

Article

Contribution to the Orophilous Cushion-Like Vegetation of Central-Southern and Insular Greece

Carmelo Maria Musarella ^{1,*} , Salvatore Brullo ² and Gianpietro Giusso del Galdo ² ¹ Department of AGRARIA, Mediterranean University of Reggio Calabria, 89122 Reggio Calabria, Italy² Department of Biological, Geological and Environmental Sciences, University of Catania, 95125 Catania, Italy; salvo.brullo@gmail.com (S.B.); g.giusso@unict.it (G.G.d.G.)

* Correspondence: carmelo.musarella@unirc.it

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Abstract: The results of a phytosociological investigation regarding the orophilous cushion-like vegetation occurring in the top of the high mountains of central-southern Greece and in some Ionian (Lefkas, Cephalonia) and Aegean Islands (Euboea, Samos, Lesbos, Chios and Thassos) are provided. Based on 680 phytosociological relevés (460 unpublished and 220 from literature), a new syntaxonomical arrangement is proposed with the description of a new class, including two new orders, eight new alliances, and several associations (many of them new). Compared to the previous hierarchical framework usually followed in the literature, this study provides a more realistic and clear phytosociological characterization of this peculiar and archaic vegetation type, which is exclusive to the high mountains of the north-eastern Mediterranean. The new arrangement is mainly based on the phytogeographical role of the orophytes featuring this very specialized vegetation, which is essentially represented by endemics or rare species belonging to the ancient Mediterranean Tertiary flora. In addition, taxonomic research on the orophilous flora occurring in these plant communities allowed to identify six species new to science (i.e., *Astragalus corinthiacus*, *Allium crennophilum*, *A. cylleneum*, *A. orosamium*, *A. karvounis*, and *A. lefkadensis*) and a new subspecies (i.e., *Allium hirtovaginatum* subsp. *samium*), and two new combinations (i.e., *Astragalus rumelicus* subsp. *euboicus* and subsp. *taygeticus*) are proposed.

Keywords: phytosociology; flora; high mountain vegetation; Greece; taxonomy; *Astragalus*; *Allium*

1. Introduction

The orophilous cushion-like vegetation colonizing the cacuminal stands of the highest mountains of the Mediterranean territories has always aroused a lot of interest from botanists, mainly for the occurrence of a peculiar and specialized flora. It is represented usually by relict taxa (species and subspecies), mainly endemic adapted to hard environmental conditions, which are aggregated in physiognomically well differentiated plant communities [1,2].

Many plants that characterize these phytocoenoses (usually localized at high altitude) belong to the ancient Tertiary Mediterranean flora. They are represented mostly by dwarf nanophanerophytes and chamaephytes mixed with caespitose hemicryptophytes which form plant communities often covering large surfaces. This ecologically specialized vegetation is associated and adapted to long wintry periods of lasting snow cover (sometimes till late spring), as well as to prolonged summer droughts with intense winds. It occurs mostly on rocky places with undeveloped and immature soils due to the prevailing harsh climatic conditions and wide diurnal and annual variations. Such factors seem to converge to climatic conditions of the temperate cold climate inserted in the Mediterranean context [3].

This leads to a strong contrast between the winter-spring period, which is very rigid and cold, and that summer-autumn one, generally very hot and dry. Therefore, the plants that thrive in these high-mountain stands (generally ranging from about 1000 to 4000 m of elevation in Mediterranean area) are evolutionarily adapted to very peculiar climatic conditions shaping significant ecological specializations and concomitant range restrictions, that, in most cases, not allows them to live outside of these habitats. Therefore, they can be considered as typical Mediterranean orophytes that often have well circumscribed or punctiform distribution patterns and are well differentiated taxonomically from other closely related taxa. Among these high-mountain plants, it is possible to identify vicariants due to speciation processes and geographical or ecological isolation.

The occurrence of dwarf shrubs in these Mediterranean mountains is very significant; such species have a typical thorny and compact cushion-like habit, inside which many delicate herbaceous species take refuge due to higher humidity compared to the exterior one, with their vegetative and floral structures protruding from them. Among these, an important physiognomic-structural role is played mainly by thorny species of *Astragalus*, which often dominate in many plant communities.

In the central and western Mediterranean few of species belonging to this group of *Astragalus* usually occur. They are mainly represented by endemic species disjunctly distributed among some mountain tops, for example: *Astragalus granatensis* Lam. in Spain and northern Africa, *A. nevadensis* Boiss. in southern Spain, *A. genargentus* Moris and *A. gennarii* Bacchetta & Brullo in Sardinia, *A. greuteri* Bacchetta & Brullo in Corsica, *A. calabricus* Fischer in Calabria, *A. sirinicus* Ten. in southern Apennines, while in Sicily there are *A. siculus* Biv. in the Etna volcano and *A. nebrodensis* Guss. in the Madonie massif [4]. Conversely, *Astragalus* species with tragacanthoid habit are much more numerous and widespread in the mountains of the eastern Mediterranean territories, which reach their maximum diversity in Anatolia. In particular, in the mountains of the Balkan Peninsula and of some Aegean islands the species of thorny *Astragalus* are more frequent, such as: *A. angustifolius* Lam. s.l., *A. rumelicus* Bunge s.l., *A. creticus* Lam., *A. cylleneus* Boiss. & Heldr., *Astragalus calavrytensis* Beauverd & Topali, *A. cephalonicus* C. Presl, *A. thymphresteus* Boiss. & Spruner, *A. parnassi* Boiss., *A. taygeteus* Persson & Strid, *A. thracicus* Griseb., *A. condensatus* Ledeb., *Astragalus lesbiacus* P. Candargy, *A. dolinicolus* Brullo & Giusso, etc. [5].

Apart from the *Astragalus* sp.pl., there are also other orophytes belonging to other genera or species complex that are characterised by morphological peculiarities and ecological adaptations, which are well distinct from other ones closely related taxa found in coastal or hilly places (geographical or ecological vicariants). In the eastern Mediterranean area, the following groups of taxa can be quoted as examples:

- (a) *Cerastium candidissimum* Correns, replaced in the Apennines and Sicily by *C. tomentosum* L., in Sardinia by *C. supramontanum* Arrigoni and in Corsica by *C. soleirolii* Duby [6–8].
- (b) *Marrubium cylleneum* Boiss. & Heldr., distributed in the northern Peloponnese, which is vicaried by *M. velutinum* Sibth. & Sm. in the central Greece and *M. thessalum* Boiss. & Heldr. in the northern Balkans [9].
- (c) *Sideritis clandestina* (Bory & Chaub.) Hayek is represented by the subsp. *clandestina* in the southern Peloponnese, and by the subsp. *peloponnesiaca* (Boiss. & Heldr.) Baden in northern Peloponnese, while it is vicariated by *S. raeseri* Boiss. & Heldr. subsp. *raeseri* in central and northern Greece, *S. euboea* Heldr. on the island of Evvoia, *S. scardica* Griseb. in the north and central Greece and former Yugoslavia, *S. sipylea* Boiss. in the eastern Aegean area, *S. syriaca* L. subsp. *syriaca* in Crete, *S. sicula* Ucria in Sicily and *S. italica* (Miller) Greuter & Burdet in the central-southern Italy [10,11].
- (d) *Nepeta argolica* Bory ex Chaub. is distributed in the Peloponnese and Sterea Ellas, replaced by *N. dirphyia* (Boiss.) Heldr. in Euboea, *N. parnassica* Heldr. & Sartr. ex Boiss. in the Mts. Parnassus and Chelmos, *N. spruneri* Boiss. in the North-central Greece, *N. camphorata* Boiss. & Heldr. in Taygetos, *N. sphaciotica* Davis in Crete, *N. orphanidea* Boiss. in Mt. Parnon and *N. italica* L. in Samos and West Anatolia [12].
- (e) *Carlina frigida* Boiss. & Heldr. widespread in central-southern Greece, which is replaced by *C. biebersteinii* Hornem. subsp. *brevibracteata* (Andrae) K. Werner in the northern Balkans,

- C. curetum* Heldr. in Crete, *C. macrocephala* Moris in Sardinia and Corsica, *C. nebrodensis* Guss. in Sicily and South Italy [13,14].
- (f) *Sesleria vaginalis* Boiss. & Orph. widespread in Greece, replaced by *S. robusta* Schott et al. in the northern Balkans, *S. anatolica* Deyl in Samos and Anatolia, *S. achtarovii* Deyl in Thassos and eastern Balkans, *S. nitida* Ten. s.l. in Sicily and central-southern Apennines [13,15].
- (g) *Erysimum pusillum* Bory & Chaub., endemic to southern Peloponnese, replaced by *E. cephalonicum* Polatsc. in northern Peloponnese and central Greece, *E. parnassi* (Boiss. & Heldr.) Hausskn. in the Parnassus, *E. olympicum* Boiss. in the Mount Olympus (Greece), *E. mutabile* Boiss. & Heldr. and *E. raulinii* Boiss. in Crete, *E. bonannianum* C.Presl and *E. etnense* Jord. in Sicily [13,16].
- (h) *Viola graeca* (W. Becker) Halácsy, widespread in central Greece and northern Peloponnese, replaced in the southern Peloponnese by *V. parnonia* Kit Tan & al. in Mt. Parnon, *V. sfikasiana* Erben on Mt. Taygetos, *V. euboea* (Halácsy) Halácsy in Euboea, *V. epirotica* (Halácsy) Raus in Pindos ranges, *Viola stojanowii* W. Becker in Sterea Ellas, *V. fragrans* Sieber in Crete, *V. nebrodensis* C. Presl and *V. aethnensis* (Ging. & DC.) Strobl in Sicily, *V. corsica* Nyman in Corsica and Sardinia [13,17].
- (i) *Armeria orphanidis* Boiss., distributed in southern Greece, which is vicariate in other Mediterranean mountains by *A. nebrodensis* (Guss.) Boiss. on Madonie in Sicily, *A. aspromontana* Brullo, Scelsi & Spamp. in Aspromonte (southern Calabria), *A. brutia* Brullo, Gangale & Uzunov in Sila (northern Calabria), by *A. sardoa* Spreng. in Sardinia and *A. multiceps* Wallr. in Corsica [18,19].

From the dynamic point of view, these plant communities reach full expression and maturity in the cacuminal stands above 1700–1800 m of altitude, where they usually play a climatophilous role, replacing the forest vegetation that generally stops below the aforesaid altitude, usually corresponding to the timberline.

Examples of this type of vegetation are also frequent between 900 and 1700 m of altitude, in correspondence of summit areas or ridges of mountains in which there are very harsh conditions, due to several environmental factors. In these peculiar environmental conditions, these communities will not constitute typical climatophilous associations, but assume an edaphophilous role or sometimes secondary one due to the processes of degradation of the woodlands.

This type of vegetation, occurring in the several mountain ranges of the Mediterranean area, was studied previously by several authors, using the phytosociological sigmatist approach. In particular, object of these researches regarded the pulvinar orophilous vegetation of several massifs, as: Sierra Nevada in southern Spain [20], Atlas Mountains in North Africa [21], as well as many high mountains of Corsica [22,23], Sardinia [2,24,25], Sicily [2,26–31], Calabria in southern Italy [32–34], Greece [35–44], Crete [45,46], Anatolia [47–50], and Cyprus [51].

In order to improve the knowledge of this type of orophilous vegetation, a study on main mountain massifs of Central and Southern Greece (Sterea Ellas and Peloponnese) was carried out. These phytosociological investigations were also extended to the mountains of some islands of Ionian area (Lefkada and Cephalonia) and of eastern and northern Aegean, such as Euboea, Samos, Lesbos, Chios and Thassos, where there are mountains colonized in the top by pulvinar orophilous plant communities. The aim of this paper was to investigate the orophilous pulvinar vegetation of this area of the eastern Mediterranean, since this region still lacks a detailed approach from the phytosociological viewpoint and there is a need to fully clarify the issues regarding their syntaxonomical arrangement and related nomenclatural aspects.

However, it has been noted that in some cases these plant communities can make catenal contacts with orophilous conifer forests having often a prostrate or pulvinate habit, which can be considered as the last vestiges of the ancient dwarf forests, that at the end of Miocene covered in a massive and widespread way the peaks of the high Mediterranean mountains [52–57]. It is possible to observe in this vegetation the dominance of conifers (mostly big shrubs or small trees belonging to the genus *Juniperus*, *Pinus* and *Abies* that are usually associated to several other orophilous, often thorny, shrubs), among which there are various species of the genera *Berberis*, *Cerasus*, *Ribes*, *Rosa*, *Sorbus*, *Daphne*, *Rhamnus*, etc. These relict forests belonging to the class *Pino-Juniperetea sylvestris* Rivas-Martínez 1965 are widespread

in all the Mediterranean area and, in particular, in the eastern territories, they are represented by the order *Berberido creticae-Juniperetalia excelsae* Mucina in Mucina et al. 2016, with several alliances and associations described by Brullo et al. [57].

1.1. Study Area

The mountain ranges and massifs, that have been investigated in this study, are located in Southern Sterea Ellas and Attica (Parnassus, Giona, Vardoussia, Timfristos, Parnis (or Parnitha) and Kitheronas (or Kithaeronas)), in Peloponnese (Panachaiko, Erimanthos, Klokos, Chelmos, Killini, Menalon, Taygetos, and Parnon) and in some Islands of the Ionian (Lefkas and Cephalonia) and Aegean area (Euboea, Thassos, Lesvos, Samos, and Chios) (Figure 1).

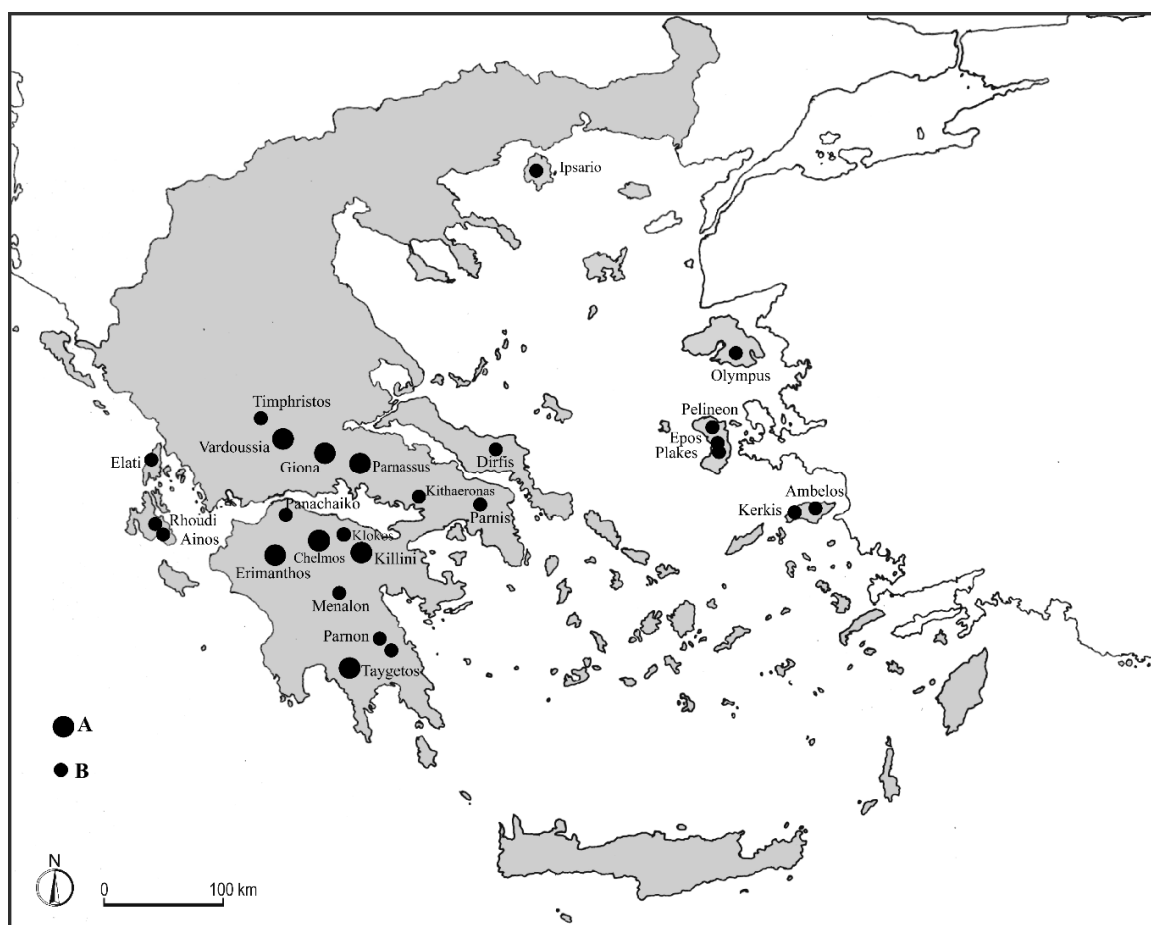


Figure 1. Distribution map of the massifs (A) and mountains (B) investigated in Greece.

1.1.1. Sterea Ellas and Attica

From the geographical point of view, the high mountains of central Greece distributed to the north of Gulf of Corinth, falling in Sterea Ellas and Attica, are represented by the three main mountain massifs: Parnassus, Giona and Vardoussia, all characterized by peaks with altitudes above 2000 m, as well as other lower mountains like Mt. Kitheronas and Mt. Parnis.

- Mt. Parnassus

This mountain range is spread from north to south for about 25 km and has numerous peaks, many of which exceed 2100 m: Liákoura (2455 m), Kotróni (2428 m), Tsarkos (2415 m), Gérontovrakhos (2395 m), Koukos (2234 m), Mávra Lithári (2334 m), Raïdhólakka (2328 m), énnesa (2328 m), Kalogiros (2327 m), Tsarkoraki (2322 m), Arnóvrissi (2259 m), and Sési (2120 m).

The substrates are essentially constituted by carbonate rocks, consisting mostly of Mesozoic dolomites and limestones. The landscape is mainly rocky with walls and dolines. The bioclimate between 1000 and 1500 m falls within meso-Mediterranean sub-humid, while up to 2000 m is of supra-temperate sub-Mediterranean type; over 2000 m it is replaced by oro-temperate sub-Mediterranean one. The average annual temperatures range between 11 °C and 5 °C, related to the altitude, while the annual rainfall average ranges from 800 to 1000 mm. Up to about 1700 m scattered forests dominated by *Abies cephalonica* occur, which are usually mixed to dwarf shrubs conifer communities and cushion-like orophilous vegetation: the latter, becomes dominant above 1700 m of altitude. Previously, these shrub communities were investigated by Quézel [35].

- Mt. Giona

It is a large mountain massif with rather blunt peaks spread over a large area. The highest peak is Piramidha (2507 m), followed at lower altitudes by Traghoros (2456 m), Makrivlakos (2302 m), Plativoúna (2316 m), Profitis Ilias (2298 m), Pírgakia (2191 m), Vraïla (2177 m), Kastro (2176 m), Stállos (2128 m), and Plativouni (2122 m). The substrates are mostly constituted by Mesozoic dolomites with numerous plateaux and valleys and scattered dolines. In this area the bioclimate has the same characteristics as that shown for the Mount Parnassus: in particular, the annual average temperatures range between 10 °C and 5 °C, while the mean annual rainfall is between 800 and 1000 mm. According to Quézel [35], the timberline of *Abies cephalonica* forests is around 1700 m, while above this altitude, the landscape is dominated by cushion-like shrubs, often mixed to grasslands.

- Mt. Vardoussia

This massif is long 45 km, with various peaks oriented from north to south, separated into two blocks by the valley of Kanavorema river. The highest peak is Korakas (2495 m) which is followed by Kókkini Tsoúma (2414 m), Skórda Ptimalikoú (2413 m), Klisoura (2403 m), Kokiniás (2383 m), Vouno Chomirianis (2293 m), Korakia (2148 m), and Sinani (2054 m).

The substrates consist mainly of Mesozoic limestones. The landscape is characterized by rocky cliffs interspersed to ridges with rocky slopes. Screes and snowy valleys are also frequent. The bioclimate below 1700 m ranges from meso- to supra-temperate in the sub-Mediterranean variant, while at higher altitudes it falls in the supra- and oro-temperate belt.

The annual average temperatures between 1000 and 1700 m of altitude range from 11 to 8 °C, reaching values of 5–4 °C above 1700 m. The annual rainfalls range from 800 to 1000 mm in relation to altitude. As highlighted by Quézel [38], the forests between 1600 and 1800 m are represented by woodlands of *Abies cephalonica*, while at higher altitudes the communities of cushion-like shrubs are dominant. Between 1800 and 2000 m, this vegetation is associated to *Juniperus foetidissima* with scattered individuals.

- Mt. Timfristos

This mountain is located at the northernmost of Sterea Ellas, at the northern side of Mt. Vardoussia. The highest peak is Veluchi (2315 m), which is followed by Symbetheriako (2104 m), Anemos (1998 m), Kumbi (1863 m), etc. Geologically, Mt. Timfristos is represented by Mesozoic limestones mixed with schists and cherts (Mountrakis 1985). As concerns its bioclimatology, it shows the same characteristics mentioned for Mt. Vardoussia.

- Mt. Kitheronas

It is an isolated mountain located west of Mt. Parnitha, reaching in the Profitis Ilias the altitude of 1409 m. It consists of Mesozoic limestones with very steep slopes and a small plateau at the top where an orophilous shrub vegetation is located.

- Mt. Parnis

This massif located north-west of Athens, also known as Mt. Parnitha, is characterized by several peaks: Karavola (1413 m), Ornio (1350 m), Mavrovouni (1091), etc. The bioclimate of this area falls within the meso-Mediterranean subhumid belt, with an annual average precipitation about 790 mm. Geologically it consists of Mesozoic limestones and schists. Examples of orophilous dwarf-shrub vegetation are usually frequent at an altitude above 1100 m. Some observations on the orophilous vegetation are reported by Aplada et al. [58].

1.1.2. Peloponnese

The Peloponnese is the southernmost part of mainland Greece, separated from the mainland by the Gulf of Corinth which in the past was united by the homonymous Isthmus (now Channel). This peninsula has a surface of 21,400 km² that, apart from few coastal plains, is almost entirely mountainous. The main massifs are located in the northern part of Achaia, along the coastal strip corresponding to the southern side of the Corinth Gulf, among them there are Mt. Panachaiko, Mt. Erimanthos, Mt. Klokos, Mt. Chelmos, Mt Killini, and Mt. Menalon, some with peaks higher than 2000 m. Other mountain ranges occur in the southern part of the Peloponnese: among them the most important are Mt. Taygetos in Arkadia and Mt. Parnon in Lakonia. In particular, on Taygetos the altitude of 2400 m is reached.

- Mt. Panachaiko

Panachaiko is the mountain range with the northernmost position than any other mountain in the Peloponnese. It is located south of Patras, peaking almost 2000 m of elevation. Its summit reaches, in fact, 1924 m and is characterized by ridges with rocky walls overhanging extended scree. The substrates consisting of dolomites and limestones dating back to the Mesozoic, usually with very sloped and rocky surfaces. From a bioclimatic point of view, this mountain area falls mainly within the meso-Mediterranean belt, and only in the highest part, above 1600–1700 m, it tends toward the supra-temperate sub-Mediterranean one. The ombrotypes range from the sub-humid to humid, with average annual rainfall reaching 1000 mm. The annual average temperatures range between 8 °C and 10 °C. Due to the remarkable acclivity of the surfaces, the orophilous cushion-like communities are quite widespread and well represented from the 1500–1600 m of altitude. Currently, there are no phytosociological data about this type of vegetation on this mountain.

- Mt. Erimanthos

It is located in the northwestern part of the Peloponnese, south of Panachaiko, and forms a range oriented from NE to SW with various rocky peaks, including Mt. Granitis (2221 m), Mt. Barba (2169 m) and Mt. Profitis Ilias (2124 m). Other peaks forming part of this massif range are: Mt. Pargako (2050 m), Mt. Kallifoni (1996 m), Mt. Lepida (1893 m), Mt. Psili Tourla (1891 m), Mt. Gnaikes Tris (1834 m) and Mt. Lamba (1793 m). The substrates are usually represented by limestones, radiolarites and, sometimes, schists. The bioclimate, between 1600 m and 1900 m of altitude, falls within the supra-temperate sub-Mediterranean belt, while above 1900–2000 m in the oro-temperate sub-Mediterranean one. At altitudes below 1600 m, the surfaces are affected by a meso-Mediterranean termotype. As regards the ombrotype, it ranges from the lower to the upper humid, with average annual rainfall of 1000–1400 mm. The annual average temperatures are around 8–5 °C, with significantly lower values on the eastern side which is characterized by a higher continentality. The tree vegetation is represented by woodlands of *Abies cephalonica*, that are widespread up to 1600–1700 m, while at higher altitudes, not exceeding 1800–1900 m, there are examples of open and spaced dwarf woods of *Juniperus foetidissima*, usually mixed with cushion-like communities, that in the higher peaks become dominant. Previously, a study of this hemicrypto-chamaephytic orophylous vegetation, was carried out by Maroulis and Georgiadis [44].

- Mt. Klokos

This mountain is located at south-east of M. Panachaiko, characterized by carbonatic substrates consisting mainly of dolomites. The summit reaches 1778 m in altitude and coincides with the uppermost part of a large rocky face. The landscape is very rough due to the presence of ridges, very steep slopes, and screes. This mountainous area is characterized by a bioclimate falling mostly in sub-humid meso-Mediterranean belt which, at the summit, tends toward the supra-temperate sub-Mediterranean one. Average annual temperatures range between 8 °C and 9 °C, while the average annual rainfall reaches 900–1000 mm. The highest part of the mount is essentially characterized by thorny pulvinate communities, covering the most part of the surfaces. So far, there are no studies on the vegetation of this mountain.

- M. Chelmos

Mt. Chelmos, also called “Aroania”, is one of the main massifs of northern Peloponnese, with several peaks topping 2000 m in altitude, such as Psili Korfi (2355 m), Neraïdorachi (2339 m), Kato Kambos (2318 m), Profitis Ilias (2282 m), Ghardhiki (2182 m) and Augo Anghio (2138 m). The substrates consist mainly of Mesozoic limestones and dolomites, sometimes with outcrops of marls and clays. The landscape is very harsh and rugged with numerous ridges, very steep slopes, screes and valleys. At elevations higher than 1500–1600 m, the bioclimate falls into supra-temperate sub-Mediterranean belt, while above 1800–1900 m of altitude it is of oro-temperate sub-Mediterranean type, with average annual temperatures between 9 °C and 5 °C. The ombrotype is comprised between the upper sub-humid and the lower humid, with annual average rainfall reaching 900–1200 mm. In the mountain belt, at an altitude lower than 1500 m, the bioclimate is attributable to meso-Mediterranean sub-humid. The forest vegetation is represented by *Abies cephalonica* woodlands or, limitedly to marly substrata, by pine wood of *Pinus pallasiana*. In the higher stands, coinciding with the peaks and the steep rocky slopes, the surfaces are covered by orophilous pulvinate communities. Investigations on this vegetation, were previously carried out by Quézel and Katrabassa [40].

- Mt. Killini

Mt. Killini, also known as “Ziria”, is a mountain range with several peaks topping 2000 m in altitude, including Megali Ziria or Simio (2374 m), Profitis Ilias (2259 m), Kokinovrakos (2168 m), Michri Ziria or Kioni (2082 m), Paraga (2032 m), and Tsouma (2021 m). It is located in the north-eastern sector of the Peloponnese, at south-east of Mt. Chelmos. The substrates are mostly of carbonatic origin and are represented by dolomites and various types of limestones (bioclastic blackish, in plaques or compact). The landscape is quite soft with smoothed summits, interspersed with dolines and plateaux, while poorly developed are the rock walls and screes. Below 1800 m, the bioclimate falls into supra-temperate sub-Mediterranean belt, while above 1800–1900 m falls into oro-temperate sub-Mediterranean one, with ombrotype upper sub-humid. Average annual temperatures in relation to the altitude, range from 10 to 6 °C, with average annual rainfall comprised between 900 and 1000 mm. The mountain forests between 1400 and 1800 m are represented by open woodlands with *Juniperus foetidissima* or sometimes *Acer monspessulanum*, usually mixed with orophilous pulvinate communities that above 1800 m become dominant. Previously, phytosociological investigations were carried out by Quézel [35] and Georgiadis and Dimopoulos [42].

- Mt. Menalon

It is a small mountain range, located at north of Tripoli, in the north-central part of the Peloponnese. The highest peaks are Ostrakina (1980 m), Tzeláti (1875 m) and Kendhrovouni (1730 m), showing not much sloping and bland surfaces. The substrates are prevalently represented by limestones in plaques and dolomites. The bioclimate above 1500–1600 m of altitude, falls into supra-temperate sub-Mediterranean belt, with annual average temperatures of 9–8 °C, and annual average rainfall

of 900–1000 mm. In the highest part, the vegetation is mainly represented by orophilous pulvinate communities, while at elevations lower than 1500 m occur *Abies cephalonica* woodlands. So far, this mountainous area had not yet been investigated from the phytosociological point of view.

- Mt. Parnon

The mountain range of Parnon occupies the eastern part of the southern Peloponnese and consists of not very high peaks (below 2000 m). The highest peaks are Megali Tourla (1934 m), Psari (1839 m), Gaïdanórrachi (1801 m), Profitis Ilias near Agriani (1780 m), Profitis Ilias near Polidroso (1762 m), Koulochera (1760 m), and Prezesi (1701 m). The substrates are represented by Mesozoic limestones and dolomites. The massif has a north-south direction with peaks rather mild interrupted by wide valleys that give a marked discontinuity. The bioclimate falls within Mediterranean Oceanic Pluviseasonal with thermotypes between meso-Mediterranean, at altitudes lower than 1500 m and supra-Mediterranean at higher altitudes. The ombrotype is attributable to sub-humid, with annual average rainfall of 900–1000 mm. The annual average temperatures are around 10–9 °C or even lower (7–8 °C) at the highest peaks. Currently, the woodlands appear very degraded with patches occurring up to an altitude of 1600–1700 m, and are characterized by the dominance of *Abies cephalonica*. Instead, the pulvinate thorny communities are widespread and well represented in the summit stands. Currently, no vegetation data are available on this mountain range.

- Mt. Taygetos

Mt. Taygetos consists of a long chain of about 50 km on a north-south direction, located in the northern part of Mani Peninsula, in the southern Peloponnese. The highest peak is Profitis Ilias (2404 m), with numerous other peaks topping the 2000 m, as Halasmeno (2204 m), Neraïdhovoúna (2025 m), Spanakaki (2024 m) and Aghios Paraskevi (2019 m). Geologically it is mainly constituted by compact limestones, with schist outcrops especially at lower altitudes. The landscape is very rough due to the presence of numerous ridges and peaks with slopes quite steep and rocky. Screes and cliffs are common, as well as plateaux with scattered dolines. The bioclimate is Mediterranean with oceanic pluviaseasonal thermotypes ranging from the supra- and oro-Mediterranean in relation to altitude, while the ombrotype is in the top sub-humid. Annual average temperatures above 1500 m vary between 9 °C and 7 °C, while the annual average rainfall of between 900 and 1000 mm. On this mountain the forests occurring at high altitudes are represented by *Abies cephalonica* woodlands, which are frequent up to 1800 m. They usually are linked to carbonatic substrata, while on scists they are replaced by *Pinus pallasiana* woods. Some example of orophilous pulvinate vegetation can be observed from 1200 m of altitude limitedly to the areas with rocky outcrops, penetrating inside of the forest belt. These communities become dominant above 1800 m up to the highest peaks. This kind of vegetation was previously investigated by Quézel [35].

1.1.3. Island Mountains

- Lefkas Island

It is about 100 m from the mainland, with which it is connected by a floating bridge. The highest mountain of the island is Mt. Elati (1158 m), also known as Mt. Stavrota, characterized by some peaks, as Agios Elias, Pirgos, and Mega Oros. This mountain is covered with phrygana communities, which is replaced by orophilous pulvinate communities in the summit, while the forests are currently absent. The substrata are mainly represented by Mesozoic limestones and the bioclimate falls within the meso-Mediterranean with sub-humid ombrotype.

- Cephalonia Island

Mount Ainos, or Black Mountain, constituted mainly by Mesozoic limestones, is the highest range on Cephalonia, which has a crest long about 14 km with a south-eastern direction. It has its highest

peak in Mt. Megas Soros with an elevation of 1628 m, while the second peak towards north-west is Mt. Roudhi, which rises to 1125 m. The bioclimate in the higher stands is typically oro-Mediterranean with sub-humid ombrotype. The slopes between 700 and 1200 m are covered by pine forests and above this altitude there are forests dominated by *Abies cephalonica*. The very windy ridges and the rocky plateaux, located at an altitude not lower than 800 m, are characterized by a pulvinate dwarf shrub vegetation very rich of endemic orophytes. Observations of this type of vegetation are reported by Knapp [59].

- Euboea Island

The mountains in the Euboea Island, or Evvia, that for dimensions is the second largest island in Greece after Crete, are numerous and well represented. The main peaks are Mt. Dirfis (1743 m), Mt. Ochi (1394 m), and Mt. Pyxaria (1341 m), constituted by metamorphic substrata (scists) mixed to triassic marbles. The highest summits are usually affected in by a oro-Mediterranean bioclimate, tending to meso-temperate sub-Mediterranean one, with sub-humid ombrotype. The orophilous dwarf shrub vegetation is well represented in the mountain summit of this island and in particular on Mt. Dirfis. No data on these orophilous communities are reported in literature.

- Samos Island

On the Island of Samos (East Aegean), the peaks with altitudes above 1000 m are Mt. Kerkis (1433 m) and Mt. Ambelos (1153 m). Geologically, Mt. Kerkis consists of Mesozoic limestones, while Mt. Ambelos (or Karvounis) is mainly represented by schists and marbles. The bioclimate affecting these mountains falls within the meso-Mediterranean belt, with sub-humid ombrotype. In the summits of these mountains, above 1000 m of altitude, are located orophilous pulvinate communities, often dominated by echinophytic shrubs. Previously, some observations of this vegetation in Samos were reported by Christodoulakis and Georgiadis [41].

- Lesbos Island

Lesbos (or Lesbos), near to the Turkish coast, is mainly mountainous with an important large peak, represented by Mt. Olympus (967 m), located in the southern part of the island. The top of this mount is constituted by an outcrop of Mesozoic crystalline limestones, with very steep and eroded slopes. From the bioclimatic point of view, this area falls in the meso-Mediterranean belt with sub-humid ombrotype. The thorny orophilous shrub vegetation is circumscribed to this cacuminal habitat. No data on these orophilous communities are reported on literature.

- Chios Island

The island, separated from Turkey by the Çeşme Strait, is prevalently mountainous with numerous peaks occurring mainly in the northern part. The largest of these mountains are Mt. Pelineon (1297 m), Mt. Epos (1188 m), Mt. Oros (1186 m), M. Plakes (912 m), and M. Marathovouno (796 m), which show markedly rocky surfaces, often very sloped and rugged. The substrata are prevalently constituted by Mesozoic limestones or more rarely by schists. The mountain area is affected by a meso-Mediterranean sub-humid bioclimate. The cacuminal stands are usually colonized by orophilous dwarf shrubs communities. No data on these orophilous communities are reported on literature.

