.	.	.	.
<i>Hyparrhenia hirta</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2	2	.
<i>Petrorhagia illyrica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.
<i>Rhamnus graeca</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	+	.
<i>Emerus major</i> subsp. <i>emeroides</i>	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pistacia terebinthus</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Bituminaria bituminosa</i>	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia characias</i>	.	.	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Anthyllis hermanniae</i> subsp. <i>hermanniae</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	.	1	.	.	.	.	.	.	.
<i>Euphorbia acanthothamnus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.
<i>Sarcopoterium spinosum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Dactylis hispanica</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Leontodon graecus</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Silene italica</i> subsp. <i>peloponnesiaca</i>	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Brachypodium retusum</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rhamnus alaternus</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Asphodeline lutea</i>	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Allium chamaespathum</i>	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Avena barbata</i>	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Hypericum empetrifolium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
<i>Melica ciliata</i> s.l.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Selaginella denticulata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Allium</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Pistacia lentiscus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+

Relevés 1-2: Greece, Peloponnese, Xilokeriza (UTM ED50 34 S 0671 E 4193 N, limestone (11.06.2015))

Relevés 3-4: Greece, Peloponnese, Akrokorintos (UTM ED50 34 S 0664 E 4195 N, limestone (11.06.2015))

Relevés 5-9: Greece, Peloponnese, Akrokorinthos, limestone (12.07.2016)

Relevés 10-12: Greece, Peloponnese, Katakali, limestone (9.07.2016)

Relevés 13-20: Greece, Peloponnese, Korfos Korinthos, limestone (9.07.2016)

Relevés 21-22: Greece, Peloponnese, Between Achladokambos and Mili (SW of Argos) (UTM ED50 34 S 0648 E 4154 N), limestone (12.06.2015)

Tab. 14 - <i>Stachydo virellae</i> - <i>Campanuletum hirsutulae</i>									
									*
Relevés number	1	2	3	4	5	6	7	8	9
Altitude (m a.s.l.)	50	50	50	20	25	25	25	20	20
Aspect	SSE	SE	S	SSE	S	S	S	S	S
Slope (°)	90	90	90	90	90	90	90	90	90
Area (m ²)	40	50	40	50	20	20	25	25	25
Cover (%)	35	40	40	30	50	50	50	50	70
Char. Association									
<i>Campanula andrewsii</i> subsp. <i>hirsutula</i>	1	1	1	1	2	2	2	1	3
<i>Stachys spreitzenhoferi</i> subsp. <i>virella</i>	.	+	+	.	+	1	3	3	2
Char. All. (<i>Campanulion versicoloris</i>)									
<i>Inula verbascifolia</i> subsp. <i>methanaea</i>	2	1	2	+	1	2	1	2	2
<i>Stachys chrysantha</i>	.	+	.	.	.	.	.	.	.
Char. Ord. (<i>Onosmetalia frutescentis</i>)									
<i>Ptilostemon chamaepeuce</i> var. <i>chamaepeuce</i>	2	3	2	2	3	3	2	2	3
<i>Onosma frutescens</i>	+	.	.	+	1	2	1	2	1
<i>Aurinia saxatilis</i>	.	.	.	.	1	1	1	+	2
<i>Capparis orientalis</i>	+	.	+	.	.	.	.	.	.
Char. Class (<i>Asplenieta trichomanis</i>)									
<i>Sedum ochroleucum</i>	1	+	.	.	.	.	.	.	.
Other species									
<i>Reichardia picroides</i>	+	+	+	1	1	+	+	+	.
<i>Hyparrhenia hirta</i>	+	1	+	+	1	1	1	.	+
<i>Phagnalon graecum</i>	.	1	1	+	2	1	1	+	1
<i>Bituminaria bituminosa</i>	+	+	1	.	+	+	.	+	+
<i>Lotus cytisoides</i>	.	.	.	1	+	.	+	+	.
<i>Euphorbia dendroides</i>	+	+	1	.	.	.	.	.	.
<i>Allium ampeloprasum</i>	.	+	+	+	.	.	.	.	.
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	1	+	.	.	.	.	.	.	.
<i>Matthiola incana</i>	.	.	.	+	+	.	.	.	.
<i>Opuntia</i> sp.	.	+	.	.	.	.	.	.	.
<i>Phlomis fruticosa</i>	.	+	.	.	.	.	.	.	.
<i>Cichorium spinosum</i>	.	.	.	+	.	.	.	.	.
<i>Ecballium elaterium</i>	.	.	.	+	.	.	.	.	.
<i>Glaucium flavum</i>	.	.	.	+	.	.	.	.	.
<i>Limonium sieberi</i>	.	.	.	+	.	.	.	.	.
Rels. 1-4: Greece, Peloponnese, Monemvasia Peninsula (UTM ED50 34 S 0683 E 4062 N), limestone (16.06.2015)									
Rels. 5-9: Greece, Peloponnese, Monemvasia Peninsula, limestone (10.07.2016)									

Tab. 15 - *Petrorhagio grandiflorae*-*Stachydetum chrysanthae*

	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	
Relevés number	120	125	125	490	490	490	490	60	60	60	60	400	400	400	410	410	510	510	515	515	515	520	520	520	520	520	520	
Altitude (m a.s.l.)	S	SSW	W	SSE	ENE	ENE	E	E	E	E	E	N	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Aspect	90	90	85	85	85	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	
Slope (°)	60	50	35	30	40	30	20	50	50	50	50	50	50	50	50	50	50	50	25	20	29	20	25	50	50	50	50	
Area (m²)	25	20	25	30	30	25	25	60	60	50	50	50	50	40	60	50	60	50	50	40	50	50	50	50	60	60	40'	
Cover (%)																												
Char. Association																												
<i>Stachys chrysantha</i>	+	.	1	2	2	2	+	3	2	3	2	2	2	2	3	2	2	2	1	.	.	.	3	2	2	1	2	
<i>Petrorhagio grandiflora</i>	.	1	.	.	.	.	.	.	.	.	.	3	3	1	+	1	+	1	+	2	1	+	2	3	3	2	2
<i>Inula candida</i> subsp. <i>limonella</i>	2	1	2	.	.	.	.	.	.	.	.	2	1	1	+	.	.	.	1	2	1	2	2	2	3	3	.
<i>Asperula elonea</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	2	2	2	2	1	2	+	.	+	2	1	+	.	+
<i>Campanula asperuloides</i> subsp. <i>asperuloides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	2	1	2	1	+	.	1
<i>Teucrium francisci-wernerii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	1	2	2	.	.	.	.	2
<i>Potentilla arcadiensis</i>	2	2	+
<i>Stachys spreitzenhoferi</i> subsp. <i>spreitzenhoferi</i>	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. All. (<i>Campanulion versicoloris</i>)																												
<i>Campanula topaliana</i> subsp. <i>topaliana</i>	+	1	+	.	.	.	.	2	2	1	2	+	+	+	+	+	.	1	.	1	1	+	+	+	+	+	.
<i>Galium taygeteum</i>	+	1	+	2	2	1	2	2	1	+	2	1	1	1	1	1	+	+
<i>Asperula boryana</i>	1	2	2	1	2	2	2	1	1	2	1
<i>Sesleria taygetea</i>	2	2	+
<i>Inula verbascifolia</i> subsp. <i>methanaea</i>	1	2	1	2
<i>Minuartia picchleri</i>	+	1	1	1
Char. Ord. (<i>Onosmetalia frutescentis</i>)																												
<i>Ptilostemon gnaphaloides</i> subsp. <i>pseudofruticosus</i>	.	.	.	.	.	.	.	2	3	2	1	.	.	2	2	1	1	2	.	+	1	+	2	3	1	.	1
<i>Odontites linkii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	2	1	+	+	+	+	+	.	.	1	+	.
<i>Onosma frutescens</i>	.	.	+	.	.	.	.	1	1	1	2	1	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Silene gigantea</i> subsp. <i>hellenica</i>
<i>Aurinia saxatilis</i>	3	2	2	2	+
<i>Ephedra foeminea</i>	1	+	.	1
<i>Centranthus ruber</i> subsp. <i>sibthorpii</i>	1	+
<i>Asperula taygetea</i>	.	1
Char. Class (<i>Asplenietea trichomanis</i>)																												
<i>Ceterach officinarum</i>
<i>Melica minuta</i>
<i>Teucrium flavum</i> subsp. <i>glaucum</i>
<i>Ficus carica</i>	1	.	1	1	1
<i>Capparis spinosa</i>	2	2	1	+
<i>Piptatherum coerulescens</i>	2	1	1	2
<i>Allosorus acrostichus</i>
<i>Umbilicus</i> cfr. <i>horizontalis</i>
<i>Putoria calabrica</i>
<i>Arabis hirsuta</i>
Other species																												
<i>Micromeria juliana</i>	+	+	+	1	+	2	1	1	1	+	1	+	1	1	+	.	.	.	+	1	+	1	+	+
<i>Hypericum empetrifolium</i>	.	.	.	.	.	1	.	.	.	.	.	.	1	1	+	1	1	1	+	+	1	.	1	2	1	1	+
<i>Origanum onites</i>	+	+	+	1	1	1	1	1	+	1	+
<i>Phagnalon graecum</i>	2	1	1	2
<i>Erica forskalii</i>	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	1	1	.	1	1
<i>Thymra capitata</i>	.	.	.	1	1	+	.	.	.	.	.	.	.	.	.	.	2	1	.	.	.	.	.	1	.	.	.
<i>Helichrysum barrelieri</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	.	.	.	.	.	.	.
<i>Phlomis fruticosa</i>	.	.	.	.	.	.	.	1	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Linum collinum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	.	.	.	.	.	.	.	.
<i>Ditrichia orientalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Genista acanthoclada</i>	.	.	.	1	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia acanthothamos</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Hyparrhenia hirta</i>	.	.	.	.	.	.	.	2	2	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Globularia alypum</i>	2	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pistacia lentiscus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Reichardia picroides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Valantia muralis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sedum album</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Salvia fruticosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	.	.	.	.	.	.	.	.	.	.	.
<i>Teucrium capitatum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia spinosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sarcopoterium spinosum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Bituminaria bituminosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Knautia hybrida</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Scutellaria rupestris</i> subsp. <i>caroli-henrici</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<p>Reis. 1-3: Greece, Peloponnese, 2-5 km W of Leonidion (UTM ED50 34 S 065/66 E 411 N), limestone (15.06.2015) Reis. 4-7: Greece, Peloponnese, 4 km NW of Velanidia (UTM ED50 34 S 0689/90 E 4040 N), limestone (17.06.2015) Reis. 8-11: Greece, Peloponnese, Kiveri Nafplio, limestone (9.07.2016) Reis. 12-16: Grecia, Peloponnese, Under the Monastery of Elonas, Leonida, limestone (10.7.2016) Reis. 17-27: Greece, Peloponnese, Monastery of Elonas, Leonida, limestone (10.7.2016)</p>																												

Tab. 16 - <i>Diantho occidentalis-Stachydetum ionicae</i>						
				*		
Relevés number	1	2	3	4	5	6
Altitude (m a.s.l.)	600	600	20	15	15	15
Aspect	SE	E	W	W	W	W
Slope (°)	90	90	90	90	90	90
Area (m ²)	50	30	10	30	30	50
Cover (%)	60	50	60	60	60	50
Char. Association						
<i>Stachys ionica</i>	2	1	2	3	2	1
<i>Dianthus fruticosus</i> subsp. <i>occidentalis</i>	.	.	2	2	2	1
<i>Inula verbascifolia</i> subsp. <i>verbascifolia</i>	.	.	3	3	2	2
Char. All. (<i>Campanulion versicoloris</i>)						
<i>Campanula versicolor</i>	2	2	.	.	.	.
<i>Cephalaria ambrosioides</i>	+	+	.	.	.	.
Char. Ord. (<i>Onosmetalia frutescentis</i>)						
<i>Ptilostemon chamaepeuce</i> var. <i>chamaepeuce</i>	2	2	2	1	2	+
<i>Ephedra foeminea</i>	1	1	1	+	1	.
<i>Brassica cretica</i> subsp. <i>cretica</i>	.	.	1	1	+	.
<i>Capparis orientalis</i>	.	.	1	+	+	.
<i>Athamanta macedonica</i>	1	+	.	.	.	.
<i>Centranthus ruber</i> subsp. <i>sibthorpii</i>	1	2	.	.	.	.
<i>Silene gigantea</i> subsp. <i>gigantea</i>	2	1	.	.	.	.
Char. Class (<i>Asplenieta trichomanis</i>)						
<i>Putoria calabrica</i>	+	1	.	+	.	.
<i>Ceterach officinarum</i>	+	+	.	.	.	.
<i>Piptatherum coerulescens</i>	+	+	.	.	.	.
<i>Umbilicus horizontalis</i>	+	1	.	.	.	.
Other species						
<i>Juniperus turbinata</i>	.	.	.	1	1	+
<i>Emerus major</i> subsp. <i>emeroides</i>	+	+	.	.	.	.
<i>Euphorbia acanthothamnos</i>	+	+	.	.	.	.
<i>Helictotrichon convolutum</i>	1	1	.	.	.	.
<i>Leontodon graecus</i>	1	+	.	.	.	.
<i>Phagnalon graecum</i>	+	1	.	.	.	.
<i>Phlomis fruticosa</i>	+	+	.	.	.	.
<i>Smilax aspera</i>	+	+	.	.	.	.
<i>Allium commutatum</i>	.	.	.	+	+	.
<i>Dactylis hispanica</i>	.	.	.	+	.	+
<i>Limonium</i> sp.	.	.	.	.	+	2
<i>Salvia fruticosa</i>	1	.	.	.	.	.
<i>Euphorbia dendroides</i>	.	.	1	.	.	.
<i>Dittrichia orientalis</i>	.	.	.	+	.	.
Rels. 1-2: Greece, Kefalonia Island, Mt. Ainos (22.08.1999)						
Rels. 3-6: Greece, Kefalonia Island, Myrto Bay, limestone (24.08.1999)						