- Thassos Island

This island is the northernmost of the Aegean Sea, in front of Kavala (N-Greece). The highest peak of Thassos is Mt. Ipsario (1208 m), characterized by schists and Mesozoic marbles. This territory is affected by meso-Mediterranean sub-humid bioclimate. The orophilous thorny shrub vegetation is exclusively localized on limestone outcrops. No data on these orophilous communities are reported in the literature.

1.2. Geology

The mountains of central and southern Greece with peaks topping 1700 m are found mainly in Sterea Ellas at the north of Corinth Gulf and in Peloponnese. They are represented mainly by carbonate mountain ranges, characterized by numerous peaks with variable altitudes, many of them reaching 2000 m. As regards the islands, apart from Crete that is not treated in this work, only those reaching altitudes above 900–1000 m have been surveyed by the authors. In particular, among them there are the islands of Cephalonia, Lefkas, Euboea, Samos, Lesbos, Chios, and Thassos, which are characterized by orophilous dwarf shrub communities in the summit of their mountains.

According to literature data [60–62], the investigated mountains are geologically constituted in the highest parts by limestones and dolomites dating back to the Mesozoic, or more rarely carbonatic rocks of the Miocene. In some islands, the cacuminal stands are characterized by outcrops of marbles and schists dating back to the Mesozoic or Paleozoic.

Based on our personal observations in the field, due to the marked erosion, the soils are generally very shallow, accumulating mainly in the cracks and crevices of the rock, as well as in the small depressions or dolines. In the less inclined or often flat stands, the soils show usually a scarce maturity and are mixed with a rich skeletal component, often quite coarse. In these mountains, the screes are also quite frequent, especially in the highest parts, consisting of clasts with varying granulometry that are originated from gelifluxion phenomena in correspondence of the highest peaks or at the base of the cliffs, for the fragmentation of overlying rocky walls.

1.3. Bioclimate

According to the classification proposed by Rivas-Martínez [63], Rivas-Martínez and Rivas-Saenz [64] and Rivas-Martínez et al. [65,66], the bioclimate affecting the investigated Greek mountains falls, limited to the highest stands, in the Temperate oceanic sub-Mediterranean one, while as concerns the lower ones in the Mediterranean oceanic pluviseasonal one. Regarding the thermotypes, they ranged in the first case between the supra-temperate and oro-temperate belts limitedly to the sub-Mediterranean variant. At altitudes below to 1500–1600 m, the territories are affected essentially by the meso- or supra-Mediterranean thermotype. On the most southern mountains of Peloponnese and islands, the bioclimate tends to assume connotations more markedly Mediterranean, with thermotypes referring to supra- and oro-Mediterranean in the highest peaks, and meso-Mediterranean in low altitude ones. In particular, on the mountains localized in the islands of the eastern and northern Aegean, the thermotypes fall almost exclusively in the meso-Mediterranean thermotype. With regard to rainfall, the tops of the mountain ranges of these regions are affected by ombrotypes between the upper sub-humid one and the upper humid one, tending in the slopes most exposed to moist marine winds, towards the hiper-humid. In fact, the cacuminal stands, and those at altitudes usually above 1600–1700 m, are characterized by rather moist and cold winters, with more or less long periods of snow cover, while the summers are quite hot and dry. Throughout the year, these areas are normally affected by strong winds, as well as by extreme daily temperature ranges and fog regimes.

Just as an example, the charts built according to the scheme proposed by Walter and Leith [67] are provided, using the interpolated data published by Hijmans et al. [68,69], which are listed in the “Global climate surfaces” and relate to the period 1950–2000. These data have been taken from a map grid of 10 km², in which the toponym is not given but only the geographical coordinates of the centroid of the square (Figure 2).

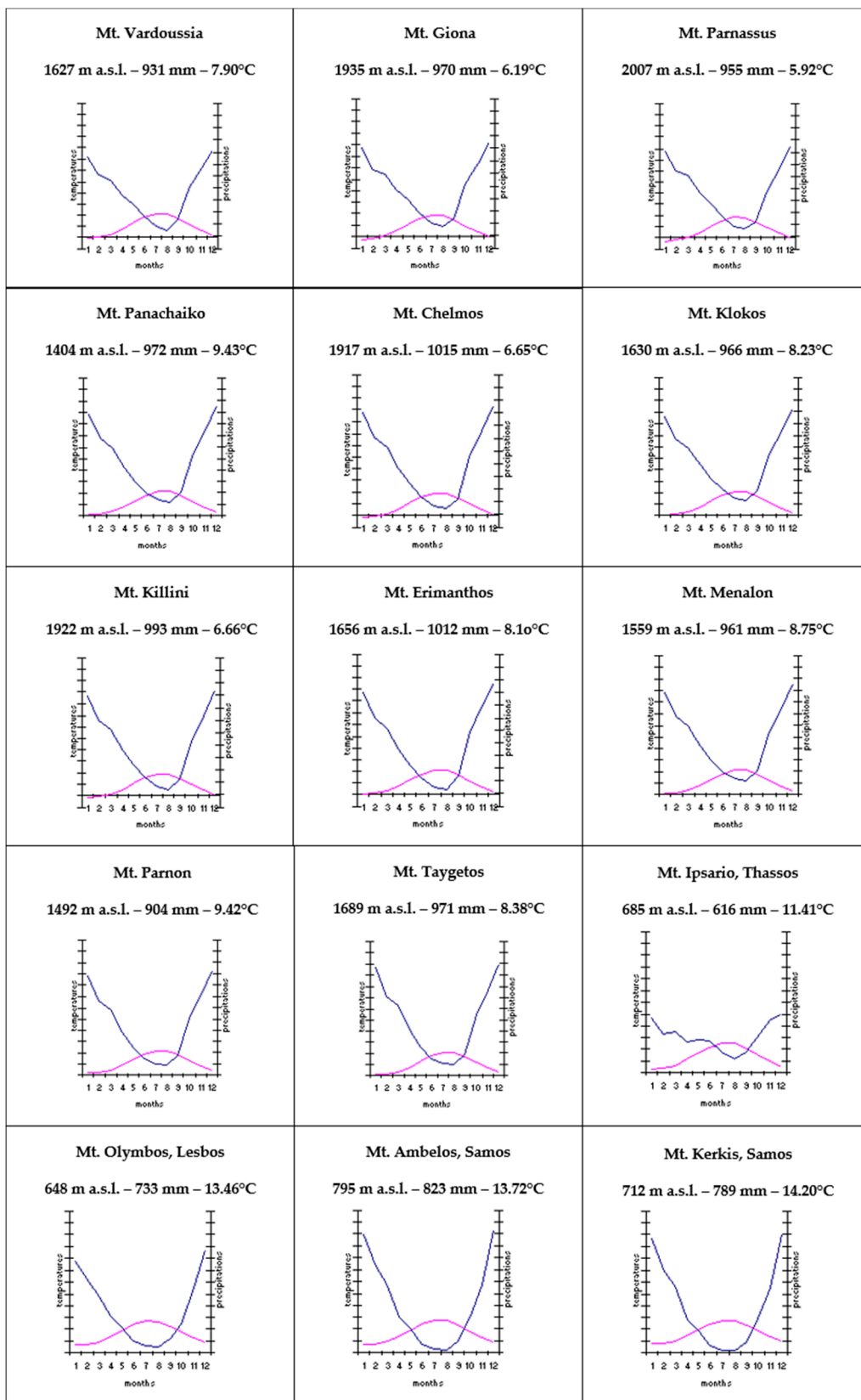


Figure 2. Climograms of 15 thermo-pluviometric stations of some continental and insular mountains from Greece, obtained from data interpolated by WorldClim according to [68,69].

1.4. Floristic Considerations

The floristic set, involved in the orophilous pulvinate vegetation occurring in the mountains of central and southern Greece, as well as some Ionian (Lefkas and Cephalonia) and Aegean islands (Thassos, Lesbos, Chios, and Samos) of this country, is here investigated. Based on the phytosociological relevés used for this study, both literature and unpublished data, a floristic checklist has been created (Appendix A, Table A1), where all the taxa at specific and infraspecific level (634 taxa) are reported. As regards the nomenclatural aspects, life forms and chorological elements, the most recent floras and checklists were used [70–77]. In the cases of very complex taxa, belonging to critical species or groups, when possible, specific revision treatment were followed, or a taxonomic update based on herbaria researches and literature were carried out (see Taxonomic Remarks).

In the context of this orophilous vegetation, some dwarf shrubs, showing a thorny pulvinate more or less compact habit, are physiognomically very important, since they often tend to cover very large surfaces. They are mainly represented by tragacanthoid plants belonging to the genus *Astragalus*, which are usually endemic and often confined to one or a few mountain ranges. Among them there are: *Astragalus rumelicus*, represented in Greece by three subspecies distributed one in the center-north of Greece (subsp. *rumelicus*), another in the Peloponnese (subsp. *taygeticus*) and a last on the island of Euboea (subsp. *euboicus*); *A. cephalonicus* restricted in some Ionic islands (Lefkas and Cephalonia); *A. corinthiacus* in Mts. Parnassus and Giona; *A. taygeteus* circumscribed to Mt. Taygetos; *A. tymphresteus* distributed on mountain ranges of the central-northern of the Balkan area; *A. cylleneus* occurring only on Mt. Killini and Mt. Chelmos; *A. calavrytensis* exclusive of Mt. Chelmos; *A. parnassi* known from some massifs of Sterea Ellas and Mt. Ossa; *A. creticus* subsp. *samius*, *A. lesbiacus* and *A. condensatus* restricted to on Eastern Aegean Islands.

Another thorny and cushion-like *Astragalus* distributed on the mountains of Greece is *A. angustifolius* Lam., a species having an eastern Mediterranean range, which shows a high polymorphism. According to Brullo et al. [78], within *A. angustifolius*, it is possible to distinguish various taxa differentiated at subspecific level, such as: subsp. *angustifolius*, exclusive of Anatolia and Caucasus, subsp. *balcanicus*, distributed in the northern Balkanic Peninsula (N-Greece, Bulgaria, Macedonia, Serbia, Albania), subsp. *erinaceus*, from central-southern Greece (Sterea Hellas, Attica, Peloponnese and Cephalonia), subsp. *echinoides* from Crete, subsp. *aegeicus*, occurring in some eastern Aegean Islands (Lesbos, Samos, and Chios) and subsp. *odonianus* from the Thassos Islands (N-Greece).

Other tragacanthoid shrubs, or otherwise thorny, occurring in these habitats are: *Acantholimon graecum*, *A. aegaeum*, *Silene urvillei*, *Atraphaxis billardieri*, *Minuartia juniperina*, *M. stellata*, etc.

Many other orophilous endemics belong to genera or species complexes, often representing geographical vicariants, such as: *Marrubium* (*M. cylleneum*, *M. velutinum*), *Nepeta* (*N. argolica*, *N. spruneri*, *N. parnassica*, *N. camphorata*, *N. orphanides*), *Sideritis* (*S. clandestina* subsp. *clandestina*, and subsp. *peloponnesiaca*, *S. raeseri*, *S. sypilea*), *Anthemis* (*A. cretica*, *A. laconica*, *A. samia*, *A. spruneri*, *A. aciphylla*).

Other taxa well represented in the Greek mountains belong to some critical groups, such as: *Koeleria mitrushii*, closely related to *K. splendens*, *Armeria orphanidis*, related to *A. majellensis* and *A. canescens*, *Stipa endotricha*, closely related to *S. pulcherrima*, and *S. holosericea*, related to *S. fontanesii*.

2. Results and Discussion

2.1. Taxonomic Remarks

During the phytosociological investigation carried out in the high-mountains of Greece, we have collected several orophytes belonging to the genus *Astragalus* and *Allium*, which are very peculiar from the taxonomical point of view and treated as taxa new to science. Moreover, the taxonomic rank in some of them was modified. They are the following:

(1) *Astragalus corinthiacus* Brullo, Giusso & Musarella, sp. nov.

Holotype: Greece, Sterea Hellas, eastern slopes of Mt. Parnassus, on the bottom of carbonatic dolines with deep silt-clay soils, ca. 1800 m a.s.l., 07.VII.2006, S. Brullo, C.M. Musarella & G. Giusso del Galdo s.n. (CAT).

Diagnosis: *Astragalus cephalonicus* affinis sed stipulis coriaceis, uninervatis, sparsim piloso-ciliatis dorsaliter, aristis triangularibus, 3–6 mm longis, foliis lineari-ellipticis, 1–2.2 mm latis, viridibus, pubescentibus vel laxe lanuginosis, bracteis subulatis vel lineari-subulatis, dense ciliatis dorsaliter, numquam glabris margine, bracteolis praesentibus, tubo calice 4–4.5 mm longo et dentibus subequalibus, 9–10 mm longis, corolla roseo-purpurea, vessillo 16.5–18 mm longo, hastato, tubo staminorum 15 mm longo.

Description: Dwarf shrub forming a loose, spiny cushion, 30–60 cm tall. Stems woody, tomentose-lanuginose, with hairs 0.2–1.5 mm long, loosely branched, tough, with persistent stipules and rachis in the old parts of the branches. Stipules coriaceous, straw coloured, 8–12 mm long, usually 1-nervate, adnate to the petiole for 4.5–7 mm, ciliate at the margin, sparsely lanuginose dorsally, free part triangular, acuminate, 3–6 mm long. Leaves paripinnate, 2.5–4 cm long, with ivory rachis, covered by sparsely lanuginous hairs; petiole 8–20 mm long; terminal spine 3–5 mm long. Leaflets linear-elliptical, dark green, acuminate at the apex, 3–8.5 × 1–2.2 mm, more or less paired, covered by sparsely and appressed lanuginous hairs. Leaflet peduncle 0.2–0.4 mm long. Inflorescence crowded in subsessile racemes up to 8–10-flowered. Bracts subulate to linear-subulate, hyaline, usually curved dorsally, exceeding calyx tube, 8–10 mm long, 0.5–2 mm wide, dorsally ciliate-pilose, often glabrous laterally. Bracteoles subulate up to 8 mm long, ciliate-pilose. Calyx cylindrical, white-hyaline, densely covered by rigid hyaline hairs 1–3 mm long, up to the teeth apex, tube 4–4.5 mm long, teeth subulate, subequal, 9–10 mm long. Corolla pink-purplish: standard hastate, 16.5–18 mm long, minutely emarginate, with blade 9–10 × 5.5–6 mm; wings 13–14 mm long, with blade 6–7 × 1.5–1.7 mm and auricle 0.6 mm long; keel 14–14.5 mm long. Staminal tube 15 mm long and free stamen 13 mm long; anthers 0.8 mm long. Pistill 15–16 mm long; ovary 4–4.5 mm long, densely hairy; style hairy at the base. Pod 7 mm long, ellipsoid, densely pilose-appressed.

Etymology: From “*Corinthus*”, the Latin name of the city of Corinth and its gulf between Sterea Ellas and Peloponnese.

Distribution: The new species occurs in the mountain places of Mt. Parnassus and Mt. Giona where it is localized in the carbonatic dolines on silt-clay soils, mainly on the eastern and northern slopes at 1600–1900 m a.s.l.

Notes: This new species shows close relationships with *A. cephalonicus* C. Presl, occurring in the Ionian islands of Cephalonia and Lefkada. In particular, *A. cephalonicus* differs from *A. corinthiacus* in having stipules membranaceous, linear-triangular, plurinerved, densely ciliate-hirsute, free part 5–10 mm long, leaflets oblong, up to 3 mm wide, greyish-green, densely villose, bracts ovate-lanceolate, long ciliate, 2.5–2.8 mm wide, bracteoles lacking, calyx with tube 5.5–7 mm long, teeth unequal, the three lower teeth 5.5–7 mm long, the upper two 7–9 mm long, corolla whitish to pinkish-white, standard spatulate with blade 13–16 × 5.5–6 mm, staminal tube 14 mm long. Previously Strid [73] also pointed out that the populations of *A. cephalonicus* of Cephalonia differed from those ones occurring in Sterea Ellas.

(2) *Astragalus rumelicus* Bunge, Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 7. 15(1): 81 (1868)

- (a) subsp. *euboicus* (Širj.) Brullo, Giusso & Musarella comb. et stat nov. Bas.: *Astragalus rumelicus* var. *euboicus* Širj., Repert. Spec. Nov. Regni Veg. 47: 200. 1939.
- (b) subsp. *rumelicus*
- (c) subsp. *taygeticus* (Širj.) Brullo, Giusso & Musarella comb. et stat. nov.

Bas.: *Astragalus rumelicus* var. *taygeticus* Širj., Repert. Spec. Nov. Regni Veg. 47: 199. 1939.

Syn.: *Astracantha rumelica* (Bunge) Reer & Podlech subsp. *taygetica* (Širj.) Reer & Podlech, Mitt. Bot. Staatssaml. Munchen 22: 544. 1986.

Notes: According to Širjaev [79] the two subspecies differ from the type in some morphological characteristics. In particular, the subsp. *euboicus* differs in having leaflets denser, outspread white-villous, calyx with short teeth, and corolla 11 mm long, while the subsp. *taygeticus* apart from having leaflets denser outspread white-villous, is differentiated by a calyx with longer teeth, and corolla 13 mm long.

(3) *Allium hirtovaginatatum* subsp. *samiium* Brullo, Pavone & Salmeri, subsp. nov.

Holotype: Greece. Samos, Mt. Kerkis, esemplare coltivato, 22 July 1993, S. Brullo s.n. (CAT).

Diagnosis: *A typo differt scapo usque ad 35 cm alto, foliis 5–6, pilis subadpressis 0.3–0.4 mm longis, florum pedicellis usque ad 7 cm longis, spatha 3.5–7(–9) cm longa, appendice usque ad 40 mm longa, perigonio 7–8 mm longo, tepalis e purpura superne albo-roseis, exterioribus lineari-lanceolatis, obtusiusculis vel rotundatis apice, 2–2.5 mm latis, staminum filamentibus subulato-triangulis, exterioribus usque ad 1.8 mm longis, interioribus 2–2.5 mm longis, annulo 1.2–1.4 mm alto, capsula 4.2 × 4 mm.*

Description: Bulb ovoid, sometimes bulbiferous, 15–20 × 8–12 mm, with brown tunics, fibrous slightly reticulate, split at the base, covering the stem up to 2 cm. Stem erect, flexuous 15–35 cm high, covered by the leaf sheaths 1/2–2/3 of its length. Leaves 5–6, filiform, semicylindrical, shorter than the inflorescence, 4–20 cm long, hairy with dense subappressed hairs 0.3–0.4 mm long. Inflorescence fastigiate, unilateral, with 5–10(–12) flowers on pedicels 1–5(–7) cm long. Spathe 1-valved, longer than the inflorescence or subequal, persistent, 9–11-nerved, 3.5–7(–9) cm long, with an appendage 15–40 mm long. Bostryces 2. Perigon cylindrical-suburceolate, 7–8 mm long; tepals white-pink, tinged with purple in the upper part, with a brown-purplish mid-vein, the outer linear-lanceolate, entire, subobtusate or rounded at the apex, 2–2.5 mm wide, the inner linear-oblong, rounded and feebly gnawed-undulate at the apex, 1.2–1.8 mm wide. Stamens with white filaments, yellowish below, subulate-triangular, unequal, the outer 0.9–1.8 mm long and 0.8–1 mm wide at the base, the inner 2–2.5 mm long and 1.2–1.5 mm wide at the base, below connate with tepals into an annulus 1.2–1.4 mm high; anthers straw coloured-yellowish, linear-elliptical, apiculate, 1.4 × 0.6 mm. Ovary greenish, subglobose-pyriform, smooth, 1.5–1.8 × 1.3–1.6 mm. Style white, 1–1.8 mm long. Capsule trivalved, subglobose, 4.2 × 4 mm.

Etymology: From Latin “*Samius*” = of Samos, Greek island of E Aegean area.

Distribution and habitat: It is exclusive of Samos, Aegean island near the Turkish coast. It grows in the semiruprestrian stands, where it is frequent within ephemeral meadows placed among the phrygana, from sea level to submountain belt.

(4) *Allium cremnophilum* Brullo, Pavone & Salmeri, sp. nov.

Holotype: Greece. Thassos, Ipsario, 26 June 2003, S. Brullo & G. Giusso s.n. (CAT).

Diagnosis: *Allio hirtovaginato simili sed bulbo bulbilifero, scapo flexuoso, prostrato-adscendentis, vaginis foliorum per 1/3–1/2 longitudinis tecto, pilis lanuginosis 0.5–1.4 mm longis, perigonio cylindrico-campanulato, tepalis 7.5–8 mm longis, staminum filamentibus omnino luteolis, exterioribus 1.4–2 mm long, interioribus 2.8–3.5 mm, ovario globoso-ovoideo, rugoso superne, 1–1.1 × 1.1–1.2 mm, capsula obovoidea, 3.7 × 3.4 mm.*

Description: Bulb ovoid, often paired, bulbiferous, 8–13 × 6–10 mm, with brown tunics, reticulate-fibrous, split at the base, covering the stem up to 2 cm. Stem flexuous, prostrate-ascending, 6–11 cm high, covered by the leaf sheaths 1/3–1/2 of its length, often bearing two inflorescences. Leaves 3, filiform, subcylindrical, longer than the inflorescence or subequal, 4–8 cm long, hairy-woolly with patent hairs 0.5–1.4 mm long. Inflorescence fastigiate, unilateral, with 4–8 flowers on pedicels 10–30 mm long. Spathe 1-valved, longer than the inflorescence or subequal, with 7 nerves of which 4 are incomplete, 8–32 mm long, with an appendage 5–20 mm long. Bostryces 2. Perigon cylindrical-campanulate, 7.5–8 mm long; tepals whitish to white-pinkish, with purplish mid-vein, the outer lanceolate, entire and acute at the apex, 1.8–2 mm wide, the inner linear-oblong, with purple striae above, subobtusate and gnawed-undulate the apex, 1.6–1.8 mm wide. Stamens with yellowish filaments, triangular-subulate, unequal, the outer 1.4–2 mm long and 0.5–0.8 mm wide at the base, the inner 2.8–3.5 mm long and

0.8–1 mm wide at the base, below connate with tepals into an annulus 0.8–1 mm high; anthers straw coloured, elliptical, apiculate, $1.5 \times 0.8\text{--}0.9$ mm. Ovary greenish, globose-ovoid, rugose above, $1\text{--}1.1 \times 1.1\text{--}1.2$ mm. Style white, 1.3–1.4 mm long. Capsule trivalved, obovoid, 3.7×3.4 mm.

Etymology: From the Greek words “*cremnos*” = crevice and “*philos*” = fond of, in reference with its habitat.

Distribution: At present, this species occurs only in Thassos at the top of Mt. Ipsario, a N Aegean island near Kavala, Greece. Usually, it grows in depth of calcareous crevices at c. 1200 m of altitude, mixed with chasmophytic vegetation or more rarely inside the thorny dwarf-shrubs of *Astragalus angustifolius* subsp. *odonianus*.

(5) *Allium cylleneum* Brullo, Pavone & Salmeri, sp. nov.

Holotype: GREECE. Peloponnisos, Mount Kyllini, 5 July 2006, S. Brullo, G. Giusso & C. Musarella s.n. (CAT).

Diagnosis: *Allio cremnophilo simili sed bulbis aggregatis, tunicis fibrosis leviter reticulatis, usque ad 4 cm scapum tegentibus, scapo e vaginis foliorum per 3/4 longitudinis tecto vel totaliter, foliis usque ad 11 cm longis, pilis curvatis, subappressatis, 0.3–0.6 mm longis, spathe 5–7-nervata, nervis completis, perigonio campanulato-urceolato, tepalis 6.5–7 mm longis, omnino eroso-undulatis et rotundatis superne, staminum filamentibus albidis, subulatis, ovario ovoideo, laeve, capsula 3.5 × 4 mm.*

Description: Bulb ovoid, clustered, $12\text{--}20 \times 8\text{--}12$ mm, with pale brown tunics, fibrous with subparallel fibres feebly reticulate, split at the base, covering the stem up to 4 cm. Stem flexuous, erect or erect-ascending, 4–10 cm high, covered by the leaf sheaths from 3/4 of its length to totally. Leaves 3, filiform, subcylindrical, normally longer than the inflorescence, 6–11 cm long, hairy with curved subappressed hairs 0.3–0.6 mm long. Inflorescence fastigate, unilateral, with 3–6 flowers on pedicels 5–25 mm long. Spathe 1-valved, shorter than the inflorescence or subequal, 5–7-nerved, 18–35 mm long, with an appendage 6–13 mm long. Bostryces 2. Perigon campanulate-urceolate with tepals white-pinkish, with purple striae and mid-vein, gnawed-undulate and rounded at the apex, $6.5\text{--}7 \times 1.6\text{--}1.8$ mm, the outer linear-lanceolate, the inner linear-elliptical. Stamens with white filaments, subulate, unequal, the outer 1.2–2 mm long and 0.6–0.8 mm wide at the base, the inner 2.8–3.3 mm long and 0.7–1 mm wide at the base, below connate with tepals into an annulus 1–1.2 mm high; anthers straw coloured, ovate-elliptical, apiculate, $1.3\text{--}1.4 \times 0.7\text{--}0.8$ mm. Ovary yellow-greenish, ovoid, smooth, $1\text{--}1.1 \times 1.1\text{--}1.2$ mm. Style white, 1.2–1.3 mm long. Capsule trivalved, obovoid, 3.5×4 mm. **Etymology:** from Latin “*cylleneus*” = from Mt. Kyllini (N Peloponnese).

Distribution: At present, this species seems confined to the top of Mt. Profitis Ilias, the highest summit of Kyllini massif in N Peloponnese (Greece). It is quite rare and occurs in the orophilous dwarf-shrub communities with *Astragalus rumelicus* subsp. *taygeticus* on Mesozoic limestone, at 2200–2400 m of altitude.

(6) *Allium orosamium* Brullo, Giusso & Musarella, sp. nov.

Holotype: Greece, Island of Samos, Mt. Kerkis, near the top at 1100 m a.s.l., 02/07/2003, S. Brullo s.n. (CAT).

Diagnosis: *Allio stamineo simili sed tunicis bulborum fibroso-coriaceis, scapo usque ad 27 cm alto, spathe 5–6-nervatis, inflorescentia 20–35 floribus, perigonio campanulato, tepalis brunneo-viridibus, max. 5 mm longis, 2–2.2 mm latis, staminum filamentibus albidis, 3.5–4.5 mm longis, ovario obovoideo, papilloso, 3.2–3.5 × 2.2–2.4 mm, stilo 0.5 mm longo, capsula subglobosa 5 × 5.2 mm.*

Description: Bulb ovoid, $12\text{--}15 \times 7\text{--}9$ mm, with outer tunics fibrous-coriaceous, dark brown, the inner ones membranous, whitish. Scape glabrous, erect, 9–27 cm high, covered by leaf sheaths for 1/2–2/3 of its length. Leaves 3–5, green, semicylindrical, costate, with blade 10–20 cm long. Spathe persistent, with 2 unequal valves, longer than umbel, the larger 5–6-nerved, 3–8 cm long, the smaller 5–6-nerved, 2–5 cm long. Inflorescence lax, diffuse, 20–35-flowered; pedicels unequal, flexuous, 7–20 mm long. Perigon campanulate, with tepals unequal, brownish green tinged with

brown-purplish, oblong, rounded at apex, the outers 4.5–4.8 × 2.2 mm, the inners 4.8–5 × 2–2.1 mm. Stamens simple, exerted, with filaments subulate, 3.5–4.5 mm long, white, connate at base into an annulus 0.6–1 mm high; anthers oblong, straw, rounded at apex, 1.2 × 0.7 mm. Ovary obovoid, yellow-greenish, papillose above, 3.2–3.5 × 2.2–2.4 mm. Style white, 0.5 mm long. Capsule widely subglobose, green, 5 × 5.2 mm.

Etymology: From “oros” Greek name of “mountain” and “Samius” Latin adjective of Samos (Aegean Island).

Distribution: This species is localized in the top of Mt. Kerkis (Samos island), where it grows in the carbonatic rocky stands within the community characterized by *Astragalus creticus* subsp. *samius*.

(7) *Allium karvounis* Brullo, Giusso & Musarella, sp. nov.

Greece, Island of Samos, Mt. Ambelos, near the top at 1100 m a.s.l., 11/06/2005, S. Brullo & C.M. Musarella s.n. (CAT).

Diagnosis: *Allio stamineo simili sed bulbis maioribus, tunicis fibroso-coriaceis, scapis minoribus e vaginis foliorum per 1/2 longitudinis tectis, lamina foliorum rigida, spathis brevioribus, inflorescentia usque ad 80 floribus, pedicellis usque ad 40 mm longis, tepalis minoribus 3.8–4 × 1.6–1.8 mm, staminum filamentibus brevioribus, ovario obovoideo, laeviter papilloso, maiore, stilo 2–6 mm longo, capsula maiore.*

Description: Bulb ovoid, 10–15 × 8–12 mm, with outer tunics fibrous-coriaceous, dark brown, the inner ones membranous, whitish. Scape glabrous, erect, 18–24 cm high, covered by leaf sheaths for 1/2 of its length. Leaves 3–4, green, semicylindrical, costate, with blade rigid, 8–20 cm long. Spathe persistent, with 2 unequal valves, longer than umbel, the larger 7-nerved, 4–7 cm long, the smaller 5–7-nerved, 2–4 cm long. Inflorescence fastigiate, compact, 25–80-flowered; pedicels unequal, flexuous, 8–40 mm long. Perigon conic-campanulate, with tepals equal, greenish yellow tinged with purplish, oblong, rounded at apex, 3.8–4 × 1.6–1.8 mm. Stamens simple, exerted, with filaments subulate, 3.5–5 mm long, white below, purplish above, connate at base into an annulus 0.4–0.5 mm high; anthers oblong, yellow, rounded at apex, 1.2–1.3 × 0.8–0.9 mm. Ovary obovoid slightly throttled, green, slightly papillose above, 1.8–2 × 1.8–2 mm. Style white, 2–6 mm long. Capsule obovoid, green, 4.5–5 × 4.5–5 mm.

Etymology: From “Karvounis” old name of Ambelos mount from Samos (Aegean Island).

Distribution: This species is localized in the top of Mt. Ambelos from Samos island in the Aegean area, where it grows into the orophilous cushion-like vegetation.

(8) *Allium lefkadensis* Brullo, Giusso & Musarella, sp. nov.

Holotype: Greece, Lefkàda, Ionian Islands, Mt. Elati, near the top at 1000 m a.s.l., 16/07/2011, S. Brullo & G. Giacalone s.n. (CAT).

Diagnosis: *Allio stamineo simili sed tunicis interioribus bulborum brunneo-purpurescentibus, scapis minoribus e vaginis foliorum per 1/4–1/3 longitudinis tectis, lamina foliorum 8–16 mm, spathis brevioribus, tepalis minoribus, pruinosis, staminum filamentibus supra roseam suffusis, ovario maiore, stilo longiore.*

Description: Bulb ovoid, 15 × 10 mm, with outer tunics coriaceous, dark brown, the inner ones membranous, reddish-brown. Scape glabrous, erect, 10–16 cm high, covered by leaf sheaths for 1/4–1/3 of its length. Leaves 4, green, semicylindrical, costate, 8–16 cm long. Spathe persistent, with 2 unequal valves, longer than umbel, the larger 7-nerved, 3–4 cm long, the smaller 5-nerved, 1.5–2 cm long. Inflorescence lax, diffuse, 20–25-flowered; pedicels unequal, flexuous, 10–25 mm long. Perigon conical-campanulate, with tepals equal, greenish yellow pruinose, oblong, rounded at apex, 4.5 × 2 mm. Stamens simple, exerted, with filaments subulate, 6–7 mm long, white below and slightly tinged with pink above, connate at base into an annulus 0.5–0.6 mm high; anthers oblong, straw, apiculate at apex, 1.2–1.4 × 0.6–0.7 mm. Ovary subglobose, yellow-greenish, slightly rugose-papillose above, 2 × 2–2.1 mm. Style white, 2.5–6 mm long. Capsule not observed.

Etymology: From “Lefkàda”, the Greek Ionian island where this species is confined.

Distribution: The species was observed only on the top of Mt. Elati at Lefkàda Ionian Island.

2.2. Phytogeographical Analysis

Regarding the life forms (Table 1), this florula is characterized mainly by hemicryptophytes (H) (43.06%), followed by chamaephytes (Ch) (34.86%), while geophytes (G) (9.78%) and therophytes (T) (9.15%) are clearly inferior. Finally, nanopharenophytes (NP) (2.68%) and phanerophytes (P) (0.47%) are negligible. In fact, due to the extremely harsh conditions of these high mountain habitats, only plants with particular structural adaptations can aggregate in plant communities able to express their potential to the fullest. In this respect, the hemicryptophytes and chamaephytes, being perennial plants characterized by a habit slightly raised from the soil, are those that are best suited to these environments. They are affected by a climate with very cold winter, characterized by long periods of snow cover, strong winds blowing on the mountain tops, the marked daily temperature ranges, hot and dry summers. In particular, these habitats are characterized by the dominance of dwarf shrub chamaephytes, showing often a pulvinate habit that tolerates better these extreme environmental conditions. Instead, nanopharenophytes and phanerophytes do not go beyond the timberline, while geophytes and therophytes, having no adaptations, are very rare and grow usually into the shrubs.

Table 1. Life forms of the investigated orophilous flora (from [70–77]).

Life Form	n.	%
Ch total	221	34.86
Ch caesp	7	1.10
Ch frut	28	4.42
Ch pulv	45	7.10
Ch rept	9	1.42
Ch succ	9	1.42
Ch suffr	123	19.40
G total	62	9.78
G bulb	42	6.62
G rhiz	20	3.15
H total	273	43.06
H bienn	13	2.05
H caesp	105	16.56
H rept	13	2.05
H rhiz	3	0.47
H ros	30	4.73
H scap	109	17.19
T total	58	9.15
T scap	58	9.15
NP	17	2.68
P	3	0.47
TOTAL	634	100

From the chorological viewpoint, being Mediterranean mountains, the floristic set featuring these habitats, shows a clear predominance of Mediterranean species (Table 2). In particular, the Mediterranean element shows the highest percentage (42.43%), within which the more representative are the East-Mediterranean taxa (29.65%), while the circum-mediterranean ones present lower percentages (9.62%). As concerns the other mediterranean elements, they are scarcely represented. Apart to the Mediterranean element, the endemic one is very high represented (40.38%).

Table 2. Chorotypes of the investigated orophilous flora (from [70–77]).

Chorotypes	N.	%
Wide distribution		
total	35	5.52
cosmop	9	1.42
circumboreal	3	0.47
paleotemp	23	3.63
Europeans		
total	74	11.67
european	10	1.58
eurasian	20	3.15
euro-siberian	3	0.47
euro-medit	32	5.05
euro-medit-irano-turan	9	1.42
Mediterraneans		
total	269	42.43
circum-medit	61	9.62
E-medit	188	29.65
N-medit	10	1.58
medit-irano-turan	9	1.42
medit-asian	1	0.16
Endemics		
total	256	40.38
end Balkan	58	9.15
end Greece	39	6.15
end NC Greece	15	2.37
end CS Greece	48	7.57
end Sterea Ellas	16	2.52
end Peloponnese	45	7.10
end Euboea	6	0.95
end Ionian islands	7	1.10
end E-Aegean	15	2.37
end N-Aegean	7	1.10
TOTAL	634	100

Within the endemic set, different endemisms can be distinguished, such as: Balkan one which is the more frequent (22.66%), CS Greece one (18.75%), Peloponnese one (17.58%), Greece one (15.23%), Sterea Ellas one (6.25%), while the other endemic species occurring in the Greek islands show a lower percentage, such as those ones of E-Aegean islands (5.86%), Ionian islands (2.73%), N-Aegean (2.73%), and Euboea (2.34%) (Table 3). Other elements are less significant, such as the European one (11.67%) and the wide distribution one (5.52%), the latter including circumboreal, cosmopolite, and paleotemperate species (Table 2).

Table 3. Endemic chorotypes of the investigated orophilous flora.

Chorotype	n.	%
end Balkan	58	22.66
end CS Greece	48	18.75
end Peloponnese	45	17.58
end Greece	39	15.23
end Sterea Ellas	16	6.25
end NC Greece	15	5.88
end E-Aegean	14	5.86
end Ionian islands	7	2.73
end N-Aegean	7	2.73
end Euboea	6	2.34
TOTAL	256	100

This diversity of endemic species in cacuminal stations of the investigated mountain ranges of Greece is clearly to be connected to the paleogeographic vicissitudes that these territories have had in the last million years. Most probably the geographical isolation of these mountain massifs has clearly increased the speciation processes in the orophilous populations confined in the cacuminal stands, mainly in those ones having a relic character.

2.3. Phytosociological Investigation

Previously, the orophilous pulvinate vegetation of central-southern and insular Greece hitherto known in literature were included in *Daphneeto-Festucetea* class as described by Quézel [35]. Within this class, the associations were arranged according to the syntaxonomical scheme proposed by that author, afterwards modified by Quézel et al. [80]:

DAPHNO OLEOIDIS-FESTUCETEA VARIAE Quézel 1964, corr. Quézel et al. 1992

Syn.: *Daphneeto-Festucetea* Quézel 1964, *Vegetatio*, 12:325

Lectotypus: *Daphno oleoidis-Festucetalia variae* Quézel 1964

DAPHNO OLEOIDIS-FESTUCETALIA VARIAE Quézel 1964, corr. Quézel et al. 1992

Syn.: *Daphneeto-Festucetalia* Quézel 1964, *Vegetatio*, 12:325

Lectotypus: *Eryngio multifidi-Bromion fibrosi* Quézel 1964

STIPO PULCHERRIMAE-MORINION PERSICAE Quézel 1964, corr. Quézel et al. 1992

Syn.: *Stipeto-Morinion* Quézel 1964, *Vegetatio*, 12: 326

Lectotypus: *Scabioso taygeteae-Onosmetum leptanthae* Quézel 1964

Scabioso taygeteae-Onosmetum leptanthae Quézel 1964 *Vegetatio*, 12:327

Syn.: Ass. à *Scabiosa taygetea* et *Onosma leptanthum* Quézel 1964

Galio lucidi-Ribetum uvae-crispae Quézel 1964, *Vegetatio*, 12:329

Syn.: ass. à *Galium lucidum* et *Ribes uva-crispa* Quézel 1964

Onobrychido minoris-Juniperetum foetidissimae Quézel 1973, *Biol. Gallo-Hell.* 5(1):147

Syn.: ass. à *Juniperus foetidissima* et *Onobrychis ebnooides* var. *minor* Quézel 1973

Juniperetum foetidissimae Georgiadis & Dimopoulos 1993, *Bot. Helv.* 103:152 (nom. inval.)

scabiosetosum ochroleucae Maroulis & Georgiadis 2005, *Fitosociologia* 42(1):37

Acer monspessulano-Prunetum mahaleb Georgiadis & Dimopoulos 1993, *Bot. Helv.* 103:153 (nom. inval.)

Astracantho thracicae-Marrubietum cyllenei Georgiadis & Dimopoulos 1993, *Bot. Helv.* 103:153 (nom. inval.)

galietosum taygetei Georgiadis & Dimopoulos 1993, *Bot. Helv.* 103:153 (nom. inval.)

Stipa pennata subsp. *pulcherrima*-*Sesleria vaginalis* comm. Maroulis & Georgiadis 2005, *Fitosociologia* 42(1):42

Hippocrepis comosa-*Stipa pennata* subsp. *pulcherrima* comm. Maroulis & Georgiadis 2005, *Fitosociologia* 42(1):43

ERYNGIO MULTIFIDI-BROMION FIBROSI Quézel 1964, corr. Quézel et al. 1992

Syn.: *Eryngieto-Bromion* Quézel 1964, *Vegetatio*, 12:326

Lectotypus: ass. à *Astragalus cylleneus* et *Cirsium cylleneum*, Quézel 1964

Sideritetum theezantis Quézel 1964, *Vegetatio*, 12:331

Syn.: ass. à *Sideritis theezans* Quézel 1964

Cirsio cyllenei-Astragaletum cyllenei Quézel 1964, *Vegetatio*, 12:332

Syn.: ass. à *Astragalus cylleneus* et *Cirsium cylleneum* Quézel 1964

Marrubio velutini-Astragaletum cretici Quézel 1964, *Vegetatio*, 12:334

Syn.: ass. à *Astragalus creticus* ssp. *rumelicus* et *Marrubium velutinum* Quézel 1964

Astracantho thracicae-Marrubietum cyllenei Georgiadis & Dimopoulos 1993, *Bot. Helv.* 103:153, nom. inval.

typicum Georgiadis & Dimopoulos 1993, *Bot. Helv.* 103: 158 (nom. inval.)

festucetosum cyllenecae Georgiadis & Dimopoulos 1993, *Bot. Helv.* 103:158 (nom. inval.)

Marrubio cyllenei-Astragaletum rumelici Maroulis & Georgiadis 2005, *Fitosociologia* 42(1):43
Festuco politae-Festucetum cyllenicae Maroulis & Georgiadis 2005, *Fitosociologia* 42(1):44
 ASTRAGALO ANGUSTIFOLII-SESLERION COERULANTIS Quézel 1964, corr. Quézel et al. 1992.
 Syn.: *Astragaleto-Seslerion* Quézel 1964, *Vegetatio*, 12:326
 Lectotypus: ass. à *Minuartia stellata* et *Erysimum parnassi* Quézel 1964, *Vegetatio*, 12:326
Rindero graecae-Acantholimetum graeci Quézel 1964, *Vegetatio*, 12:336
 Syn.: ass. à *Acantholimon echinus* et *Rindera graeca* Quézel 1964
Asteri cyllenei-Globularietum stygiae Quézel 1964, *Vegetatio*, 12:337
 Syn.: ass. à *Aster cylleneus* et *Globularia stygia* Quézel 1964
Convolvulo cochlearis-Astragaletum lactei Quézel 1964, *Vegetatio*, 12:339
 Syn.: ass. à *Convolvulus cochlearis* et *Astragalus lacteus* Quézel 1964
Erysimo parnassi-Minuartietum stellatae Quézel 1964, *Vegetatio*, 12:340
 Syn.: ass. à *Minuartia stellata* et *Erysimum pusillum* ssp. *parnassi* Quézel 1964
Paronychio chionaeae-Thymetum ciliato-pubescentis Quézel 1964, *Vegetatio*, 12:341
 Syn.: ass. à *Paronychia chionaea* et *Thymus hirsutus* ssp. *ciliato-pubescentis* Quézel 1964
Violo-Seslerietum vaginalis Quézel 1973, *Biol. Gallo-Hell.* 5(1):152
 Syn.: ass. à *Sesleria coerulans* et *Viola stojanowii* Quézel 1973
Euphrasio salisburgensis-Asperuletum nitidae Quézel 1974, *Rev. Biol. Ecol. Medit.* 1(1):19
 Syn.: ass. à *Asperula nitida* et *Euphrasia salisburgensis* Quézel 1974
Festuco cyllenicae-Asperuletum boissieri Georgiadis & Dimopoulos 1993, *Bot. Helv.* 103: 158, nom. inval.

Within this hierarchical arrangement proposed by Quézel [35], the most relevant aspect that emerges from this classification was to use only the altitudinal distribution of plant communities as a discriminating criterion for alliance identification. In fact, according to this author, the order *Daphno-Festucetalia* includes three alliances which are widespread in all the mountains of Greece and are distributed exclusively at different altitudinal ranges. They are: (a) *Stipeto-Morinion* occurring between 1500 and 1700 m; (b) *Eryngieto-Bromion* between 1700 and 2200 m; (c) *Astragaleto-Seslerion* above 2200 m, sloping down sometimes up to 1700 m. Another important factor to note is that these alliances do not provide any information on the real phytogeographic role of the rich floristic contingent featuring this type of orophilous vegetation. Indeed, Quézel [35] considered as characteristics of these alliances mainly species having a wide East Mediterranean or even circum-Mediterranean distribution, showing also a wide altitudinal range and not limited to a narrow belt as stated by the author. In particular, the author proposed *Stipa endotricha* (= *S. pennata* var. *pulcherima*), *Melica ciliata*, *Asphodeline lutea*, *Ononis pusilla*, *Morinia persica*, *Scutellaria rupestris* (= *S. peregrina* subsp. *rupestris*), *Pteroccephalus perennis* and *Anthemis spruneri* (= *A. montana* var. *incana*) as characteristics of *Stipeto-Morinion*; while *Bromus riparius* (= *B. fibrosus*), *Helictotrichon aetolicum* (= *Avena australis*), *Eryngium multifidum*, *Thymus sibthorpii*, *Galium thymifolium*, *Campanula spathulata*, *Podospermum canum* var. *alpinum*, and *Carduus tmoleus* (= *C. armatus*), as characteristics of *Eryngieto-Bromion*; finally, *Sesleria tenerrima* (= *S. coerulans*), *Iberis sempervirens*, *Astragalus angustifolius*, *Draba lasiocarpa* (= *D. affinis*), *Viola graeca* (= *Viola heterophylla* subsp. *graeca*), *Trinia frigida* (*Apinella frigida*), *Trinia guicciardii* (*Apinella guicciardii*), *Acantholimon graecum* (= *A. echinus*), *Lactuca intricata* (= *L. graeca*), *Veronica orsiniana* subsp. *teucroides* (= *V. austriaca* var. *teucroides*), *V. thessalica*, *V. thymifolia*, *Asperula boissieri*, and *Tragopogon crocifolius* subsp. *samaritani* as characteristics of *Astragaleto-Seslerion*. On the basis of literature and personal observations, these taxa can not be used to characterize alliances, at most, some of them may be included among the characteristics of order or class, while others are simply accidentals or ubiquitous species. Even, the same author [35,36] underlined often some perplexity in the inclusion of a given association in one of the three alliances identified by him, due to the contemporaneous occurrence in the relevés of characteristic species belonging to all three alliances. Therefore, the alliances identified by Quézel [35] are not being characterized by exclusive species, since they include ubiquitous or species of wider ecological requirements, that are not strictly related to those specific habitats; in this way they do not provide

clear information from an ecological and phytogeographical point of view. Based on the above, these alliances do not satisfy the prerequisites required by the sigmatist phytosociological method. They only create a lot of confusion and ambiguity in the syntaxonomical arrangement of this very peculiar kind of orophilous vegetation. In conclusion, these alliances are really ambiguous names that must be rejected (art. 36). Therefore, a new phytosociological framework is necessary to propose. The designation of new alliances must be essentially based on the phytogeographic criteria and such characteristics must include steno-endemic species in order to define unequivocally the geographical boundaries of each syntaxon as well as its syntaxonomical role.

In order to emphasize the distribution of characteristic species within the three alliances and syntaxa of higher rank according to the hierarchic arrangement proposed by Quézel [35], a synoptic table (Appendix B, Table A2) was processed including all the phytosociological relevés published until now on this type of orophilous vegetation in central-southern Greece by Quézel [35,38] and Quézel and Katrassas [40], as well as other later authors as Georgiadis and Dimopoulos [42] and Maroulis and Georgiadis [44]. From the analysis of this table, the floristic comparison among the hitherto recognized associations, which are well differentiated from the phytosociological viewpoint, shows clearly that the species proposed as characteristics of the alliances are distributed indifferently in all three syntaxa, often with high frequency values. Therefore, it can be easily deduced that a single association cannot be clearly and unambiguously attributed to a specific alliance. Quézel [35] in order to attribute an association to a given alliance, he relied mainly on its altitudinal distribution, rather than considering the information relating to its floristic cortège. Unfortunately, the species selected by the author to define these alliances are not strictly linked to well-defined altitudinal bands, but are widespread almost at all altitudes. From this, it can easily be deduced that, in the case of the orophilous pulvinate vegetation of the Greek mountains, as well as of other geographic territories, this criterion can not be followed. Instead, a purely phytogeographical method must be selected, mainly based on endemic flora, that gives more significant information under phytosociological feature.

On the basis of several unpublished phytosociological relevés carried out by us in the summit stands of most of central and southern Greek mountains as well as in some islands (Figure 1), it was possible to verify that only a strictly phytogeographic policy can allow for a correct syntaxonomic arrangement of these communities, similar to what has been achieved for other Mediterranean territories [22–48]. In fact, it is much more realistic and meaningful to identify alliances based on floristic elements that give clear information on phytogeographic correlations of the various associations, rather than on their altitudinal distribution. In particular, the flora characterizing the orophilous community usually shows a significant richness in relict species, often very isolated, or represented by geographical vicariants of remarkable phytosociological significance. Therefore, for a syntaxonomic arrangement that can best express the floristic and structural organization of the pulvinate-orophilous plant communities currently occurring in the Greek mountains, it has to be based on the choice of species suitable for providing more precise information on their phytogeographical role. Following this viewpoint, this study presents a clearer and more comprehensive syntaxonomical overview of these plant communities, reflecting their origin and diversification. Therefore, for a correct floristic characterization of higher syntaxa (alliances, orders and classes) allowing differentiation of specific alliances, the choice should fall on endemics with restricted distribution, such as those confined to one or few neighbouring or close mountain ranges, and it should gradually move on to those endemics with wider ranges and the other more widespread taxa which should be used for the designation of orders and classes. In addition, the floristic contingent that differentiates the higher syntaxa, and particularly in the case of orophilous vegetation featuring the Mediterranean mountains, provides clearer information about the relationships that the plant communities show among them, since they are the result of paleogeographic vicissitudes of the territories that host them.

Furthermore, it must be emphasized that Quézel et al. [80] when lectotypified the class *Daphno-Festucetea* and the corresponding order *Daphno-Festucetalia*, corrected respectively the two names in *Daphno oleoidis-Festucetea variae* and *Daphno oleoidis-Festucetalia variae*. The use of

Daphne oleoides and *Festuca varia* for giving the name to the two syntaxa brings further confusion and ambiguity, since both species are not pertinent to this type of vegetation. In fact, *Daphne oleoides* is widespread in all Mediterranean mountains and is considered a typical characteristic species of the class *Junipero-Pinetea sylvestris* Rivas-Martínez 1964, as emphasized by Rivas-Martínez [52], Rivas-Martínez et al. [53–55,80–82], Stanisci [56] and Brullo et al. [57], while in the pulvinate dwarf shrub vegetation it is rather rare and occasional. As concerns *Festuca varia*, this species has a properly alpine distribution and is totally absent in Greece [83], where it is replaced by various other species of this genus. Moreover, it is not possible to identify in a univocal and correct way what is the species of *Festuca* to which Quézel [35] refers in naming these syntaxa.

Besides, among the species proposed by Quézel [35] as characteristic of the class and order is to be noted that some of them, such as *Juniperus communis* var. *hemisphaerica*, *Berberis cretica*, *Prunus prostrata* and mainly *Daphne oleoides*, are linked to the orophilous communities characterized by phanerophytes and nanophanerophytes belonging to the class *Junipero-Pinetea sylvestris* Rivas-Martínez 1965 nom. invers. propos. (= *Pino-Juniperetea* Rivas-Martínez 1965). This is in agreement with the literature data concerning this type of orophilous forest vegetation [55–57,63,84].

In particular as emphasized by Brullo et al. [57] and Mucina et al. [84], the woody communities characterized by the dominance of erect or prostrate conifers occurring in Greece and other central-eastern Mediterranean territories, must be ascribed to syntaxa exclusive to these mountains, represented by the order *Berberido creticae-Juniperetalia excelsae* Mucina in Mucina et al. 2016 and some alliances, such as *Berberido aetnensis-Pinion laricionis* (Brullo et al. 2001) Mucina & Theurillat in Mucina 2016, *Juniperion excelso-foetidissimae* Em ex Matevski et al. 2010, *Berberido creticae-Juniperion foetidissimae* Brullo et al. 2001, etc. These forest communities are relegated to the supra- and oro-Mediterranean belts, as well as supra-temperate belt, where they show a fragmentary distribution, which confirms their relict origin. Usually, they occupy an intermediate position between the typical mountain forests of *Quercus-Fagetea* and pulvinate orophilous dwarf shrubs linked to cacuminal stands.

Besides as emphasized by Brullo et al. [57], some associations of *Daphno-Festucetea* described by the previous authors must be rather clearly attributed to the class *Junipero-Pinetea sylvestris*, since they show a floristic, structural and ecological feature of the last syntaxon. In particular, this is the case of the “ass. à *Galium lucidum* et *Ribes uva-crispa* Quézel 1964”, “ass. à *Juniperus foetidissima* et *Onobrychis ebanoidea* var. *minor* Quézel 1973”, “*Juniperetum foetidissimae* Georgiadis & Dimopoulos 1993”, “*Acer monspessulano-Prunetum mahaleb* Georgiadis & Dimopoulos 1993”, contributing further to confer a marked ambiguity to the class *Daphno-Festucetea*.

For the reasons above mentioned, the names *Daphno-Festucetea* Quézel 1964 and *Daphno-Festucetalia* Quézel 1964 must be proposed as nomina ambigua rejicienda (Art. 36), since they are based on very ambiguous alliances, are sources of continuous errors in the univocal and unambiguous designation of the relative associations. The new names proposed here in order to replace those of the two aforesaid syntaxa are *Cerastio candidissimi-Astragaletea rumelici* and *Eryngio multifidi-Armerietalia orphanidis*, both having a large distribution in the high mountains of southern Balkans and Aegean area.

The floristic analysis of the investigated plant communities occurring mainly in the high mountains of the Peloponnese and Sterea Ellas, as well as in some Ionian Islands and Euboea, showed the existence of significant sets of endemic species, which have a well-defined geographical distribution that allows the identification of alliances based on a clear phytogeographical role, emphasizing especially the palaeogeographical isolation of the various mountain areas among them.

Based on these criteria, it was possible to distinguish in the aforesaid territories some new alliances, which are well circumscribed from the phytogeographical point of view and allow a very realistic arrangement of the orophilous dwarf shrubby vegetation occurring in these Greek high mountains, emphasizing their floristic affinities. These are: *Marrubio velutini-Thymion parnassici*, distributed in the mountains of Sterea Hellas and Attica; *Festuco achaicae-Marrubion cyllenei*, from the North Peloponnese mountains; *Sideritido clandestinae-Asperulion mungieri*, from South Peloponnese mountains. Moreover,

Astragalion cephalonici, from the Ionian islands of Cephalonia and Lefkada, as well as *Astragalion euboici* from the island of Euboea, must be added to these alliances.

In order to highlight that these alliances have a clear phytosociological role with a well-defined phytogeographic boundary than those proposed by Quézel [35], the associations examined in Appendix B, Table A2 were processed according to this new syntaxonomic scheme. As can be clearly observed in the new Table A3 (Appendix B), the associations fall within floristically well-differentiated alliances, since they are characterized by endemics exclusive of geographically distinct areas, which are characterized by very similar paleogeographic vicissitudes.

In addition, further phytosociological investigations were carried out in the high mountains of some islands of North Aegean area (Thassos, Lesbos, Chios, and Samos) peaking over 1000 m. a.s.l and hosting this kind of vegetation. Within the orophilous pulvinate dwarf shrubs communities occurring in these islands, some characteristic species of *Cerastio candidissimi-Astragaletea rumelici* class are still present (although numerically reduced), while species belonging to the *Eryngio multifidi-Armerietalia orphanidis* order and related alliances are fully missing.

In these insular high-mountain areas, there is a rich set of endemics or eastern Aegean taxa, which allow to differentiate a new vicariant order, namely *Noaeo mucronate-Silenetalia urvillei*. On essential phytogeographical basis, it is possible to distinguish three floristically well-differentiated alliances, represented by *Asperulion samiae*, circumscribed to Samos, *Festuco pseudosupinae-Astragalion aegeici*, distributed to Chios and Lesbos, and *Seslerio achtarovii-Anthemidion tenuilobae*, from Thassos. Based on the observations above emphasized, a new syntaxonomic scheme is proposed:

CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI Musarella, Brullo & Giusso cl. nov.

ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS Musarella, Brullo & Giusso ord. nov.

MARRUBIO VELUTINI-THYMION PARNASSICI Musarella, Brullo & Giusso all. nov.

Marrubio velutini-Astragaletea rumelici Quézel 1964

typicum

achilleetosum nobilis Quézel 1964

Astragalo lactei-Convulvuletum cochlearis Quézel 1964

Nepeto epiroticae-Astragaletea corynthisci (Quézel 1964) Musarella, Brullo & Giusso nom. nov.

Nepeto spruneri-Astragaletea corynthisci Musarella, Brullo & Giusso ass. nov.

Thymo parnassici-Paronychietum polygonifoliae Quézel 1964

typicum

linetosum angustifolii Quézel 1964

Nepeto spruneri-Astragaletea tymphrestei Musarella, Brullo & Giusso ass. nov.

Violo stojanowii-Seslerietum vaginalis Quézel 1973

Erysimo parnassici-Minuartietum stellatae Quézel 1964

Aurinio gionae-Minuartietum stellatae Musarella, Brullo & Giusso ass. nov.

Achilleo fraisii-Dianthetum tymphrestei Musarella, Brullo & Giusso ass. nov.

Asperulo luteae-Achilleetum umbellatae Musarella, Brullo & Giusso ass. nov.

Astragalo lactei-Asperuletum apiculatae Musarella, Brullo & Giusso ass. nov.

Diantho minutiflori-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov.

Scabioso ochroleuca-Sideridetum raeseri Musarella, Brullo & Giusso ass. nov.

Ranunculo psilostachydis-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov.

Edraiantho parnassici-Globularietum cordifoliae Musarella, Brullo & Giusso ass. nov.

Thymo parnassici-Astragaletea parnassici Musarella, Brullo & Giusso ass. nov.

Chamaecytiso hirsuti-Astragaletea parnassici Musarella, Brullo & Giusso ass. nov.

Onobrychido pentelicae-Genistetum parnassicae Musarella, Brullo & Giusso ass. nov.

Allio cithaeronis-Dianthetum serratifolii Musarella, Brullo & Giusso ass. nov.

Inulo methanae-Sideridetum atticae Musarella, Brullo & Giusso ass. nov.

ASTRAGALION CEPHALONICI Musarella, Brullo & Giusso all. nov.

Helictotricho convoluti-Thymetum holosericeae Musarella, Brullo & Giusso ass. nov.

- Saturejo cuneifoliae-Thymetum holosericeae* Musarella, Brullo & Giusso ass. nov.
Scutellario cephalonicae-Astragaletum cephalonici Musarella, Brullo & Giusso ass. nov.
Paronychio graecae-Astragaletum erinacei Musarella, Brullo & Giusso ass. nov.
- ASTRAGALION EUBOICI Musarella, Brullo & Giusso all. nov.
Sideritido euboeae-Astragaletum euboici Musarella, Brullo & Giusso ass. nov.
Scabioso webbianaee-Phlomidetum samiae Musarella, Brullo & Giusso ass. nov.
Sideritido euboeae-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov.
Inulo limonellae-Seslerietum krajiniae Musarella, Brullo & Giusso ass. nov.
- FESTUCO ACHAICAE-MARRUBION CYLLENEI Musarella, Brullo & Giusso all. nov.
Cirsio hypopsilii-Astragaletum taygetici Quézel 1964 corr.
Astero cyllenei-Globularietum stygiae Quézel 1964
Euphrasio salisburgensis-Asperuletum oetaeae Quézel & Katrabassa 1974 corr.
Marrubio cyllenei-Astragaletum calaorytensis Musarella, Brullo & Giusso ass. nov.
elytrigietosum intermediae Musarella, Brullo & Giusso subass. nov.
hippocrepidetum comosae Musarella, Brullo & Giusso subass. nov.
tulipetosum australis Musarella, Brullo & Giusso subass. nov.
Plantagini graecae-Astragaletum cyllenei Musarella, Brullo & Giusso ass. nov.
Festuco achaicae-Minuartietum stellatae Musarella, Brullo & Giusso ass. nov.
Alyso taygetei-Plantaginetum alpestris Musarella, Brullo & Giusso ass. nov.
Hieracio sartoriani-Seslerietum tenerrimae Musarella, Brullo & Giusso ass. nov.
Asperulo boissieri-Festucetum cyllenicae Georgiadis & Dimopoulos ass. nov.
Ranunculo brevifolii-Seslerietum tenerrimae Musarella, Brullo & Giusso ass. nov.
Astragaletum hellenico-erinacei Musarella, Brullo & Giusso ass. nov.
Festucetum polito-cyllenicae Maroulis & Georgiadis 2005
Arenario filicaulis-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov.
Aurinio moreanae-Lomelosietum crenatae Musarella, Brullo & Giusso ass. nov.
Onosmo malickyi-Astragaletum hellenici Musarella, Brullo & Giusso ass. nov.
Violo graecae-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov.
Tripodio graeci-Helictotrichetum heldreichii Musarella, Brullo & Giusso ass. nov.
- SIDERITIDO CLANDESTINAE-ASPERULION MUNGIERI Musarella, Brullo & Giusso all. nov.
Scabioso taygeteae-Onosmetum leptanthae Quézel 1964
Danthoniastro compacti-Fumanetum alpinae Musarella, Brullo & Giusso ass. nov.
Sideritido clandestinae-Astragaletum taygetici Musarella, Brullo & Giusso ass. nov.
Rindero graecae-Acantholimetum graeci Quézel 1964
Onosmo heterophyllae-Astragaletum erinacei Musarella, Brullo & Giusso ass. nov.
Astragaletum lacteo-taygetici Musarella, Brullo & Giusso ass. nov.
Violo parnoniae-Astragaletum erinacei Musarella, Brullo & Giusso ass. nov.
astragaletosum erinacei Musarella, Brullo & Giusso subass. nov.
asperuletosum malevonensis Musarella, Brullo & Giusso subass. nov.
- NOAEO MUCRONATAE-SILENETALIA URVILLEI Musarella, Brullo & Giusso ord. nov.
- ASPERULION SAMIAE Musarella, Brullo & Giusso all. nov.
Astragaletum samii Musarella, Brullo & Giusso ass. nov.
Thymo samii-Astragaletum condensati Musarella, Brullo & Giusso ass. nov.
Campanulo lyratae-Genistetum parnassicae Musarella, Brullo & Giusso ass. nov.
Arenario guicciardii-Seslerietum anatolicae Musarella, Brullo & Giusso ass. nov.
- FESTUCO PSEUDOSUPINAE-ASTRAGALION AEGEICI Musarella, Brullo & Giusso all. nov.
Anthemido discoideae-Astragaletum aegeici Musarella, Brullo & Giusso ass. nov.
Diantho zonati-Astragaletum lesbiaci Musarella, Brullo & Giusso ass. nov.
Galio insularis-Thymetum sypilei Musarella, Brullo & Giusso ass. nov.
Acantholimo aegaei-Astragaletum lesbiaci Musarella, Brullo & Giusso ass. nov.

SESLERIO ACHTAROVII-ANTHEMIDION TENUILOBAE Musarella, Brullo & Giusso all.nov.
Paronychio bornmuelleri-Astragaletea odoniani Musarella, Brullo & Giusso ass. nov.

Finally, in order to highlight the phytosociological relationships among the investigated associations belonging to *Cerastio candidissimi-Astragaletea rumelici*, two synoptical tables regarding the orders *Eryngio multifidi-Armerietalia orphanidis* (Appendix B, Table A4) and *Noaeo mucronatae-Silenetalia urvillei* (Appendix B, Table A5) are provided.

2.4. Description of the Vegetation

CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI Musarella, Brullo & Giusso cl. nov. *hoc loco*

Syn.: *Daphneeto-Festucetea* Quézel 1964, Vegetatio 12:325, p.p., nom. amb. rejic. propos. (art. 36)
Daphno oleoidis-Festucetea variae Quézel 1964, corr. Quézel, Barbero & Akman 1992, Ecol. Medit. 18: 82, p.p., nom. amb. rejic. propos. (art. 36)

Holotypus: *Eryngio multifidi-Armerietalia orphanidis* Musarella, Brullo & Giusso ord. nov. *hoc loco*.

Characteristic species: *Achillea umbellata*, *Alyssum montanum* subsp. *graecum* *Arenaria guicciardii*, *Asperula boissieri*, *Asperula lutea*, *Asperula thessala*, *Astragalus rumelicus* subsp. *rumelicus*, *Beta nana*, *Campanula radicata*, *Centaurea pichleri*, *Centaurea raphanina* subsp. *mixta*, *Cerastium candidissimum*, *Crepis fraasii* subsp. *fraasii*, *Dianthus tymphristeus*, *Draba lacaitae*, *Erysimum cephalonicum*, *Erysimum microstylum*, *Erysimum pectinatum*, *Festuca cyllenica* subsp. *cyllenica*, *Festuca polita*, *Fritillaria graeca*, *Fritillaria guicciardii*, *Galium citraceum*, *Galium thymifolium*, *Helianthemum hymettium*, *Herniaria parnassica* subsp. *parnassica*, *Hieracium lazistanum* subsp. *Leithneri*, *Lamium pictum*, *Leontodon graecus*, *Lysimachia serpyllifolia*, *Minuartia confusa*, *Minuartia attica* subsp. *attica*, *Nepeta argolica* subsp. *argolica*, *Paronychia albanica* subsp. *graeca*, *Poa thessala*, *Podospermum canum* var. *alpinum*, *Pterocephalus perennis* subsp. *perennis*, *Scutellaria rupestris* subsp. *parnassica*, *Silene radicata* subsp. *radicata*, *Stipa endotricha*, *Teucrium montanum* var. *parnassicum*, *Trinia frigida*, *Trinia guicciardi*, *Trisetum tenuiforme*, *Verbascum epixanthinum* var. *epixanthinum*, *Veronica erinoides*, *V. thymifolia*, *Viola chelmea*, *V. greca*.

Differential species: *Achillea fraasii*, *Achillea holosericea*, *Acinos alpinus* subsp. *meridionalis*, *Aethionema saxatile* subsp. *graecum*, *Anthemis cretica* subsp. *cretica*, *Asyneuma limonifolium*, *Aubrieta deltoidea* var. *deltoidea*, *Aubrieta deltoidea* subsp. *intermedia*, *Bromopsis lacmonica*, *Bromus riparius*, *Campanula spathulata* subsp. *spathulata*, *Carduus tmoleus*, *Carlina frigida*, *Carum graecum* subsp. *graecum*, *Carum meoides*, *Dianthus integer* subsp. *minutiflorus*, *Dianthus viscidus* var. *viscidus*, *Draba lasiocarpa*, *Euphorbia herniariifolia*, *Festuca callieri* subsp. *callieri*, *Festuca jeanpertia* subsp. *jeanpertia*, *Galium incanum* subsp. *incanum*, *Geranium macrostylum*, *Geranium subcaulescens*, *Helictotrichon aetolicum*, *Koeleria mitrushi*, *Linaria peloponnesiaca*, *Linum elegans*, *Minuartia juniperina*, *Minuartia stellata*, *Morina persica*, *Myosotis suaveolens*, *Myosotis sylvatica* subsp. *canea*, *Onobrychis alba* subsp. *pentelica*, *Pimpinella tragi* subsp. *polyclada*, *Pimpinella tragi* subsp. *tragi*, *Ranunculus sartorianus*, *Sedum laconicum*, *Sempervivum marmoreum*, *Sesleria tenerrima*, *Sesleria vaginalis*, *Silene bupleuroides* subsp. *staticifolia*, *Stachys heldreichii*, *Telephium orientale*, *Thymus chaubardii*, *Thymus leucotrichus*, *Tragopogon crocifolius* subsp. *samaritanii*.

Structure and ecology: The class groups pulvinate orophilous plant communities characterized by dominance of dwarf shrubs, often with tragacanthoid habit, sometimes mixed with caespitose hemicyptophytes, which constitute quite spaced grasslands, where numerous geophytes or rosulate hemicyptophytes play a relevant physiognomic role. The stands colonized by these communities are usually represented by more or less rocky windy ridges and cacuminal surfaces usually with undeveloped soils, as well as more or less stabilized screes. These habitats are distributed mainly in the mountains at 1500–3000 m of altitude, with stands characterized by quite rigid environmental conditions. Sometimes, especially in situations of insularity these plant communities occur also at lower altitudes, sometimes up to 1000 m. From the bioclimatic point of view, these communities are distributed prevalently within the supra- and oro-Mediterranean belts, as well as in supra- and oro-temperate belts, often of sub-Mediterranean type. Downwards, they tend to penetrate into meso-Mediterranean belt, especially due to the degradation processes of the woodlands or when the

edaphic conditions are particularly critical, as in the case of blocking of the pedogenetic processes. Dynamically, it is a typically orophilous vegetation showing usually a climatophilous role, even if often it is represented by edaphophilous communities. When these communities are localized within the forest belt, they assume a secondary role, being linked usually to processes of woodland degradation. As concerns its floristic arrangement, this vegetation is characterized by a rich set of endemics, often having a relevant taxonomic and phytogeographic significance. Many of them are relict species belonging to Tertiary elements, often represented by groups taxonomically isolated, segregated in a lot of geographical vicariants. Apart from a contingent of endemic taxa, which are proposed as characteristics of this class, other non-strictly endemic species with a wider distribution are considered as “differential species”, since in Greece they are usually localized in this type of orophilous vegetation.

Distribution: According to literature and unpublished personal data, this class has its greater spread on the mountains of mainland Greece, extending northwards to Albania and Macedonia and eastwards in the north-western and western Anatolia, as well as in Euboea and some Ionian Islands. Moreover, although floristically rather impoverished, it is represented also in some islands of north-eastern and northern Aegean, such as Samos, Chios, Lesbos, Samothraki and Thassos, where high mountains occur.

ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS Musarella, Brullo & Giusso ord. nov. *hoc loco*.

Syn.: *Daphneeto-Festucetalia* Quézel 1964, *Vegetatio*, 12:325 p.p., nom. amb. rejic. propos. (art. 36).

Daphno oleoidis-Festucetalia varia Quézel 1964, *Vegetatio*, 12:325, corr. Quézel, Barbero & Akman 1992, *Ecol. Medit.* 18:82, p.p., nom. amb. rejic. propos. (art. 36).

Acantholimo-Astragaleta Voliotis 1973, *Sci. Ann. Fac. Phys. Math Univ. Thess.* 13:237, p.p., *nom. nud.*

Holotypus: *Sideritido raeseri-Thymion parnassici* Musarella, Brullo & Giusso all. nov. *hoc loco*.