Tab. 18 - *Campanulo versicoloris*-*Aurinetium leucadeae*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Altitude (m a.s.l.)	60	40	50	60	60	40	50	40	40	50	60	50	60	60	50	70	20	20	25	40	30	30	25	
Aspect	NE	E	SW	NW	NW	N	E	S	S	S	E	NE	NE	E	E	NE	SW	SE	W	SE	SE	SE	SE	
Slope (°)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Area (m ²)	50	50	20	50	30	40	50	30	20	50	30	15	10	50	30	20	50	60	30	50	50	60	40	
Cover (%)	50	30	50	50	25	30	40	70	70	60	10	30	30	30	40	30	40	25	10	50	50	60	40	
Char. Association																								
<i>Aurinia leucadea</i> subsp. <i>leucadea</i>	2	1	2	3	1	1	1	3	2	3	+	+	.	+	2	1	+	1	+	2	1	2	1	
<i>Dianthus japygicus</i>	.	.	.	.	.	.	1	+	+	.	1	1	1	.	.	.	.	.	.	2	1	2	+
<i>Centaurea leucadea</i>	.	.	.	.	.	.	2	2	3	1	1	1	.	.	.	.	.	.	.	.	.	.	.
<i>Centaurea iapygica</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	2	1	1	.	.	.	.	.	.	.
<i>Centaurea tenacissima</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	+	.	.	.	.
<i>Centaurea nobilis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	3	2	2
Char. All. (<i>Campanulion versicoloris</i>)																								
<i>Campanula versicolor</i>	2	2	2	2	1	1	2	2	2	2	1	2	1	2	1	2	2	1	1	1	+	1	1	
Char. Ord. (<i>Onosmetalia frutescentis</i>)																								
<i>Scrophularia lucida</i>	1	2	1	+	.	.	+	1	1	.	+	.	+	1	.	.	+	.	+	1	+	+	+	
<i>Hellenocarum multiflorum</i>	+	1	+	+	+	.	.	.	.	+	1	.	1	1	+	.	.	.	.	.	.	.	.
Char. Class (<i>Asplenietea trichomanis</i>)																								
<i>Capparis spinosa</i>	+	+	2	1	.	+	1	.	1	1	+	.	.	+	1	.	1	+	+	1	1	1	+	
<i>Sedum dasyphyllum</i>	.	+	+	+	.	.	.	1	1	+	.	.	.	+	+	.	.	.	.	.	.	+	.
<i>Teucrium flavum</i> subsp. <i>flavum</i>	.	.	.	.	+	+	.	.	.	.	+	.	.	1	1	+	.	.	.	.	.	.	.
<i>Umbilicus horizontalis</i>	.	+	.	.	.	.	.	+	+	.	.	.	.	+	+	.	.	.	.	.	.	.	.
<i>Ficus carica</i>	.	.	1	1	.	.	+	+	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.
<i>Melica minuta</i>	.	.	.	.	+	.	.	.	.	.	.	.	.	+	.	.	.	.	+	+	.	.	+
Other species																								
<i>Brachypodium retusum</i>	+	.	+	1	1	1	1	.	.	.	+	+	1	1	+	1	1	+	.	1	1	2	1	
<i>Parietaria judaica</i>	1	1	+	1	+	+	.	+	+	1	.	.	.	.	.	.	1	+	1	.	.	.	.
<i>Prasium majus</i>	+	+	.	.	.	.	.	.	.	+	+	1	+	1	+	1	+	.	.	+	+	.	+
<i>Lotus cytisoides</i>	+	2	1	1	+	1	.	.	1	+	+	.	.	.	.	.	.	.	.	.	.	.	+
<i>Reichardia picroides</i>	.	.	.	.	+	.	.	+	+	+	+	.	.	.	.	.	+	.	.	.	+	+	+
<i>Valantia muralis</i>	.	+	.	.	.	+	+	+	+	+	.	.	.	+	+	.	.	.	.	.	.	.	.
<i>Trachynia distachya</i>	.	.	+	+	+	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	+	+	+
<i>Dittrichia viscosa</i>	.	.	.	.	+	+	.	.	.	.	+	.	+	.	.	.	+	1	+	.	.	.	+
<i>Crithmum maritimum</i>	.	.	+	+	.	.	1	.	.	.	+	+	.	.	.	+	.	.	.	.	.	.	1
<i>Euphorbia dendroides</i>	.	+	.	.	.	.	+	.	.	.	.	+	.	.	.	2	+	.	.	.	1	+	.
<i>Daucus carota</i>	.	.	.	.	.	.	+	.	.	.	.	.	.	.	+	.	+	+	.	+	.	+	+
<i>Sedum sediforme</i>	.	1	.	.	.	.	.	.	.	.	.	.	.	+	+	.	1	+	.	.	.	.	.
<i>Hyparrhenia hirta</i>	.	.	1	+	.	.	.	+	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Satureja cuneifolia</i>	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	1	1	1	.	.	.	.
<i>Pistacia lentiscus</i>	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	1	2	1	+
<i>Micromeria graeca</i>	.	.	+	1	+	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.
<i>Limonium japygicum</i>	.	.	.	.	.	+	1	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Silene vulgaris</i> subsp. <i>tenoreana</i>	.	.	.	.	.	.	.	1	1	2	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Phlomis fruticosa</i>	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+	.	.	.	1	.
<i>Lotus hirsutus</i>	+	+	1	+
<i>Quercus ilex</i>	1	.	.	.	.	.	.	.	.	.	.	.	.	1	+	.	.	.	.	.	.	.	.
<i>Catapodium rigidum</i>	.	.	.	.	.	.	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sonchus tenerrimus</i>	.	.	.	.	.	.	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Foeniculum piperitum</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Echium plantagineum</i>	.	.	.	.	+	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Convolvulus althaeoides</i>	.	.	.	.	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia</i> cfr. <i>bivonae</i>	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.
<i>Campanula erinus</i>	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rostraria cristata</i>	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Myrtus communis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+
<i>Malva veneta</i>	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sideritis romana</i>	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Carlina corymbosa</i>	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sedum stellatum</i>	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Stipa capensis</i>	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Acanthus mollis</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.
<i>Asparagus acutifolius</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.
<i>Coronilla valentina</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.
<i>Lonicera implexa</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.
<i>Allium</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.
<i>Cachrys libanotis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.
<i>Melica ciliata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.
<i>Picris hieracioides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.
<i>Lagurus ovatus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.
<i>Thymra capitata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.
<i>Smilax aspera</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.
<i>Bituminaria bituminosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Dactylis glomerata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+

Relev. 1-23: Italy, Apulia, Salento (Tab. 1 in Bianco et al. 1988)

Tab. 20 - A) *Centaureo acicularis*-*Campanuletum icaricae*; B) *Johrenio dichotomae*-*Cephalarietum squamiflorae*; C) *Brassicco aegaeae*-*Campanuletum lyratae*

	*			*			*			*			*				
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Altitude (m a.s.l.)	550	550	550	800	830	850	860	900	1000	50	50	10	15	10	10	15	10
Aspect	SW	SW	SW	N	N	N	N	N	N	E	E	N	N	N	N	N	N
Slope (°)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Area (m ²)	50	50	50	50	50	100	100	100	50	40	50	20	20	10	25	25	20
Cover (%)	50	60	60	60	50	50	60	50	50	60	70	50	50	50	60	60	50
Association	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	C	C
Char. Association																	
<i>Campanula calaminthifolia</i>	1	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Campanula lyrata</i> subsp. <i>icarica</i>	+	2	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Centaurea acicularis</i>	1	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Linum gyaricum</i> subsp. <i>icaricum</i>	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Johrenia dichotoma</i>	.	.	.	1	1	+	1	.	1	.	.	.	.	.	.	.	.
<i>Campanula lyrata</i> subsp. <i>lyrata</i>	.	.	.	.	.	.	.	+	.	1	1	+	1	1	1	+	1
Char. All. (<i>Eryngio glomerati</i>-<i>Inulion heterolepidis</i>)																	
<i>Inula verbascifolia</i> subsp. <i>heterolepis</i>	3	2	2	2	2	3	2	3	2	2	3	1	3	2	1	1	2
<i>Dianthus elegans</i>	1	+	1	2	1	+	1	1	2	.	.	.	.	.	.	.	.
<i>Hypericum cuisinii</i>	1	+	1	+	1	.	+	+	.	.	.	.	.	.	.	.	.
<i>Arenaria deflexa</i> subsp. <i>deflexa</i>	.	.	.	1	+	+	1	1	1	.	.	.	.	.	.	.	.
<i>Silene fabaria</i>	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Ord. (<i>Onosmetalia frutescentis</i>)																	
<i>Silene gigantea</i> subsp. <i>gigantea</i>	1	+	+	.	+	+	+	.	.	.	.	1	1	1	2	1	+
<i>Cephalaria squamiflora</i>	2	2	1	3	2	2	3	2	3	.	.	.	.	.	.	.	.
<i>Helichrysum orientale</i>	2	2	3	.	.	.	.	.	.	.	.	2	3	1	2	2	1
<i>Brassica cretica</i> subsp. <i>aegaea</i>	.	1	+	.	.	.	.	.	.	.	.	1	1	1	2	1	+
<i>Scrophularia heterophylla</i>	.	.	.	.	.	.	.	.	.	1	+	2	2	1	1	+	+
<i>Teucrium divaricatum</i> subsp. <i>graecum</i>	.	.	.	.	.	.	.	.	.	1	+	+	1	1	+	1	1
<i>Ptilostemon chamaepeuce</i>	.	.	.	.	.	.	.	.	.	3	2	.	2	1	1	2	2
<i>Crepis fraasii</i> subsp. <i>fraasii</i>	.	.	.	1	1	2	2	+	+	.	.	.	.	.	.	.	.
<i>Rosularia serrata</i>	.	.	.	+	+	.	+	+	+	.	.	.	.	.	.	.	.
<i>Petrohragia armerioides</i>	.	.	.	1	+	.	+	+	.	.	.	.	.	.	.	.	.
<i>Capparis orientalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	1
<i>Aurinia saxatilis</i> subsp. <i>megalocarpa</i>	.	.	.	.	.	.	.	.	+	1	1	.	.	.	.	.	.
<i>Teucrium divaricatum</i> subsp. <i>divaricatum</i>	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ptilostemon gnaphaloides</i> subsp. <i>pseudofruticosum</i>	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Class (<i>Asplenietea trichomanis</i>)																	
<i>Ceterach officinarum</i>	+	+	+	+	+	+	+	+	.	+	+	.	.	+	+	+	.
<i>Melica minuta</i>	.	.	.	.	.	.	.	.	.	.	+	.	+	+	+	2	+
<i>Ficus carica</i>	.	.	.	.	.	.	.	.	.	+	.	+	.	.	+	.	+
<i>Umbilicus horizontalis</i>	.	+	+	.	.	.	.	.	.	.	.	+	+	.	.	.	.
<i>Sedum dasyphyllum</i>	.	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.
<i>Allosorus acrostichus</i>	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.
Other species																	
<i>Micromeria juliana</i>	.	.	.	+	1	+	+	1	1	1	1	.	.	.	.	.	.
<i>Euphorbia rigida</i>	.	.	.	1	1	1	1	1	1	+	.	.	.	.	.	.	.
<i>Lactuca viminea</i>	.	.	.	+	+	+	1	+	+	+	.	.	.	.	.	.	.
<i>Ballota acetabulosa</i>	.	.	.	1	2	+	1	1	1	.	.	.	.	.	.	.	.
<i>Phagnalon graecum</i>	.	.	.	.	.	.	.	.	.	1	+	.	.	2	1	1	+
<i>Thymra capitata</i>	.	.	.	.	.	.	.	.	.	1	1	.	.	1	1	1	+
<i>Dactylis hispanica</i>	.	.	.	.	.	.	.	.	.	.	.	+	+	1	+	1	+
<i>Parietaria judaica</i>	.	.	.	.	.	.	.	.	.	.	.	+	1	+	+	.	+
<i>Aubrieta deltoidea</i>	.	.	.	1	+	.	+	+	.	.	.	.	.	.	.	.	.
<i>Festuca pseudosupina</i>	.	.	.	1	+	.	2	.	1	.	.	.	.	.	.	.	.
<i>Rhamnus graeca</i>	.	.	.	.	.	.	.	.	+	.	+	+	1	.	.	.	.
<i>Dittrichia orientalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	+	+
<i>Hypericum empetrifolium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	2	+
<i>Satureja thymra</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	1	1
<i>Erica forskalii</i>	2	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Poa bulbosa</i>	+	.	1	.	.	.	.	.	+	.	.	.	.	.	.	.	.
<i>Allium exile</i>	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.
<i>Echinops spinosissimus</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	1	+	.	.
<i>Silene</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.
<i>Parietaria cretica</i>	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Malcolmia chia</i>	+	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Brachypodium retusum</i>	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.
<i>Hyparrhenia hirta</i>	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.
<i>Sarcopoterium spinosum</i>	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.
<i>Teucrium capitatum</i>	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.
<i>Crithmum maritimum</i>	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.
<i>Adiantum capillus-veneris</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Valeriana dioscoridis</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Anthemis</i> cfr. <i>orientalis</i>	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.
<i>Origanum onites</i>	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.
<i>Piptatherum miliaceum</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.
<i>Pistacia lentiscus</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.
<i>Verbascum</i> sp.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.
Rels. 1-3: Greece, Ikaria Island, Koskina, limestone (29.08.2003)																	
Rels. 4-8: Greece, Chios Island, Mt. Pelinaion (Viki) (11.10.2007)																	
Rel. 9: Greece, Chios Island, Mt. Pelinaion (Viki) (26.08.2008)																	
Rels. 10-11: Greece, Chios Island, near Chios (26.08.2008)																	
Rels. 12-13: Greece, Samos Island, Potami (01.07.2003)																	
Rels. 14-17: Greece, Samos Island, Potami (31.08.1992)																	