Characteristic species: *Acantholimon graecum*, *Alkanna graeca* subsp. *boetica*, *Allium achaium*, *Allium frigidum*, *Alyssum repens* var. *brachyphyllum*, *Armeria orphanidis*, *Asperula rigidula*, *Astragalus angustifolius* subsp. *erinaceus*, *Astragalus rumelicus* subsp. *taygeticus*, *Avenochloa agropyroides*, *Centaurea affinis* subsp. *laconiae*, *Cirsium hypopsilium*, *Crepis incana*, *Dasypyrum hordeaceum*, *Dianthus androsaceus*, *Dianthus biflorus*, *Draba parnassica*, *Echinops taygeteus*, *Erodium chrysanthum*, *Eryngium multifidum*, *Erysimum asperulum*, *Erysimum pusillum*, *Euphorbia deflexa*, *Festuca janpertii* subsp. *achaica*, *Galium taygeteum*, *Geocaryum parnassicum*, *Geocaryum peloponnesiacum*, *Inula candida* subsp. *limonella*, *Noccaea graeca*, *Paronychia albanica* subsp. *graeca*, *Rindera graeca*, *Scutellaria rupestris* subsp. *rupestris*, *Verbascum acaule*.

Structure and ecology: This order groups the orophilous plant communities, as highlighted in the class, linked mainly to the supra-and oro-temperate belts of sub-Mediterranean type, occurring mainly at above 1700–1800 m of altitude. These plant communities show a climatophilous, or sometimes edaphophilous character, usually are localized in the cacuminal stands of the mountains above the timberline. Within this syntaxon the plant communities distributed also at lower altitudes (1000–1700 m) falling in the meso-and oro-Mediterranean belt can be included. In this case, the vegetation is largely represented by secondary communities, often of edaphophilous type, since linked to degradation processes of the woodlands.

Distribution: On the basis of current knowledge, the order seems to be circumscribed to the mountains of Greece, Peloponnese included, as well as the Ionian Islands (Cephalonia and Lefkas) and Euboea.

MARRUBIO VELUTINI-THYMION PARNASSICI Musarella, Brullo & Giusso all. nov. *hoc loco*.

Syn.: *Eryngieto-Bromion* Quézel 1964, *Vegetatio*, 12:326, p.min.p., nom. amb. rejic. propos. (art. 36).

Eryngio multifidi-Bromion fibrosi Quézel 1964, corr. Quézel, Barbero & Akman 1992, *Ecol. Medit.* 18:82 p.min.p., nom. amb. rejic. propos. (art. 36).

Astragaleto-Seslerion Quézel 1964, *Vegetatio*, 12:326, p.min.p., nom. amb. rejic. propos. (art. 36).

Astragalo angustifolii-Seslerion coeruleantis Quézel 1964, corr. Quézel, Barbero & Akman 1992, *Ecol. Medit.* 18:82, p.min.p., nom. amb. rejic. propos. (art. 36).

Stipeto-Morinion Quézel 1964, *Vegetatio*, 12:326, p.min.p, nom. amb. rejic. propos. (art. 36).

Stipo pulcherrimae-Morinion persicae Quézel 1964, corr. Quézel, Barbero & Akman 1992, *Ecol. Medit.* 18:82 p.min.p., nom. amb. rejic. propos. (art. 36).

Holotypus: *Astragalo lactei-Convolutum cochlearis* Quézel 1964, *hoc loco*.

Characteristic species: *Alyssum montanum* subsp. *hymettium*, *Centaurea affinis* subsp. *affinis*, *Centaurea affinis* subsp. *pallidior* *Dianthus viscidus* var. *parnassicus*, *Erigeron glabratus* subsp. *graecus*, *Erysimum parnassi*, *Festuca graeca* subsp. *graeca*, *Galium circae*, *Geocaryum parnassicum*, *Lactuca intricata*, *Linaria parnassica*, *Marrubium velutinum*, *Nepeta parnassica*, *Nepeta spruneri*, *Satureja parnassica*, *Sideritis raeseri* subsp. *raeseri*, *Thymus leucospermus*, *Thymus parnassicus*, *Thymus teucrioides* subsp. *teucrioides*, *Verbascum parnassicum*.

Structure and ecology: Within the order *Eryngio multifidi-Armerietalia orphanidis*, this alliance is that one showing more marked characters of continentality. The associations belonging to this syntaxon seem to have greater floristic structural and ecological correlations with those ones occurring in the northern Greece. Clearly, towards to the north of Greece, the bioclimate becomes markedly more mesic with a progressive decrease of its Mediterranean character. This is reflected quite well in the orophilic pulvinate vegetation, which shows a more marked thermophily in the mountains of southern Greece. Therefore, this syntaxon can be considered as the transition term between the southernmost alliances occurring in the Peloponnese and probably the northernmost ones regarding the mountain ranges of Pindus and Mt. Olympus, which is still to be defined under the phytosociological profile including several associations already defined by Quézel [36]. In particular, the associations falling in the *Marrubio velutini-Thymion parnassici*, while maintaining structurally their prerogatives of shrub-pulvinate community, tend to show a certain increase of the hemicriptophytic component. Further, their floristic settlement increases with elements having more relationships with taxonomic groups having a more northernmost distribution.

Distribution: The alliance is distributed mainly in the massifs of Sterea Ellas, such as Mt. Parnassus, Mt. Giona, Mt. Vardoussia and Mt. Timfristos, as well as of Attica. Probably, plant communities belonging to this syntaxon occur also in other mountains of this continental area of Greece.

Notes: The *Marrubio velutini-Thymion parnassici* does not show any clear floristic, ecological and chorological correlation with the three alliances described by Quézel [35]. In particular, this new syntaxon is floristically differentiated by endemics distributed in the high-mountain belt of the massifs located exclusively in Sterea Ellas and Attica. In addition, this alliance groups associations that are not linked to a well-defined altitudinal belt, but they are distributed from the lower mountain zones (1200–1300 m) up to the high-mountain ones reaching the altitude of 2500 m.

Marrubio velutini-Astragaletum rumelici Quézel 1964, *Vegetatio* 12:334 (Appendix C, Table A6).

Syn.: Association à *Astragalus creticus* subsp. *rumelicus* et *Marrubium velutinum*, Quézel 1964.

Lectotypus: Table 18, rel. 3, Quézel [35], *hoc loco*.

Characteristic species: *Astragalus rumelicus* subsp. *rumelicus*, *A. hellenicus*, *Nepeta parnassica*.

Structure and ecology: The association is located on calcareous and dolomitic substrata, of more or less rocky steep slopes (30°–40°), characterized by eroded or not very deep soils, rich in coarse skeletal component. It assumes a clear climatophilous role in the supra-temperate sub-Mediterranean belt at an elevation of 1800 and 2100 m, while at lower altitudes (examples were found up to 1500 m) shows a clearly secondary pattern, because its spread is linked to the processes of forest degradation, here represented mainly by *Abies cephalonica* woods. Physiognomically, this association is dominated by thorny cushion-like of *Astragalus rumelicus* subsp. *rumelicus*, which often constitutes dense populations. Quite significant it is the occurrence, although scattered, in this vegetation of two interesting endemic species, such as *Nepeta parnassica*, distributed in Mt. Parnassus and Mt. Chelmos (on the latter, however, is quite rare), and *Astragalus hellenicus*, widespread on the mountains of Sterea Ellas. Within this association, as emphasized by Quézel [35], two subassociations linked to different soil conditions can be distinguished. They are cited by that author as subass. *typicum*, localized on carbonatic substrates

with no floristic differentiation, and subass. *achilleetosum nobilis* Quézel 1964 (lectotypus rel. 12, Table 18, Quézel [35], *hoc loco*) restricted to sandstone or sometimes schist outcrops, differentiated by *Achillea nobilis* and *Salvia argentea* var. *alpina*.

Distribution: This association is well represented on the southernmost massifs of Sterea Ellas, as Mt. Parnassus, Mt. Giona and Mt. Vardoussia. However, its occurrence also in other mountain massifs of this area can not be excluded.

Astragalo lactei-Convulvuletum cochlearis Quézel 1964, Vegetatio 12:339 (Appendix C, Table A7).

Syn.: Association à *Convulvulus cochlearis* et *Astragalus lacteus* Quézel 1964.

Lectotypus: Table 21, rel. 4, Quézel [35], *hoc loco*.

Characteristic species: *Astragalus lacteus*, *Convulvulus cochlearis*, *Koeleria carniolica*.

Structure and ecology: The association is confined to the dolomitic substrates of the ridges that bordered some deep dolines. The surfaces occupied by this association are usually almost flat and are distributed at an altitude of 1650–1800 m, within the supratemperate sub-Mediterranean bioclimatic belt. This vegetation is dominated by small prostrate chamaephytes, among them have a quite significant role *Convulvulus cochlearis* (= *C. parnassicus* Boiss. & Orph.), rather rare Balkan endemic. In this association it occurs also *Astragalus lacteus*, which shows a quite constant frequency, as well as *Asperula rigidula* and *Koeleria carniolica*, which are less frequent.

Distribution: Currently it is known only to the Mt. Parnassus, where it is observed near the refuge of the EOS Gherondovrachos.

Notes: As concerns this association, Quézel [35] highlight that it occupies an intermediate position between the *Astragalo-Seslerion* and *Stipo-Morinion* alliances, because in its floristic settlement are present characteristic species of both syntaxa. However, the author considers more properly to include it in the *Astragalo-Seslerion*, mainly for the occurrence of *Astragalus angustifolius*. That is further evidence of the lack of phytosociological value of the alliances proposed by the author.

Nepeto epiroticae-Astragaletum corynithiaci (Quézel 1964) Musarella, Brullo & Giusso nom. nov. (Appendix C, Table A8).

Syn.: Association à *Astragalus cephalonicus* et *Nepeta nuda* Quézel 1964, Vegetatio 12:357.

Lectotypus: Table 30, rel. 2, Quézel [35], *hoc loco*.

Characteristic species: *Astragalus corynithiacus*, *Nepeta nuda* var. *epirotica*.

Structure and ecology: The association is localized on the bottom of dolines and also on slightly inclined surfaces characterized by rather deep silt-clay soils, deposited on carbonate substrata. It is distributed between 1600 and 1900 m of altitude, sometimes reaching 2100 m, having its optimum in the supratemperate sub-Mediterranean belt. Physiognomically, this vegetation is differentiated by the dominance of *Astragalus corynithiacus*, a new species closely related to *A. cephalonicus*, which tends to constitute dense and homogeneous populations. Another quite significant species is *Nepeta nuda* var. *epirotica*, which seems to have its optimum in these stands. Potentially, this association is linked to the erosion processes and washing away of calcareous rocks that accumulate fine particles into the lower parts of dolines and depressions. These surfaces, in extreme conditions, with very deep soils, are usually colonized by hemicyptophytic communities of *Trifolium parnassi*. In fact, in this association, some elements belonging to the latter alliance and related order, *Trifolietalia parnassi*, are present which clearly have the meaning of transgression. In conditions of marked edaphic xericity, such as in the stands with rocky outcrops and superficial soils, the vegetation at issue is replaced by the climatophylous communities of *Marrubio velutini-Astragaletum rumelici*.

Distribution: The association was currently observed only on Mt. Parnassus, where it is represented mainly in the dolines.

Notes: As regards its phytosociological arrangement, this association was described by Quézel [35] as Association à *Astragalus cephalonicus* et *Nepeta nuda* and included into the alliance *Trifolium parnassi*, since the author based on its ecological requirements, being linked to deep soils and on the presence

of a fair number of species characteristic of this syntaxon. However, it should be noted that the author considered this association structurally very similar to the communities of *Daphno-Festucetalia*, especially for the dominance of torny cushion-like shrubs, completely absent in the typical grasslands of *Trifolion parnassi*. Moreover, for the presence of a significant settlement of *Daphno-Festucetalia*, he considered this association as intermediate between this order and that of *Trifolietalia parnassi*. In fact, this perplexity of Quézel [35] is here shared by us too, but basing on its floristic and structural characteristics, it seems to exclude its possible attribution to *Trifolion parnassi*. It is to underline that on the whole in this association are well represented many species of *Marrubio velutini-Thymion parnassici* and related higher syntaxa. The dominant species was previously identified by Quézel [35] as *Astragalus cephalonicus*, but this attribution was wrong, since it clearly differs from the latter in numerous morphological features and should be treated as a distinct new species named *A. corinthiacus*.

Nepeto sprunerii-Astragaletum corynthisci Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A9).

Holotypus: Appendix C, Table A9, rel. 3, *hoc loco*.

Characteristic species: *Astragalus corynthiscus*, *Nepeta sprunerii*.

Structure and ecology: This association can be considered as a geographical vicariant of *Nepeto epiroticae-Astragaletum corynthisci* previously described from Mt Parnassus. It is also characterized by the dominance of *Astragalus corynthiscus*, while *Nepeta nuda* var. *epirotica* is replaced by *N. sprunerii*. This vegetation shows the same ecology of the above-mentioned association, since it always occurs in the dolines characterized by quite deep soils, usually localized between 1700–1800 m of elevation, sometimes reaching 2000 m. Floristically, it is well differentiated by several species of the alliance and higher ranks, while that ones of *Trifolion parnassi* are very rare.

Distribution: The association was surveyed in some stands of Mt. Giona.

Thymo parnassici-Paronychietum polygonifoliae Quézel 1964, Vegetatio 12:341 corr. (Appendix C, Table A10).

Syn.: Association à *Paronychia chionaea* et *Thymus hirsutus* subsp. *ciliato-pubescens* Quézel 1964.

Lectotypus: Table 23, rel. 3, Quézel [35], *hoc loco*.

Characteristic species: *Paronychia polygonifolia* (= *P. chionaea*), *Edraianthus graminifolius* f. *minor*, *Dianthus ventricosus*.

Structure and ecology: This association, characterized by dominance of small chamaephytes showing a prostrate or creeping habit, is localized in correspondence to the very windy ridges, usually over 2000 m of altitude. It is possible to observe this vegetation also at lower altitudes (ca. 1800 m), always in cacuminal stands. From the bioclimatic point of view, this association is well represented in the oro-temperate sub-Mediterranean belt extending downward in the supra-temperate sub-Mediterranean one. The surfaces are rather flat with superficial soils rich in minute skeleton, where, due to the action of the winds, the soil evolution is very slow, and the vegetation always keeps a prostrate habit. According to Quézel [35], this vegetation is dominated by plants showing a small size, such as *Paronychia polygonifolia* (as *P. chionaea*), *Thymus parnassicus* (as *T. hirsutus* subsp. *ciliato-pubescens*), *Edraianthus graminifolius* f. *minor*, *Dianthus ventricosus*. The pulvinate chamaephytes and the cespitose grasses are totally absent. The author distinguished two subassociations linked to altitudinal factors, represented at over 2100 m of altitude by the subass. *typicum*, which is replaced at lower altitudes from subass. *linetosum angustifolii* Quézel 1964 (lectotypus: Table 23 rel. 5, *hoc loco*). Floristically, the first subassociation is differentiated by *Euphrasia salisburgensis*, *Minuartia condensata*, *Festuca halleri* subsp. *riloensis*, *Carex kitaibeliana*, and *Galium plebeium*, while the second one has as differential species *Linum tenuifolium* and *Ptilotrichum rupestre*.

Distribution: The association seems to be exclusive of Mt. Giona, where it is very frequent.

Nepeto sprunerii-Astragaletum tymphrestei Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A11).

Holotypus: Appendix C, Table A11, rel. 1, *hoc loco*.

Characteristic species: *Astragalus tymphresteus*.

Structure and ecology: The association was observed in stands at altitudes between 1200 and 1400 m, on slightly inclined slopes characterized by carbonate rocks within the meso-Mediterranean bioclimatic belt. The soils are poorly developed with many minute skeletons. This vegetation is dominated by *Astragalus tymphresteus*, thorny dwarf shrub growing with other small chamaephytes, such as *Nepeta spruneri*, *Thymus chaubardii*, *Chamaecytisus hirsutus*, and some caespitose hemicryptophytes.

Distribution: The association was found only on Mt. Giona, where it is circumscribed to stands of lower altitudes, but it probably occurs also in other mountains.

Viola stojanowii-*Seslerietum vaginalis* Quézel 1973, Biol. Gallo-Hellen. 5(1):152, corr. (Appendix C, Table A12).

Syn.: Association à *Sesleria coeruleans* et *Viola stojanowii* Quézel 1973.

Lectotypus: Table 3, rel. 11, Quézel [38], *hoc loco*.

Characteristic species: *Viola stojanowii*, *Thymus teucrioides* subsp. *teucrioides*, *Thymus striatus*.

Structure and ecology: The association occurs over 2200 m of altitude, where is localized in the small depressions among the cacuminal rocky peaks, where very minute clasts are accumulated and covered by soils rich in clay subject to solifluction. In these stands characterized by an acclivity of 20–30%, the vegetation shows a rather sparse coverage in which *Sesleria vaginalis* (= *S. coeruleans*) plays an important role. On the whole, it is a floristically quite poor herbaceous vegetation, where *Viola stojanowii* is physiognomically significant. Usually, this association takes catenal contacts with the scree vegetation belonging to *Drypetalia spinosae*.

Distribution: This vegetation was described by Quézel [38] for Mt. Vardoussia, but probably it occurs also in other mountains of Sterea Ellas.

Erysimo parnassi-*Minuartietum stellatae* Quézel 1964, Vegetatio 12:340 (Appendix C, Table A13).

Syn.: Association à *Minuartia stellata* et *Erysimum pusillum* subsp. *parnassi* Quézel 1964.

Lectotypus: Table 22, rel. 3, Quézel [35], *hoc loco*.

Characteristic species: *Minuartia stellata*, *Astragalus apollineus*, *Anthemis spruneri*, *Allium parnassicum*, *Anthemis tinctoria* var. *parnassica*, *Erigeron alpinus*.

Structure and ecology: The association colonizes the rocky outcrops and the stabilized screes at altitudes over 2100 m, within the oro-temperate sub-Mediterranean bioclimatic belt. It is frequent on the prevalently rocky surfaces that, due to the considerable acclivity, the soils are very superficial, accumulating mainly among the rocky crevices and into the bushes. Physiognomically, it is distinguished by the dominance of compact and often voluminous cushion-like shrubs of *Minuartia stellata*, that usually grows together with *Sesleria vaginalis* and several species with prostrate habit. The characteristic species of the alliance *Marrubio velutini*-*Thymion parnassici* are well represented, among them *Erysimum parnassi*, *Marrubium velutinum*, *Satureja parnassica*, which show high coverage value. Within this association Quézel [35] distinguished two subassociations on phytogeographical base, represented by *saturejetosum parnassicae* (=subass. *teucrioides* à *Thymus*), restricted to Mt. Parnassus, and by *aurinietosum gionae* (=subass. *kionae* à *Alyssum*) for Mt. Giona. The first one corresponds clearly to the type, while the second one must be treated as a distinct association, well differentiated from floristically, also from chorological point of view, named as *Aurinio gionae*-*Minuartietum stellatae*.

Distribution: Actually, this vegetation is distributed only on Mt. Parnassus.

Aurinio gionae-*Minuartietum stellatae* Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A14).

Syn.: Association à *Minuartia stellata* et *Erysimum pusillum* subsp. *parnassi* subass. à *Alyssum kionae* Quézel 1964.

Holotypus: Table 22, rel. 3, Quézel [35], *hoc loco*.

Characteristic species: *Minuartia stellata*, *Aurinio gionae*.

Structure and ecology: From the ecological point of view, the association is very similar to *Erysimo parnassi*-*Minuartietum stellatae*. In fact, it occurs at altitudes between 2100 and 2450 m,

on calcareous substrata, more or less acclive, showing a coverage which not exceeding 70%. Floristically the vegetation differs markedly from the *Erysimo parnassi-Minuartietum stellatae*, for the almost total absence of *Erysimum parnassi*, *Satureja parnassica*, *Sesleria vaginalis*, all species that in the latter association are fairly common and often dominant. In addition to the absence of all characteristic species, the association at issue differs from the previous one also for the occurrence of the endemic *Aurinia gionae*. The only common element between the two communities is the dominance of *Minuartia stellata*.

Distribution: The association is exclusive of some places of Mt. Giona, where it is quite frequent.

Achilleo fraisii-Dianthetum tymphrestei Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A15).

Holotypus: Appendix C, Table A15, rel. 5, *hoc loco*.

Characteristic species: *Dianthus tymphresteus*, *Valeriana bertisceae*.

Structure and ecology: The association is localized on small rocky summits, in the more or less flat places characterized by minute crumbly limestone mixed with a little soil. It has been observed at altitudes of 1700–1800 m of very windy stands, within the supra-temperate sub-Mediterranean belt. Floristically, it is differentiated by the dominance of small pulvinate shrubs of *Dianthus tymphresteus*, which grows together other caespitose hemicryptophytes and small prostrate chamaephytes, such as *Centaurea affinis* subsp. *affinis*, *Achillea fraisii*, *Koeleria mitrushi*, *Festuca jeanpertii* subsp. *jeanpertii*, *Astragalus lacteus*, etc.

Distribution: This association was surveyed on Mt. Giona at Liritsa, but it probably occurs also in other neighbouring massifs, such as Vardoussia and Timphristos.

Asperulo luteae-Achilleetum umbellatae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A16).

Holotypus: Appendix C, Table A16, rel. 3, *hoc loco*.

Characteristic species: *Achillea umbellata*, *Carex caryophyllea*.

Structure and ecology: The association colonizes the slopes often rather inclined with fresh solis, mixed to big size clasts, at altitudes of 1700–1800 m, within the supra-temperate sub-Mediterranean belt. The surfaces occupied by this vegetation are usually South-facing and are frequent at the base of small rocky ridges. In such habitats, several hemicryptophytes such as *Achillea umbellata*, *Carex caryophyllea*, *Asperula lutea*, *Festuca cyllenica* subsp. *cyllenica*, *Stipa endotricha*, *Koeleria mitrushi* and *Festuca jeanpertii* subsp. *jeanpertii* occur and thrive.

Distribution: This vegetation was surveyed only on Mt. Giona, near Liritsa, where it is very circumscribed.

Astragalo lactei-Asperuletum apiculatae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A17).

Holotypus: Appendix C, Table A17, rel. 2, *hoc loco*.

Characteristic species: *Asperula purpurea* subsp. *apiculata*, *Astragalus lacteus*.

Structure and ecology: The association seems exclusive of the calcareous rocky ridges at altitudes between 1500 and 1600 m, where it is linked to slopes with very variable inclination (30–80°), with S-SO exposure. From the biolimatic point of view, it falls between the meso-Mediterranean and supra temperate sub-Mediterranean belts. The vegetation is localized along the large cracks of the rock and is characterized by small chamaephytes and hemicryptophytes. Among them, *Asperula purpurea* subsp. *apiculata*, *Astragalus lacteus*, *Achillea holosericea* and *Thymus chaubardii* are dominant together with various grasses.

Distribution: The association was observed on Mt. Giona at Mavrikorfi, near Proni, where seems quite localized.

Diantho minutiflori-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A18).

Holotypus: Appendix C, Table A18, rel. 5, *hoc loco*.

Characteristic species: *Dianthus integer* subsp. *minutiflorus*, *Festuca cyllenica* subsp. *cyllenica*, *Silene roemerii* subsp. *macrocarpa*.

Structure and ecology: The association colonizes the more or less stabilized screes with an inclination of 20–30°, at an altitude of around 2000 m. It is found in the orotemperate sub-Mediterranean belt, penetrating downward in the sub-Mediterranean supra-temperate one. Physiognomically, it is differentiated by the dominance of large tufts of *Festuca cyllenica* subsp. *cyllenica*, often associated with *Sesleria vaginalis*. In particular, this community is characterized by *Dianthus integer* subsp. *minutiflorus* and *Silene roemerii* subsp. *macrocarpa*. Moreover, *Satureja parnassica*, *Nepeta spruneri*, *Galium thymifolium*, *Campanula spathulata* subsp. *spathulata*, and *Ranunculus brevifolius* are very frequent.

Distribution: The association was surveyed on Mt. Giona at Amfissa, near Pirghakia.

Scabioso ochroleucae-Sideridetum raeseri Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A19).

Holotypus: Appendix C, Table A19, rel. 4, *hoc loco*.

Characteristic species: *Scabiosa ochroleuca*, *Sideritis raeseri* subsp. *raeseri*, *Vincetoxicum hirundinaria* subsp. *nivale*.

Structure and ecology: This association replaces the *Diantho minutiflori-Festucetum cyllenicae* in the stabilized screes or, anyway, on the surfaces more compact and richer in soil. Physiognomically, it is differentiated by the dominance of suffruticous shrubs, mainly chamaephytes, such as *Scabiosa ochroleuca*, *Sideritis raeseri* subsp. *raeseri*, *Vincetoxicum hirundinaria* subsp. *nivale*, *Satureja parnassica*, *Marrubium velutinum*, *Asperula lutea*, *Centaurea affinis* subsp. *affinis*, *Nepeta spruneri*, etc., while decrease the coverage of the caespitose hemicryptophytes.

Distribution: The association was surveyed on Mt. Giona, in the same place where the *Diantho minutiflori-Festucetum cyllenicae* occurs.

Ranunculo psilostachydis-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A20).

Holotypus: Appendix C, Table A20, rel. 3, *hoc loco*.

Characteristic species: *Festuca cyllenica* subsp. *cyllenica*, *Laserpitium pseudomeum*, *Ranunculus psilostachys*.

Structure and ecology: This association replaces the *Diantho minutiflori-Festucetum cyllenicae* on the more or less stabilized screes localized at lower altitudes (1700–1750 m) in quite fresh and sheltered stands. Particularly, it is frequent in the supra-temperate sub-Mediterranean belt, on surfaces having an inclination of 25–35°. Physiognomically, this vegetation is dominated by *Festuca cyllenica* subsp. *cyllenica*, but in comparison with the previous association, in its floristic settlement, a marked decrease of the more orophilous species is observable. Nevertheless, it is well differentiated due to the occurrence of *Ranunculus psilostachys*, *Laserpitium pseudomeum*, *Galium circae*, *Avenochloa agropyroides*, *Trisetum tenuiforme*, etc., species linked to stands of lower altitudes.

Distribution: As the two previous associations, this vegetation was surveyed in the same area of Mt. Giona, but at lower altitudes.

Edraiantho parnassici-Globularietum cordifoliae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A21).

Holotypus: Appendix C, Table A21, rel. 2, *hoc loco*.

Characteristic species: *Globularia cordifolia*, *Anthyllis montana* subsp. *jacquinii*, *Edraianthus parnassicus*, *Silene auriculata*.

Structure and ecology: The association is localized in rocky places, generally more or less flat or, however, a little sloped. It shows a wide altimetric range, ranging at altitudes from 1700 to 2150 m, thus affecting the supratemperate and orotemperate sub-Mediterranean bioclimatic belts. It can be considered as a semi-rupestrian community characterized by prostrate or creeping chamaephytes, such as *Globularia cordifolia*, *Anthyllis montana* subsp. *jacquinii*, *Edraianthus parnassicus*, *Silene auriculata*, which grow together with other small pulvinate shrubs, among them *Paronychia polygonifolia*, *Satureja parnassica*, *Thymus leucotrichus*, etc.

Distribution: The association is spread on some mountain places of Mt. Giona where, usually, it is localized on small surfaces.

Thymo parnassici-Astragaletum parnassi Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A22).

Holotypus: Appendix C, Table A22, rel. 4, *hoc loco*.

Characteristic species: *Astragalus parnassi*.

Structure and ecology: This association is characterized by the dominance of thorny cushion-like shrubs of *Astragalus parnassi*. This species is linked to very lower altitudes (1000–1300 m) within the meso-Mediterranean bioclimatic belt, characterizing one of the most thermophilous communities of the *Marrubio velutini-Thymion parnassici*. However, the characteristic species of this alliance and the higher syntaxa, are here well represented, among them *Thymus parnassicus*, *Erysimum parnassi*, *Festuca graeca* subsp. *graeca*, *Astragalus angustifolius* subsp. *erinaceus*, *Asperula lutea*, etc. The vegetation is usually localized in quite fresh and sheltered stands, represented mainly by clearing within the *Abies cephalonica* woodlands. It colonizes the more or less flat surfaces, showing high coverage values.

Distribution: The association is spread in the southern slopes of Mt. Parnassus.

Chamaecytiso hirsuti-Astragaletum parnassi Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A23).

Holotypus: Appendix C, Table A23, rel. 6, *hoc loco*.

Characteristic species: *Astragalus parnassi*, *Chamaecytisus hirsutus*.

Structure and ecology: This association must be considered as a geographic vicariant of the *Thymo parnassici-Astragaletum parnassi*. In fact, it occurs on Mt. Giona, where it is localized in habitats very similar to that one occupied by the aforesaid association. This vegetation is always characterized by the dominance of *Astragalus parnassi* and is distributed at an altitude of 1250–1500 m, in little inclinate stands localized within the *Abies cephalonica* woodlands. Floristically, it is characterized by the occurrence of *Chamaecytisus hirsutus* that forms large creeping cushion-like shrubs, while totally absent are several species of the related alliance, frequent though in the previous association.

Distribution: The association occurs in various localities of Mt. Giona.

Onobrychido pentelicae-Genistetum parnassicae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A24).

Holotypus: Appendix C, Table A24, rel. 5, *hoc loco*.

Characteristic species: *Genista parnassica*, *Onobrychis alba* subsp. *pentelica*.

Structure and ecology: The association replaces the *Thymo parnassici-Astragaletum parnassici* on the slopes with northern exposure of the southern part of Mt. Parnassus. This vegetation is very circumscribed and linked to a little inclined escarpments with very deep and fresh soils at an altitude of 1100–1200 m. It is localized within the meso-temperate bioclimatic belt and is characterized by the dominance of the rare *Genista parnassica* that usually forms large thorny cushion-like shrubs, often growing with *Astragalus angustifolius* subsp. *erinaceus* and, occasionally, with *Astragalus rumelicus* subsp. *rumelicus* and *A. parnassi*. Differential species of this association is *Onobrychis alba* subsp. *pentelica*, while as concerns the species of the higher syntaxa are well represented.

Distribution: The association seems circumscribed to a very narrow area of the southern part of Mt. Parnassus.

Allio cithaeronis-Dianthetum serratifolii Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A25).

Holotypus: Appendix C, Table A25, rel. 1, *hoc loco*.

Characteristic species: *Allium cithaeronis*, *Dianthus serratifolius* subsp. *serratifolius*, *Petrorhagia armerioides*, *Paronychia macedonica*, *Scabiosa ochroleuca*.

Structure and ecology: The association is circumscribed at the cacuminal calcareous plateau of Mt. Kitheronas, at an altitude of 1350–1400 m. It is a very windy place, subjected, unfortunately, to overgrazing, falling in the meso-Mediterranean bioclimatic belt. Physiognomically, it is differentiated by the occurrence of some small chamaephytes as *Dianthus serratifolius* subsp. *serratifolius*, *Petrorhagia armerioides*, *Paronychia macedonica*, and *Scabiosa ochroleuca*, growing together with the endemic *Allium cithaeronis*.

Distribution: The association is exclusive of Mt. Kitheronas (Sterea Hellas).

Inulo methanaeae-Sideritetum atticae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A26).

Holotypus: Appendix C, Table A26, rel. 5, *hoc loco*.

Characteristic species: *Inula verbascifolia* subsp. *methanaea*, *Sideritis raeseri* subsp. *attica*, *Aethionema saxatile* subsp. *graecum*.

Structure and ecology: The association occurs on the calcareous slopes of Mt. Parnis at an altitude of 1150–1300 m, within an area characterized by a meso-Mediterranean bioclimate and, particularly, affected by a regime of dense fog. It is localized on flat or a little inclined surfaces with variable exposure. Physiognomically, it is differentiated by the occurrence and often dominance of small shrubs, as *Inula verbascifolia* subsp. *methanaea*, *Sideritis raeseri* subsp. *attica*, *Aethionema saxatile* subsp. *graecum*, *Alyssum montanum* subsp. *hymettium*, *Achillea holosericea*, etc.

Distribution: The association was surveyed only in cacuminal stands of Mt. Parnis near Athens.

ASTRAGALION CEPHALONICI Musarella, Brullo & Giusso all. nov. *hoc loco*.

Holotypus: *Scutellario cephalonicae-Astragaletum cephalonici* Musarella, Brullo & Giusso ass. nov. *hoc loco*.

Characteristic species: *Astragalus cephalonicus*, *Centaurea subciliaris* subsp. *subciliaris*, *Thymus holosericeus*, *Petrorhagia fasciculata* var. *cephallenica*, *Scutellaria rupestris* subsp. *cephalonica*.

Structure and ecology: The alliance replaces in the Ionian islands of Cephalonia and Lefkada the *Marrubio velutini-Thymion parnassici* distributed in Sterea Ellas and Attica. The syntaxon at issue is well differentiated from the previous alliance for some floristic and ecological peculiarity due to its geographical isolation. Floristically, it is also differentiated by some insular endemics exclusive of Cephalonia and Lefkada, taxonomically quite significant, such as *Astragalus cephalonicus*, *Centaurea subciliaris* subsp. *subciliaris*, *Thymus holosericeus*, *Scutellaria rupestris* subsp. *cephalonica*, and *Petrorhagia fasciculata* var. *cephallenica*. The communities belonging to this alliance are localized on the top of isolated mountain summits at altitudes between 800 and 1400 m, which are markedly affected by moist marine winds.

Distribution: The alliance seems circumscribed to the Ionian Islands of Cephalonia and Lefkada.

Helictotricho convoluti-Thymetum holosericeae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A27, rel. 1–5).

Holotypus: Appendix C, Table A27, rel. 3, *hoc loco*.

Characteristic species: *Helictotrichon convolutum* subsp. *convolutum*, *Ononis pusilla*, *Allium lefkadensis*, *Aurinia saxatilis* subsp. *saxatilis*, *Erysimum linearifolium*.

Structure and ecology: The association is localized on the cacuminal plateau more or less windy, characterized by very rocky calcareous substrata with immature soils. This vegetation has its optimum at 800–1000 m of altitude, within the upper meso-Mediterranean belt. Floristically, it is differentiated by the dominance of the endemic *Thymus holosericeus* which grows together with the tufts of *Helictotrichon convolutum* subsp. *convolutum*, an Est-Mediterranean species, and the endemic *Allium lefkadensis*. In this association occurs also *Astragalus cephalonicus* which was already recorded in this mountain by Hofmann [85].

Distribution: This association is localized in the Lefkas Island in small places on Mt. Elati (Stravoti).

Saturejo cuneifoliae-Thymetum holosericeae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A27, rel. 6–9).

Holotypus: Appendix C, Table A27, rel. 6, *hoc loco*.

Characteristic species: *Allium cephalonicum*, *Centaurea spruneri* subsp. *guicciardi*, *Satureja cuneifolia*.

Structure and ecology: The association, ecologically very similar to the previous one, occurs on calcareous rocky outcrops at 800–1000 m of altitude in the Cephalonia Island. Floristically, it is differentiated from the previous one for the lack of *Helictotrichon convolutum* subsp. *convolutum*, while *Satureja cuneifolia* is frequent, which together with *Thymus holosericeus* and *Astragalus cephalonicus*,

characterizes this cushion-like prostrate vegetation. Moreover, the occurrence of *Allium cephalonicum* in this vegetation is significant, as a very rare and isolated endemic species, closely related to *A. callidictyon* C. A. Meyer ex Kunth [86].

Distribution: It is a geographical vicariant of the previous association in Cephalonia Island where it is localized on Mt. Ainos and Mt. Roudhi in open and windy places.

Scutellario cephalonicae-Astragaletum cephalonici Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A27, rel. 10–12).

Holotypus: Appendix C, Table A27, rel. 12, *hoc loco*.

Characteristic species: *Astragalus cephalonicus*, *Galium ionicum*, *Erysimum cephalonicum*.

Structure and ecology: This association replaces the previous one in the higher stands at altitudes between 1200 and 1400 m, where it is localized in more or less sloping stands characterized by calcareous rocky substrata. Floristically, it is differentiated from the previous association for the dominance of *Astragalus cephalonicus* which grows together with other endemisms as *Erysimum cephalonicum* and *Scutellaria rupestris* subsp. *cephalonica*. This vegetation is localized within supra-Mediterranean bioclimatic belt in the clearing of the *Abies cephalonica* woodlands that occur in the surfaces with more deep and mature soils.

Distribution: The association occurring in the Cephalonia Island, replaces at higher altitudes the *Saturejo cuneifoliae-Thymetum holosericeae*.

Paronychio graecae-Astragaletum erinacei Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A27, rel. 13–19).

Holotypus: Appendix C, Table A27, rel. 15, *hoc loco*.

Characteristic species: *Astragalus angustifolius* subsp. *erinaceus*, *Paronychia albanica* subsp. *graeca*, *Galium circae*, *Trinia glauca* subsp. *pindica*, *Aubrieta deltoidea*, *Viola cephalonica*, *Astragalus depressus* subsp. *depressus*, *Verbascum guicciardii*.

Structure and ecology: This association is localized in cacuminal open stands at an altitude of 1600 m, colonizing the calcareous rocks of southern slopes usually quite inclined. These surfaces are strongly affected by winds and daily thermic changes, also subject to long periods of snow cover, with very superficial and eroded soils. Physiognomically it is characterized by small and flattened pulvines of *Astragalus angustifolius* subsp. *erinaceus*, growing together with other dwarf orophytes with chamaephytic or hemicryptophytic habit, some of them endemic, such as *Paronychia albanica* subsp. *graeca*, *Galium circae*, *Viola cephalonica*, *Scutellaria rupestris* subsp. *cephalonica*, etc. This vegetation occurs within supra-Mediterranean bioclimatic belt, which is replaced in the northern slopes with not eroded and mature soils by *Abies cephalonica* woodlands.

Distribution: The association is exclusive of Cephalonia Island it only occurs in the top of Mount Ainos.

ASTRAGALION EUBOICI Musarella, Brullo & Giusso all. nov. *hoc loco*.

Holotypus: *Sideritido euboeae-Astragaletum euboici* Musarella, Brullo & Giusso ass. nov., *hoc loco*.

Characteristic species: *Astragalus rumelicus* subsp. *euboicus*, *Asperula suffruticosa*, *Hieracium pannosum* subsp. *euboicum*, *Nepeta dirphya*, *Paronychia euboea*, *Sideritis euboea*, *Verbascum delphicum*.

Structure and ecology: The alliance can be considered a geographical vicariant on the Euboea mountains of the *Marrubio velutini-Thymion parnassici* distributed in the continental Central Greece. It is differentiated from the latter alliance for its floristic peculiarities (represented by several endemics), linked to geographical isolation due to its insularity. The plant communities belonging to this syntaxon are surveyed at altitudes between 1000 and 1700 m on prevalently carbonatic substrata.

Distribution: The alliance is circumscribed to the Euboea Island in the Central Egean Sea.

Sideritido euboeae-Astragaletum euboici Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A28).

Holotypus: Appendix C, Table A28, rel. 4, *hoc loco*.

Characteristic species: *Astragalus rumelicus* subsp. *euboicus*, *Cytisus supinus*.

Structure and ecology: The association is localized on the carbonatic rocky outcrops at 1100–1200 m of altitude, occasionally reaching 1350 m. The surfaces colonized by this vegetation are more or less inclinate and represented by sunny slopes. The vegetation is dominated by pulvinate shrubs of *Astragalus rumelicus* subsp. *euboicus*, which covers also very large surfaces. Other shrubs are also very frequent, such as *Cytisus supinus*, *Sideritis euboea*, *Inula candida* subsp. *limonella* and *Nepeta dirphyia*, species quite important from the physiognomical point of view.

Distribution: The association was surveyed on Mt. Dirfis in the Euboea Island.

Scabioso webbiana-Phlomidetum samiae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A29).

Holotypus: Appendix C, Table A29, rel. 3, *hoc loco*.

Characteristic species: *Phlomis samia*, *Scabiosa webbiana*, *Viola euboea*, *Helleborus cyclophyllus*.

Structure and ecology: The association is circumscribed to the fresh depressions with more deep soils and rich in humus, localized at 1000–1100 m of altitude. Quite significant it is here the occurrence of some mesophilous species with herbaceous habit, such as: *Phlomis samia*, *Scabiosa webbiana*, *Viola euboea* and *Helleborus cyclophyllus*.

Distribution: The association was surveyed on Mt. Dirfis in the Euboea Island.

Sideritido euboeae-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A30).

Holotypus: Appendix C, Table A30, rel. 1, *hoc loco*.

Characteristic species: *Festuca cyllenica* subsp. *cyllenica*, *Sideritis euboea*, *Bolanthus graecus*, *Carum graecum* subsp. *graecum*, *Arenaria filicaulis* subsp. *euboica*.

Structure and ecology: The cacuminal stands at altitudes over 1550 m are colonized by a herbaceous perennial vegetation dominated by *Festuca cyllenica* subsp. *cyllenica*. Usually, this species colonizes the stony soils and the consolidated screes, adapting well to long periods of snow cover. The association is well differentiated from the other communities characterized by the dominance of *Festuca cyllenica* subsp. *cyllenica*, distributed in the mountains of continental Greece, due to the occurrence of rare orophytes, some endemic of Euboea, such as *Sideritis euboea*.

Distribution: The association was surveyed on Mt. Dirfis in the Euboea Island.

Inulo limonellae-Seslerietum vaginalis Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A31).

Holotypus: Appendix C, Table A31, rel. 8, *hoc loco*.

Characteristic species: *Sesleria vaginalis*, *Inula candida* subsp. *limonella*.

Structure and ecology: The association covers the very inclinate southern rocky slopes of the calcareous summits at 1150–1500 m of altitude. Physiognomically, it is characterized by the dominance, with high coverage values, of *Sesleria vaginalis*, which grows with small shrubs of *Inula candida* subsp. *limonella*, *Sideritis euboea* and *Astragalus rumelicus* subsp. *euboicus*. The association replaces the *Sideritido euboeae-Astragaletum euboici* in the stands at altitudes over 1150 m of very opened and windy slopes.

Distribution: The association was surveyed on Mt. Dirfis in the Euboea Island.

FESTUCO ACHAICAE-MARRUBION CYLLENEI Musarella, Brullo & Giusso all. nov. *hoc loco*

Syn.: *Eryngieto-Bromion* Quézel 1964, *Vegetatio*, 12:326, p.min.p., nom. ambig. rejic. propos. (art. 36).

Eryngio multifidi-Bromion fibrosi Quézel 1964, corr. Quézel, Barbero & Akman 1992, *Ecol. Medit.* 18:82 p.min.p.nom. ambig. rejic. propos. (art. 36).

Astragaleto-Seslerion Quézel 1964, *Vegetatio*, 12:326, p.min.p., nom. ambig. rejic. propos. (art. 36).

Astragalo angustifolii-Seslerion coerulantis Quézel 1964, corr. Quézel, Barbero & Akman 1992, *Ecol. Medit.* 18:82, p.min.p., nom. ambig. rejic. propos. (art. 36).

Stipeto-Morinion Quézel 1964, *Vegetatio*, 12:326, p.min.p., nom ambig. rejic. propos. (art. 36).

Stipo pulcherrimae-Morinion persicae Quézel 1964, corr. Quézel, Barbero & Akman 1992, *Ecol. Medit.* 18:82 p.min.p., nom. ambig. rejic. propos. (art. 36).

Holotypus: *Festuco achaicae-Minuartietum stellatae* Musarella, Brullo & Giusso ass. nov. *hoc loco*.

Characteristic species: *Aster cylleneus*, *Astragalus calaorytensis*, *A. cylleneus*, *Festuca jeanpertii* subsp. *achaica*, *Globularia stygia*, *Marrubium cylleneum*, *Onobrychis montana* subsp. *macrocarpa*, *Sideritis clandestina* subsp. *peloponnesiaca*, *Taraxacum cylleneum*, *Verbascum cylleneum*.

Structure and ecology: This alliance represents the southern geographical vicarious of *Marrubio velutini-Thymion parnassici*, grouping, similarly to the latter, orophilous plant communities structurally characterized by the dominance of chamaephytes and pulvinate nanophanerophytes, sometimes mixed with caespitose hemicryptophytes. Particularly, they differ from those ones occurring in the mountains of Sterea Ellas, apart from the occurrence of a rich set of endemics, also for their ecological requirements. In fact, these communities are subject to climatic conditions characterized by a more marked thermophily, with higher average annual temperatures and drier rainfall regime, especially in summer. This area falls mainly in the supra-and oro-temperate of sub-Mediterranean type. Moreover, from the phytogeographical point of view, it is possible observe a strong increase of species belonging to taxonomic groups showing a more southern origin.

Distribution: The alliance is distributed in the mountains of northern Peloponnese (Mt. Erimanthos, Mt. Panachaiko, Mt. Chelmos, Mt. Klokos, Mt. Killini and Mt. Menalon).

Notes: The *Festuco achaicae-Marrubion cyllenei* has a strictly phytogeographical characterization, since it is floristically differentiated by species confined to the mountains of Achaia, Corinthia and North Arcadia. It groups plant communities occurring in high mountain stands at altitudes from 1200 to 2400 m. This alliance groups, in addition to several new associations, also other ones described by Quézel [35], Quézel and Katrabassa [40], Georgiadis and Dimopoulos [42], Maroulis and Georgiadis [44], which previously were attributed by these authors in the alliances *Stipo-Morinion*, *Eryngio-Bromion* and *Astragalus-Seslerion*.

Cirsio hypopsilii-Astragaletum taygetici Quézel 1964 corr. (Table A32)

Syn.: Association à *Astragalus cylleneus* et *Cirsium cylleneum* Quézel 1964, *Vegetatio* 12:332.

Astracantho thracicae-Marrubietum cyllenei Georgiadis & Dimopoulos 1993 *Bot. Helv.* 103:153, nom. inval. (art. 3 c, 5)

Marrubio cyllenei-Astragaletum rumelici Maroulis & Georgiadis 2005, *Fitosociologia* 42(1): 43, nom. illeg. (art. 22,23); Holotypus: Table 2, rel. 460, Maroulis & Georgiadis [44].

Lectotypus: Table 17, rel. 1, Quézel [35], *hoc loco*.

Characteristic species: *Astragalus rumelicus* subsp. *taygeticus*, *Cirsium hypopsilium*.

Structure and ecology: The association is localized on the slopes more or less inclined with variable exposure, characterized by carbonatic stony substrata with rocky outcrops. The soils are enough evolved, but with a significant component of coarse skeleton. It is widespread at altitudes from 1400 to 2000 m, within the supra-temperate sub-Mediterranean bioclimatic belt, with penetrations upward in the oro-temperate submediterranean belt and downward in the meso-Mediterranean one. In fact, examples of this vegetation can be observed up to 2150 m of altitude in places well exposed and sunny, as well as at relative low altitudes (1150 m), limited to cacuminal and very rocky windy stands. Physiognomically, this association is differentiated by large thorny pulvinate individuals, often quite raised from the ground, of *Astragalus rumelicus* subsp. *taygeticus*, that in the Peloponnese replaces the subsp. *rumelicus*, distributed in the central and northern Greece [87]. Previously, the populations of this *Astragalus* occurring in the M. Killini were identified by Quézel [35] and Georgiadis and Dimopoulos [42] as *Astragalus cylleneus*, quite rare species on this massif, where it is localized in habitat totally different from those ones normally occupied by the association in question. As regards the floristic composition of this pulvinate vegetation, it is observed a rich contingent of characteristic species of the alliance, as well as of higher syntaxa. It assumes usually a climatophilous role especially at

altitudes over 1700–1800 m, while at lower altitudes can be considered as an edaphophilous vegetation, limitedly to cacuminal more rocky stands. Within the climatophilous belt relative to *Abies cephalonica* woodlands, the association represents usually a substitution aspect, due to degradation of this forest.

Distribution: The association is widespread and well represented in the various mountains of the northern Peloponnese, as Mt. Erimanthos, Mt. Panachaiko, Mt. Klokos and Mt. Killini, where it tends to occupy large surfaces.

Notes: This association was originally described by Quézel [35] for Mt. Killini as ass. à *Astragalus cylleneus* et *Cirsium cylleneum* and successively redescribed by Georgiadis and Dimopoulos [42], but changing its name in *Astracantho thracicae-Marrubietum cyllenei* comb. nova, not indicating the holotypus. Therefore, the last syntaxon is an invalid name, according to articles 3 c and 5. In both cases, the authors indicate as characteristic species, physiognomically dominant, *Astragalus cylleneus* (= *Astracantha thracica* subsp. *cyllenea*). Unfortunately, this species was misidentified by these authors, since on the Mt. Killini in the stands where they have carried out the relevés there is exclusively *Astragalus rumelicus* subsp. *taygeticus*, while the true *A. cylleneus* is very rare and confined in depressed areas, such as dolines, characterized by very deep soils rich in silt-clay component, not occurring never on rocky substrata. The association occurs with the same ecological characteristics and floristic composition also on Mt. Erimanthos, where it was correctly described by Maroulis and Georgiadis [44] as *Marrubio cyllenei-Astragaletum rumelici*. However, this syntaxon is an illegitimate name being a synonym of the association described by Quézel [35], whose name must be corrected in *Cirsio hypopsilii-Astragaletum taygetici*. In this association are well represented the characteristic species of the three alliances proposed by Quézel [35], particularity already evidenced by Georgiadis and Dimopoulos [42] and also by Maroulis and Georgiadis [44].

Asteri cyllenei-Globularietum stygiae Quézel 1964, Vegetatio 12: 337 (Appendix C, Table A33).

Syn.: Association à *Aster cylleneus* et *Globularia stygia*. Quézel 1964, Vegetatio, 12:337.

Lectotypus: Table 20, rel. 5, Quézel [35], *hoc loco*.

Characteristic species: *Aster cylleneus*, *Globularia stygia*, *Macrotoma cephalotes*, *Taraxacum bythinicum*.

Structure and ecology: The association has its best expression between 2000 and 2330 m of altitude, within the orotemperate sub-Mediterranean bioclimatic belt. It can be observed sometimes up to 1800 m in stands represented by rocky ridge. Usually, it is localized on markedly rocky surfaces, constitute by carbonate substrata, as the ridges, saddles and stabilized scree, stands generally very windy with very shallow and undeveloped soils. It is a vegetation dominated by small prostrate dwarf shrubs mixed with several hemicryptophytes. The most important species are *Globularia stygia* and *Aster cylleneus*, rare endemics known for Mt. Chelmos and Mt. Killini. Floristically, the association is rather poor with low values of coverage. Dynamically, it can be considered an essentially edaphophilous vegetation.

Distribution: The association is currently known only for Mt. Chelmos and Mt. Killini in the northern Peloponnese.

Notes: This association was previously included by Quézel [35] within *Astragalo-Seslerion*, even though, as evidenced by the same author, the species of this alliance were not well represented in the relevés.

Euphrasio salisburgensis-Asperuletum oetaeae Quézel & Katrabassa 1974, Rev. Biol. Ecol. Medit. 1(1):19, corr. (Appendix C, Table A34).

Syn.: Association à *Asperula nitida* et *Euphrasia salisburgensis* Quézel & Katrabassa 1974.

Lectotypus: Table 4, rel. 3, Quézel and Katrabassa [40], *hoc loco*.

Characteristic species: *Asperula oetaea*, *Euphrasia salisburgensis*, *Iberis saxatilis* subsp. *saxatilis*.

Structure and ecology: The association is localized at 2000 and 2200 m of altitude in the windy crests, with flat surfaces formed by eroded limestone cracked and free of soil. It is linked to the oro-temperate sub-Mediterranean bioclimatic belt, where it assumes a role clearly edaphophilous. Physiognomically, it is dominated by small prostrate chamaephytes mixed to rosulate hemicryptophytes with coverage

values not too high. It is significant the occurrence of some orophytes that find in this vegetation type their optimal growth conditions, such as *Asperula oetaea* (by Quézel and Katrabassa [40] quoted as *A. nitida*), *Paronychia albanica* subsp. *graeca* (as *P. chionaea*), *Euphrasia salisburgensis* and *Iberis saxatilis* subsp. *saxatilis*. These authors distinguish within this association two sub-associations proposed as *erodietosum chrysanthi*, located on compact limestone, and *minuartietosum confusae*, occurring on calcareous substrata that flake on plaques.

Distribution: The association occurs only on Mt. Chelmos in northern Peloponnese.

Marrubio cyllenei-Astragaletum calavrytensis Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A35).

Syn.: Association à *Astragalus cylleneus* et *Cirsium cylleneum* subass. à *Astragalus cylleneus* Quézel & Katrabassa 1974, Rev. Biol. Ecol. Medit. 1(1):16, non Quézel 1964.

Holotypus: Appendix C, Table A35, rel. 5, *hoc loco*.

Characteristic species: *Astragalus calavrytensis*.

Structure and ecology: The association is localized on the little inclined slopes with rocky outcrops and more or less developed soils, rich in coarse skeletal component. It is developed in the bioclimatic belts between the supra-temperate sub-Mediterranean and the oro-temperate sub-Mediterranean, at altitudes of 1800 and 2200 m. Sometimes examples of this vegetation are found up to 1500 m of altitude in the markedly rocky stands. It is a plant community dominated by thorny pulvini of *Astragalus calavrytensis*, by Quézel and Katrabassa [40] mistakenly attributed to *A. cylleneus*. This species showing often high values of coverage, it is usually associated with *Marrubium cylleneum*, which assumes also a significant physiognomical role. The association has usually a clear climatophilous role, although sometimes, especially at lower altitudes, it represents an aspect of substitution, or at most edaphophilous. It can be considered as a geographical vicariant of the *Cirsio hypopsilii-Astragaletum taygetici* occurring in other mountains of the Peloponnese. Within this association, three subassociations linked to altitudinal ranges can be distinguished: (a) *elytrigietosum intermediae* subass. nov. (holotypus: rel. 6, *hoc loco*), distributed at lower altitudes (1250–1650 m), differentiated by *Elytrigia intermedia* and *Silene italica* subsp. *peloponnesiaca*; (b) *hippocrepidetum comosae* subass. nov. (holotypus: rel. 10, *hoc loco*), distributed between 1650 and 2000 m of altitude, which is differentiated by *Hippocrepis comosa*; (c) *tulipetosum australis* subass. nov. (holotypus: rel. 21, *hoc loco*), localized at 2000–2200 m of altitude, characterized by *Tulipa australis*, *Ornithogalum oligophyllum* and *Gagea villosa*.

Distribution: On the basis of current knowledge, this association seems to be exclusive of Mt. Chelmos in the northern Peloponnese.

Notes: Previously Quézel and Katrabassa [40] attributed this vegetation to the Ass. à *Astragalus cylleneus* et *Cirsium cylleneum* described by Quézel [35] for Mt. Killini. Effectively as previously emphasized, the aforesaid authors mistakenly attributed these populations of *A. calavrytensis* to *A. cylleneus*. As clearly can be observed from floristic composition and ecology, the vegetation of Mt Chelmos is well differentiated from that one of Mt. Killini and therefore they must be treated as two distinct associations.

Plantagini graecae-Astragaletum cyllenei Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A36).

Holotypus: Appendix C, Table A36, rel. 4, *hoc loco*.

Characteristic species: *Astragalus cylleneus*, *Alopecurus gerardii*, *Plantago atrata* subsp. *graeca*, *Potentilla recta*.

Structure and ecology: The association is localized in small depressions, similar to dolines, in the middle of the carbonatic rock outcrops, where there is a fairly deep soil rich in silt and clay, accumulated as a result of processes of washing away of the surrounding surfaces more or less sloping. It was surveyed in the supra-temperate sub-Mediterranean bioclimatic belt at 1800–2000 m of altitude. Physiognomically, it is dominated by *Astragalus cylleneus*, usually associated with numerous other orophytes of the alliance and higher syntaxa. The deep and compact soil justifies the occurrence of

mesic species of the *Trifolion parnassi*, such as *Alopecurus gerardii*, *Plantago atrata* subsp. *graeca* and *Potentilla recta*. The arrangement of this association in the *Festuco achaicae-Marrubion cyllenei* rather than in the *Trifolion parnassi* is justified by the fact that from the structural point of view it is a shrub vegetation of tragacanthoid type, as most of the community of the alliance in question and not of a meadow with prevalence of small herbaceous hemicryptophytes. In addition, the floristic contingent of species of the *Cerastio candidissimi-Astragaletea rumelici* as well as the related alliance is clearly prevalent respect to that one of *Trifolietalia* and *Trifolion parnassi*.

Distribution: This association was observed on Mt. Killini, where is localized exclusively on Mt. Simios.

Notes: The *Plantagini graecae-Astragaletum cyllenei* is floristically and ecologically quite related to the *Nepeto epiroticae-Astragaletum corynthiaci* occurring on M. Parnassuss. In fact, both associations are characterized by the dominance of vicariant tragacantoidi species of *Astragalus* and by the occurrence of species of *Trifolion parnassi*. In addition, they are localized exclusively in stands more or less depressed with very thick and compact soils, poor in skeleton.

Festuco achaicae-Minuartietum stellatae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A37).

Syn.: Aggr. à *Minuartia stellata* Quézel & Katrabassa 1974, Rev. Biol. Ecol. Medit. 1(1):18.

Comm. à *Minuartia stellata* Georgiadis & Dimopoulos 1993, Bot. Helv. 103:160.

Holotypus: Appendix C, Table A37, rel. 7, *hoc loco*.

Characteristic species: *Minuartia stellata*, *Festuca jeanpertia* subsp. *achaica*, *Allium cylleneum*.

Structure and ecology: The association is linked to rocky stands with calcareous outcrops or to compact rocky surfaces, more or less sloping at the foot of vertical walls. It is a habitat of semiruprestrian type, with soils present only in rocky crevices or in small ledges. This vegetation seems to have its optimum in the oro-temperate sub-Mediterranean bioclimatic belt, at 2000–2250 m of altitude; examples can be observed also at lower altitudes (up to 1800 m) within the supra-temperate sub-Mediterranean belt. Physiognomically, the association is differentiated by the occurrence of compact and large pulvini of *Minuartia stellata*, sometimes mixed with smaller other ones of *Asperula boissieri*. The characteristics of the alliance of higher syntaxa are here well represented; among these show a greater diffusion and coverage *Astragalus angustifolius* subsp. *erinaceus*, *Festuca janpertia* subsp. *achaica* and *Festuca cyllenica* subsp. *cyllenica*. The association is a typical edaphophilous aspect, colonizing small areas scattered in midst of the tragacanthoid community of *Cirsio hypopsilii-Astragaletum taygetici* or *Plantagini graecae-Astragaletum cyllenei*. Previously, it was described by Quézel and Katrabassa [40] as aggr. à *Minuartia stellata* and by Georgiadis and Dimopoulos (ref. [42] as comm. à *Minuartia stellata*).

Distribution: This association is well represented on Mt. Chelmos, Mt. Killini and Mt Klokos in the northern Peloponnese.

Notes: The *Festuco achaicae-Minuartietum stellatae* can be considered as a southern vicariant of the *Erysimo parnassi-Minuartietum stellatae*, association described by Quézel [35] for Mt. Parnassus.

Alyssso taygetei-Plantaginetum alpestris Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A38).

Holotypus: Appendix C, Table A38, rel. 1, *hoc loco*.

Characteristic species: *Alyssum taygeteum*, *Plantago holosteum* var. *alpestris*, *Scorzonera mollis*.

Structure and ecology: The association is linked to cacuminal stations and very windy stands, localizing on carbonate substrata flaking in platelets, with primitive or very immature soils. It is distributed within the oro-temperate sub-Mediterranean bioclimatic belt, at 2000–2100, where it has its optimum on surfaces strongly eroded and subject to gelifluxion. It is a low pulvinar vegetation characterized by small, often prostrate, chamaephytes, in which play a significant role *Alyssum taygeteum* and *Plantago holosteum* var. *alpestris*, growing usually together with *Astragalus angustifolius* subsp. *erinaceus* and *Astragalus rumelicus* subsp. *taygeticus*.

Distribution: The association was observed only on Mt. Chelmos in the northern Peloponnese.

Hieracio sartoriani-Seslerietum tenerrimae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A39).

Syn.: Ass. à *Astragalus cylleneus* et *Cirsium cylleneum* subass. à *Festuca varia* facies à *Sesleria caerulans* Quézel & Katrabassa 1974, Rev. Biol. Ecol. Medit. 1(1):18.

Holotypus: Appendix C, Table A39, rel. 7, *hoc loco*.

Characteristic species: *Sesleria tenerrima*, *Hieracium sartorianum*, *Arenaria cretica* var. *stygia*, *Galium incanum* subsp. *incanum*, *Silene auriculata*.

Structure and ecology: The association is localized on the rocky ridges, sometimes cacuminal, on substrates consisting of compact craked limestone, with soil present only in the rocky ravines and ledges. It was observed at 1900–2350 m of altitude, within the oro-temperate sub-Mediterranean bioclimatic belt, in ecologically very specialized contexts. In fact, in these stands there are very rigid environmental conditions, as strong winds, soil erosion, marked acclivity, gelifluction, etc. This vegetation represents a typical orophilous thinned out grassland, dominated by *Sesleria tenerrima*. In the middle of the tufts of this grass grow several hemicryptophytes and chasmophyte, that highlight the semirupestrian characteristics of the habitat. This association clearly constitutes an edaphophilous aspect, replaced in typically rocky habitats by casmophilous communities of *Asplenietea trichomanis*.

Distribution: Based on current knowledge, the association is known only for Mt. Chelmos in northern Peloponnese.

Notes: Within this association some relevés carried out by Quézel and Katrabassa [40] and considered by them as a facies à *Sesleria caerulans* of the subass. à *Festuca varia* of the ass. à *Astragalus cylleneus* et *Cirsium cylleneum* can be included.

Asperulo boissieri-Festucetum cyllenicae Georgiadis & Dimopoulos ex Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A40).

Syn.: *Festuco cyllenicae-Asperuletum boissieri* Georgiadis & Dimopoulos 1993, Bot. Helv. 103(2):158, nom. inval. (art. 5).

Holotypus: Table 3, rel. 1, Georgiadis and Dimopoulos [42], *hoc loco*.

Characteristic species: *Festuca cyllenica* subsp. *cyllenica*, *Dianthus integer* subsp. *minutiflorus*.

Structure and ecology: The association colonizes the rocky calcareous substrata and stabilized screens, more or less sloping with shallow undeveloped and heavily skeletal soils. It is usually distributed at 2000 and 2200 m of altitude, coming down sometimes up to 1800 m, within the oro-temperate sub-Mediterranean bioclimatic belt, penetrating marginally also in that one supra temperate sub-Mediterranean belt. Physiognomically, it is differentiated by the dominance of large tufts of *Festuca cyllenica* subsp. *cyllenica*, that, sometimes, are mixed with those ones of *Sesleria vaginalis*. Scattered with these grasses there are some low prostrate pulvini of *Asperula boissieri* and *Astragalus angustifolius* subsp. *erinaceus*. It usually assumes a climatophilous role in the higher cacuminal places of the mountains.

Distribution: The association is known only for Mt. Killini in the northern Peloponnese.

Notes: This association was described by Georgiadis and Dimopoulos [42] from various stands of Mt. Killini and included by them with some perplexity within the *Astragalo-Seslerion*, due to the occurrence of a relevant number of characteristics of the *Eryngio-Bromion*. However, this syntaxon is an invalid name, because the authors do not indicate the relevé type of the association.

Ranunculo brevifolii-Seslerietum tenerrimae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A41).

Holotypus: Appendix C, Table A41, rel. 3, *hoc loco*.

Characteristic species: *Sesleria tenerrima*, *Ranunculus brevifolius*, *Ranunculus sartorianus*, *Dianthus serratifolius* subsp. *abbreviatus*.

Structure and ecology: The association is linked to stabilized screes characterized by a marked acclivity and occurrence of undeveloped soils with a high percentage of skeleton. It is located at 2000–2100 m of altitude, within the oro-temperate sub-Mediterranean bioclimatic belt. It is a typical

grassland characterized by the dominance of *Sesleria tenerrima*, showing a very scattered coverage, interspersed with small bare surfaces. Mixed with this grass there are tufts of *Festuca cyllenica* subsp. *cyllenica*, which often show a high coverage, and several quite significant rosulate hemicryptophytes, such as *Ranunculus brevifolius*, *Ranunculus sartorianus*, *Dianthus serratifolius* subsp. *abbreviatus*. For its peculiar ecology, the association must to be considered as an edaphophilous aspect, which tends due to the natural evolution of the soil, towards pulvinate communities, structurally more evolved.

Distribution: The association occurs only in Killini massif on Mt. Simios (northern Peloponnese).

Astragaletum hellenico-erinacei Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A42).

Holotypus: Appendix C, Table A42, rel. 6, *hoc loco*.

Characteristic species: *Astragalus angustifolius* subsp. *erinaceus*, *A. hellenicus*.

Structure and Ecology: The association is localized on fairly inclined rocky slopes, with soils more or less deep and rich in coarse skeleton. From the structural point of view, the vegetation is differentiated by the dominance of tragacanthoid pulvini of *Astragalus angustifolius* subsp. *erinaceus*, which grows together with several chamaephytes and hemicryptophytes, among them *Astragalus hellenicus*, endemic species, rare in the Peloponnese. This association, showing usually a climatophilous character, at least in the rocky cacuminal stands, represents often a substitution aspect, replacing the forests of *Abies cephalonica* as a result of soil degradation processes.

Distribution: The association was surveyed only on Mt. Menalon in the Central Peloponnese.

Notes: On the whole, it can be considered as a thermophilous vicariant of the community with *Astragalus rumelicus* subsp. *taygeticus* occurring in the other massifs of the northern Peloponnese.

Festucetum polito-cyllenicae Maroulis & Georgiadis 2005, Fitosociologia 42(1):44, corr. (Appendix C, Table A43).

Syn.: *Festuco politae-Festucetum cyllenicae* Maroulis & Georgiadis 2005, Fitosociologia 42(1):44.

Holotypus: Table 2, rel. 509, Maroulis and Georgiadis [44].

Characteristic species: *Festuca cyllenica* subsp. *cyllenica*, *Festuca polita*, *Campanula albanica* subsp. *albanica* and *Taraxacum delphicum*.

Structure and ecology: The association is localized along the very sloped surfaces on stabilized screes or rocky stands with undeveloped calcareous soils rich in skeleton. It is widespread at 1750–2200 m of altitude, within the supra-temperate and oro-temperate sub-Mediterranean bioclimatic belts, where it plays a climatophilous role. This vegetation constitutes dense orophilous grasslands dominated by *Festuca cyllenica* subsp. *cyllenica*, *Festuca polita* and *Sesleria vaginalis*, where are frequent several other hemicryptophytes and small chamaephytes.

Distribution: According to literature, it is widespread on various mountains of the Erimanthos massif in the Northern Peloponnese.

Notes: The association described by Maroulis and Georgiadis [44] as *Festuco politae-Festucetum cyllenicae*, was included by the authors in the *Eryngio-Bromion* although there is a significant contingent of characteristics of *Astragalo-Seslerion*. For its structure and ecology, as well as for its floristic composition, this association is quite related to *Asperulo boissieri-Festucetum cyllenicae* from Mt. Killini, from which differs mainly for its floristic set.

Arenario filicaulis-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A44).

Holotypus: Appendix C, Table A44, rel. 1, *hoc loco*.

Characteristic species: *Festuca cyllenica* subsp. *cyllenica*, *Arenaria filicaulis* subsp. *filicaulis*, *Ranunculus psilostachys*.

Structure and ecology: The association occurs mainly on stabilized screes or on quite inclined slopes covered by calcareous stones, mixed with scarce humus. It is surveyed at 1500 and 1600 m of altitude on northern slopes, it colonizes large surfaces. Physiognomically, it is characterized by the dominance of large tufts of *Festuca cyllenica* subsp. *cyllenica*, which grows very well on inclined slopes

subject to long periods of snow coverage. This vegetation, where it is frequent also *Festuca jeanpertii* subsp. *achaica*, results well differentiated from the other associations with *Festuca cyllenica* subsp. *cyllenica* for the occurrence of *Arenaria filicaulis* subsp. *filicaulis* and *Ranunculus psilostachys*.

Distribution: The association is frequent on Mt. Panachaiko in the northern Peloponnese.

Aurinio moreanae-Lomelosietum crenatae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A45).

Holotypus: Appendix C, Table A45, rel. 6, *hoc loco*.

Characteristic species: *Aurinia moreana*, *Lomelosia crenata* subsp. *crenata*.

Structure and ecology: The association is localized in semiruprestrian habits on very sloped (70–80°) limestone outcrops, usually showing a northern exposure. This vegetation dominated by *Lomelosia crenata* subsp. *crenata* and *Aurinia moreana*, is distributed at 1600 and 1700 m of altitude. It is an edaphophilous community, replacing in this rocky stand the *Cirsio hypopsilii-Astragaletum taygetici*. On the whole, the species of the alliance and higher syntaxa are here well represented, among them there are *Festuca jeanpertii* subsp. *achaica*, *Astragalus angustifolius* subsp. *erinaceus*, *Astragalus rumelicus* subsp. *taygeticus*, *Achillea umbellata*, etc.

Distribution: The association was surveyed only on Mt. Klokos in northern Peloponnese.

Onosmo malickyi-Astragaletum hellenici Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A46).

Holotypus: Appendix C, Table A46, rel. 2, *hoc loco*.

Characteristic species: *Onosma erectum* subsp. *malickyi*, *Astragalus hellenicus*, *Alyssum murale*.

Structure and ecology: The association occurs at 1300–1400 m of altitude, in the clearing within the *Abies cephalonica* woodlands. The surfaces are slightly inclined, and the soils are covered with a bed of fir needles. Floristically, it is characterized by hemicryptophytes and small chamaephytes, among them *Onosma erectum* subsp. *malickyi*, *Astragalus hellenicus*, *Alyssum murale*, *Helianthemum hymettium* and *Festuca jeanpertii* subsp. *achaica*.

Distribution: This community was surveyed only on Mt. Chelmos near Mavros Logos.

Viola graecae-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A47).

Holotypus: Appendix C, Table A47, rel. 7, *hoc loco*.

Characteristic species: *Festuca cyllenica* subsp. *cyllenica*, *Viola graeca*, *Ornithogalum oligophyllum*.