Tab. 21 - A) *Helichryso pichleri*-*Cephalarietum squamiflorae*; B) *Galio ovati*-*Caroxyletum carpathi*; C) *Teucrio heliotropiifolii*-*Inuleteum heterolepidis*

	*			*											*					
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Altitude (m a.s.l.)	1125	1125	1125	10	10	15	15	20	15	20	15	15	15	20	720	720	270	300	.	
Aspect	N	N	N	N	N	N	NW	W	W	W	S	N	NW	W	S	SE	N	NE	.	
Slope (°)	90	90	90	90	90	90	80	90	90	90	90	90	90	90	90	90	90	90	.	
Area (m²)	100	100	100	50	20	10	10	20	20	20	50	50	20	50	100	60	50	50	.	
Cover (%)	50	30	50	30	20	35	30	30	25	25	30	30	40	40	30	40	30	40	.	
Association	A	A	A	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	
N. of relevés (synoptical table)	8
Char. Association																				
<i>Helichrysum pichleri</i>	2	+	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Origanum vetteri</i>	1	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Pimpinella pretenderis</i>	+	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Caroxylon carpathum</i>	.	.	.	2	+	2	2	1	2	2	1	2	2	.	.	.	.	.	.
<i>Dianthus fruticosus</i> subsp. <i>carpathus</i>	.	.	.	.	.	.	.	.	.	.	1	+	2	.	.	.	.	.	I
<i>Teucrium montbretii</i> subsp. <i>heliotropiifolium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	1	+	+	IV
Char. All. (<i>Eryngio glomerati</i>-<i>Inulion heterolepidis</i>)																				
<i>Galium canum</i> subsp. <i>ovatum</i>	.	.	.	.	+	1	2	1	+	.	.	1	+	.	1	+	1	+	.
<i>Campanula carpatha</i>	1	+	+	2	1	+	+	.	.	.	.	.	.	.	.	.	1	+	.
<i>Cymbalaria microcalyx</i> subsp. <i>dodekanesi</i>	+	+	+	.	.	.	.	.	.	.	.	.	.	.	1	+	+	+	.
<i>Hypericum cuisinii</i>	+	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II
<i>Inula verbascifolia</i> subsp. <i>heterolepis</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	2	1	2	1	IV
<i>Lomelosia variifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	+	2	+	3	I
<i>Galium incurvum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
Char. Ord. (<i>Onosmetalia frutescentis</i>)																				
<i>Linum arboreum</i>	1	1	1	.	.	.	.	.	.	.	.	.	.	1	1	2	1	1	II
<i>Lactuca acanthifolia</i>	.	.	.	1	+	+	.	.	.	.	.	2	+	.	2	2	.	.	.
<i>Ptilostemon chamaepeuce</i>	+	+	1	+
<i>Rosularia serrata</i>	+	+	+	1
<i>Hellenocarum multiflorum</i>	+	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Seseli gummiferum</i> subsp. <i>crithmifolius</i>	2	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
<i>Silene gigantea</i> subsp. <i>gigantea</i>	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Sedum creticum</i> var. <i>monocarpicum</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Cephalaria squamiflora</i>	3	2	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	IV
<i>Crepis fraasii</i> subsp. <i>fraasii</i>	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Capparis orientalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.
<i>Helichrysum orientale</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II
<i>Lutzia cretica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	I
<i>Stachelina fruticosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	II
<i>Scrophularia lucida</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	.	.	.
<i>Brassica cretica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
Char. Class (<i>Asplenietea trichomanis</i>)																				
<i>Ceterach officinarum</i>	+	+	+	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	.
<i>Melica minuta</i>	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	+	1	1	+
<i>Eryngium glomeratum</i>	.	.	.	1	1	+	.	.	.	.	+	+	1	.	.	.	.	1	.
<i>Umbilicus horizontalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	.
<i>Piptatherum coeruleum</i>	1	+	1	+
<i>Arabis alpina</i> subsp. <i>caucasica</i>	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Asplenium trichomanes</i>	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Putoria calabrica</i>	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Allosorus acrostichus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II
<i>Capparis spinosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II
<i>Silene fruticosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
Other species																				
<i>Parietaria cretica</i>	.	.	.	1	1	+	+	+	+	+	+	+	+	.	+	+	.	.	.	
<i>Carlina traganthifolia</i>	.	.	.	2	1	1	1	1	1	+	+	1	1	.	.	.	.	.	.
<i>Echinops spinosissimus</i>	.	.	.	1	+	+	+	+	+	+	+	+	+	.	.	.	.	+	.
<i>Erica forskalii</i>	1	2	1	.	.	.	.	.	.	.	.	.	.	.	.	+	1	1	1
<i>Sarcopoterium spinosum</i>	.	.	.	+	+	+	.	.	.	.	.	.	.	.	+	+	.	.	.
<i>Reichardia picroides</i>	.	.	.	.	+	+	+	+	+	+	+	+	+	.	.	.	.	.	.
<i>Sedum litoreum</i>	.	.	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Cichorium spinosum</i>	.	.	.	.	1	+	+	1	1	+	.	.	.	.	.	.	.	.	.
<i>Silene sedoides</i>	.	.	.	.	.	+	+	+	+	+	+	+	+	.	.	.	.	.	.
<i>Dactylis hispanica</i>	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.
<i>Crithmum maritimum</i>	.	.	.	.	.	.	.	2	+	1	2	+	.	.	.	.	.	.	.
<i>Phagnalon graecum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	+	+	+
<i>Taraxacum</i> sp.	.	.	.	.	+	.	+	+	+	.	.	.	.	.	.	.	.	.	.
<i>Micromeria nervosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+
<i>Bryonia cretica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Festuca jeanpertii</i>	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia dendroides</i>	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Bellium minutum</i>	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Achillea cretica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II
<i>Lotus cytisoides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Allium commutatum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Hyparrhenia hirta</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.
<i>Sedum sediforme</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.
<i>Teucrium brevifolium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.
<i>Origanum onites</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Allium subhirsutum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Helichrysum barrelieri</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Allium bourgeaui</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III
<p>Relev. 1-3: Greece, Karpathos Island, Kali Limni (02.07.2002) Relev. 4-13: Greece, Karpathos Island, Vroukounda, N from Olympos (03.07.2002) Rel. 14: Greece, Karpathos Island, Finiki, limestone (22.08.2003) Relev. 15-16: Greece, Karpathos Island, Stavri (01.07.2002) Rel. 17: Greece, Karpathos Island, Manita, limestone (03.07.2002) Rel. 18: Greece, Karpathos Island, Spoa, limestone (03.07.2002) Column 19: Greece, Karpathos Island, limestone (Col. 3 of Tab. 10 in Horvat et al. 1974: 104)</p>																				

Tab. 22 - Diantho rhodii-Campanuletum hagieliae

			*																	
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Altitude (m a.s.l.)	25	30	30	50	50	60	450	470	460	470	180	175	175	180	450	30	30	40	40	30
Aspect	E	E	E	E	E	E	S	S	S	S	S	S	S	S	E	N	N	NE	NE	N
Slope (°)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Area (m²)	20	10	25	25	20	20	20	25	50	20	10	20	20	20	20	40	20	15	30	20
Cover (%)	50	60	60	60	60	50	60	50	60	60	60	50	50	60	60	40	60	40	40	50
Char. Association																				
<i>Campanula hagielia</i>	1	1	1	+	+	+	1	1	+	2	1	+	+	1	.	.	.	.	.	.
<i>Dianthus fruticosus</i> subsp. <i>rhodius</i>	1	2	1	2	1	2	.	.	.	.	.	.	.	.	.	2	2	1	1	3
<i>Centaurea lactucifolia</i> subsp. <i>halkensis</i>	.	.	.	+	1	1	2	1	2	3	2	1	1	2	.	.	.	.	.	.
<i>Cymbalaria microcalyx</i> subsp. <i>dodekanesi</i>	.	.	.	.	+	+	.	.	.	.	1	1	1	2	.	.	.	+	+	.
<i>Erysimum rhodium</i>	+	2	1	1	+	+	.	.	.	.	.	.	.	.	1	.	.	.	.	.
<i>Scorzonera sublanata</i>	.	.	.	.	.	.	.	.	.	.	2	1	2	2	.	.	.	.	.	.
<i>Ferula chilantha</i>	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Asperula tournefortii</i>	.	.	.	.	.	.	+	1	.	.	.	.	.	.	.	.	.	.	.	.
Char. All. (<i>Eryngio glomerati-Inulion heterolepidis</i>)																				
<i>Inula verbascifolia</i> subsp. <i>heterolepis</i>	2	2	2	2	2	3	1	2	2	1	2	3	3	3	2	2	2	2	2	2
<i>Galium canum</i> subsp. <i>ovatum</i>	1	2	1	2	2	1	1	.	1	+	1	+	.	+	.	1	1	+	1	2
<i>Lomelosia variifolia</i>	1	1	3	2	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Ord. (<i>Onosmetalia frutescentis</i>)																				
<i>Lactuca acanthifolia</i>	1	1	+	1	2	1	.	.	.	.	.	+	1	1	1	.	.	.	+	1
<i>Ptilostemon chamaepeuce</i>	3	2	2	.	.	.	3	3	2	3	.	.	.	.	3	1	3	2	3	1
<i>Capparis orientalis</i>	.	.	.	1	1	1	.	.	.	.	+	+	1	1	.	.	+	1	1	.
<i>Rosularia serrata</i>	.	.	.	.	.	.	+	+	.	+	+	+	+	1	.	+	+	.	+	.
<i>Helichrysum orientale</i>	.	.	.	2	1	.	.	.	.	.	2	2	2	1	.	.	.	.	.	.
<i>Seseli crithmifolium</i>	.	.	.	1	1	+	.	.	.	.	.	.	.	.	.	.	.	+	.	1
<i>Silene gigantea</i> subsp. <i>gigantea</i>	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Micromeria myrtifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.
<i>Linum arboreum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Char. Class (<i>Asplenietea trichomanis</i>)																				
<i>Eryngium glomeratum</i>	1	2	+	+	+	+	1	1	2	1	+	.	1	1	+	.	.	.	.	.
<i>Ceterach officinarum</i>	+	+	+	.	.	.	.	1	+	+	+	+	+	1	.	.	.	.	.	.
<i>Piptatherum coerulescens</i>	.	.	+	.	.	.	.	.	.	.	1	.	+	1	.	.	.	.	.	.
<i>Allosorus acrosticus</i>	.	.	.	.	.	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.
<i>Umbilicus horizontalis</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.
Other species																				
<i>Rhamnus graeca</i>	.	+	1	1	2	.	1	1	+	2	.	.	.	.	1	.	.	.	.	.
<i>Phagnalon graecum</i>	+	+	1	.	.	.	+	1	1	.	.	.	.	.	.	.	.	.	.	.
<i>Allium commutatum</i>	1	2	1	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ballota acetabulosa</i>	.	.	.	.	.	.	+	+	.	+	.	.	+	+	.	.	.	.	.	.
<i>Parietaria cretica</i>	.	.	.	.	.	.	+	+	+	.	+	.	+	.	.	.	.	.	.	.
<i>Carlina tragacanthifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	+	2	+
<i>Origanum onites</i>	.	1	+	.	.	.	.	.	1	+	.	.	.	.	.	.	.	.	.	.
<i>Allium junceum</i>	.	.	.	.	.	.	1	1	+	+	.	.	.	.	.	.	.	.	.	.
<i>Micromeria juliana</i>	.	.	.	.	.	.	1	1	1	+	.	.	.	.	.	.	.	.	.	.
<i>Convolvulus oleifolius</i>	.	.	.	.	.	.	.	.	.	.	+	1	2	2	.	.	.	.	.	.
<i>Salvia fruticosa</i>	.	.	.	.	.	.	.	.	.	.	1	1	1	+	.	.	.	.	.	.
<i>Satureja thymbra</i>	1	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sarcopoterium spinosum</i>	.	.	.	.	.	.	.	.	.	.	1	1	+	.	.	.	.	.	.	.
<i>Alyssum</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	1	.	2
<i>Echinops spinosissimus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1	.	+	.
<i>Sedum sediforme</i>	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Reichardia picroides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1	.	.	.
<i>Achillea cretica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	.
<i>Pistacia terebinthus</i>	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.
Rels. 1-3: Greece, Rhodos Island, Lardos (25.08.1989)																				
Rels. 4-6: Greece, Rhodos Island, Lindos (25.08.1989)																				
Rels. 7-10: Greece, Rhodos Island, Siana (24.08.1989)																				
Rels. 11-14: Greece, Rhodos Island, Psinthos, Pan. Armeniotissis (24.08.1989)																				
Rel. 15: Greece, Rhodos Island, Embonas (24.08.1989)																				
Rels. 16-20: Greece, Rhodos Island, Monolithos, Akr. Armenistis (25.08.1989)																				