Structure and ecology: The association occurs on calcareous stabilized screes and stony slopes at 2000 and 2500 m of altitude. It is a pioneer vegetation linked to slightly inclined surfaces and poor in soil. Physiognomically, it is characterized by the dominance of *Festuca cyllenica* subsp. *cyllenica*, which constitute wide grasslands where occur several orophytes of higher syntaxa. Small hemicryptophytes and geophytes found often refuge among the tufts of this plant, among them *Viola graeca*, *Ornithogalum oligophyllum*, *Allium frigidum*, *Galium taygeteum*, *Geocaryum peloponnesiacum*, etc.

Distribution: This association is widespread on Mt. Chelmos.

Tripodio graeci-Helictotrichetum heldreichii Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A48).

Holotypus: Appendix C, Table A48, rel. 1, *hoc loco*.

Characteristic species: *Helictotrichon convolutum* subsp. *heldreichii*, *Tripodion graecum*.

Structure and ecology: The association occurs at 1400 and 1600 m of altitude, in the large rock clearing within the *Abies cephalonica* woodlands. Normally it is frequent along the more or less inclined slopes characterized by rocky outcrops with very shallow and immature soils. The occurrence of *Tripodion graecum* is significant, i.e., since it is a species known only from a few places in the Peloponnese and Anatolia (mainly in the Taurus region). It is usually associated with *Helictotrichon convolutum* subsp. *heldreichii*, generally with high values of coverage, and *Festuca jeanpertii* subsp. *achaica*. In this vegetation the species of higher syntaxa are overall well represented.

Distribution: The association is widespread in the lower montane belt of Mt. Menalon, Central Peloponnese.

SIDERITIDO CLANDESTINAE-ASPERULION MUNGIERI Musarella, Brullo & Giusso all. nov. *hoc loco*.

Syn.: *Eryngieto-Bromion* Quézel 1964, *Vegetatio*, 12:326, p.min.p., nom. ambig. rejic. propos. (art. 36).
Eryngio multifidi-Bromion fibrosi Quézel 1964, corr. Quézel, Barbero & Akman 1992, *Ecol. Medit.* 18:82 p.min.p., nom. ambig. rejic. propos. (art. 36).

Astragaleto-Seslerion Quézel 1964, *Vegetatio*, 12:326, p.min.p., nom. ambig. rejic. propos. (art. 36).
Astragalo angustifolii-Seslerion coerulantis Quézel 1964, corr. Quézel, Barbero & Akman 1992, *Ecol. Medit.* 18:82, p.min.p., nom. ambig. rejic. propos. (art. 36).

Stipeto-Morinion Quézel 1964, *Vegetatio*, 12: 26, p.min.p., nom. ambig. rejic. propos. (art. 36).

Stipo pulcherrimae-Morinion persicae Quézel 1964, corr. Quézel, Barbero & Akman 1992, *Ecol. Medit.* 18:82, p.min.p., nom. ambig. rejic. propos. (art. 36).

Holotypus: *Sideritido clandestinae-Astragaletum taygetici* Musarella, Brullo & Giusso ass. nov.

Characteristic species: *Achillea setacea*, *Achillea taygetea*, *Allium pycnotrichum*, *Anthemis laconica*, *Asperula boryana*, *Asperula mungieri*, *Astragalus taygeteus*, *Asyneuma psaridis*, *Crepis heldreichiana*, *Nepeta camphorata*, *Phitosia crocifolia*, *Sideritis clandestina* subsp. *clandestina*, *Viola sfikasiana*.

Structure and ecology: It gathers, likewise to the previous alliances included in order *Eryngio multifidi-Armerietalia orphanidis*, the orophilous plant communities rich in chamaephytes and nanophanerophytes, often with pulvinate habit, as well as in hemicryptophytes, while rarer are the geophytes. On the whole, the associations belonging to this alliance show a more marked thermophily than those ones of the other two alliances. In addition, the considerable contingent of endemics that characterizes this syntaxon is represented mainly by species taxonomically quite isolated or otherwise of remarkable phytogeographical significance. From the bioclimatic point of view, this alliance falls in an area affected by termotypes referring to supra-and oro-Mediterranean, since one detects a long period of high summer dryness enough, although there is a certain tendency towards the supra- and oro-temperate sub-Mediterranean type, with ombrotypes characterized by scarce rainfall, especially during the summertime.

Distribution: The alliance is confined to the southern Peloponnese including the massifs of the Taygetos and Parnon.

Notes: Into this alliance, analogously to the other two previously described, fall within part of the alliances described by Quézel [35], namely *Eryngio-Bromion*, *Stipo-Morinion*, and *Astragalo-Seslerion*.

Scabioso taygeteae-Onosmetum leptanthae Quézel 1964, *Vegetatio*, 12:327 (Appendix C, Table A49).

Syn.: Association à *Scabiosa taygetea* et *Onosma leptanthum* Quézel 1964, *Vegetatio*, 12: 327.

Lectotypus: Table 15, rel. 2, Quézel [35], *hoc loco*.

Characteristic species: *Onosma leptantha*, *Scabiosa taygetea* subsp. *taygetea*, *Calamintha suaveolens*, *Tripodion graecum*.

Structure and ecology: The association is located on rocky outcrops or however more or less rocky surfaces consisting of compact limestone subject to heavy erosion and washing away. The soils are very superficial and localized in crevices and ledges. It is widespread within the meso-mediterranean and supra-Mediterranean bioclimatic belt, at 1250–1800 m of altitude. This vegetation is dominated by chamaephytes and nanophanerophytes of small and medium size, mixed to several caespitose hemicryptophytes, and among them there are *Onosma leptantha*, *Scabiosa taygetea* subsp. *taygetea*, *Pterocephalus perennis* spp. *perennis*, *Stipa endotricha*, *Dasyphyrum hordeaceum*, *Koeleria mitrushi*, *Bromus riparius*, *Festuca jeanpertii* subsp. *jeanpertii*. The association has a purely edaphophilous role, although it represents a secondary aspect too, as a result of degradation processes of *Abies cephalonica* woodlands.

Distribution: The association is distributed on Mt. Taygetos in the southern Peloponnese.

Notes: This association was considered by Quézel et al. [80] as the nomenclatural type of the alliance *Stipo pulcherrimae-Morinion persicae*, although in the relative phytosociological table there are several characteristic species of the other two alliances described by Quézel [3].

Danthoniastro compacti-Fumaneum alpinae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A50).

Holotypus: Appendix C, Table A50, rel. 4, *hoc loco*.

Characteristic species: *Fumana paphlagonica* subsp. *alpina*, *Danthoniastrum compactum*.

Structure and ecology: The association is localized on the slightly sloping limestone slabs, especially with an eastern exposure. It is developed within the supra-Mediterranean bioclimatic belt at an altitude of about a 1700 m. The surfaces are free of soil except in the cracks and small depressions, that allow the establishment of a rather sparse vegetation. It is a vegetation rich in small prostrate chamaephytes, sometimes creeping, among them particularly significant are *Fumana paphlagonica* subsp. *alpina*, *Helianthemum hymettium*, *Teucrium montanum* var. *parnassicum* and *Asperula mungieri*. Several hemicryptophytes, such as *Danthoniastrum compactum*, *Festuca jeanpertii* subsp. *jeanpertii*, *Koeleria mitrushi* and *Stipa endotricha* are also well represented. This association plays a clearly edaphophilous role replacing the *Scabioso taygetae-Onosmetum leptanthae* in the above-mentioned habitats.

Distribution: Basing on the current knowledge, the association is confined to a small area of Mt. Taygetos in the southern Peloponnese.

Sideritido clandestinae-Astragaletum taygetici Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A51).

Syn.: Association à *Sideritis theezans*, Quézel 1964, Vegetatio, 12:331, nom. illeg. (art. 29).

Holotypus: Appendix C, Table A51, rel. 14, *hoc loco*.

Characteristic species: *Astragalus rumelicus* subsp. *taygeticus*, *A. taygeteus*, *Plantago holosteum* var. *alpestris*, *Hypericum olympicum* and *Arabis subflava*.

Structure and ecology: The association is widely distributed on flat and sometimes more or less sloped surfaces, characterized by not very deep soils, rich in minute skeletal component of carbonatic nature. It grows at 1700 and 2100 m of altitude, within the supra-Mediterranean bioclimatic belt with penetrations in oro-Mediterranean that one. This vegetation is physiognomically differentiated by the dominance of flashy tragacanthoid pulvini of *Astragalus rumelicus* subsp. *taygeticus*, *A. taygeteus* and, more rarely, by *A. angustifolius* subsp. *erinaceus*. Many other small shrubs are also quite frequent, such as *Plantago holosteum* var. *alpestris*, *Sideritis clandestina* subsp. *clandestina*, *Cerastium candidissimum* and several hemicryptophytes. Overall, the association, which usually shows a high value of coverage, must be considered as a climatophilous aspect, spread on all slopes regardless of exposure. From the physiognomic-structural point of view, it is quite related with the other pulvinate tragacanthoid associations dominated by *Astragalus rumelicus* s.l., such as *Cirsio hypopsilii-Astragaletum taygetici*, *Astragaletum lacteo-taygetici* and *Marrubio velutini-Astragaletum rumelici*.

Distribution: The association is exclusive of Mt Taygetos, in the southern Peloponnese.

Notes: This vegetation was described by Quézel [35] with the name "Association à *Sideritis theezans*", which actually is not very significant from the floristic-structural viewpoint. In fact, *Sideritis theezans* (whose correct name is *S. clandestina* subsp. *clandestina*) is a small chamaephyte with a secondary physiognomically role in the context of this shrubby association, dominated by some tragacanthoid nanophanerophytes, such as *Astragalus rumelicus* subsp. *taygeticus* and *A. taygeteus*. According to art. 29, the syntaxon is an illegitimate name and therefore should be replaced by a new name that expresses in clear way its floristic and physiognomic-structural peculiarities. It is therefore proposed the new name *Sideritido clandestinae-Astragaletum taygetici* with a better floristic characterization. In this regard it should be noted that *S. clandestina* subsp. *clandestina* is not exclusive to this association, but it is an endemic chamaephyte widespread in various orophilous communities of southern Peloponnese and therefore it has been proposed as characteristics of the alliance *Sideritido clandestinae-Asperulion mungieri*.

Rindero graecae-Acantholimeton graeci Quézel 1964, Vegetatio, 12:336 (Appendix C, Table A52), corr.

Syn.: Association à *Acantholimeton echinus* et *Rindera graeca* Quézel 1964, Vegetatio, 12:336.

Lectotypus: Table 19, rel. 2, Quézel [35], *hoc loco*.

Characteristic species: *Sesleria vaginalis*, *Jurinea taygetea*, *Minuartia condensata*, *Campanula papillosa*, *Erigeron epiroticus*, *Aethionema carlsbergii*, *Alyssum taygeteum*, *Bupleurum sibthorpiatum*.

Structure and ecology: The association is localized in cacuminal stands of high altitude, about 2200–2400 m, within the oro-Mediterranean bioclimatic belt. It prefers quite acclive surfaces, where it shows a coverage of 40–70%, which decreases significantly at higher altitudes. The substrata are represented by carbonatic rocks that break up into plaquettes or sometimes by semi-stabilized screes. Physiognomically the vegetation is characterized by thorny pulvini of *Astragalus angustifolius* subsp. *erinaceus* and *Acantholimon graecum*, mixed to several caespitose hemicryptophytes, such as *Sesleria vaginalis*. In addition, it is very significant the occurrence of some rare endemics exclusive of this vegetation, as *Jurinea taygetea* and *Aethionema carlsbergii*. This community, showing a clear climatophilous role, is linked to winterproof environmental features, such as the prolonged snow cover, the accentuated phenomena of gelifluction, exposure to cold winds and the occurrence of rocky substrata with shallow and immature soils. The name of this association must be corrected in *Rindero graecae-Acantholimetum graeci* since *Acantholimon echinus* subsp. *echinus* used by Quézel [35] is taxonomically incorrect and should be attributed to *Acantholimon graecum* (see Dimopoulos et al. [71]).

Distribution: The association is confined to the cacuminal higher part of Mt. Taygetos, in the southern Peloponnese.

Notes: This association was included by Quézel [35] in the *Astragalo-Seslerion* and afterwards indicated by Quézel et al. [80] as the lectotype of this alliance.

Onosmo heterophyllae-Astragaletum erinacei Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A53).

Holotypus: Appendix C, Table A53, rel. 3, *hoc loco*.

Characteristic species: *Onosma heterophylla*.

Structure and ecology: The association was surveyed on carbonatic rocky slopes more or less inclined occurring at relatively low altitudes (1300–1500 m), characterized by coarse material mixed with immature soils. It is localized within the meso-Mediterranean bioclimatic belt, usually occupied by *Abies cephalonica* woodlands. From the physiognomic-structural point of view, this vegetation is differentiated by thorny pulvini of *Astragalus angustifolius* subsp. *erinaceus*, that grow together with other shrubs and several caespitose hemicryptophytes; among the latter there are *Onosma heterophylla*, *Stipa endotricha*, *Festuca jeanpertia* subsp. *jeanpertia*, *Koeleria mitrushi*, *Bromus riparius*, *Stipa holosericea*. It is a substitution community linked to the degradation processes of the woody vegetation, although in strictly rocky conditions it tends to have an edaphophilous role.

Distribution: The association has been surveyed on M. Parnon, exclusively at Prophitis M. Ilias, near Agriani in the Southern Peloponnese.

Notes: This association is closely related to *Scabioso taygeteae-Onosmetum leptanthi* from Mt. Taygetos, of which it can be considered a geographical vicariant.

Astragaletum lacteo-taygetici Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A54).

Holotypus: Appendix C, Table A54, rel. 7, *hoc loco*.

Characteristic species: *Astragalus rumelicus* subsp. *taygeticus*, *A. lacteus*, *Cynoglossum pustulatum* subsp. *parviflorum*.

Structure and ecology: The association is linked to rocky slopes characterized by very compact limestone with soil accumulating only in crevices and depressions of the rocks. It is well developed between 1400 and 1800 m of altitude, within the meso-Mediterranean and supra-Mediterranean bioclimatic belts, constituting usually a climatophilous vegetation which tends to expand towards lower elevations as a result of the degradation processes of *Abies cephalonica* forest. This vegetation is physiognomically characterized by tragacanthoid pulvini of *Astragalus rumelicus* subsp. *taygeticus* and *A. angustifolius* subsp. *erinaceus*, in the midst of which grow several small chamaephytes and caespitose or rosulate hemicryptophytes.

Distribution: The association occurs only on the massif of Parnon, in the southern Peloponnese, where it is common in several mountains.

Notes: From the physiognomic-structural and partially floristic viewpoint, this association is quite similar to *Sideritido clandestinae-Astragaletum taygetici* from Mt. Taygetos, differing, however especially for the dynamic role, since the latter association is distributed in a higher altitudinal belt.

Viola parnoniae-Astragaletum erinacei Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A55).

Holotypus: Appendix C, Table A55, rel. 2, *hoc loco*.

Characteristic species: *Viola parnonia*, *Astragalus agraniotii*, *Centaurea parnonia*.

Structure and ecology: The association covers the rather inclined rocky slopes characterized by generally undeveloped calcareous soils, sometimes represented by lithosols. It is widespread within the bioclimatic supra-Mediterranean bioclimatic belt at 1700–1900 m of altitude, regardless of exposure. In this community plays a significant physiognomic role *Astragalus angustifolius* subsp. *erinaceus*, which tends to constitute with its characteristic compact thorny pulvini extensive populations. Furthermore, the occurrence of several chamaephytes and hemicryptophytes, including in particular some rare endemics such as *Viola parnonia*, *Astragalus agraniotii* and *Centaurea parnonia*, differentiate very well this vegetation from other ones of this alliance. Based on the edaphic characteristics, it is possible to distinguish two subassociations, indicated as *astragaletosum erinacei* and *asperuletosum malevonensis*, which will be examined below.

Distribution: The association was surveyed exclusively on Megali Tourla, which is the highest mountain of the Parnon Massif in the southern Peloponnese.

(a) *astragaletosum erinacei* Musarella, Brullo & Giusso subass. nov. *hoc loco* (Appendix C, Table A55, rel. 1–3).

Holotypus: Appendix C, Table A55, rel. 2, *hoc loco*.

Characteristic species: *Astragalus angustifolius* subsp. *erinaceus* (dominant).

Structure and ecology: It represents the typical aspect of the association and is localized on the inclined slopes of the summit, where it colonizes surfaces rich in clastic stabilized material with more or less deep and rich in coarse skeleton soils. Physiognomically, it is differentiated by the dominance of *Astragalus angustifolius* subsp. *erinaceus*, which tends to cover most of the surface occupied by the association. This subassociation plays a prevalently climatophyllous role, although currently it is also widespread in stands in the past occupied by *Abies cephalonica* forests, where has a secondary meaning as a result of degradation processes of soil.

Distribution: See association.

(b) *asperuletosum malevonensis* Musarella, Brullo & Giusso subass. nov. *hoc loco* (Appendix C, Table A55, rel. 4–11).

Holotypus: Appendix C, Table A55, rel. 10, *hoc loco*.

Characteristic species: *Achillea umbellata*, *Asperula malevonensis*, *Helianthemum canum* subsp. *canum*.

Structure and ecology: It replaces the typical aspect in correspondence of compact outcrops, consisting of more or less cracked limestones. In these stands, some species which show markedly chasmophytic habit often occur, such as *Achillea umbellata*, *Helianthemum canum* subsp. *canum* and the local endemic *Asperula malevonensis*, thus providing a distinct physiognomy. It is an edaphophilous aspect showing a scarce coverage, forming small patches in the middle of the previous subassociation.

Distribution: See association.

NOAEO MUCRONATAE-SILENETALIA URVILLEI Musarella, Brullo & Giusso ord. nov. *hoc loco*.

Holotypus: *Asperulion samiae* Musarella, Brullo & Giusso all. nov. *hoc loco*.

Characteristic species: *Acantholimon aegaeum*, *Aethionema saxatile* subsp. *creticum*, *Alopecurus davisii*, *Astragalus angustifolius* subsp. *aegeicus*, *Atraphaxis billardierei*, *Bunium microcarpum* subsp. *microcarpum*,

Centaurea urvillei subsp. *urvillei*, *Dianthus zonatus*, *Draba heterocoma* subsp. *archipelagi*, *Erysimum hayekii*, *Galium heldreichii*, *Inula heterolepis*, *Jurinea cadmea*, *Koeleria lobata*, *Minuartia anatolica* var. *polymorpha*, *Noaea mucronata*, *Paracaryum aucheri*, *Paronychia chionaea*, *Pterocephalus pinardii*, *Sesleria anatolica*, *Sideritis sipylea*, *Silene urvillei*, *Stachys cretica* subsp. *smyrnaea*, *Verbascum pycnostachyum*.

Structure and ecology: This order groups the orophilous pulvinate plant communities dominated by chamaephytes and nanophanerophytes with tragacanthoid habit linked to cacuminal very sunny and windy stands at altitudes higher than 900–1000 m. The substrates are prevalently carbonatic with immature soils rich in coarse skeleton occurring mainly in the rocky crevices. The vegetation belonging to this syntaxon colonize mainly rocky surfaces more or less denuded, often quite sloping, affected by moist marine winds or a regime of mists. During the winter period these stations are usually covered for quite short periods by snow. On the basis of investigations carried out in the Aegean area, the habitats colonized by this type of vegetation are represented mainly by the summit areas of island mountains, where the peculiar environmental conditions above emphasized can be found. From the bioclimatic point of view, the order is linked to mountain or high mountain habitats falling into meso- and supra-Mediterranean belts, extending marginally also in the oro-Mediterranean one. Floristically, the order is characterized by a rich contingent of species having mainly an East Aegean-Anatolian distribution, including also several rare endemics.

Distribution: Basing on the current knowledge, the order seems distributed on the mountains of some north-eastern Aegean islands, such as Samos, Chios, Lesbos and Thassos. It is likely that plant communities related to this syntaxon are also present on the island of Samothraki, Mt. Athos, and some coastal mountains of western Anatolia.

Notes: The *Noaea mucronatae-Silenetalia urvillei* must be considered as the eastern vicariant of *Eryngio multifidi-Armerietalia orphanidis*, distributed in the mainland of central-southern Greece, as well as in some Ionian Islands and Euboea.

ASPERULION SAMIAE Musarella, Brullo & Giusso all. nov. *hoc loco*.

Holotypus: *Astragaletum samii* Musarella, Brullo & Giusso ass. nov. *hoc loco*.

Characteristic species: *Allium hirtovaginatatum* subsp. *samium*, *A. orosamium*, *Alyssum samium*, *Anthemis samia*, *Asperula samia*, *Erodium sibthorpiatum* subsp. *vetteri*, *Satureja spinosa* var. *glabra*, *Thymus samius*.

Structure and ecology: This alliance gathers the plant communities occurring in cacuminal stands of island mountains, localized at 900–1400 m of altitude. It is an essentially calcicolous syntaxon linked to a meso-Mediterranean bioclimatic belt, extending towards the supra-Mediterranean one. It has its best expression in very peculiar ecological conditions, where some environmental factors play an important role, such as the marine moist winds, rather cold during the autumn and winter, the erosive action of weathering on rocky surfaces, the mists, and the marked summer dryness. Floristically, it is differentiated by a rich endemic and rare species contingent, having a considerable taxonomical and phytogeographical significance.

Distribution: The alliance is confined to the mountains of the island of Samos in the eastern Aegean.

Astragaletum samii Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A56).

Holotypus: Appendix C, Table A56, rel. 3, *hoc loco*.

Characteristic species: *Astragalus creticus* subsp. *samius* and *Allium orosamium*.

Structure and ecology: The association is localized on calcareous slopes of cacuminal areas at 1000–1400 m of altitude, where it tends to cover wide surfaces. It has its best expression on compact rocky substrates, often very sloping, represented by calcareous outcrops and buttresses, with soils present almost exclusively in the crevices and ledges. From the bioclimatic viewpoint, this vegetation grows within the meso-Mediterranean belt, extending marginally also in the oro-Mediterranean one, showing a role, not strictly climatophilous, but rather of edaphophilous vegetation. However, it is spread in an area located above the limit of the forests, consisting mainly of *Pinus brutia* and *Quercus calliprinos*

woodlands. In the tracts with deeper and mature soils, this pulvinate vegetation is mixed to relict of orophilous conifer forest of *Junipero-Pinetea sylvestris*, where *Juniperus foetidissima* and *J. oxycedrus* play an important role. Floristically, the association is characterized by the dominance of thorny pulvini of *Astragalus creticus* subsp. *samius*, punctiform endemic of considerable phytogeographical interest. Several relevant endemic orophytes, such as *Allium orosamium*, *Alyssum samium*, *Anthemis samia*, *Asperula samia*, *Erodium sibthorpiatum* subsp. *vetteri*, and *Thymus samius* occur in this association and probably also *Centaurea xylobasis*, a rare endemic exclusive of these cacuminal stands.

Distribution: The association is exclusive of the cacuminal area of Mt. Kerkis in the island of Samos (East Aegean).

Thymo samii-Astragaletum condensati Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A57).

Holotypus: Appendix C, Table A57, rel. 10, *hoc loco*.

Characteristic species: *Astragalus condensatus* (= *A. ptilodes*), *Valeriana dioscoridis*, *Phlomis grandiflora*, *Fritillaria carica*, *Centaurea cariensis* subsp. *maculiceps*, *Petrorhagia armeriodes*, *Vincetoxicum canescens* subsp. *pedunculatum*, *Allium karvounis*, *Lomelosia polykratis*, *Ranunculus rumelicus*, *Crocus oliveri* subsp. *balansae*.

Structure and ecology: The association is localized in a cacuminal area characterized by outcrops of compact crystalline limestone (marble), with surfaces flat or slightly sloping. The soils are very shallow and fill the depressions and cracks of the rock. The area in which it is developed, localized at 1100–1200 m of altitude, falls within the meso-Mediterranean bioclimatic belt. From the structural point of view, it is observed the dominance of low pulvinate or creeping shrubs, among them *Astragalus condensatus*, tragacanthoid species, playing a relevant role, and various other small shrubs, such as *Asperula samia*, *Noaea mucronata*, *Satureja spinosa* var. *glabra*, *Thymus samius*, etc. In this association are found numerous endemic species rather rare exclusive of these cacuminal stands. Outside of the limestone outcrops, in correspondence of the schistose substrata, this pulvinate vegetation is replaced by *Pinus pallasiana* woodlands, adaphically much more exigent. On the whole, this vegetation has a clear edaphophilous role.

Distribution: The association is exclusive of cacuminal area of Mt. Ambelos in the island of Samos (East Aegean).

Notes: The *Thymo samii-Astragaletum condensatis* can be considered a vicariant of the *Astragaletum samii*, occurring on different substrata in another mountain of Samos.

Campanulo lyratae-Genistetum parnassicae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A58).

Holotypus: Table 11, rel. 5, Christodoulakis and Georgiadis [41], *hoc loco*.

Characteristic species: *Genista parnassica*, *Campanula lyrata* subsp. *lyrata*.

Structure and ecology: Based on the relevés published by Christodoulakis and Georgiadis [41], at altitude lower than 1000 m always in calcareous rocky stands, more or less sloping, the *Astragaletum samii* is replaced by another type of shrub pulvinate vegetation, differentiated by the dominance of *Genista parnassica*. In the places occupied by this vegetation, *Astragalus creticus* subsp. *samius* is wholly absent, as well as the species most significant of the alliance and order decrease and become quite rare. This community, which is proposed as *Campanulo lyratae-Genistetum parnassicae*, therefore, can be considered as a vicariant of low altitude of the *Astragaletum samii*. From the bioclimatic point of view, the association is distributed in the meso-Mediterranean belt.

Distribution: The association is known only to Mt. Kerkis in the island of Samos (East Aegean).

Arenario guicciardii-Seslerietum anatolicae Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A59).

Holotypus: Appendix C, Table A59, rel. 3, *hoc loco*.

Characteristic species: *Sesleria anatolica*, *Arenaria guicciardii*, *Pimpinella peregrina*.

Structure and ecology: The association is localized in calcareous markedly sloping rocky places with soils occurring only in the cracks and the crevices. It seems to have its optimum at 900–1000 m of

altitude on a little sunshine surface especially with northern exposure, within the meso-Mediterranean bioclimatic belt. This vegetation is dominated by *Sesleria anatolica* which grows together with a rich contingent of small pulvini or creeping shrubs, such as *Anthemis samia*, *Inula heterolepis*, *Noaea mucronata*, *Satureja spinosa* var. *glabra*, *Sideritis sipylea*, etc. As concerns its dynamic role, it is a community prevalently edaphophilous, occurring within the climatophilous *Pinus brutia* forests, which is linked to surfaces with mature and more or less deep soils.

Distribution: The association was surveyed on Mt. Kerkis in the island of Samos (East Aegean).

Notes: The *Arenario guicciardii-Seslerietum anatolicae* tends to replace the *Astragaletum samii* at altitudes lower than 1000 m, limited to shady and fresh stands.

FESTUCO PSEUDOSUPINAE-ASTRAGALION AEGEICI Musarella, Brullo & Giusso all. nov. *hoc loco*.

Holotypus: *Anthemido discoideae-Astragaletum aegeici* Musarella, Brullo & Giusso ass. nov. *hoc loco*.

Characteristic species: *Anthemis cretica* subsp. *leucanthemoides*, *Astragalus lesbiacus*, *Crepis sancta* subsp. *nemausensis*, *Erysimum hayekii*, *Festuca pseudosupina*.

Structure and ecology: The alliance gathers pulvinate plant communities dominated by small tragacanthoid shrubs occurring in the mountain cacuminal stands of insular mountains. They are localized at 900–1300 m of altitude, mainly within the meso-Mediterranean bioclimatic belt. The associations falling in this syntaxon are very specialized and linked to very peculiar edaphic and bioclimatic conditions. They are circumscribed to carbonatic substrata represented by ridges and rocky outcrops, with soils present only in the cracks and crevices. The alliance is floristically differentiated by endemic species exclusive to these summit stands, that emphasized their marked geographical isolation.

Distribution: The alliance is circumscribed to the East Aegean islands of Lesbos and Chios.

Notes: This syntaxon can be considered as a geographical vicariant of the *Asperulion samiae*.

Anthemido discoideae-Astragaletum aegeici Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A60, rel. 1–6).

Holotypus: Appendix C, Table A60, rel. 1, *hoc loco*.

Characteristic species: *Astragalus angustifolius* subsp. *aegeicus*, *Anthemis aciphylla* subsp. *discoidea*, *Allium stamineum* s.l., *Silene lesbiaca*, *Paronychia macrosepala*.

Structure and ecology: The association is restricted to cacuminal stands at 900–967 m of altitude, on compact limestone with very superficial soils confined to the crevices of the rock. It is developed within the meso-Mediterranean bioclimatic belt on rocky surfaces usually well exposed and windy. In this vegetation small often thorny pulvini occur, among which a relevant physiognomic role is played by *Astragalus angustifolius* subsp. *aegeicus*, *Inula heterolepis*, *Noaea mucronata*, *Silene urvillei*, *Sideritis sipylea*, *Anthemis aciphylla* subsp. *discoidea*, mixed to which there are some caespitose grasses, such as *Festuca pseudosupina* and *Koeleria lobata*. It is clearly an edaphophilous vegetation closely related to very peculiar environmental conditions, such as eroded soils, marked winds and mist regime. These factors taken together do not allow a natural evolution of the vegetation towards more mature forms, such as *Pinus brutia* pine forest widespread in the surrounding areas.

Distribution: The association is exclusive of Mt. Olymbos in the island of Lesbos (Eastern Aegean).

Diantho zonati-Astragaletum lesbiaci Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A60, rel. 7–11).

Holotypus: Appendix C, Table A60, rel. 7, *hoc loco*.

Characteristic species: *Astragalus lesbiacus*, *Dianthus zonatus*, *Petrorrhagia armerioides*.

Structure and ecology: The association is localized on outcrops of calcareous rocks characterized by very shallow and immature soils. Usually it grows on fairly flat surfaces at altitudes between 700 and 800 m. Physiognomically, it shows a coverage rather scattered characterized by small prostrate shrubs,

represented mainly by *Astragalus lesbiacus*, *A. angustifolius* subsp. *aegeicus* and *Dianthus zonatus*. The association usually covers small surfaces interspersed with uncultivated or reforested areas.

Distribution: The association was observed only on Mt. Marathovounos in Chios island.

Galio insularis-Thymetum sypilei Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A60, rel. 12–16).

Holotypus: Appendix C, Table A60, rel. 15, *hoc loco*.

Characteristic species: *Thymus sipyleus*, *Minuartia attica* subsp. *idaea*, *Galium brevifolium* subsp. *insulare*, *Minuartia mesogitana* subsp. *kotschyana*, *Asyneuma virgatum* subsp. *cichoriforme*.

Structure and ecology: The association colonizes the rocky ridges very windy and washed away at altitudes above 1100 m. The vegetation is rather thinned out with small dwarf shrubs that grow in the cracks of rocks. The more frequent species in this vegetation are *Thymus sipyleus*, *Minuartia attica* subsp. *idaea*, *Galium brevifolium* subsp. *insulare*, *Minuartia mesogitana* subsp. *kotschyana*, *Festuca pseudosupina*, *Centaurea urvillei* subsp. *urvillei*, *Pteroccephalus pinardii* and *Euphorbia herniariifolia*. This vegetation is very degraded and floristically impoverished mainly due to heavy grazing

Distribution: The association occurs on Mt. Pelineon in Chios.

Acantholimo aegaei-Astragaletum lesbiaci Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A60, rel. 17–21).

Holotypus: Appendix C, Table A60, rel. 17, *hoc loco*.

Characteristics species: *Astragalus lesbiacus*, *Acantholimon aegaeum*, *Thymus zygioides*.

Structure and ecology: The association occurs on the cacuminal limestone plateaux, where it colonizes washed rocky surfaces at altitudes between 800 and 900 m. It is characterized by the dominance of pulvinate tragacanthoid shrubs, such as *Astragalus lesbiacus*, *A. angustifolius* subsp. *aegeicus*, *Acantholimon aegaeum*, and *Silene urvillei*.

Distribution: The association was surveyed exclusively on Mt. Plakes in Chios island.

SESLERIO ACHTAROVII-ANTHEMIDION TENUILOBAE Musarella, Brullo & Giusso all. nov. *hoc loco*.

Holotypus: *Paronychio bornmuelleri-Astragaletum odoniani* Musarella, Brullo & Giusso ass. nov. *hoc loco*.

Characteristic species: *Anthemis tenuiloba*, *Festuca hirtovaginata*, *Galium insulare*, *Inula aschersoniana* var. *athoa*, *Satureja montana* subsp. *macedonica*, *Sesleria ahtarovii*.

Structure and ecology: This alliance brings plant communities linked to carbonatic substrates of mountain and high-mountain stands, dominated by thorny pulvini. This vegetation is distributed at altitudes above 900 m, where it is localized in places usually represented by summit rocky plateaux, ridges and cacuminal areas with very superficial and immature soils, present mainly in small depressions and crevices. From the bioclimatic viewpoint, this alliance is distributed within the meso-Mediterranean belt, with ombrotype more or less humid, even during the summer, penetrating probably in that supra-Mediterranean one. Floristically, it is differentiated by a set of endemic species with North Aegean distribution.

Distribution: The alliance is currently known only for the island of Thassos in the northern Aegean, but based on the geographic distribution of characteristic species, probably it occurs also in the coastal mountains of North Greece.

Notes: This syntaxon can be considered as a northern vicariant of the other two alliances included in the *Noaeo mucronatae-Silenetalia urvillei* previously described.

Paronychio bornmuelleri-Astragaletum odoniani Musarella, Brullo & Giusso ass. nov. *hoc loco* (Appendix C, Table A61).

Holotypus: Appendix C, Table A61, rel. 1, *hoc loco*.

Characteristic species: *Astragalus angustifolius* subsp. *odonianus*, *Paronychia bornmuelleri*, *Cerastium moesiacum* subsp. *glutinosum*, *Allium cremnophilum*, *Dianthus gracilis* subsp. *xanthianus*, *Minuartia verna* var. *thasia*.

Structure and ecology: The association is confined to the summit very windy and sunny plateaux, consisting of crystalline limestones, located at altitudes between 900 and 1000 m, falling within the bioclimatic meso-Mediterranean belt. It occurs on rocky substrates with very superficial and immature soils, reaching its maximum expression in situations of ridge. The vegetation is dominated by thorny pulvini of *Astragalus angustifolius* subsp. *odonianus*, which forms large populations mixed with small prostrate chamaephytes (*Dianthus gracilis* subsp. *xanthianus*, *Minuartia verna* var. *thasia*, *Paronychia bornmuelleri*, *Cerastium moesiacum* subsp. *glutinosum*) and several hemicriptophytes represented mainly by caespitose grasses (*Festuca hirtovaginata*, *Sesleria achtarovii*, *Koeleria lobata*, *Stipa endotricha*). This vegetation is typically edaphophile, since it is linked to peculiar environmental conditions that do not allow the normal development of the soil. In edaphic more mature situations, the association is usually replaced by *Juniperus excelsa* woodlands.

Distribution: The association is confined to rocky outcrops of the cacuminal stands of Mt. Ipsario in the island of Thassos (northern Aegean).

3. Materials and Methods

The methodology used for the study regarding this kind of orophilous vegetation was based on a careful analysis of the diagnostic components that characterize the biotic and abiotic landscape of the investigated area.

The 680 phytosociological relevés (460 unpublished and 220 from literature), carried out during the spring-summer of the several years (2003, 2004, 2005, 2006, 2007, 2008, 2011, 2019) according to the sigmatist method of Zürich-Montpellier school [88,89], allowed for the definition of the main vegetation typologies with the identification of many different plant communities, for whose correct syntaxonomic arrangement and the phytosociological nomenclature code was followed [90]. The literature data refer to the contributions of several authors who carried out phytosociological investigations on the mountain ranges included in this study [35,38,40–42,44]. All the identified syntaxa were analyzed from nomenclatural, floristic, structural, ecological, chorological and syndynamic point of view. With regard to single associations, these are provided with a phytosociological table in which the unpublished relevés are complemented by literature data after floristic update. For the identification of the plants listed in phytosociological relevés, several Balkan, European, and Mediterranean floras were used, while for the floristic nomenclature we were based on the most significant floras, checklist and taxonomic monographs regarding genera and critical groups. The main works consulted were: Boissier [91], Halácsy [92], Hayek [93], Tutin et al. [94,95], Davis [96], Cristodoulakis and Georgiadis [97], Greuter et al. [98], Scholz [99], Strid [73,74], Strid and Tan [75–77], Strasser [100], Tan et al. [70], Greuter [101], Krendl [102], Podlech and Zarre [103], Dimopoulos et al. [71], “Flora of Greece web” [103], and other regarding particular species [104,105]. The floristic list obtained from phytosociological relevés is reported in Appendix A (Table A1) and were used for the phytogeographic processing.

As regards the bioclimatic investigations, the classification of Rivas-Martínez [64] was followed, based on the thermopluviometric data by this author. In particular, the charts built according to the criteria proposed by Walter and Leith [67] are provided, using the extrapolation data according to the method of Hijmans et al. [68,69], which are listed in the “Global climate surfaces” and relate to the period 1950–2000. These data have been taken from a map grid of 10 km², in which the toponym is not given but only the geographical coordinates of the centroid of the square.

For the taxonomic treatment of the new species and subspecies described in this work, the study is based on floristic collections carried out in the investigated territories, integrated by herbarium and literature data in order to clarify their morphological relationships. As regards the taxonomic approach, the international code of botanical nomenclature [106] was followed.

4. Conclusions

This study allowed to improve the knowledge on the orophilous pulvinate vegetation occurring in the high-mountains of continental and insular Greece. These plant communities probably dating back to the Messinian (late Miocene) following the desiccation of the Mediterranean basin, since they are featured by steppic species, that currently have their greatest diffusion in the Irano-Turanian region. In particular, these species having usually a cushion-like habit, often thorny, seem to have penetrated in the Mediterranean after the drying up of the climate, which led to climatically challenging and very harsh environmental conditions unfit for the pre-existing flora.

It is a very peculiar and physiognomically well characterized vegetation, very rich in endemics represented mainly by pulvinate chamaephytes and nanophanerophytes as well as often by dominance of hemicryptophytes. Most of the endemic species have a relict distribution and belong to the ancient tertiary flora, which gives a remarkable phytogeographic significance to this kind of vegetation.

Compared to the previous syntaxonomic scheme proposed by Quézel [35], nomenclaturally updated by Quézel et al. [80] and more recently taken up by Mucina et al. [84], which did not provide clear information on the classification of the plant communities present in the cacuminal stations of the Greek mountains, a new treatment is proposed in this study, based above all on the phytogeographic role of endemic species and not on the altimetric ranges, at least as regards the alliances. On the whole, this new class, namely *Cerastio candidissimi-Astragaletea rumelici*, replacing the previous *Daphno-Festucetea* which must be considered as an ambiguous name, represent a geographical vicariant in Greece and Aegean area of other syntaxa already known in literature [2,22,31,45,48,51]. Such cases are the following: *Carici-Genistetea lobelii* Klein 1972 in Sardinia and Corsica; *Rumici-Astragaletea siculi* Pignatti & Nimis in Pignatti et al. 1980 in Sicily and Calabria; *Saturejetea spinosae* Zaffran 1990 in Crete; *Diantho troodi-Teucrietea cyprii* Brullo, Giusso & Guarino 2005 in Cyprus; and *Astragalo-Brometea* Quézel 1973 in Anatolia and Lebanon.

There are numerous problems related to the conservation of these high mountain vegetation aspects. The most important are the anthropogenic pressure, due to grazing, especially goats, and the landslide of some areas which makes them particularly inconsistent, and this causes continuous erosions of various strips of vegetation. If on the one hand, thorny pulvins are not eaten by grazing animals, it is also true, however, that their presence leads continuous trampling and excessive eutrophication.

Furthermore, the ongoing climate change will certainly have a further negative influence on these peculiar high mountain plant communities and can promote a change in species strategies and growth form [107]. In fact, increasing temperatures will result in less water availability at ever higher altitudes, resulting in the impossibility for the plant communities to be able to survive using their environmental adaptations, such as spinescence, pulvinate habit, etc. All this could involve changes in the vegetation typology, with a progressive replacement of the hitherto predominant angiosperms with dwarf gymnosperms, as species of *Juniperus* [108,109].

For all these reasons, a strictly ecological approach could provide more detailed information on the role that these plant communities have within the entire ecosystem of the high mountains involved in this study. This research related to conservation biology could be used mainly for protection policy.

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Appendix A

Table A1. Checklist of the taxa occurring in the phytosociological relevés with their life forms and chorotypes (from [70–77]).

Taxon	Life Form	Chorotype
<i>Abies cephalonica</i> Loudon	P	end Greece
<i>Acantholimon aegaeum</i> F.K. Mey.	Ch pulv	end E-Aegean
<i>Acantholimon echinus</i> Boiss. subsp. <i>echinus</i>	Ch pulv	E-medit
<i>Acantholimon graecum</i> F.K. Mey.	Ch pulv	end Balkan
<i>Achillea ageratifolia</i> (Sm.) Benth. & Hook. f. subsp. <i>ageratifolia</i>	H caesp	end Balkan
<i>Achillea fraasii</i> Schultz Bip.	H caesp	E-medit
<i>Achillea holosericea</i> Sm.	H caesp	end Balkan
<i>Achillea nobilis</i> L.	H caesp	eurosiberian
<i>Achillea setacea</i> Waldst. & Kit.	H scap	E-medit
<i>Achillea taygetea</i> Boiss. & Heldr.	Ch suffr	end Peloponnese
<i>Achillea umbellata</i> Sm.	Ch suffr	end Greece
<i>Acinos alpinus</i> (L.) Moench subsp. <i>meridionalis</i> (Nyman) Ball	Ch suffr	circum-medit
<i>Acinos arvensis</i> (Lam.) Dandy	T scap	circum-medit
<i>Aethionema carlsbergii</i> Strid & Papanicolau	Ch suffr	end Peloponnese
<i>Aethionema saxatile</i> (L.) R. Br.		
subsp. <i>creticum</i> (Boiss. & Heldr.) Andersson et al.	Ch suffr	E-medit
<i>Aethionema saxatile</i> (L.) R. Br.		
subsp. <i>graecum</i> (Boiss. & Spruner) Hayek	Ch suffr	E-medit
<i>Ajuga orientalis</i> L.	H rhiz	E-medit
<i>Alkanna graeca</i> Boiss. & Spruner		
subsp. <i>baeotica</i> (DC.) Nyman	H caesp	end Greece
<i>Allium achaium</i> Boiss. & Orph.	G bulb	end Peloponnese
<i>Allium cephalonicum</i> Brullo, Pavone & Salmeri	G bulb	end Ionian islands
<i>Allium cithaeronis</i> Bogdanović et al.	G bulb	end Sterea Ellas
<i>Allium cremnophilum</i> Brullo, Pavone & Salmeri	G bulb	end N-Aegean
<i>Allium cylleneum</i> Brullo, Pavone & Salmeri	G bulb	end Peloponnese
<i>Allium frigidum</i> Boiss. & Heldr.	G bulb	end Peloponnese
<i>Allium guttatum</i> Steven	G bulb	circum-medit
<i>Allium hirtovaginatatum</i> Kunth		
subsp. <i>samiium</i> Brullo, Pavone & Salmeri	G bulb	end E-Aegean
<i>Allium karvounis</i> Brullo, Giusso del Galdo & Musarella	G bulb	end E-Aegean
<i>Allium orosamiium</i> Brullo, Giusso del Galdo & Musarella	G bulb	end E-Aegean
<i>Allium parnassicum</i> (Boiss.) Halácsy	G bulb	end Sterea Ellas
<i>Allium pycnotrichum</i> Trigas, Kalpoutzakakis & Constantinidis	G bulb	end Peloponnese
<i>Allium reuterianum</i> Boiss.	G bulb	end E-Aegean
<i>Allium rhodopeum</i> Velen.	G bulb	end Balkan
<i>Allium sardoum</i> Moris	G bulb	circum-medit
<i>Allium stamineum</i> Boiss. s.l.	G bulb	E-medit
<i>Allium subhirsutum</i> L.	G bulb	circum-medit
<i>Alopecurus davisii</i> Bor	H caesp	E-medit
<i>Alopecurus gerardii</i> Vill.	H caesp	circum-medit
<i>Alyssum fulvescens</i> Sm.	T scap	E-medit
<i>Alyssum montanum</i> L. subsp. <i>graecum</i> (Halácsy) Hayek	Ch suffr	E-medit
<i>Alyssum montanum</i> L. var. <i>hymettium</i> Boiss.	Ch suffr	end Sterea Ellas
<i>Alyssum murale</i> Waldst. & Kit.	H caesp	circum-medit
<i>Alyssum repens</i> Baumgt. var. <i>brachyphyllum</i> Halácsy	Ch suffr	end Peloponnese
<i>Alyssum samiium</i> T.R.Dudley & Christod.	Ch suffr	end E-Aegean
<i>Alyssum siculum</i> Jordan	T scap	circum-medit
<i>Alyssum taygeteum</i> Heldr.	Ch suffr	end CS Greece

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Anchusa hybrida</i> Ten.	H scap	circum-medit
<i>Anemone blanda</i> Schott & Kotschy	G rhiz	E-medit
<i>Anthemis aciphylla</i> Boiss. subsp. <i>discoidea</i> Boiss.	Ch suffr	E-medit
<i>Anthemis arvensis</i> L.	T scap	cosmop
<i>Anthemis cretica</i> L. subsp. <i>cretica</i>	H caesp	E-medit
<i>Anthemis cretica</i> L. subsp. <i>leucanthemoides</i> (Boiss.) Grierson	H caesp	E-medit
<i>Anthemis laconica</i> Franzen	Ch suffr	end Peloponnese
<i>Anthemis orientalis</i> (L.) Degen	Ch suffr	E-medit
<i>Anthemis samia</i> Rech. fil.	Ch suffr	end E-Aegean
<i>Anthemis spruneri</i> Boiss. & Heldr.	Ch suffr	end Sterea Ellas
<i>Anthemis tenuiloba</i> (DC.) R. Fernandes	Ch suffr	E-medit
<i>Anthemis tinctoria</i> L. subsp. <i>parnassica</i> (Boiss. & Heldr.) Nyman	H caesp	end Balkan
<i>Anthoxanthum odoratum</i> L.	H caesp	cosmop
<i>Anthoxanthum ovatum</i> Lag.	T scap	circum-medit
<i>Anthyllis montana</i> L. subsp. <i>jacquinii</i> (A. Kern.) Hayek	Ch frut	circum-medit
<i>Anthyllis vulneraria</i> L. subsp. <i>bulgarica</i> (Sagorski) Cullen	H caesp	end Balkan
<i>Anthyllis vulneraria</i> L. subsp. <i>praepropera</i> (A. Kerner) Bornm.	H caesp	N-medit
<i>Anthyllis vulneraria</i> L. subsp. <i>rubriflora</i> (DC.) Arcang.	H caesp	circum-medit
<i>Arabis bryoides</i> Boiss.	H caesp	end Balkan
<i>Arabis caucasica</i> Willd.	H scap	E-medit
<i>Arabis collina</i> Ten.	H scap	circum-medit
<i>Arabis subflava</i> Jones	Ch frut	end CS Greece
<i>Arenaria cretica</i> Sprengel var. <i>stygia</i> Boiss. & Heldr.	Ch frut	E-medit
<i>Arenaria filicaulis</i> Fenzl subsp. <i>filicaulis</i>	Ch frut	end Balkan
<i>Arenaria filicaulis</i> Fenzl subsp. <i>graeca</i> (Boiss.) Mc Neill	Ch frut	end Balkan
<i>Arenaria guicciardii</i> Heldr. ex Boiss.	T scap	end Greece
<i>Arenaria leptoclados</i> (Reichenb.) Guss.	T scap	eurasian
<i>Arenaria serpyllifolia</i> L.	T scap	eurasian
<i>Aristolochia rotunda</i> L.	G rhiz	circum-medit
<i>Armeria orphanidis</i> Boiss.	Ch caesp	end CS Greece
<i>Arrhenatherum palestinum</i> Boiss.	H caesp	E-medit
<i>Arum maculatum</i> L.	G rhiz	euro-medit
<i>Asperula boissieri</i> Heldr. ex Boiss.	Ch pulv	end CS Greece
<i>Asperula boryana</i> (Walp.) Herendorf	Ch pulv	end Peloponnese
<i>Asperula lutea</i> Sibth. & Sm.	Ch suffr	end CS Greece
<i>Asperula malevonensis</i> Ehrend. & Schonb.-Temesy	Ch pulv	end Peloponnese
<i>Asperula mungieri</i> Boiss. & Heldr.	Ch suffr	end Peloponnese
<i>Asperula oetaea</i> (Boiss.) Halácsy	H caesp	end Greece
<i>Asperula purpurea</i> (L.) Ehrend. subsp. <i>apiculata</i> (Sm.) Ehrend.	Ch frut	end Balkan
<i>Asperula rigidula</i> Halácsy	Ch rept	end CS Greece
<i>Asperula samia</i> Christod. & Georgiadis	Ch suffr	end E-Aegean
<i>Asperula suffruticosa</i> Boiss. & Heldr.	Ch suffr	end NC Greece
<i>Asperula thessala</i> Boiss. & Heldr.	Ch suffr	end Greece
<i>Asphodeline liburnica</i> (Scop.) Rchb.	G rhiz	E-medit
<i>Asphodeline lutea</i> (L.) Reichenb.	G rhiz	euro-medit
<i>Aster cylleneus</i> (Boiss. & Orph.) Halácsy	H caesp	end Balkan
<i>Astragalus agraniotii</i> Orph.	Ch pulv	end Peloponnese
<i>Astragalus angustifolius</i> Lam.	Ch pulv	end E-Aegean
subsp. <i>aegeicus</i> Brullo, Giusso & Musarella		
<i>Astragalus angustifolius</i> Lam.	Ch pulv	end Greece
subsp. <i>erinaceus</i> (C. Presl) Brullo, Giusso & Musarella		
<i>Astragalus angustifolius</i> Lam.	Ch pulv	end N-Aegean
subsp. <i>odonianus</i> Brullo, Giusso & Musarella		
<i>Astragalus apollineus</i> Boiss. & Heldr.	H caesp	end CS Greece
<i>Astragalus calavrytensis</i> Beauverd & Topali	Ch pulv	end Peloponnese
<i>Astragalus cephalonicus</i> Presl	Ch pulv	end Ionian islands
<i>Astragalus condensatus</i> Ledeb.	Ch pulv	E-medit

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Astragalus corynthetaicus</i> Brullo, Giusso & Musarella	Ch pulv	end Sterea Ellas
<i>Astragalus creticus</i> Lam. subsp. <i>samius</i> (Sirj. & Rech.) Ponert	Ch pulv	end E-Aegean
<i>Astragalus cylleneus</i> Boiss. & Heldr.	Ch pulv	end Peloponnese
<i>Astragalus depressus</i> L. subsp. <i>depressus</i>	H ros	circum-medit
<i>Astragalus hellenicus</i> Boiss.	H ros	circum-medit
<i>Astragalus lacteus</i> Heldr. & Sart.	H ros	end Balkan
<i>Astragalus lesbiacus</i> P. Candargy	Ch pulv	end E-Aegean
<i>Astragalus monspessulanus</i> L.	H caesp	circum-medit
<i>Astragalus parnassi</i> Boiss.	Ch pulv	end Sterea Ellas
<i>Astragalus rumelicus</i> Bunge subsp. <i>rumelicus</i>	Ch pulv	E-medit
<i>Astragalus rumelicus</i> Bunge	Ch pulv	end Euboea
subsp. <i>euboicus</i> (Širj.) Brullo, Giusso & Musarella	Ch pulv	end Peloponnese
<i>Astragalus rumelicus</i> Bunge	Ch pulv	end Peloponnese
subsp. <i>taygeticus</i> (Širj.) Brullo, Giusso & Musarella	Ch pulv	end Peloponnese
<i>Astragalus taygeteus</i> Persson & Strid	Ch pulv	end NC Greece
<i>Astragalus tymphresteus</i> Boiss. & Spruner	Ch pulv	E-medit
<i>Asyneuma limonifolium</i> (L.) Jancken	H scap	end Peloponnese
<i>Asyneuma psaridis</i> (Halácsy) Bornm.	H scap	E-medit
<i>Asyneuma virgatum</i> (Labill.) Bornm. subsp. <i>cichoriforme</i> (Boiss.) Damboldt	Ch pulv	E-medit
<i>Atraphaxis billardierei</i> Jaub. & Spach	Ch suffr	E-medit
<i>Aubrieta deltoidea</i> (L.) DC. subsp. <i>deltoidea</i>	Ch suffr	E-medit
<i>Aubrieta deltoidea</i> (L.) DC. var. <i>integrifolia</i> F. & M.	Ch suffr	E-medit
<i>Aubrieta deltoidea</i> (L.) DC. subsp. <i>intermedia</i> (Heldr. & Orph.) M. & P.	Ch frut	end NC Greece
<i>Aurinia gionae</i> (Quézel & Contandr.) Greuter & Burdet	H caesp	end Peloponnese
<i>Aurinia moreana</i> Tzanoud. & Iatrou	Ch frut	E-medit
<i>Aurinia saxatilis</i> (L.) Desv. subsp. <i>megalocarpa</i> (Hauskn.) Dudley	H caesp	end Balkan
<i>Aurinia saxatilis</i> (L.) Desv. subsp. <i>orientalis</i> (Ard.) T.R. Dudley	H caesp	E-medit
<i>Avenochloa agropyroides</i> (Boiss.) Holub	Ch frut	E-medit
<i>Ballota acetabuolsa</i> (L.) Bentham	Ch frut	E-medit
<i>Ballota pseudodictamnus</i> Benth.	G bulb	circum-medit
<i>Bellevalia trifoliata</i> (Ten.) Kunth	H ros	paleotemp
<i>Bellis perennis</i> L.	NP	E-medit
<i>Berberis cretica</i> L.	H ros	end CS Greece
<i>Beta nana</i> Boiss. & Heldr.	Ch frut	end Greece
<i>Bolanthus graecus</i> (Schreb.) Barkoudah	T scap	cosmop
<i>Botrychium lunaria</i> (L.) Schwartz	H caesp	circum-medit
<i>Brachypodium retusum</i> P. Beauv.	T scap	E-medit
<i>Briza humilis</i> M. Bieb.	T scap	circum-medit
<i>Bromus intermedius</i> Guss.	H caesp	E-medit
<i>Bromus lacmonicus</i> Hauskn.	H caesp	E-medit
<i>Bromus riparius</i> Rehm.	T scap	paleotemp
<i>Bromus squarrosus</i> L.	T scap	paleotemp
<i>Bromus tectorum</i> L.	G bulb	E-medit
<i>Bunium microcarpum</i> (Boiss.) Freyn subsp. <i>microcarpum</i>	H scap	euro-medit
<i>Bupleurum falcatum</i> L. subsp. <i>cernuum</i> (Ten.) Arcangeli	T scap	E-medit
<i>Bupleurum glumaceum</i> Sibth. & Sm.	Ch frut	end CS Greece
<i>Bupleurum sibthorpiatum</i> Sibth. & Sm.	T scap	E-medit
<i>Bupleurum trichopodium</i> Boiss. & Spruner	H scap	E-medit
<i>Cachrys ferulacea</i> (L.) Calestani	Ch suffr	E-medit
<i>Calamintha suaveolens</i> Boiss.	H bienn	end Greece
<i>Campanula aizoides</i> Zaffran ex Greuter	H scap	end Balkan
<i>Campanula albanica</i> Witasek subsp. <i>albanica</i>		

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Campanula lyrata</i> Lam. subsp. <i>lyrata</i>	H scap	E-medit
<i>Campanula papillosa</i> Halácsy	H scap	end Peloponnese
<i>Campanula radicata</i> Bory & Chaub.	H rept	end CS Greece
<i>Campanula spathulata</i> Sibth. & Sm. subsp. <i>spathulata</i>	G rhiz	end Balkan
<i>Capsella bursa-pastoris</i> L.	T scap	euro-medit
<i>Carduus nutans</i> L. subsp. <i>scabrisquamus</i> Arènes	H bienn	circum-medit
<i>Carduus taygeteus</i> (Boiss. & Heldr.) Hayek	H bienn	circum-medit
<i>Carduus tmoleus</i> Boiss.	H bienn	end Balkan
<i>Carex caryophyllea</i> Latourr.	H caesp	eurasian
<i>Carex kitaibeliana</i> Degen ex Becherer	H caesp	circum-medit
<i>Carex macrolepis</i> DC.	H caesp	eurasian
<i>Carlina frigida</i> Boiss. & Heldr.	H scap	E-medit
<i>Carlina graeca</i> Heldr. & Sartori	H scap	end Balkan
<i>Carum graecum</i> Boiss. & Heldr. subsp. <i>graecum</i>	H scap	end Balkan
<i>Carum meoides</i> (Griseb.) Halácsy	H scap	end Balkan
<i>Centaurea affinis</i> Friv. subsp. <i>affinis</i>	H scap	end Balkan
<i>Centaurea affinis</i> Friv. subsp. <i>laconiae</i> Prodan	H scap	end CS Greece
<i>Centaurea affinis</i> Friv. subsp. <i>pallidior</i> (Halácsy) Hayek	H scap	end Balkan
<i>Centaurea cariensis</i> Boiss. subsp. <i>maculiceps</i> (Schwarz) Wagenitz	Ch suffr	E-medit
<i>Centaurea parnonia</i> Halácsy	H caesp	end Peloponnese
<i>Centaurea pichleri</i> Boiss.	H caesp	E-medit
<i>Centaurea raphanina</i> Sibth. & Sm. subsp. <i>mixta</i> (DC.) Runem.	H ros	end Greece
<i>Centaurea spinosa</i> L.	Ch frut	E-medit
<i>Centaurea spruneri</i> Boiss. & Heldr. subsp. <i>guicciardi</i> (Boiss.) Hayek	H caesp	end Balkan
<i>Centaurea subciliaris</i> Boiss. & Heldr. subsp. <i>subciliaris</i>	H caesp	end Balkan
<i>Centaurea urovillei</i> DC. subsp. <i>urovillei</i>	H caesp	E-medit
<i>Cerastium brachypetalum</i> Pers.	T scap	E-medit
subsp. <i>roeseri</i> (Boiss. & Heldr.) Nyman		
<i>Cerastium candidissimum</i> Correns	Ch frut	end Greece
<i>Cerastium decalvans</i> Schlosser & Wuk.		
subsp. <i>glutinosum</i> (Strid) Niketic	H caesp	end N-Aegean
<i>Cerastium illyricum comatum</i> Desv.	T scap	E-medit
<i>Cerasus prostrata</i> (Labill.) Ser.	NP	circum-medit
<i>Ceterach officinarum</i> Willd.	H ros	eurasian
<i>Chamaecytisus hirsutus</i> (L.) Link	Ch suffr	euro-medit
<i>Cirsium hypopsilium</i> Boiss. & Heldr.	H bienn	end Peloponnese
<i>Colchicum graecum</i> K. Persson	G bulb	end CS Greece
<i>Colchicum variegatum</i> L.	G bulb	E-medit
<i>Convolvulus althaeoides</i> L.	H rept	cosmop
<i>Convolvulus boissieri</i> Steud.		
subsp. <i>parnassicus</i> (Boiss. & Orph.) Kuzmanov	Ch rept	end Balkan
<i>Convolvulus cantabrica</i> L.	Ch frut	eurasian
<i>Convolvulus elegantissimus</i> Miller	H rept	circum-medit
<i>Corydalis solida</i> (L.) Clairv. subsp. <i>incisa</i> Liden	G bulb	end Balkan
<i>Crataegus monogyna</i> Jacq.	NP	paleotemp
<i>Crataegus orientalis</i> Pallas ex Bieb.	NP	euro-medit-irano-turan
<i>Crataegus pycnoloba</i> Boiss. & Heldr.	NP	eurasian
<i>Crepis fraasii</i> Schultz-Bip. subsp. <i>fraasii</i>	H ros	E-medit
<i>Crepis heldreichiana</i> (O. Kuntze) Greuter	H scap	end Peloponnese
<i>Crepis incana</i> Sm.	H scap	end CS Greece
<i>Crepis neglecta</i> L.	T scap	end Balkan
<i>Crepis rubra</i> L.	T scap	circum-medit
<i>Crepis sancta</i> (L.) Babcock subsp. <i>nemausensis</i>	T scap	E-medit
<i>Crepis sancta</i> (L.) Babcock subsp. <i>sancta</i>	T scap	medit-irano-turan
<i>Crocus oliveri</i> Gay subsp. <i>balansae</i> (Baker) Mathew	G bulb	E-medit

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Crupina crupinastrum</i> (Moris) Vis.	T scap	eurasian
<i>Cyclamen peloponnesiacum</i> (Grey-Wilson) Kit Tan subsp. <i>peloponnesiacum</i>	G bulb	end CS Greece
<i>Cynoglossum montanum</i> L.	H scap	eurasian
<i>Cynoglossum pustulatum</i> Boiss. subsp. <i>parviflorum</i> (Vis.) Sutory	H scap	end Balkan
<i>Cynosurus echinatus</i> L.	T scap	circum-medit
<i>Cytisus villosus</i> Pourr.	NP	circum-medit
<i>Dactylis glomerata</i> L.	H caesp	paleotemp
<i>Dactylis hispanica</i> Roth	H caesp	circum-medit
<i>Dactylorhiza sambucina</i> (L.) Soó	G bulb	european
<i>Danthoniastrum compactum</i> (Boiss. & Heldr.) Holub.	H caesp	E-medit
<i>Daphne oleoides</i> Schreber	Ch frut	circum-medit
<i>Dasypyrum hordeaceum</i> Cand.	H caesp	circum-medit
<i>Dasypyrum villosum</i> (L.) Borbás	T scap	medit-asian
<i>Daucus carota</i> L.	H bienn	paleotemp
<i>Dianthus androsaceus</i> (Boiss. & Heldr.) Hayek	Ch suffr	end Peloponnese
<i>Dianthus biflorus</i> Sm.	Ch suffr	end Greece
<i>Dianthus gracilis</i> Sm. subsp. <i>xanthianus</i> (Davidov) Tutin	Ch suffr	end NC Greece
<i>Dianthus haematocalyx</i> Boiss. & Heldr. subsp. <i>ventricosus</i> Maire & Petitm.	Ch suffr	end Sterea Ellas
<i>Dianthus integer</i> Vis. subsp. <i>minutiflorus</i> (Halácsy) Bornm.	Ch suffr	end Balkan
<i>Dianthus serratifolius</i> Sm. subsp. <i>abbreviatus</i> (Heldr. ex Halácsy) Strid	Ch suffr	end Peloponnese
<i>Dianthus serratifolius</i> Sm. subsp. <i>serratifolius</i>	Ch suffr	end CS Greece
<i>Dianthus tymphresteus</i> (Boiss. & Spruner) Boiss.	Ch suffr	end CS Greece
<i>Dianthus viscidus</i> Bory & Chaub. var. <i>viscidus</i>	Ch suffr	E-medit
<i>Dianthus viscidus</i> Bory & Chaub. var. <i>parnassicus</i> (Boiss. & Heldr.) Boiss.	Ch suffr	end Sterea Ellas
<i>Dianthus zonatus</i> Fenzl	Ch suffr	E-medit
<i>Dichoropetalum vittijugum</i> (Boiss.) Pimenov & Kljuykov	H scap	end Balkan
<i>Digitalis ferruginea</i> L.	H scap	medit-irano-turan
<i>Digitalis laevigata</i> Waldst. & Kit.	H scap	end Balkan
<i>Doronicum columnae</i> Ten.	G rhiz	euro-medit
<i>Dorycnium germanicum</i> (Gremli) Rikli	H caesp	european
<i>Dorycnium herbaceum</i> Vill.	H caesp	circum-medit
<i>Draba heterocoma</i> Fenzl subsp. <i>archipelagi</i> (O.E. Schulz) Buttler	Ch pulv	E-medit
<i>Draba lacaitae</i> Boiss.	Ch pulv	end Balkan
<i>Draba lasiocarpa</i> Rochel	Ch frut	european
<i>Draba parnassica</i> Boiss. & Heldr.	Ch pulv	end Sterea Ellas
<i>Drypis spinosa</i> L.	Ch pulv	european
<i>Echinops spinosissimus</i> Turra	H scap	circum-medit
<i>Echinops taygeteus</i> Boiss. & Heldr.	H scap	end CS Greece
<i>Edraianthus graminifolius</i> (L.) DC. f. <i>minor</i>	Ch suffr	end Balkan
<i>Elytrigia intermedia</i> (Host) Nevski	G rhiz	eurasian
<i>Ephedra procera</i> Fischer & C.A. Meyer	NP	E-medit
<i>Erica manipuliflora</i> Salisb.	Ch frut	E-medit
<i>Erigeron alpinus</i> L.	H scap	euro-medit
<i>Erigeron epiroticus</i> (Vierh.) Halácsy	H scap	E-medit
<i>Erigeron glabratus</i> Hoppe & Hornsc. ex Bluff & Fingerh. subsp. <i>graecus</i> Vierh.	H scap	end NC Greece
<i>Erodium chrysanthum</i> L'Her. ex DC.	H caesp	end CS Greece
<i>Erodium sibthorpiatum</i> Boiss. subsp. <i>vetteri</i> (Barbey & Major) Davis	H caesp	end E-Aegean
<i>Erophila verna</i> (L.) Chevall.	T scap	paleotemp
<i>Eryngium campestre</i> L.	H scap	euro-medit
<i>Eryngium multifidum</i> Sibth. & Sm.	T scap	N-medit
<i>Erysimum cephalonicum</i> Polatschek	H scap	end Greece
<i>Erysimum cuspidatum</i> (Bieb.) DC.	H bienn	medit-irano-turan
<i>Erysimum hayekii</i> (Jav. & Rech. fil.) Polatschek	H scap	E-medit

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Erysimum linearifolium</i> Tausch	H caesp	end Balkan
<i>Erysimum microstylum</i> Ausskn.	H caesp	end Balkan
<i>Erysimum parnassi</i> (Boiss. & Heldr.) Hausskn.	Ch suffr	end Sterea Ellas
<i>Erysimum pectinatum</i> Bory & Chaub.	H scap	end Peloponnese
<i>Erysimum pusillum</i> Bory & Chaub.	Ch suffr	end Peloponnese
<i>Euphorbia acanthotamnos</i> Heldr. & Sart. ex Boiss.	Ch frut	E-medit
<i>Euphorbia deflexa</i> Sibth. & Sm.	Ch suffr	E-medit
<i>Euphorbia herniariifolia</i> Willd.	G rhiz	E-medit
<i>Euphorbia myrsinites</i> L.	Ch rept	E-medit
<i>Euphorbia rigida</i> Bieb.	Ch suffr	E-medit
<i>Euphrasia salisburgensis</i> Funk.	T scap	euro-medit
<i>Festuca callieri</i> (St.-Yves) Markgr. subsp. <i>callieri</i>	H caesp	eurasian
<i>Festuca cyllenica</i> Boiss. & Heldr. subsp. <i>cyllenica</i>	H caesp	end CS Greece
<i>Festuca graeca</i> (Hackel) Markgraf subsp. <i>graeca</i>	H caesp	end NC Greece
<i>Festuca halleri</i> All. subsp. <i>riloensis</i> Hack.	H caesp	E-medit
<i>Festuca hirtovaginata</i> (Acht.) Markgr.-Dannenb.	H caesp	E-medit
<i>Festuca jeanpertii</i> (St.-Yves) Markgr. subsp. <i>achaica</i> (I.Markgraf- Dannenberg) Markgr.-Dann.	H caesp	E-medit
<i>Festuca jeanpertii</i> (St.-Yves) Markgraf subsp. <i>jeanpertii</i>	H caesp	E-medit
<i>Festuca olympica</i> Vetter	H caesp	end NC Greece
<i>Festuca polita</i> (Halácsy) Tzelev	H caesp	end CS Greece
<i>Festuca pseudosupina</i> Vetter	H caesp	end E-Aegean
<i>Festuca sipylea</i> (Hack.) Markgr.-Dann.	H caesp	E-medit
<i>Festuca spectabilis</i> Jan subsp. <i>affinis</i> (Boiss. & Heldr. ex Hackel) Hackel	H caesp	E-medit
<i>Filago arvensis</i> L.	T scap	paleotemp
<i>Fritillaria carica</i> Rix	G bulb	E-medit
<i>Fritillaria graeca</i> Boiss. & Spruner var. <i>graeca</i>	G bulb	end Balkan
<i>Fritillaria guicciardii</i> Heldr. & Sart.	G bulb	end CS Greece
<i>Fumana paphlagonica</i> Bornm. & Janchen subsp. <i>alpina</i> (Janchen) Greuter	Ch suffr	E-medit
<i>Fumana procumbens</i> (Dunal) Gren. & Godron	Ch suffr	euro-medit-irano-turan
<i>Gagea villosa</i> (M. Bieb.) Sweet	G bulb	eurasian
<i>Galium brevifolium</i> Sm. subsp. <i>insulare</i> Ehrend. & Schönb.-Tem.	T scap	E-medit
<i>Galium circae</i> Krendl	Ch suffr	end Greece
<i>Galium citraceum</i> Boiss.	Ch suffr	end CS Greece
<i>Galium cyllenium</i> Boiss. & Heldr.	Ch pulv	end Peloponnese
<i>Galium heldreichii</i> Halácsy	H scap	E-medit
<i>Galium incanum</i> Sibth. & Sm. subsp. <i>incanum</i>	Ch pulv	E-medit
<i>Galium insulare</i> Krendl	Ch suffr	end N-Aegean
<i>Galium ionicum</i> Krendl	H caesp	end Ionian islands
<i>Galium plebeium</i> Boiss. & Heldr.	Ch pulv	E-medit
<i>Galium taygeteum</i> Krendl	Ch suffr	end Peloponnese
<i>Galium thymifolium</i> Boiss. & Heldr.	H caesp	end CS Greece
<i>Genista parnassica</i> Halácsy	Ch pulv	end Greece
<i>Geocaryum parnassicum</i> (Boiss. & Heldr.) Engstrand	G bulb	end CS Greece
<i>Geocaryum peloponnesiacum</i> Engstrand	G bulb	end Peloponnese
<i>Geranium macrostylum</i> Boiss.	G rhiz	E-medit
<i>Geranium pyrenaicum</i> Burm. fil.	H scap	paleotemp
<i>Geranium subcaulescens</i> L'Her.	H scap	E-medit
<i>Globularia cordifolia</i> L.	Ch frut	euro-medit
<i>Globularia stygia</i> Orph.	Ch frut	end Peloponnese
<i>Halacsyella parnassica</i> (Boiss. & Spruner) Janch.	Ch suffr	end CS Greece
<i>Helianthemum canum</i> (L.) Baumg. subsp. <i>canum</i>	Ch suffr	euro-medit
<i>Helianthemum hymettium</i> Boiss. & Heldr.	Ch suffr	E-medit
<i>Helianthemum nummularium</i> (L.) Miller subsp. <i>nummularium</i>	Ch suffr	euro-medit