Tab. 23 - Galio reiseri-Cephalarietum squamiflorae		
	*	
Relevés number	1	2
Altitude (m a.s.l.)	90	100
Aspect	E	SE
Slope (°)	90	90
Area (m ²)	50	30
Cover (%)	50	60
Char. Association		
<i>Galium reiseri</i>	1	1
Char. All. (<i>Inulion limonellae</i>)		
<i>Campanula reiseri</i>	2	2
<i>Centaurea rechingeri</i>	+	1
<i>Inula candida</i> subsp. <i>limonella</i>	2	1
Char. Ord. (<i>Onosmetalina frutescentis</i>)		
<i>Brassica cretica</i> subsp. <i>cretica</i>	+	1
<i>Cephalaria squamiflora</i>	2	1
<i>Ptilostemon chamaepeuce</i> var. <i>chamaepeuce</i>	2	3
<i>Scrophularia heterophylla</i>	+	1
Char. Class (<i>Asplenietea trichomanis</i>)		
<i>Ceterach officinarum</i>	+	+
<i>Putoria calabrica</i>	1	1
<i>Allosorus pteridioides</i>	+	.
Other species		
<i>Anthyllis hermanniae</i> subsp. <i>hermanniae</i>	+	1
<i>Brachypodium retusum</i>	1	+
<i>Jurinea mollis</i> subsp. <i>anatolica</i>	+	+
<i>Lithodora</i> sp.	1	2
<i>Ruta graveolens</i>	.	1
Rels. 1-2: Greece, Alonissos Island, Gerakas Peninsula (14.10.2007)		

Tab. 24 - Diantho amorgini-Centaureetum amorginae							
			*				
Relevés number	1	2	3	4	5	6	7
Altitude (m a.s.l.)	200	190	200	210	220	230	250
Aspect	NE	NE	NE	NE	NE	NE	NE
Slope (°)	90	90	90	90	90	90	90
Area (m ²)	50	30	50	50	50	50	50
Cover (%)	60	60	50	60	50	50	50
Char. Association							
<i>Centaurea oliveriana</i> var. <i>amorgina</i>	2	1	2	2	2	2	1
<i>Dianthus fruticosus</i> subsp. <i>amorginus</i>	2	1	2	2	1	1	2
<i>Lactuca amorgina</i>	2	1	2	3	1	1	2
<i>Galium amorginum</i>	1	+	1	+	.	+	1
<i>Campanula amorgina</i>	.	+	1	+	.	+	1
<i>Erysimum senoneri</i> subsp. <i>amorginum</i>	+	+	.	1	1	.	.
Char. All. (<i>Helichryson amorgini</i>)							
<i>Helichrysum amorginum</i>	1	2	1	1	2	3	2
<i>Origanum calcaratum</i>	1	1	1	+	1	1	+
Char. Ord. (<i>Onosmetalía frutescentis</i>)							
<i>Brassica cretica</i> subsp. <i>aegaea</i>	1	1	1	2	1	1	+
<i>Capparis orientalis</i>	2	1	1	2	1	1	1
<i>Ptilostemon chamaepeuce</i>	1	2	2	1	2	1	2
<i>Teucrium divaricatum</i> subsp. <i>divaricatum</i>	+	+	+	+	+	.	+
<i>Seseli crithmifolium</i>	.	1	+	+	1	1	+
<i>Cymbalaria microcalyx</i> subsp. <i>microcalyx</i>	+	.	+	+	.	+	.
<i>Scrophularia lucida</i>	2	.	.	.	.	.	.
Char. Class (<i>Asplenietea trichomanis</i>)							
<i>Ceterach officinarum</i>	.	+	+	+	+	+	+
<i>Piptatherum coerulescens</i>	.	1	+	+	+	1	+
<i>Melica minuta</i>	.	+	+	.	1	+	+
<i>Umbilicus horizontalis</i>	.	.	+	+	.	+	+
Other species							
<i>Euphorbia dendroides</i>	+	1	+	.	1	1	1
<i>Sedum sediforme</i>	+	+	+	.	+	.	+
<i>Hyparrhenia hirta</i>	.	1	.	+	1	+	+
<i>Matthiola incana</i> subsp. <i>incana</i>	.	+	+	+	+	.	+
<i>Parietaria cretica</i>	.	+	+	+	+	.	+
<i>Reichardia picroides</i>	.	+	+	+	.	+	+
<i>Sarcopoterium spinosum</i>	.	+	.	+	1	1	+
<i>Erica forskalii</i>	1	1	.	+	.	+	.
<i>Phagnalon graecum</i>	.	+	+	+	.	+	.
<i>Satureja thymbra</i>	.	1	+	.	+	.	+
<i>Rhamnus graeca</i>	2	.	.	.	+	.	1
<i>Pistacia lentiscus</i>	.	1	+	.	.	.	+
<i>Phagnalon rupestre</i>	.	+	.	+	+	.	.
<i>Micromeria juliana</i>	.	.	1	+	+	.	.
Rel. 1: Greece, Amorgos Island, Chozoviotissa Monastery, limestone (28.08.1994)							
Rels. 2-7: Greece, Amorgos Island, Chozoviotissa Monastery, limestone (31.08.2003)							

Tab. 25 - Galio cani-Dianthetum cyprii									
					*				
Relevés number	1	2	3	4	5	6	7	8	9
Altitude (m a.s.l.)	740	740	770	800	800	630	650	650	680
Aspect	S	S	SE	SE	E	S	SE	SE	E
Slope (°)	90	90	90	90	90	90	90	90	90
Area (m ²)	100	50	100	100	100	50	50	60	50
Cover (%)	70	50	50	40	60	70	60	50	50
Char. Association									
<i>Bituminaria kyreniae</i>	2	1	2	+	1	1	2	2	+
<i>Galium canum</i> subsp. <i>canum</i>	2	2	1	2	2	2	2	1	1
<i>Micromeria cypria</i>	2	2	1	1	2	.	+	+	1
<i>Dianthus cyprius</i>	2	1	+	.	2	2	1	2	+
<i>Pimpinella cypria</i>	+	+	1	+	1	.	+	.	1
<i>Sideritis cypria</i>	1	2	1	1	2	.	.	+	1
<i>Allium kyrenium</i>	1	1	+	.	+	+	.	+	+
<i>Brassica hilarionis</i>	.	.	1	+	2	1	1	+	1
<i>Rosularia cypria</i>	+	+	1	+	+	.	.	.	.
<i>Teucrium cyprium</i> subsp. <i>kyreniae</i>	2	2	1	2	2	.	.	.	.
<i>Arabis cypria</i>	.	.	.	.	.	+	+	.	.
Char. All. (<i>Ptilostemion cyprii</i>)									
<i>Ptilostemon chamaepeuce</i> var. <i>cyprius</i>	2	1	2	2	1	3	2	2	3
<i>Asperula stricta</i>	1	+	+	1	1	+	.	+	+
<i>Erica sicula</i> subsp. <i>libanotica</i>	.	.	1	2	1	.	.	.	.
Char. Ord. (<i>Onosmetalia frutescentis</i>)									
<i>Silene gigantea</i> subsp. <i>gigantea</i>	+	.	+	1	+	2	1	2	1
<i>Teucrium divaricatum</i> subsp. <i>canescens</i>	1	+	+	+	1	.	.	.	.
<i>Capparis orientalis</i>	.	.	.	.	.	+	+	.	+
Char. Class (<i>Asplenietea trichomanis</i>)									
<i>Melica minuta</i>	+	+	+	+	+	+	1	1	.
<i>Allosorus pteridioides</i>	+	+	1	+	+	+	.	+	1
<i>Ceterach officinarum</i>	+	+	1	+	.	+	.	+	+
<i>Notholaena marantae</i>	1	2	1	+	+	.	.	.	.
<i>Piptatherum coerulescens</i>	.	.	.	.	.	+	.	+	+
Other species									
<i>Hyparrhenia hirta</i>	1	1	+	1	1	1	1	1	+
<i>Phagnalon graecum</i>	+	1	1	1	+	+	1	1	.
<i>Antirrhinum majus</i> var. <i>angustifolium</i>	1	2	1	1	1	+	+	.	1
<i>Hyoscyamus aureus</i>	2	1	1	.	1	+	1	+	+
<i>Odontites cyprius</i>	.	.	.	.	.	1	1	+	1
<i>Pterocephalus multiflorus</i> subsp. <i>obtusifolius</i>	.	.	.	.	.	+	+	1	+
<i>Scrophularia peyronii</i>	.	.	.	.	.	+	+	1	.
<i>Verbascum levanticum</i>	.	.	.	.	.	+	1	1	.
<i>Prasium majus</i>	.	.	.	.	.	1	+	.	+
Rels. 1-5: N Cyprus, Buffavento Castle, limestone (06.07.2013)									
Rels. 6-9: N Cyprus, Saint Hilarion Castle, limestone (06.07.2013)									

Tab. 26 - Campanulo creticae-Centaureetum macrothysanae

Relevés 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						
Altitude (m a.s.l.)	270	290	305	320	360	450	450	450	470	430	400	350	330	310	300	350	300	280	200	150	400	150	800	900	950	600	500	600	250	100								
Aspect	NW	W	S	E	NW	SW	E	E	W	W	E	W	E	E	E	E	E	E	W	E	N	NE	NW	N	SE	SW	SE	SW	NW	N								
Slope (°)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	80	90	95	100	100	100	95	90	95	85							
Area (m²)	100	100	100	100	100	50	50	100	60	100	50	50	100	100	50	50	50	100	50	50	50	50	80	90	95	100	100	50	50	50	50							
Cover (%)	50	60	60	40	60	50	40	50	60	60	50	40	60	70	60	70	50	70	50	70	50	60	20	25	15	10	10	15	20	20	15							
Char. Association																																						
<i>Centaurea argentea</i> subsp. <i>macrothysana</i>	2	2	2	1	+	1	1	2	.	1	2	2	+	1	2	1	1	2	1	1	2	.	2	.	+	.	+	1	1	.	.	+						
<i>Euphorbia sultan-hassei</i>	+	2	1	2	2	.	.	.	.	.	.	.	3	2	3	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Helichrysum heldreichii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	2	2	.	.	.	.	+	2	.	.	.	.	.	.
<i>Sesleria doerfleri</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	3	1	2	2	1	.	+	.	.	.	.	.	.	.	.
<i>Centaurea pocolatoris</i>	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Micromeria sphaciotica</i>	.	.	.	.	.	2	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. All. (Verbasco arcturi-Campanulion creticae)																																						
<i>Verbascum arcturus</i>	2	1	1	2	3	+	2	1	1	1	+	2	2	1	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Petrorhagia dianthoides</i>	1	2	1	1	1	2	1	.	1	+	+	1	1	+	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Campanula cretica</i>	+	1	1	+	1	.	.	.	.	1	2	+	1	+	2	1	1	1	+	2	2	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Eryngium ternatum</i>	+	1	2	1	+	.	.	.	.	+	.	1	.	2	2	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ferulago thyrsoiflora</i>	1	2	2	1	2	+	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Inula candida</i> subsp. <i>candida</i>	.	.	.	.	.	.	2	2	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sanguisorba cretica</i>	2	1	1	+	2	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Calamintha cretica</i>	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Galium fruticosum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Achillea cretica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Subord. (Petromarulenalia pinnatae)																																						
<i>Asperula rigida</i>	1	1	1	+	+	+	2	2	.	2	1	2	1	1	1	1	2	1	2	1	1	2	1	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ebenus cretica</i>	2	3	3	2	3	1	.	.	2	3	2	2	2	2	2	2	2	2	1	1	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Stachelina petiolata</i>	.	.	.	3	1	+	.	+	1	2	+	.	3	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Petromarula pinnata</i>	.	.	.	.	.	.	+	+	2	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Erysimum candicum</i> subsp. <i>candicum</i>	.	+	+	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sedum creticum</i> var. <i>creticum</i>	+	+	+	.	1	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Scutellaria sieberi</i>	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Crepis fraasii</i> subsp. <i>mungieri</i>	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Dianthus fruticosus</i> subsp. <i>creticus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ricotia cretica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Odontites creticus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Asperula pubescens</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Ord. (Onosmetalia frutescentis)																																						
<i>Linum arboreum</i>	2	2	2	1	2	+	1	+	2	1	2	1	2	1	1	2	2	3	2	2	1	2	1	1	+	+	.	.	.	.	.	.	.	.	.
<i>Galium graecum</i> subsp. <i>graecum</i>	+	2	1	2	1	2	2	+	+	1	+	2	1	2	2	2	2	2	1	1	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rosularia serrata</i>	.	+	+	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ephedra foeminea</i>	1	1	1	+	2	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ptilostemon chamaepeuce</i>	1	2	3	2	2	.	.	.	.	2	3	3	2	3	2	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Brassica cretica</i> subsp. <i>cretica</i>	.	.	.	+	1	.	.	1	+	.	.	1	1	1	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ptilostemon gnaphaloides</i> subsp. <i>pseudofruticosus</i>	.	.	.	.	.	1	1	1	2	.	.	.	.	.	.	.	.	1	2	+	.	2	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Stachelina fruticosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2	1	3	2	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Silene gigantea</i> subsp. <i>gigantea</i>	.	.	.	.	.	.	.	.	.	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Campanula laciniata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ranunculus creticus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Class (Asplenietea trichomanis)																																						
<i>Ceterach officinarum</i>	+	+	+	+	+	1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	.	.	.	.	.	.	.	.	.	.
<i>Ficus carica</i>	1	1	+	+	+	.	1	.	1	1	.	1	.	+	1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Melica rectiflora</i>	+	1	1	2	1	+	.	+	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Melica minuta</i>	.	.	.	.	.	.	.	.	.	1	2	1	1	+	1	1	2	1	.	1	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Piptatherum coerulescens</i>	.	1	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Cosentinia vellea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Asplenium trichomanes</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Other species																																						
<i>Phagnalon graecum</i>	+	1	+	+	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Micromeria juliana</i>	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Phlomis fruticosa</i>	1	2	.	1	1	1	.	.	.	.	+	1	+	1	1	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Erica forskalii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Achnatherum bromoides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	1	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Galium heldreichii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Prasium majus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia dendroides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Campanula tubulosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Tolpis virgata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Parietaria judaica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Selaginella denticulata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Reichardia picroides</i>																																	

Tab. 28 - A) Dianthemum xylorrhiz; B) Asperula rigidae-Putorietum calabricae; C) Petromarula pinnatae-Centaureetum argenteae																						
Relevé number	*										*											
Altitude (m a.s.l.)	250	250	750	10	10	310	290	290	280	290	80	30	200	40	40	100	200	300	200	200	200	
Aspect	W	W	W	E	E	E	N	E	NE	E	E	N	E	NE	N	N	N	W	S	N	N	
Slope (°)	75	80	90	80	90	90	90	90	90	90	90	90	90	95	95	90	80	90	85	80	80	
Area (m²)	20	20	50	100	40	100	100	100	50	50	100	50	50	50	100	100	50	50	50	50	50	
Cover (%)	40	60	30	65	70	50	40	60	40	40	60	20	20	15	15	20	15	15	10	15	15	
Association	A	A	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Char. Association																						
<i>Dianthus xylorrhizus</i>	2	3																				
<i>Putoria calabrica</i>			2																			
<i>Centaurea argentea</i> subsp. <i>argentea</i>				+	1	+		2	2	1	2		+	1	1		1					
<i>Centaurea redempta</i>						+		+	1	1	1									1	+	
Char. All. (Verbasco arcturi-Campanulion creticae)																						
<i>Verbasco arcturus</i>				+		1	+	1	1	+	+	1	+		+					1	+	
<i>Inula candida</i> subsp. <i>candida</i>				3	4					1	+	3	+	2	3					3		
<i>Achillea cretica</i>				3	2																2	
<i>Galium fruticosum</i>																					1	
<i>Campanula cretica</i>	2	2																				
Char. Subord. (Petromarulenalia pinnatae)																						
<i>Petromarula pinnata</i>						1	1	1	+	1	+	4		+	1		+	1	1	+	+	
<i>Eberus cretica</i>						1	1	2	2	1	2									1	3	
<i>Asperula pubescens</i>	1	+				1	+	+	+	+	+											
<i>Asperula rigida</i>			2			2	2	1	1	1	1											
<i>Scutellaria sieberi</i>												2	+	1			1	+			+	
<i>Stachelina petiolata</i>														1	+			3	2	+		
<i>Erysimum candicum</i> subsp. <i>candicum</i>																					+	
<i>Setum creticum</i> var. <i>creticum</i>																					+	
<i>Origanum dictamnus</i>																					+	
<i>Crepis fraasii</i> subsp. <i>mungieri</i>																					+	
Char. Ord. (Onometalia frutescens)																						
<i>Galium graecum</i> subsp. <i>graecum</i>																					+	
<i>Teucrium divaricatum</i> subsp. <i>divaricatum</i>						1	+	1	+	+	1										+	
<i>Scrophularia heterophylla</i>						1	+									1	1	+				
<i>Brassica cretica</i> subsp. <i>cretica</i>						1	1	2	1	2	1											
<i>Ptilostemon chamaepeuce</i>						2	1	1	1	2	3											
<i>Helichysum orientale</i>																					+	
<i>Capparis orientalis</i>			2	1																	1	
<i>Stachelina fruticosa</i>										2	1											
<i>Cymbalaria microcalyx</i> subsp. <i>microcalyx</i>														1								
<i>Rosularia serrata</i>																					+	
<i>Ranunculus creticus</i>																					+	
<i>Linum arboreum</i>																					1	
<i>Asperula taygetea</i>																					1	
<i>Hellenocarum multiflorum</i>																					+	
Char. Class (Asplenietea trichomanis)																						
<i>Melica minuta</i>	1	+				1	1	+	+	+	+	1	+									
<i>Ficus carica</i>			2			+	+														1	
<i>Piptatherum coeruleum</i>						2	+	+	+	+	+											
<i>Ceterach officinarum</i>																					+	
<i>Melica rectiflora</i>																					1	
<i>Allosorus pleriodoides</i>																					+	
<i>Rhynchospora saxatilis</i> subsp. <i>prunifolia</i>																					+	
<i>Umbilicus horizontalis</i>																					+	
Other species																						
<i>Phagnalon graecum</i>						2	1	1	1	1	1	+	+	+	+		1	+	1	+	+	
<i>Reichardia picroides</i>	1	1																			+	
<i>Euphorbia dendroidea</i>				2	1	1	1	1	1	1	1	+									2	
<i>Scaligeria napiformis</i>																					+	
<i>Phlomis fruticosa</i>						1	+														+	
<i>Micromeria juliana</i>			1			1	+	+	+	+	+											
<i>Micromeria nervosa</i>																					+	
<i>Piptatherum miliaceum</i>			1																		+	
<i>Melva unguiculata</i>																					+	
<i>Prasium majus</i>																					+	
<i>Parietaria cretica</i>																					+	
<i>Foeniculum pipertum</i>																					+	
<i>Lactuca serriola</i>																					+	
<i>Hypochaeris achyrophorus</i>																					+	
<i>Sideritis curvidens</i>																					+	
<i>Thymra capitata</i>	1	1	2																		+	
<i>Calicotome villosa</i>																					+	
<i>Salsola fruticosa</i>																					1	
<i>Krasula integrifolia</i> subsp. <i>mimica</i>																					+	
<i>Parietaria lustranica</i>																					+	
<i>Bituminaria bituminosa</i>																					+	
<i>Crucianella latifolia</i>																					+	
<i>Lotus edulis</i>																					+	
<i>Rhynchospora graeca</i>	2	1																			+	
<i>Poa bulbosa</i>																					+	
<i>Pistacia terebinthus</i>																					+	
<i>Ferulago nodosa</i>																					+	
<i>Ajuga reptans</i>																					+	
<i>Dactylis hispanica</i>																					+	
<i>Clipa parviflora</i>																					+	
<i>Andropogon distachyos</i>																					+	
<i>Selaginella denticulata</i>																					+	
<i>Arenaria muralis</i>																					1	
<i>Silene vulgaris</i>																					+	
<i>Brachypodium retusum</i>																					+	
<i>Oxyris alba</i>	1	+																			+	
<i>Carlina graeca</i>																					+	
<i>Erica forskalii</i>																					1	
<i>Adiantum capillus-veneris</i>			1																		+	
<i>Hyperbarbena hirta</i>																					1	
<i>Pistacia lentiscus</i>																					1	
<i>Spartium junceum</i>																					+	
<i>Trifolium stellatum</i>																					+	
<i>Centranthus calcitrapae</i>																					+	
<i>Galium setaceum</i>																					+	
<i>Teucrium microphyllum</i>																					1	
<i>Anogramma leptophylla</i>																					+	
<i>Theligonum cynocrambe</i>																					+	
<i>Bryonia cretica</i>																					+	
<i>Campanula erinus</i>																					1	
<i>Bellium minus</i>																					+	
<i>Allium subulatum</i>																					2	
<i>Loncomelos narbonensis</i>																					+	
<i>Misopates orontium</i>																					+	
<i>Asparagus aphyllus</i> subsp. <i>orientalis</i>																					+	
<i>Charybdis maritima</i>																					+	
<i>Achyrocline bromoides</i>																					+	
<i>Blackstonia acuminata</i>					</																	

Tab. 29 - A) Galio graeci-Staehelinetum fruticosae; B) Galio fruticosi-Campanuletum creticae

	*										*				
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Altitude (m a.s.l.)	350	505	210	220	220	230	230	270	270	260	250	250	260	260	270
Aspect	NW	N	W	W	NW	NW	W	E	NE	E	SE	E	NE	E	E
Slope (°)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Area (m ²)	100	30	100	100	100	100	50	100	50	50	100	20	25	25	30
Cover (%)	30	30	70	60	60	60	50	40	30	60	50	60	50	60	50
Association	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B
Char. Association															
<i>Staehelina fruticosa</i>	2	.	3	2	3	3	2	3	2	2	2	.	.	.	.
<i>Ricotia cretica</i>	1	.	+	1	+	.	1	.	.	.	.	.	.	.	.
<i>Sedum creticum</i>	.	.	+	.	+	1	+	.	.	.	.	.	.	.	.
<i>Asperula taygetea</i>	2	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Galium fruticosum</i>	.	.	.	.	.	.	.	.	.	.	.	2	1	2	1
Char. All. (Verbascum arcturi-Campanulion creticae)															
<i>Verbascum arcturus</i>	.	.	1	2	2	2	1	1	+	1	1	.	.	.	.
<i>Campanula cretica</i>	1	3	.	.	.	.	.	.	.	.	.	2	1	1	2
<i>Inula candida</i> subsp. <i>candida</i>	.	.	.	.	.	.	.	.	.	.	.	2	2	1	2
Char. Subord. (Petromarulenalia pinnatae)															
<i>Ebenus cretica</i>	.	.	.	.	.	.	.	+	1	3	1	3	2	3	2
<i>Petromarula pinnata</i>	.	.	2	1	1	+	2	.	.	.	.	.	.	.	.
<i>Erysimum candicum</i> subsp. <i>candicum</i>	.	.	+	1	+	+	.	.	.	.	.	.	.	.	.
<i>Scutellaria sieberi</i>	.	1	.	.	.	.	.	.	.	.	.	+	.	+	.
<i>Dianthus fruticosus</i> subsp. <i>creticus</i>	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Silene sieberi</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.
<i>Asperula rigida</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.
Char. Ord. (Onosmetalia frutescentis)															
<i>Ptilostemon chamaepeuce</i>	1	2	2	3	2	2	2	+	.	3	+	1	2	1	2
<i>Galium graecum</i> subsp. <i>graecum</i>	1	.	1	2	1	1	2	2	1	2	2	1	1	1	+
<i>Scrophularia lucida</i>	.	1	+	+	+	.	+	.	.	.	.	+	1	1	2
<i>Teucrium divaricatum</i> subsp. <i>divaricatum</i>	+	+	.	.	.	.	.	.	.	.	.	+	+	1	+
<i>Brassica cretica</i> subsp. <i>cretica</i>	.	.	+	1	+	1	1	+	.	.	.	+	.	.	.
<i>Silene gigantea</i> subsp. <i>gigantea</i>	.	.	1	.	1	1	+	.	.	.	.	.	.	.	.
<i>Hellenocarum multiflorum</i>	1	.	.	.	.	.	.	.	.	.	.	+	1	+	.
<i>Rosularia serrata</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.
<i>Valeriana asarifolia</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.
<i>Ranunculus creticus</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.
Char. Class (Asplenietea trichomanis)															
<i>Melica minuta</i>	1	+	+	1	+	+	.	.	.	.	.	+	1	+	+
<i>Ceterach officinarum</i>	+	1	.	.	.	.	.	+	+	.	.	+	+	+	.
<i>Ficus carica</i>	.	.	1	.	+	+	.	.	.	.	.	+	.	1	.
<i>Piptatherum coerulescens</i>	.	.	+	1	+	+	.	.	.	.	.	.	.	.	.
Other species															
<i>Euphorbia dendroides</i>	.	.	1	.	1	1	1	1	+	+	+	1	1	1	.
<i>Phagnalon graecum</i>	.	.	+	1	1	.	1	.	+	+	1	.	.	.	.
<i>Satureja thymbra</i>	.	.	+	+	.	.	.	2	2	1	2	.	.	.	.
<i>Reichardia picroides</i>	+	+	.	.	.	.	.	+	+	+	+	.	.	.	.
<i>Achnatherum bromoides</i>	+	+	.	.	.	.	.	.	+	+	+	.	.	.	.
<i>Thymbra capitata</i>	+	.	.	.	.	.	.	1	1	1	1	.	.	.	.
<i>Phlomis fruticosa</i>	.	.	.	.	.	.	.	+	.	.	.	+	1	+	1
<i>Scorzonera cretica</i>	.	.	+	+	.	.	+	.	.	.	.	.	.	.	.
<i>Euphorbia acanthothamnus</i>	.	.	.	.	.	.	.	+	+	+	.	.	.	.	.
<i>Sedum sediforme</i>	.	.	.	.	.	.	.	.	.	.	.	1	+	.	+
<i>Micromeria juliana</i>	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Origanum onites</i>	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Carlina graeca</i>	.	.	.	.	.	.	.	+	.	.	+	.	.	.	.
<i>Erica forskalii</i>	.	.	.	.	.	.	.	1	.	.	1	.	.	.	.
<i>Aethionema saxatile</i> subsp. <i>creticum</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Hyparrhenia hirta</i>	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Parietaria cretica</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Rhamnus graeca</i>	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Scaligeria napiformis</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Matthiola incana</i> subsp. <i>incana</i>	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.
<i>Centaurea raphanina</i> subsp. <i>raphanina</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.
Rel. 1: Greece, N Crete: near Chonos (20.07.1999)															
Rel. 2: Greece, N Crete: near Anogia (20.07.1999)															
Rels. 3-7: Greece, S Crete: Kourtaliotis Canyon (Kourtaliotiko Farangi) (02.09.2006)															
Rels. 8-11: Greece, S Crete: Kourtaliotiko, along the road between Preveli and Rethimnon (31.08.2009)															
Rels. 12-15: Greece, W Crete: Platanos, limestone (04.06.2000)															

Tab. 31 - *Asperulo tournefortii-Valerianetum asarifoliae*

					*								
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13
Altitude (m a.s.l.)	550	500	450	400	300	300	500	600	700	500	400	500	500
Aspect	SW	S	W	N	S	W	NW	SE	N	N	S	NW	NE
Slope (°)	85	80	10	90	85	90	85	80	90	90	90	90	90
Area (m ²)	50	50	100	100	50	100	100	100	100	100	100	100	100
Cover (%)	15	15	10	15	15	20	15	20	20	20	15	15	15
Char. Association													
<i>Valeriana asarifolia</i>	+	2	+	+	1	+	1	+	1	1	.	+	.
<i>Jacobaea gnaphalioides</i>	2	.	+	2	.	.	3	.	.	.	+	.	.
<i>Asperula tournefortii</i>	.	.	+	3	+	.	3	.	.	+	.	.	.
<i>Ranunculus cupreus</i>	.	+	.	.	.	.	.	.	.	1	.	.	.
<i>Klasea cretica</i>	.	.	.	.	.	.	.	3	.	.	.	.	.
Char. All. (<i>Asterion creticum</i>)													
<i>Aster creticus</i>	.	.	+	+	1	+	+	+	.	.	.	.	.
<i>Galium graecum</i> subsp. <i>pseudocanum</i>	+	+	.	.	.	.	.	+	+	+	.	.	.
<i>Campanula pelviformis</i>	.	.	.	.	.	+	+	.	+	.	.	.	.
Char. Subord. (<i>Petromarulenalia pinnatae</i>)													
<i>Petromarula pinnata</i>	3	3	1	.	2	+	+	2	3	+	.	+	+
<i>Origanum dictamnus</i>	.	+	.	.	.	.	+	.	.	+	.	.	+
<i>Symphytum creticum</i>	.	.	.	+	.	+	.	.	+	+	.	.	.
<i>Asperula pubescens</i>	+	.	+	.	.	.	.	.	+	.	.	.	.
<i>Erysimum candicum</i> subsp. <i>candicum</i>	.	.	.	.	.	.	.	.	.	.	.	1	.
<i>Scutellaria sieberi</i>	.	.	.	.	.	.	.	.	.	.	.	+	.
Char. Ord. (<i>Onosmetalia frutescentis</i>)													
<i>Ranunculus creticus</i>	+	1	1	1	2	.	1	+	1	2	.	+	.
<i>Ptilostemon chamaepeuce</i>	.	.	+	+	.	1	+	.	.	.	4	+	+
<i>Rosularia serrata</i>	.	.	.	.	+	.	+	.	+	1	.	+	.
<i>Silene gigantea</i> subsp. <i>gigantea</i>	.	.	.	.	.	.	+	+	+	+	1	.	.
<i>Ephedra foeminea</i>	.	+	.	.	.	.	.	1	.	.	.	+	+
<i>Linum arboreum</i>	.	.	.	.	.	3	.	.	.	+	.	.	.
<i>Lactuca acanthifolia</i>	.	.	.	.	.	.	.	.	.	.	.	+	2
<i>Cymbalaria microcalyx</i> subsp. <i>dodekanesi</i>	.	.	.	.	.	.	+	.	.	.	.	.	.
<i>Teucrium divaricatum</i> subsp. <i>divaricatum</i>	.	.	.	.	.	.	.	.	+	.	.	.	.
Char. Class (<i>Asplenietea trichomanis</i>)													
<i>Ceterach officinarum</i>	+	+	.	.	+	.	+	+	+	+	+	+	.
<i>Melica rectiflora</i>	.	+	.	.	+	.	+	+	.	.	.	.	+
<i>Allosorus pteridioides</i>	+	.	+	.	.	.	.	.	.	.	1	.	.
<i>Polypodium cambricum</i>	.	+	.	.	.	.	.	.	.	.	.	+	.
<i>Umbilicus horizontalis</i>	.	+	.	.	.	.	.	.	.	.	.	+	.
<i>Ficus carica</i>	.	+	.	.	.	.	.	.	.	.	.	.	.
<i>Arabis alpina</i> subsp. <i>caucasica</i>	.	.	.	.	.	.	.	.	.	.	.	+	.
Other species													
<i>Prasium majus</i>	1	+	1	+	+	.	+	+	+	+	+	+	.
<i>Theligionum cynocrambe</i>	+	+	.	.	+	.	+	+	.	+	.	+	+
<i>Parietaria cretica</i>	.	.	.	+	.	+	+	+	+	.	+	.	+
<i>Scorzonera cretica</i>	.	.	+	.	.	.	1	+	.	.	.	+	2
<i>Phagnalon graecum</i>	.	+	.	.	.	.	+	+	.	.	+	.	.
<i>Selaginella denticulata</i>	.	+	.	.	.	.	+	.	+	+	.	.	.
<i>Erica forskalii</i>	.	.	+	+	1	.	+	.	.	.	.	.	.
<i>Salvia fruticosa</i>	+	+	.	.	.	.	.	.	.	.	.	.	.
<i>Sedum caespitosum</i>	+	+	.	.	.	.	.	.	.	.	.	.	.
<i>Asphodeline liburnica</i>	+	.	+	.	.	.	.	.	.	.	.	.	.
<i>Centaurea raphanina</i> subsp. <i>raphanina</i>	.	+	.	+	.	.	.	.	.	.	.	.	.
<i>Euphorbia acanthothamnos</i>	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Micromeria nervosa</i>	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Onosma graeca</i>	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Valantia hispida</i>	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Stachys</i> sp.	.	.	+	.	.	.	.	.	.	.	.	.	.
<i>Valerianella pumila</i>	.	.	+	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia dendroides</i>	.	.	.	.	.	+	.	.	.	.	.	.	.
<i>Pistacia lentiscus</i>	.	.	.	.	.	+	.	.	.	.	.	.	.
<i>Aristolochia cretica</i>	.	.	.	.	.	.	+	.	.	.	.	.	.
<i>Stachys mucronata</i>	.	.	.	.	.	.	+	.	.	.	.	.	.
<i>Tulipa saxatilis</i>	.	.	.	.	.	.	+	.	.	.	.	.	.
<i>Campanula tubulosa</i>	.	.	.	.	.	.	.	.	.	+	.	.	.
<i>Saxifraga hederacea</i>	.	.	.	.	.	.	.	.	.	.	.	+	.
<i>Securigera globosa</i>	.	.	.	.	.	.	.	.	.	.	.	+	.
<i>Silene vulgaris</i>	.	.	.	.	.	.	.	.	.	.	.	.	+

Rels. 1-13: Greece, Crete (rels. 54-66 of Tab. 14 in Zaffran 1990)

Tab. 32 - A: *Staezelino fruticosae-Dianthetum sitiaci*; B) *Campanulo creutzburgii-Centaureetum chionanthae*; C) *Campanuletum hierapetrae*

	*				*				*				
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13
Altitude (m a.s.l.)	105	100	75	300	320	400	215	200	1350	1390	1400	1410	1420
Aspect	N	N	N	S	SW	S	N	N	N	N	NE	NE	N
Slope (°)	90	90	90	90	90	90	90	90	90	90	90	90	90
Area (m ²)	30	25	25	100	50	50	100	100	30	50	50	25	25
Cover (%)	60	40	30	30	40	70	60	60	30	30	40	25	20
Association	A	A	A	B	B	B	B	B	C	C	C	C	C
Char. Association													
<i>Dianthus fruticosus</i> subsp. <i>sitiacus</i>	2	1	2	.	.	.	.	.	.	.	.	.	.
<i>Paronychia macrosepala</i> subsp. <i>insularum</i>	2	1	1	.	.	.	.	.	.	.	.	.	.
<i>Centaurea argentea</i> subsp. <i>chionantha</i>	.	.	.	2	2	.	+	1	.	.	.	.	.
<i>Campanula creutzburgii</i>	.	.	.	+	1	2	.	.	.	.	.	.	.
<i>Campanula hierapetrae</i>	.	.	.	.	.	.	.	.	2	2	1	1	1
<i>Galium citraceum</i>	.	.	.	.	.	.	.	.	+	1	1	+	+
<i>Arenaria fragillima</i>	.	.	.	.	.	.	.	.	1	1	1	.	+
Char. All. (<i>Asterion cretici</i>)													
<i>Inula candida</i> subsp. <i>decalvans</i>	.	.	.	.	.	.	.	.	2	2	2	2	1
<i>Campanula pelviformis</i>	+	+	.	+	1	.	.	.	.	.	.	.	.
<i>Aster creticus</i>	.	.	.	.	.	.	.	1	+	+	.	+	.
<i>Galium graecum</i> subsp. <i>pseudocanum</i>	.	.	.	2	2	.	.	1	.	.	.	.	.
<i>Hypericum amblycalyx</i>	.	.	.	.	.	.	.	.	.	.	.	.	+
Char. Subord. (<i>Petromarulenalia pinnatae</i>)													
<i>Asperula rigida</i>	.	.	.	.	.	.	.	.	1	+	1	1	+
<i>Crepis auriculifolia</i>	.	.	.	.	.	.	.	.	1	1	+	1	1
<i>Micromeria hispida</i>	.	.	.	.	.	.	.	.	2	1	2	1	1
<i>Crepis fraasii</i> subsp. <i>mungieri</i>	.	.	.	.	.	.	.	.	1	+	1	1	.
<i>Origanum dictamnus</i>	.	.	.	.	.	.	.	.	1	+	+	.	.
<i>Dianthus fruticosus</i> subsp. <i>creticus</i>	.	.	.	.	.	.	2	3	.	.	.	.	.
Char. Ord. (<i>Onosmetalia frutescentis</i>)													
<i>Galium graecum</i> subsp. <i>graecum</i>	2	2	1	.	.	.	.	.	1	1	.	+	+
<i>Lactuca acanthifolia</i>	2	1	1	.	.	4	1	1	.	.	.	.	.
<i>Staezelina fruticosa</i>	3	2	2	.	.	.	+	2	.	.	.	.	.
<i>Ptilostemon chamaepeuce</i>	.	.	.	.	.	1	2	2	.	.	.	.	.
<i>Hellenocarum multiflorum</i>	.	.	.	.	.	.	.	.	.	.	+	.	+
<i>Linum arboreum</i>	.	.	.	.	.	1	.	.	.	.	.	.	.
Char. Class (<i>Asplenietea trichomanis</i>)													
<i>Ficus carica</i>	+	+	.	.	.	1	1	1	.	.	.	.	.
<i>Melica rectiflora</i>	.	.	.	.	.	.	.	.	1	2	1	+	+
<i>Piptatherum coerulescens</i>	.	.	.	2	1	+	.	.	.	.	.	.	.
<i>Allosorus pteridioides</i>	.	.	.	1	+	.	.	.	.	.	.	.	.
<i>Ceterach officinarum</i>	.	.	.	1	+	.	.	.	.	.	.	.	.
Other species													
<i>Euphorbia acanthothamnus</i>	2	1	1	.	.	.	.	.	+	1	1	1	+
<i>Erica forskalii</i>	.	.	.	.	.	.	.	.	1	2	1	2	+
<i>Festuca jeanpertia</i>	.	.	.	.	.	.	.	.	1	2	2	2	1
<i>Helichrysum microphyllum</i>	.	.	.	.	.	.	.	.	2	1	2	1	2
<i>Poa bulbosa</i>	.	.	.	.	.	.	.	.	2	1	1	1	+
<i>Euphorbia characias</i>	2	1	2	.	.	.	.	.	.	.	.	.	.
<i>Hyparrhenia hirta</i>	1	+	+	.	.	.	.	.	.	.	.	.	.
<i>Phlomis cretica</i>	1	1	1	.	.	.	.	.	.	.	.	.	.
<i>Centaurea raphanina</i> subsp. <i>raphanina</i>	.	.	.	.	.	.	.	.	+	+	.	+	.
<i>Phagnalon graecum</i>	.	.	+	.	.	1	.	.	.	.	.	.	.
<i>Micromeria juliana</i>	.	.	.	1	+	.	.	.	.	.	.	.	.
<i>Reichardia picroides</i>	.	.	.	+	+	.	.	.	.	.	.	.	.
<i>Scorzonera cretica</i>	.	.	.	1	1	.	.	.	.	.	.	.	.
<i>Bituminaria bituminosa</i>	.	.	.	1	.	2	.	.	.	.	.	.	.
<i>Origanum onites</i>	.	.	.	1	.	.	1	.	.	.	.	.	.
<i>Allium tardands</i>	.	.	.	.	.	.	.	.	+	.	.	+	.
<i>Echinops spinosissimus</i>	.	.	+	.	.	.	.	.	.	.	.	.	.
<i>Andropogon distachyos</i>	.	.	.	2	.	.	.	.	.	.	.	.	.
<i>Allium chamaespathum</i>	.	.	.	.	.	+	.	.	.	.	.	.	.
<i>Daucus carota</i>	.	.	.	.	.	1	.	.	.	.	.	.	.
<i>Dittrichia orientalis</i>	.	.	.	.	.	2	.	.	.	.	.	.	.
Rels. 1-3: Greece, Crete, road to Xerocampos near Aspilia (10.09.2016)													
Rels. 4-5: Greece, Crete, Lastros near Sitia (9.09.2016)													
Rel. 6: Greece, Crete, near the street to Kalavros (9.09.2016)													
Rels. 7-8: Greece, Crete, Selinari near Malia (9.09.2016)													
Rels. 9-13: Greece, Crete, Afendi Kavousi at the top (11.09.2016)													

Tab. 33 - Hieracio cretici-Gypsophiletum nanae

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Relevés number																					
Altitude (m a.s.l.)	2050	2000	2050	1980	2050	1800	1800	1700	1800	1800	2300	1950	2060	2000	2180	1950	2200	2140	2180	2020	
Aspect	N	SW	N	NE	W	N	N	S	N	SE	N	E	W	N	N	E	NE	E	N	SW	
Slope (°)	95	100	90	90	90	90	90	70	90	90	90	95	90	90	95	85	85	90	90	90	
Area (m²)	100	50	50	50	20	10	50	100	100	10	30	50	50	100	50	50	50	100	50	100	
Cover (%)	10	5	5	5	10	10	10	10	10	5	10	5	10	10	10	10	5	10	25	10	
Char. Association																					
<i>Gypsophila nana</i>	3	1	+	3	.	1	+	2	2	3	1	+	1	+	.	.	.	.	.	.
<i>Hieracium schmidtii</i> subsp. <i>creticum</i>	+	.	.	+	.	+	.	.	.	.	.	1	1	+	1	.	.	+	+	.
<i>Asplenium x javorkae</i>	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Charact. All. (<i>Campanulion jacquinii</i>) & Subord. (<i>Campanulenalia jacquinii</i>)																					
<i>Draba cretica</i>	+	+	.	.	+	+	.	.	+	+	.	+	+	+	.	.	.	.	+	+
<i>Arenaria cretica</i>	1	+	3	3	3	.	.	.	.	.	.	2	2	2	+	.	.	.	.	.
<i>Potentilla speciosa</i>	2	3	+	.	.	+	.	.	.	.	+	.	2	3	2	.	.	.	.	.
<i>Arabis cretica</i>	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	2	2
<i>Asplenium segeaeum</i>	1	.	+	.	+	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.
<i>Asplenium creticum</i>	1	.	.	.	+	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.
<i>Campanula jacquinii</i>	.	1	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	.	.
<i>Campanula aizoides</i>	.	.	.	2	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.
<i>Brachypodium sylvaticum</i> subsp. <i>creticum</i>	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.
Transgressive suborder <i>Petromarulenalia pinnatae</i>																					
<i>Asperula rigida</i>	.	.	.	.	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.
Char. Class (<i>Aspleneteta trichomanis</i>)																					
<i>Arabis alpina</i> subsp. <i>caucasica</i>	1	.	+	.	.	.	1	.	1	.	1	1	1	1	+	.	+	.	+	.	
<i>Sedum magellense</i> subsp. <i>olympicum</i>	+	.	.	.	1	.	.	.	+	+	.	+	+	+	1	.	1	2	3	.	
<i>Cystopteris fragilis</i>	2	.	.	.	1	.	.	+	+	.	.	1	.	+	1	.	2	.	2	.	
<i>Melica rectiflora</i>	.	2	+	+	.	+	.	.	.	+	.	+	.	+	.	2	.	.	+	1	
<i>Asplenium trichomanes</i>	+	.	.	.	.	.	.	.	+	+	.	.	1	+	.	.	.	.	.	.
<i>Ceterach officinarum</i>	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.
<i>Asplenium ruta-muraria</i>	+	.	.	.	+	.	.	.	.	.	.	.	1	.	.	.	1	.	.	.
<i>Rhamnus saxatilis</i> subsp. <i>prunifolia</i>	.	.	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Melica minuta</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.
Other species																					
<i>Euphorbia herniariaefolia</i>	1	+	+	+	2	.	.	.	.	.	+	1	+	+	1	.	1	+	.	+
<i>Valantia muralis</i>	+	+	.	.	.	.	.	.	.	.	+	.	.	.	1	1	2	+	+	+
<i>Scutellaria hirta</i>	.	+	+	.	+	+	.	.	.	.	.	+	.	.	+	1	+	+	.	+
<i>Minuartia verna</i> subsp. <i>attica</i>	.	+	.	.	.	+	+	+	.	.	+	.	+	+	.	.	.	.	+	.
<i>Viola fragrans</i>	+	+	+	+	1	+	.	.	.	.	.	.	.	.	.	.	1	.	.	.
<i>Asperula idaea</i>	+	+	.	1	.	1	.	.	.	1	+	.	.	+	.	.	+	.	.	+	
<i>Festuca sipylea</i>	1	.	.	.	+	.	.	.	.	.	+	.	.	+	.	.	1	.	.	+
<i>Aubrieta deltoidea</i>	.	1	.	.	.	+	.	.	1	.	.	.	.	.	.	1	+	1	.	+
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	.	.	+	.	.	+	+	+	+	.	.	.	.	.	.	.	.	+	.	+
<i>Phagnalon pygmaeum</i>	.	+	2	+	.	.	.	.	.	3	.	.	.	.	.	.	.	+	1	+
<i>Senecio fruticosus</i>	2	+	.	.	+	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.
<i>Scilla nana</i>	+	+	.	.	1	.	.	.	.	.	.	.	1	.	.	.	.	+	1	.
<i>Sedum album</i>	+	.	.	.	.	+	.	+	.	+	.	.	.	.	.	.	1	.	.	.
<i>Festuca jeanpertii</i>	.	.	.	.	.	.	+	+	.	.	.	.	+	1	.	.	.	+	.	+
<i>Sedum laconicum</i> subsp. <i>insulare</i>	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	+	+	1	+
<i>Bromus tomentellus</i>	+	+	.	.	.	2	+	.	.	.	.	.	.	.	.	+	.	.	.	.
<i>Sedum tristriatum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	1	.	3
<i>Berberis cretica</i>	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Bufo stricta</i>	.	.	.	.	.	.	.	.	1	+	.	.	.	.	.	.	.	.	.	+
<i>Veronica thymifolia</i>	+	.	.	.	.	1	+	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Pimpinella depressa</i>	.	+	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	1	.	.
<i>Crepis sibthorpiana</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Aethionema saxatile</i> subsp. <i>creticum</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Acantholimon aegaeum</i>	.	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Ranunculus brevifolius</i>	.	.	.	.	1	.	.	.	.	.	.	.	+	+	2	.	.	.	.	+
<i>Prunus prostrata</i>	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	+	.	+
<i>Dryopteris pallida</i>	+	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	+
<i>Herniaria parnassica</i> subsp. <i>cretica</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Micromeria juliana</i>	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Satureja spinosa</i>	.	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Hypericum empetrifolium</i>	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Lepidium hirtum</i> subsp. <i>oxyotum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Cynoglossum lithospermifolium</i> subsp. <i>carriense</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Centaurea raphanina</i> subsp. <i>raphanina</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Asplenium onopteris</i>	.	.	.	.	.	.	.	.	1	+	.	.	.	.	.	.	.	.	.	.
<i>Sideritis syriaca</i>	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.
<i>Astragalus angustifolius</i> subsp. <i>echinoides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Alyssum sphacioticum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Poa cenisia</i> subsp. <i>contracta</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Polystichum lonchitis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Thymra capitata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
<i>Poa bulbosa</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Arenaria serpyllifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Silene variegata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Erica forskalii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Euphorbia acanthothamnus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Andrachne telephioides</i>	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
<i>Daphne oleoides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Lomeiosia sphaciotica</i>	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
<i>Paronychia macrosepala</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Microthlaspi perfoliatum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Medicago lupulina</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Muscari comosum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Telesium imperati</i> subsp. <i>pauciflorum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Alyssum fragillimum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Arenaria fragillima</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
<i>Hypochoeris tenuiflora</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
<i>Arabis auriculata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Dactylis rigida</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Nepeta sphaciotica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1

Relev. 1-11: Greece, Crete (rels. 1-11 of Tab. 1 in Zaffran 1990, sub *Hieracio-Gypsophiletum nanae*)
 Relev. 12-15: Greece, Crete (rels. 12-15 of Tab. 2 in Zaffran 1990, sub *Hieracio-Arenarietum creticae*)
 Relev. 16-20: Greece, Crete (rels. 22-26 of Tab. 4 in Zaffran 1990, sub *Nepeto-Arabitum creticae*)

Tab. 34 - A: *Campanulo jacquinii*-*Cephalarietum squamiflorae*; B) *Asplenio lepidi*-*Centaureetum lancifoliae*; C) *Arenario fragillimae*-*Silenetum antri-jovis*

	* *																						
Relevés number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Altitude (m a.s.l.)	1550	1540	1500	1600	1700	1700	1700	1700	1700	1100	1600	1700	1800	1900	1900	1800	2000	2100	1850	2000	1750	1600	1800
Aspect	NW	N	NW	NW	SE	SE	S	SE	NE	NW	NE	N	SW	N	S	N	N	NE	NE	SE	SW	N	W
Slope (°)	80	90	90	90	90	90	90	90	90	90	90	90	90	90	90	95	90	90	90	70	90	90	90
Area (m ²)	100	100	100	100	100	50	50	50	50	20	10	10	10	50	50	50	100	50	50	50	50	10	50
Cover (%)	80	60	50	70	30	60	50	40	40	10	20	10	10	10	10	15	10	5	5	30	10	20	10
Association	A	A	A	A	A	A	A	A	A	B	B	B	B	C	C	C	C	C	C	C	C	C	C
Char. Association																							
<i>Cephalaria squamiflora</i> subsp. <i>squamiflora</i>	1	2	2	2	+	1	+	+															
<i>Lomelosia albocincta</i>					2	1	2	2	2														
<i>Bupleurum kakiskalae</i>					2	3	2	1															
<i>Onobrychis sphaciotica</i>					+	+	2	1															
<i>Bellis longifolia</i>											+	+	+										
<i>Asplenium lepidum</i> subsp. <i>lepidum</i>										1			+										
<i>Campanula spatulata</i> subsp. <i>filicaulis</i>										1				1									
<i>Myosotis solange</i>											1												
<i>Asplenium scolopendrium</i> subsp. <i>antri-jovis</i>														2									
<i>Centaurea lancifolia</i>														2									
<i>Silene antri-jovis</i> (sub S. <i>fruticulosa</i>)															3	2	2	1	1	1	+	+	+
<i>Arenaria fragillima</i>															1	1	2	+	+	+	+	+	+
<i>Asplenium lepidum</i> subsp. <i>hausknechtii</i>															1	+	+	+	+	+		1	+
<i>Euphorbia deflexa</i>															1	+	+	+	+	+			
<i>Alyssum lassiticum</i>																	1						
<i>Galium incanum</i> subsp. <i>creticum</i>																		+					
Charact. All. (Campanulion jacquinii) & Subord. (Campanulenalia jacquinii)																							
<i>Campanula jacquinii</i>	2	2	1	3	2	2	1	1	2			+	+	2	3		+	+	2		1		
<i>Potentilla speciosa</i>	2	1	2	1	1			+	+	+	1	2					1	+					1
<i>Arenaria cretica</i>	2	1	1	2						+	1	1	+										
<i>Draba cretica</i>														+				+	+	+	+		
<i>Asplenium aegaeum</i>										1	+									+			
<i>Asplenium creticum</i>																	+	1					
<i>Arabis cretica</i>																							
<i>Brachypodium sylvaticum</i> subsp. <i>creticum</i>										1													
<i>Gypsophila nana</i>											+												
Transgressive suborder Petromaralenalia pinnatae																							
<i>Odontites creticus</i>					2	+	1	2	+														
<i>Stachys petiolata</i>					1	+	1	1	+														
<i>Asperula pubescens</i>	1	1	1	+																			
<i>Silene sieberi</i>	1	1	2	1																			
<i>Campanula cretica</i>						+	1	+	+														
<i>Crepis auriculifolia</i>																	+	+			1		
Char. Ord. (Onosmetalia frutescentis)																							
<i>Galium graecum</i> subsp. <i>graecum</i>	+	+	1	1	+	1	1	+	1														
<i>Hellenocarum multiflorum</i>														1		+		+					
<i>Silene gigantea</i> subsp. <i>gigantea</i>					+	+																	
<i>Scrophularia lucida</i>										+		+											
Char. Class (Asplenieta trichomanis)																							
<i>Asplenium trichomanes</i>	+	+		+				+	+	2	1	1		+	+		1			+			
<i>Cystopteris fragilis</i>										+	+	1	+				+	+	+		1		
<i>Melica rectiflora</i>										+	+	+		1	1		+	+		+			
<i>Sedum magellense</i> subsp. <i>olympicum</i>										+	+	1				1	+			+			
<i>Ceterach officinarum</i>										+		1			+	1				+			
<i>Melica minuta</i>	+	1	+	1																			
<i>Rhamnus saxatilis</i> subsp. <i>prunifolia</i>										+				+					+		+		
<i>Arabis alpina</i> subsp. <i>caucasica</i>											1				+				1				
<i>Asplenium ruta-muraria</i>															+								1
<i>Allosorus persicus</i>										+													
Other species																							
<i>Berberis cretica</i>	+		+	+							+	+				+			+		+		
<i>Sedum tristritum</i>	+	+	+	+										1		+		+		+	1		2
<i>Sedum album</i>														+	+	+	+	+	+	+	+		+
<i>Asperula idaea</i>														1	1		+	+	1	+	+		+
<i>Hypericum empetrifolium</i>	+	+		1										+	+		+	+	+	+	+		+
<i>Viola fragrans</i>														+	+		+	+	+	+	+		+
<i>Avenochloa cycladum</i>	2	+		1	+		1							+	+		+	+	+	+		+	
<i>Valantia muralis</i>										+	+			+	+		+	+	+	+			
<i>Aethionema saxatile</i> subsp. <i>creticum</i>										+	1					+	+	+	+	+			
<i>Festuca sipyra</i>														+	+		+	+	+	+	+		+
<i>Euphorbia herniarifolia</i>														+	+		+	+	+	+	+		1
<i>Micromeria juliana</i>	+	+	+	+																			
<i>Juniperus oxycedrus</i>	+		1	+	1																		
<i>Erica forskalii</i>					1	1	1		+														
<i>Lysimachia serpyllifolia</i>										+	+			+						+			
<i>Phagnalon pygmaeum</i>										+	+								+				+
<i>Senecio fruticosus</i>										+	+								+	1			
<i>Satureja spinosa</i>	1	+		1																			
<i>Rhamnus graeca</i>	+		+	+																			
<i>Polystichum lonchitis</i>										+	+			+									
<i>Scutellaria hirta</i>										+											+		
<i>Minuartia verna</i>											+			+					+				
<i>Aubrieta deltoidea</i>											+			+									+
<i>Prunus prostrata</i>														+							+		1
<i>Arenaria muralis</i>														1	+								+
<i>Scilla nana</i>															+			+	+				+
<i>Verbascum spinosum</i>	+	+																					
<i>Sideritis syriaca</i>														+	+								
<i>Microthlaspi perfoliatum</i>														+	+								+
<i>Herniaria parnassica</i> subsp. <i>cretica</i>														+	+								+
<i>Pimpinella depressa</i>														+	+								+
<i>Daphne oleoides</i>															+					+			
<i>Cupressus sempervirens</i>					1																		
<i>Asplenium viride</i>														+									
<i>Crepis sibirica</i>														+									
<i>Poa cenisia</i> subsp. <i>contracta</i>														+									
<i>Anthyllis vulneraria</i>														1									
<i>Veronica thymifolia</i>														+									
<i>Bufonia stricta</i>															+								
<i>Plantago lanceolata</i>																				+			
<i>Andrachne telephoides</i>																					+		
<i>Festuca jeanpertia</i>																					+		
<i>Paronychia macrosepala</i>																							

Tab. 37 - A) Euhesperidetum linearifoliae; B) Micromerio guichardii-Origanetum pampaninii

	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		
Relevés 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		
Altitude (m a.s.l.)	90	80	90	80	80	90	100	80	90	90	90	140	160	110	110	100	140	160	180	180	160	340	340	340	330	330	380	380	370	400	380	360	360	390	380	410	360			
Aspect	W	NE	NE	E	NE	E	E	W	W	NE	NW	N	NW	N	N	N	N	N	N	N	NW	N	N	NE	NE	N	NW	NW	N	W	NW	NW	N	N	N	N	NW			
Slope (°)	70	80	80	60	60	60	70	60	60	70	70	40	50	80	80	80	90	90	90	90	90	85	85	85	80	85	90	90	90	90	90	90	90	90	90	90	90			
Area (m²)	50	30	30	20	20	30	20	20	30	30	50	100	150	100	100	50	100	150	100	100	150	100	100	60	100	100	100	100	100	100	100	100	100	100	100	100	100			
Cover (%)	30	30	40	35	30	40	25	40	30	30	20	20	30	20	25	20	25	25	30	15	10	20	25	30	25	20	15	30	30	25	20	30	30	25	25	35	25	30		
Association	A	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	B	B	B	B	B	B	
Char. Association																																								
<i>Euhesperida linearifolia</i>	2	2	3	3	2	3	2	3	2	2	1	1	2	+	.	+	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Micromeria guichardii</i>
<i>Origanum pampaninii</i>
Char. All. (Teucrium cyrenaici)																																								
<i>Teucrium cyrenaicum</i>	1	1	+	1	1	2	1	1	+	+	+	+	+	.	1	.	.	.	.	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Silene fruticosa</i> subsp. <i>cyrenaica</i>	+	2	2	1	+	1	+	.	+	+	2	2
<i>Sedum barcense</i>	.	+	+	+	.	+	.	.	.	1	+
Char. Ord. (Chiliadenetalia candicans)																																								
<i>Chiliadenes candicans</i>	2	1	2	1	2	2	1	2	1	2	2	2	2	2	1	2	2	2	2	2	2	1	+	2	2	1	1	1	1	+	1	2	2	2	1	2	2	2		
<i>Petrorhagia illyrica</i> subsp. <i>angustifolia</i>	1	+	.	+	+	.	+	+	+	+	+	+	+	+	1
<i>Euphorbia gebelica</i>	.	.	+	1	2	1
<i>Sedum laconicum</i> subsp. <i>pentapolitanum</i>
<i>Ephedra elte</i>	1	.	+	.	+	1
<i>Hypericum aegypticum</i>	2	2	2	1	1
Char. Class (Asplenietea trichomanis)																																								
<i>Capparis spinosa</i>	.	1	+	+	+	.	.	.	.	.	.	.	.	.	1	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Umbilicus intermedius</i>	+	+	.	.	+	+	.	.	.	.	.	.	.	.	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Melica minuta</i>	.	+	+	.	.	+	+
<i>Ceterach officinarum</i>
<i>Piptatherum coerulescens</i>
<i>Allosorus pteridioides</i> (sub <i>Chellanthes asplenoides</i>)	+	.	.	+
Other species																																								
<i>Rhamnus oleoides</i> subsp. <i>libycus</i>	+	1	+	1	+	1	.	+	+	+	1	+	1	1	+	1
<i>Trachynia distachya</i>
<i>Poa bulbosa</i>
<i>Sarcopoterium spinosum</i>
<i>Phagnalon graecum</i>
<i>Trisetaria macrochaeta</i>
<i>Micromeria nervosa</i>	+	+	+	+	+	1	+	.	.	.	1
<i>Phagnalon rupestre</i> subsp. <i>mauritanicum</i>
<i>Catapodium rigidum</i>
<i>Campanula erinus</i>
<i>Parietaria lustranica</i>
<i>Ajuga reptans</i>
<i>Reichardia picroides</i>
<i>Hyperthelia hirta</i>	+	.	+	+	+
<i>Parietaria judaica</i>
<i>Prasium majus</i>
<i>Picris mauginiana</i>	+	+
<i>Ballota pseudodictamnus</i>
<i>Thapsia garganica</i>
<i>Mercurialis annua</i>	.	+	+	+
<i>Bituminaria bituminosa</i>	+	.	+	.	+
<i>Asphodelus ramosus</i>
<i>Bromus fasciculatus</i>
Rels. 1-21: Libya, N Cyrenaica, Gebel el-Akhdar (Tab. 16 in Brullo & Furnari 1994)																																								
Rels. 22-38: Libya, N Cyrenaica, Barce (Tab. 15 in Brullo & Furnari 1994)																																								