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Helichrysum orientale</i> (L.) DC.	Ch suffr	E-medit
<i>Helictotrichon aetolicum</i> (Rech. fil.) Holub	H caesp	E-medit
<i>Helictotrichon convolutum</i> (Presl) Henrard subsp. <i>convolutum</i>	H caesp	E-medit
<i>Helictotrichon convolutum</i> (Presl) Henrard subsp. <i>heldreichii</i> (Parl.) Gervais	H caesp	E-medit
<i>Helleborus cyclophyllus</i> A. Brown	G rhiz	end Balkan
<i>Herniaria incana</i> Lam.	T scap	eurasian
<i>Herniaria parnassica</i> Heldr. & Sart. subsp. <i>parnassica</i>	Ch suffr	E-medit
<i>Hieracium lazistanum</i> Arv.-Touv. subsp. <i>leithneri</i> (Boiss.) Greuter	H scap	E-medit
<i>Hieracium pannosum</i> Boiss. subsp. <i>euboeum</i> (Halácsy) Zahn	H scap	end Greece
<i>Hieracium sartorianum</i> Boiss. & Heldr.	H ros	end CS Greece
<i>Hippocrepis comosa</i> L.	Ch rept	euro-medit
<i>Hordeum bulbosum</i> L.	H scap	paleotemp
<i>Hypericum olympicum</i> L.	Ch frut	end CS Greece
<i>Hypochaeris cretensis</i> (L.) Bory & Chaub.	H ros	E-medit
<i>Iberis saxatilis</i> L. subsp. <i>saxatilis</i>	Ch suffr	N-medit
<i>Iberis sempervirens</i> L.	Ch suffr	circum-medit
<i>Inula aschersoniana</i> Janka var. <i>athoa</i> Rech.	Ch suffr	end N-Aegean
<i>Inula britannica</i> L.	H caesp	european
<i>Inula candida</i> (L.) Cass. subsp. <i>limonella</i> (Heldr.) Rech. f.	H caesp	end Greece
<i>Inula heterolepis</i> Boiss.	Ch suffr	E-medit
<i>Inula verbascifolia</i> (Willd.) Hausskn. subsp. <i>methanea</i> (Hausskn.) Tutin.	Ch suffr	end Greece
<i>Iris attica</i> Boiss. & Heldr.	G rhiz	E-medit
<i>Iris suaveolens</i> Boiss. & Reut.	G rhiz	E-medit
<i>Juniperus excelsa</i> Bieb.	NP	E-medit
<i>Juniperus foetidissima</i> Willd.	NP	E-medit
<i>Juniperus hemisphaerica</i> Presl	NP	circum-medit
<i>Juniperus oxycedrus</i> L.	P	circum-medit
<i>Jurinea cadmea</i> Boiss.	H ros	E-medit
<i>Jurinea mollis</i> (L.) Rchb.	H ros	european
<i>Jurinea taygetea</i> Halácsy	H ros	end Peloponnese
<i>Koeleria carniolica</i> A. Kerner	H caesp	E-medit
<i>Koeleria lobata</i> (Bieb.) Roemer & Schultes	H caesp	E-medit
<i>Koeleria mitrushii</i> Ujhelyi	H caesp	end Balkan
<i>Lactuca intricata</i> Boiss.	H scap	E-medit
<i>Lactuca viminea</i> (L.) J. & C. Presl	H scap	paleotemp
<i>Lamium pictum</i> Boiss. & Heldr.	H scap	end Greece
<i>Lamium striatum</i> Sibth. & Sm.	H scap	E-medit
<i>Laserpitium pseudomeum</i> Orph. & al.	H ros	end CS Greece
<i>Lathyrus grandiflorus</i> Sm.	H scap	circum-medit
<i>Legousia pentagonia</i> Druce	T scap	E-medit
<i>Leontodon asper</i> (Waldst. & Kit) Poiret	H ros	N-medit
<i>Leontodon cichoriaceus</i> (Ten.) Sanguinetti	H caesp	E-medit
<i>Leontodon graecus</i> Boiss. & Heldr.	H scap	E-medit
<i>Lepidium nebrodense</i> (Raphin.) Guss.	H scap	E-medit
<i>Linaria parnassica</i> Boiss. & Heldr.	H scap	E-medit
<i>Linaria peloponnesiaca</i> Boiss. & Heldr.	H scap	E-medit
<i>Linaria simplex</i> Desf.	T scap	circum-medit
<i>Linum elegans</i> Spruner ex Boiss.	Ch suffr	E-medit
<i>Linum tenuifolium</i> L.	Ch suffr	euro-medit
<i>Lolium perenne</i> L.	H caesp	circumboreal
<i>Lomelosia crenata</i> (Cirillo) Greuter & Burdet subsp. <i>crenata</i>	Ch frut	circum-medit
<i>Lomelosia graminifolia</i> (L.) Greuter & Burdet	H caesp	euro-medit
<i>Lomelosia polykratis</i> (Rech.f.) Greuter & Burdet	Ch frut	E-medit

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Lotus stenodon</i> (Boiss. & Heldr.) Heldr.	H scap	end Balkan
<i>Luzula spicata</i> (L.) DC.	H caesp	paleotemp
<i>Lychnis coronaria</i> (L.) Desr.	H scap	circum-medit
<i>Lysimachia serpyllifolia</i> Schreber	H scap	E-medit
<i>Macrotomia cephalotes</i> Boiss.	H scap	E-medit
<i>Majorana onites</i> Benth.	Ch suffr	E-medit
<i>Malcolmia bicolor</i> Bald.	T scap	end CS Greece
<i>Marrubium cylleneum</i> Boiss. & Heldr.	H scap	end Peloponnese
<i>Marrubium velutinum</i> Sibth. & Sm.	H scap	end NC Greece
<i>Medicago lupulina</i> L.	T scap	paleotemp
<i>Medicago sativa</i> L.	H caesp	eurasian
<i>Melica ciliata</i> L.	H caesp	euro-medit
<i>Micromeria juliana</i> (L.) Bentham ex Reichenb.	Ch suffr	circum-medit
<i>Minuartia anatolica</i> (Boiss.) Woron. var. <i>polymorpha</i> McNeill	Ch suffr	E-medit
<i>Minuartia attica</i> Vierh. subsp. <i>attica</i>	Ch suffr	E-medit
<i>Minuartia attica</i> Vierh. subsp. <i>idaea</i> (Halácsy) Kamari & Constantin	Ch suffr	E-medit
<i>Minuartia condensata</i> (J. & C. Presl) Hand.-Mazz.	Ch pulv	N-medit
<i>Minuartia confusa</i> (Boiss.) Maire & Petitm.	Ch rept	end CS Greece
<i>Minuartia juniperina</i> (L.) Maire & Petitm.	Ch pulv	E-medit
<i>Minuartia mesogitana</i> (Boiss.) Hand.-Mazz. subsp. <i>kotschyana</i> (Boiss.) McNeill	T scap	E-medit
<i>Minuartia stellata</i> (Clarke) Maire & Petitm.	Ch pulv	end Balkan
<i>Minuartia verna</i> (L.) Hiern var. <i>thasia</i> Stoj. & Kitanov	Ch suffr	end N-Aegean
<i>Morina persica</i> L.	Ch suffr	medit-irano-turan
<i>Muscari botryoides</i> (L.) Miller	G bulb	euro-medit
<i>Muscari kernerii</i> Marsh.	G bulb	euro-medit
<i>Muscari neglectum</i> Guss.	G bulb	circum-medit
<i>Myosotis incrassata</i> Guss.	T scap	circum-medit
<i>Myosotis suaveolens</i> Waldst. & Kit. ex Willd.	H scap	end Balkan
<i>Myosotis sylvatica</i> Hoffm. subsp. <i>cyanea</i> (Hayek) Vestergren	H scap	E-medit
<i>Neotinea maculata</i> (Desf.) Stern.	G bulb	circum-medit
<i>Nepeta argolica</i> Bory ex Chaub. subsp. <i>argolica</i>	Ch suffr	end CS Greece
<i>Nepeta camphorata</i> Boiss. & Heldr.	Ch suffr	end Peloponnese
<i>Nepeta dirphyia</i> Boiss.	H scap	end Euboea
<i>Nepeta nuda</i> L. var. <i>epirotica</i> Halácsy	Ch suffr	end Sterea Ellas
<i>Nepeta parnassica</i> Heldr. & Sartr. ex Boiss.	Ch suffr	end CS Greece
<i>Nepeta spruneri</i> Boiss.	Ch suffr	end NC Greece
<i>Nigella arvensis</i> L. subsp. <i>glauca</i> (Boiss.) A. Terrac.	T scap	E-medit
<i>Noaea mucronata</i> (Forssk.) Aschers. & Schweinf.	Ch pulv	E-medit
<i>Noccaea graeca</i> (Jordan) Meyer	Ch caesp	end Peloponnese
<i>Nonea pulla</i> (L.) DC.	H scap	euro-medit
<i>Onobrychis ebenoides</i> Boiss. & Spruner	Ch suffr	end CS Greece
<i>Onobrychis laconica</i> Orph. ex Boiss.	Ch suffr	end Greece
<i>Onobrychis montana</i> DC. subsp. <i>macrocarpa</i> Strid	Ch suffr	end Greece
<i>Ononis pusilla</i> L.	H scap	euro-medit
<i>Ononis spinosa</i> L. subsp. <i>antiquorum</i> (L.) Arcang.	Ch caesp	european
<i>Ononis spinosa</i> L. subsp. <i>leiosperma</i> (Bois.) Sirj.	Ch suffr	euro-medit-irano-turan
<i>Onopordum illyricum</i> L.	H scap	circum-medit
<i>Onosma erecta</i> Sm. subsp. <i>malickyi</i> Teppner	H caesp	end Peloponnese
<i>Onosma heterophylla</i> Griseb.	Ch suffr	end Balkan
<i>Onosma leptantha</i> Heldr.	Ch suffr	end Peloponnese
<i>Origanum hirtum</i> Link	H scap	E-medit
<i>Origanum sypileum</i> L.	H caesp	E-medit
<i>Ornithogalum montanum</i> Ten.	G bulb	E-medit
<i>Ornithogalum nutans</i> L.	G bulb	E-medit
<i>Ornithogalum oligophyllum</i> E.D. Clarke	G bulb	E-medit
<i>Ornithogalum sibthorpii</i> Greuter	G bulb	E-medit
<i>Papaver dubium</i> L.	T scap	paleotemp
<i>Paracaryum aucheri</i> (A. DC.) Boiss.	Ch suffr	E-medit
<i>Paronychia albanica</i> Chaudri subsp. <i>graeca</i> Chaudri	Ch pulv	end CS Greece
<i>Paronychia bornmuelleri</i> Chaudhri	Ch rept	end N-Aegean
<i>Paronychia chionaea</i> Boiss. subsp. <i>chionaea</i>	H caesp	E-medit
<i>Paronychia euboea</i> Beauverd & Topali	H caesp	end Euboea
<i>Paronychia macedonica</i> Chaudhri	H caesp	end Balkan
<i>Paronychia macrosepala</i> Boiss.	H caesp	E-medit
<i>Paronychia polygonifolia</i> (Vill.) DC.	H caesp	N-medit

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Pedicularis graeca</i> DC.	H scap	E-medit
<i>Petrorhagia armerioides</i> (Ser.) Ball & Heywood	Ch suffr	E-medit
<i>Petrorhagia fasciculata</i> (Margot & Reut.) Ball & Heywood var. <i>cephallenica</i> Damboldt & Phitos	Ch suffr	end Ionian islands
<i>Petrorhagia illyrica</i> (Ard.) Ball & Heywood subsp. <i>illyrica</i>	Ch suffr	end Balkan
<i>Petrorhagia illyrica</i> (Ard.) Ball & Heywood subsp. <i>taygetea</i> (Boiss.) Ball & Heywood	Ch suffr	end Greece
<i>Peucedanum longifolium</i> Waldst. & Kit.	H scap	E-medit
<i>Phitosia crocifolia</i> (Sibth. & Sm.) Kamari & Greuter	Ch suffr	end Peloponnese
<i>Phleum alpinum</i> L.	H caesp	euro-medit
<i>Phleum graecum</i> Boiss. & Heldr.	T scap	E-medit
<i>Phleum montanum</i> C. Koch	H caesp	paleotemp
<i>Phlomis fruticosa</i> L.	Ch frut	circum-medit
<i>Phlomis grandiflora</i> Thompson	Ch frut	E-medit
<i>Phlomis samia</i> L.	Ch suffr	end Balkan
<i>Picnomon acarna</i> (L.) Cass.	T scap	euro-medit-irano-turan
<i>Picris pauciflora</i> Willd.	T scap	E-medit
<i>Pilosella cymosa</i> (L.) Schultz & Sch. Bip. subsp. <i>sabina</i> (Sebast.) Fuchs	H scap	eurasian
<i>Pilosella hoppeana</i> F. W. Schultz & Sch. Bip. subsp. <i>testimonialis</i> (Nag. ex Pet.) Sell & C. West	H ros	euro-medit
<i>Pilosella leucopsilon</i> (Arv.-Touv.) Gottschl. subsp. <i>pilisquama</i> (Nageli & Peter) Gottschl.	H ros	euro-medit
<i>Pilosella officinarum</i> Vaill.	H ros	eurosiberian
<i>Pimpinella peregrina</i> L.	H scap	euro-medit
<i>Pimpinella polyclada</i> Boiss. & Heldr.	H scap	E-medit
<i>Pimpinella tragium</i> Vill. subsp. <i>tradium</i>	Ch suffr	N-medit
<i>Plantago atrata</i> Hoppe subsp. <i>graeca</i> (Halácsy) Holub	H scap	end Greece
<i>Plantago holosteum</i> Scop. var. <i>alpestris</i> (Griseb.) Rech. f.	Ch pulv	end CS Greece
<i>Plantago lanceolata</i> L.	H ros	circumboreal
<i>Poa bulbosa</i> L.	H caesp	paleotemp
<i>Poa sylvicola</i> Guss.	H caesp	medit-irano-turan
<i>Poa thessala</i> Boiss. & Orph.	H caesp	end Balkan
<i>Poa timoleontis</i> Heldr. ex Boiss.	H caesp	E-medit
<i>Poa trichophylla</i> Heldr. & Sart.	H caesp	end Sterea Ellas
<i>Podospermum canum</i> C.A. Meyer var. <i>alpinum</i> Boiss.	H scap	end Greece
<i>Polygala nicaeensis</i> Koch subsp. <i>mediterranea</i> Chodat	H scap	circum-medit
<i>Polygala nicaeensis</i> Koch subsp. <i>tomentella</i> (Boiss.) Chodat	H scap	end Greece
<i>Potentilla recta</i> L.	H rept	eurasian
<i>Potentilla speciosa</i> Willd.	Ch suffr	E-medit
<i>Prunella vulgaris</i> L.	H rept	eurasian
<i>Prunus cocomilia</i> Ten.	NP	E-medit
<i>Pteridium aquilinum</i> (L.) Kuhn	G rhiz	cosmop
<i>Pterocephalus perennis</i> Coult. subsp. <i>perennis</i>	Ch pulv	end CS Greece
<i>Pterocephalus pinardii</i> Boiss.	Ch pulv	E-medit
<i>Ptilostemon afer</i> (Jacq.) Greuter	H bienn	end Balkan
<i>Ptilotrichium cyclocarpum</i> Boiss. subsp. <i>cyclocarpum</i>	Ch suffr	E-medit
<i>Quercus calliprinos</i> Webb	P	E-medit
<i>Ranunculus brevifolius</i> Ten.	G rhiz	E-medit
<i>Ranunculus ficarioides</i> Bory & Chaub.	G rhiz	E-medit
<i>Ranunculus psilostachys</i> Griseb.	H ros	end Balkan
<i>Ranunculus rumelicus</i> Griseb.	G rhiz	E-medit
<i>Ranunculus sartorianus</i> Boiss. & Heldr.	G rhiz	E-medit
<i>Rhamnus oleoides</i> L. subsp. <i>graecus</i> (Boiss. & Reut.) Holmboe	NP	E-medit

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Rhamnus saxatilis</i> Jacq. subsp. <i>prunifolia</i> (Sm.) Aldén	NP	european
<i>Rhinanthus pubescens</i> (Sterneck) Boiss. & Heldr. ex Soó	T scap	end NC Greece
<i>Ribes uva-crispa</i> L.	NP	euro-medit-irano-turan
<i>Rindera graeca</i> (A. DC.) Boiss. & Heldr.	Ch suffr	end Greece
<i>Rosa agrestis</i> Savi	NP	european
<i>Rumex acetosella</i> L. subsp. <i>acetoselloides</i> (Balansa) den Nijs	H scap	E-medit
<i>Rumex nebroides</i> Campd.	H scap	circum-medit
<i>Rumex pulcher</i> L.	H scap	circum-medit
<i>Salvia argentea</i> L. var. <i>alpina</i> Heldr.	H scap	end Greece
<i>Salvia fruticosa</i> Mill.	NP	E-medit
<i>Sanguisorba minor</i> Scop. subsp. <i>verrucosa</i> (G. Don) Cout.	H scap	cosmop
<i>Saponaria bellidifolia</i> Sm.	H rept	N-medit
<i>Saponaria calabrica</i> Guss.	T scap	circum-medit
<i>Sarcopoterium spinosum</i> (L.) Spach	Ch pulv	E-medit
<i>Satureja cuneifolia</i> Ten.	Ch suffr	E-medit
<i>Satureja montana</i> L. subsp. <i>macedonica</i> (Formanek) Baden	Ch suffr	end NC Greece
<i>Satureja parnassica</i> Heldr. et Sart.	Ch suffr	end CS Greece
<i>Satureja spinosa</i> L. var. <i>glabra</i> W. Barbey & Major	Ch pulv	E-medit
<i>Saxifraga adscendens</i> L.	H bienn	euro-medit
<i>Scabiosa columbaria</i> L.	H scap	eurasian
<i>Scabiosa ochroleuca</i> L.	H scap	eurosiberian
<i>Scabiosa taygetea</i> Boiss. & Heldr. subsp. <i>taygetea</i>	H caesp	end CS Greece
<i>Scabiosa webbiana</i> D. Don	H caesp	end Balkan
<i>Scandix australis</i> L.	T scap	circum-medit
<i>Scandix macroryncha</i> C. A. Meyer	T scap	N-medit
<i>Scilla nivalis</i> L.	G bulb	end Greece
<i>Scleranthus marginatus</i> Guss.	H caesp	E-medit
<i>Scorzonera mollis</i> Bieb.	G rhiz	medit-irano-turan
<i>Scutellaria orientalis</i> L. subsp. <i>alpina</i> (Boiss.) Schwarz	Ch suffr	medit-irano-turan
<i>Scutellaria rupestris</i> Boiss. & Heldr. subsp. <i>rupestris</i>	H scap	end Peloponnese
<i>Scutellaria rupestris</i> Boiss. & Heldr. subsp. <i>cephalonica</i> (Rech. f.) Greuter & Burdet	H caesp	end Ionian islands
<i>Secale strictum</i> (Presl) Strobl	H caesp	circum-medit
<i>Sedum acre</i> L.	Ch succ	paleotemp
<i>Sedum album</i> L.	Ch succ	paleotemp
<i>Sedum dasyphyllum</i> L.	Ch succ	circum-medit
<i>Sedum hispanicum</i> L.	T scap	E-medit
<i>Sedum laconicum</i> Boiss. & Heldr.	Ch succ	E-medit
<i>Sedum magellense</i> Ten.	Ch succ	circum-medit
<i>Sedum ochroleuchum</i> Chaix	Ch succ	euro-medit
<i>Sedum tenuifolium</i> (Sm.) Strobl	Ch succ	circum-medit
<i>Sedum urvillei</i> DC.	Ch succ	E-medit
<i>Sempervivum marmoreum</i> Griseb.	Ch succ	euro-medit
<i>Senecio squalidus</i> L.	H scap	circum-medit
<i>Senecio thapsoides</i> DC.	H scap	end Balkan
<i>Senecio vernalis</i> Wladst. & Kit.	T scap	paleotemp
<i>Sesleria achtarovii</i> Deyl	H caesp	circum-medit
<i>Sesleria anatolica</i> Deyl	H caesp	E-medit
<i>Sesleria krajinae</i> Deyl	H caesp	end Euboea
<i>Sesleria tenerrima</i> (Frirsch) Hayek	H caesp	end Balkan
<i>Sesleria vaginalis</i> Boiss. & Orph.	H caesp	end Greece
<i>Sideritis clandestina</i> (Bory & Chaub.) Hayek subsp. <i>clandestina</i>	Ch suffr	end Peloponnese
<i>Sideritis clandestina</i> (Bory & Chaub.) Hayek subsp. <i>peloponnesiaca</i> (Boiss. & Heldr.) Baden	Ch suffr	end Peloponnese

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Sideritis euboea</i> Heldr.	Ch suffr	end Euboea
<i>Sideritis raeseri</i> Boiss. & Heldr. subsp. <i>raeseri</i>	Ch suffr	E-medit
<i>Sideritis raeseri</i> Boiss. & Heldr. subsp. <i>attica</i> (Heldr.) Papan. & Kokkini	Ch suffr	end Sterea Ellas
<i>Sideritis sipylea</i> Boiss.	Ch suffr	E-medit
<i>Silene auriculata</i> Sibth. & Sm.	Ch pulv	end CS Greece
<i>Silene bupleuroides</i> (L.) subsp. <i>staticifolia</i> (Sm.) Chowdhuri	Ch suffr	E-medit
<i>Silene conica</i> L.	T scap	eurasian
<i>Silene italica</i> (L.) Pers. subsp. <i>italica</i>	Ch caesp	euro-medit
<i>Silene italica</i> (L.) Pers. subsp. <i>peloponnesiaca</i> Greuter	Ch caesp	end CS Greece
<i>Silene lesbiaca</i> Cand.	Ch caesp	end E-Aegean
<i>Silene multicaulis</i> Guss. subsp. <i>multicaulis</i>	H scap	E-medit
<i>Silene parnassica</i> Boiss. & Spruner	Ch suffr	end Greece
<i>Silene radicata</i> Boiss. & Heldr. subsp. <i>radicata</i>	Ch pulv	end Balkan
<i>Silene roemerii</i> Friv. subsp. <i>macrocarpa</i> (Vandas) Greuter	H caesp	end Balkan
<i>Silene ungeri</i> Fenzl	T scap	E-medit
<i>Silene urvillei</i> Schott	Ch pulv	E-medit
<i>Silene vulgaris</i> (Moench) Garcke subsp. <i>prostrata</i> (Gaudin) Chater & Walters	H scap	end CS Greece
<i>Sorbus graeca</i> (Spach) Lodd. ex S. Schauer	NP	eurasian
<i>Stachys alopecurus</i> (L.) Benth.	H scap	euro-medit
<i>Stachys cretica</i> L. subsp. <i>smyrnaea</i> Rech. fil.	H scap	E-medit
<i>Stachys heldreichii</i> Boiss.	H scap	end Balkan
<i>Stachys tymphaea</i> Hausskn.	H scap	E-medit
<i>Stenbergia colchiciflora</i> Waldst. & Kit	G bulb	N-medit
<i>Stipa endotricha</i> Martinovský	H caesp	end CS Greece
<i>Stipa holosericea</i> Trin.	H caesp	medit-irano-turan
<i>Taraxacum albomarginatum</i> Richards	H ros	end Greece
<i>Taraxacum bythinicum</i> DC.	H ros	E-medit
<i>Taraxacum</i> cfr. <i>graecum</i> Dahlst.	H ros	end Greece
<i>Taraxacum cylleneum</i> Furnkranz	H ros	end Peloponnese
<i>Taraxacum delphicum</i> Dahlst.	H ros	end Greece
<i>Taraxacum gracilens</i> Dahlst.	H ros	E-medit
<i>Taraxacum laevigatum</i> DC.	H ros	euro-medit
<i>Taraxacum minimum</i> (Guss.) N. Terracc.	H ros	circum-medit
<i>Telephium orientale</i> Boiss.	Ch suffr	medit-irano-turan
<i>Teucrium capitatum</i> L.	Ch suffr	circum-medit
<i>Teucrium chamaedrys</i> L.	Ch suffr	euro-medit
<i>Teucrium divaricatum</i> Heldr.	Ch frut	E-medit
<i>Teucrium montanum</i> L. var. <i>parnassicum</i> Čelak.	Ch suffr	end Greece
<i>Thesium arvense</i> Horvatovszky	Ch rept	E-medit
<i>Thesium bergeri</i> Zucc.	Ch rept	E-medit
<i>Thesium parnassi</i> A. DC.	Ch rept	E-medit
<i>Thlaspi ochroleuchum</i> Boiss. & Heldr.	Ch suffr	E-medit
<i>Thlaspi perfoliatum</i> L.	T scap	paleotemp
<i>Thymbra capitata</i> (L.) Cav.	Ch frut	circum-medit
<i>Thymbra spicata</i> L.	T scap	E-medit
<i>Thymus chaubardii</i> (Boiss. & Heldr.) Celak	Ch suffr	E-medit
<i>Thymus holosericeus</i> Celak.	Ch suffr	end Ionian islands
<i>Thymus leucospermus</i> Haltvig	Ch suffr	end NC Greece
<i>Thymus leucotrichus</i> Halácsy	Ch suffr	E-medit
<i>Thymus parnassicus</i> Halácsy	Ch suffr	end Sterea Ellas
<i>Thymus samius</i> Ronniger & Rech. fil.	Ch suffr	end E-Aegean
<i>Thymus sibthorpii</i> Benth.	Ch suffr	E-medit

Table A1. Cont.

Taxon	Life Form	Chorotype
<i>Thymus sipyleus</i> Boiss.	Ch suffr	E-medit
<i>Thymus striatus</i> Vahl	Ch suffr	E-medit
<i>Thymus teucrioides</i> Boiss. & Spruner subsp. <i>teucrioides</i>	Ch suffr	end NC Greece
<i>Thymus zygoides</i> Griseb.	Ch suffr	end Balkan
<i>Tordylium hirtocarpum</i> Cand.	T scap	E-medit
<i>Tragopogon crocifolius</i> L. subsp. <i>samaritanii</i> (Boiss.) Richardson	H ros	E-medit
<i>Trifolium campestre</i> Schreb.	T scap	paleotemp
<i>Trifolium ottonis</i> Sprun.	H caesp	end CS Greece
<i>Trifolium parnassi</i> Boiss. & Spruner	Ch caesp	end Greece
<i>Trifolium physodes</i> Steven ex Bieb.	H scap	E-medit
<i>Trifolium pignantii</i> Fauché & Chaub.	G rhiz	end Balkan
<i>Trifolium pratense</i> L.	H scap	cosmop
<i>Trifolium repens</i> L.	H rept	cosmop
<i>Trifolium uniflorum</i> L.	H caesp	end Balkan
<i>Trinia frigida</i> (Boiss. & Heldr.) Drude	H scap	end CS Greece
<i>Trinia glauca</i> (L.) Dumort. subsp. <i>pindica</i> Hartvig	H scap	europaean
<i>Trinia guicciardii</i> (Boiss. & Heldr.) Drude	H scap	end CS Greece
<i>Tripodium graecum</i> (Boiss.) Lassen	Ch suffr	E-medit
<i>Trisetum tenuiforme</i> Jonsell	H caesp	E-medit
<i>Tulipa australis</i> Link	G bulb	euro-medit-irano-turan
<i>Urtica dioica</i> L.	H rhiz	cosmop
<i>Valantia aprica</i> (Sibth. & Sm.) Boiss. & Heldr.	H scap	E-medit
<i>Valeriana bertiscea</i> Pancic	H scap	end Sterea Ellas
<i>Valeriana dioscoridis</i> Sm.	H rhiz	E-medit
<i>Valeriana tuberosa</i> L.	H scap	paleotemp
<i>Verbascum acaule</i> (Bory & Chaub.) Kuntze	H ros	end Peloponnese
<i>Verbascum cylleneum</i> (Boiss. & Heldr.) O. Kuntze	H scap	end Peloponnese
<i>Verbascum delphicum</i> Boiss. & Heldr.	H scap	end Greece
<i>Verbascum densiflorum</i> Bertol.	H bienn	euro-medit-irano-turan
<i>Verbascum epixanthinum</i> Boiss. & Heldr. var. <i>epixanthinum</i>	H scap	end Greece
<i>Verbascum graecum</i> Heldr. & Sartori	H scap	end Balkan
<i>Verbascum guicciardii</i> Heldr.	H bienn	end Balkan
<i>Verbascum megaphlomos</i> (Boiss. & Heldr.) Hal.	H bienn	euro-medit-irano-turan
<i>Verbascum parnassicum</i> Halácsy	H scap	end Sterea Ellas
<i>Verbascum pycnostachyum</i> Boiss. & Heldr.	H bienn	E-medit
<i>Veronica arvensis</i> L.	T scap	paleotemp
<i>Veronica austriaca</i> L. subsp. <i>teucrioides</i> (Boiss. & Heldr.) Hal.	H scap	end NC Greece
<i>Veronica chamaedrys</i> L.	H scap	euro-medit
<i>Veronica erinoides</i> Boiss. & Spruner	Ch suffr	end CS Greece
<i>Veronica jacquinii</i> Baumg.	H scap	E-medit
<i>Veronica sartoriana</i> Boiss. & Heldr.	T scap	end Greece
<i>Veronica thymifolia</i> Sibth. & Sm.	Ch suffr	E-medit
<i>Veronica verna</i> L.	T scap	euro-medit-irano-turan
<i>Vicia cracca</i> L.	H rept	circumboreal
<i>Vincetoxicum hirundinaria</i> Medicus	H scap	E-medit
subsp. <i>nivale</i> (Boiss. & Heldr.) Markgraf		
<i>Vincetoxicum canescens</i> (Willd.) Decne subsp. <i>pedunculatum</i> Browicz	H scap	E-medit
<i>Viola cephalonica</i> Bornm.	H rept	end Ionian islands
<i>Viola chelmea</i> Boiss. & Heldr.	H rept	end CS Greece
<i>Viola euboaea</i> (Halácsy) Halácsy	H rept	end Euboea
<i>Viola graeca</i> (Becker) Halácsy	H rept	end Greece
<i>Viola mercurii</i> Halácsy	H rept	end CS Greece
<i>Viola parnonia</i> Tan, Sfikas & Vold	H scap	end Peloponnese
<i>Viola parvula</i> Tin.	T scap	circum-medit
<i>Viola sfikasiana</i> Erben	H scap	end Peloponnese
<i>Viola sieheana</i> Becker	H caesp	E-medit
<i>Viola stojanowii</i> W. Becker	H scap	end NC Greece

Table A3. Synoptic table of the old associations reported in Table A2 arranged according to the new syntaxonomical traitment.

N. of associations	1	4	14	15	16	17	18	2	5	6	7	8	20	19	10	11	12	13	3	9	
N. of relevés	7	16	4	7	8	4	9	4	7	23	29	6	15	14	5	10	7	6	8		
Char. Association																					
<i>Prunus pseudoarmerica</i>	IV																				
<i>Bupleurum sibthorpiamum</i>	III																				
<i>Galium lucidum</i>	III																				
<i>Astragalus calavrytensis</i>	I																				
<i>Achillea nobilis</i>	II	II																			
<i>Astragalus helleonicus</i>	I																				
<i>Salvia argentea</i> var. <i>alpina</i>	I																				
<i>Convolvulus cochlearis</i>			3																		
<i>Astragalus cephalonicus</i>			V																		
<i>Nepeta nuda</i>	II	V																			
<i>Lepidium nebrodense</i>			III							II											
<i>Paronychia polygonifolia</i>			V					I													
<i>Thymus ciliatopubesces</i>	I																				
<i>Edraianthus graminifolius</i> f. <i>minor</i>			IV																		
<i>Dianthus haematocalyx</i> subsp. <i>ventricosus</i>			IV																		
<i>Ptilotrichium cyclocarpum</i> subsp. <i>cyclocarpum</i>			III										I								
<i>Festuca halleri</i> subsp. <i>riboensis</i>			II																		
<i>Carex kitaibeliana</i>			II									II	I								
<i>Mimurta condensata</i>			II																		
<i>Linum tenuifolium</i>			II																		
<i>Galium plebeium</i>			I																		
<i>Viola stojanovii</i>					4																
<i>Aurinia gioiae</i>																					
<i>Festuca olympica</i>							II														
<i>Anthemis tinctoria</i> subsp. <i>parmassica</i>							II														
<i>Scorzonera</i> sp.							II														
<i>Eriogon alpinus</i>							II														
<i>Ombrychis ebeoides</i>							4														
<i>Lomelosia crenata</i> subsp. <i>crenata</i>							2														
<i>Pedicularis graeca</i>							2						I								
<i>Rhiantus pubescens</i>							2														
<i>Campanula albanica</i> subsp. <i>albanica</i>						II							III		II				I		
<i>Silene multicaulis</i> subsp. <i>multicaulis</i>																					
<i>Taraxacum delphicum</i>																					
<i>Silene vulgaris</i> subsp. <i>prostrata</i>																					
<i>Asperula oetaca</i>																					
<i>Euphrasia salisburgensis</i>						II							V		I						
<i>Iberis saxatilis</i> subsp. <i>saxatilis</i>													V		I						
<i>Globularia staggia</i>													I	V							
<i>Carex macrolepis</i>	I												II	III						V II	
<i>Campanula aizoides</i>															II						
<i>Lomelosia graminifolia</i>															II						
<i>Saponaria bellidifolia</i>															II						
<i>Taraxacum bythinicum</i>															I						
<i>Macrotomia cephalotes</i>															I						
<i>Dianthus integer</i> subsp. <i>minutiflorus</i>	I					I									I	III	II				
<i>Alyssum taygeteum</i>																				I	
<i>Campanula papillosa</i>																				I	
<i>Jurinea taygetea</i>																				I	
<i>Onosma leptantha</i>																				V	
<i>Scabiosa taygetea</i> subsp. <i>taygetea</i>																				I V	
<i>Calamintha suaveolens</i>																				V	
<i>Ombrychis laconica</i>																				V	
<i>Hypericum olympicum</i>																				II	
<i>Danthomasium compactum</i>																				II	
<i>Tripodium gnacium</i>																				II	
<i>Phytosia crocifolia</i>																				II	
<i>Viola parvula</i>																				IV	
Char. al. MARRUBIO VELUTINI-THYMION PARNASSICI																					
<i>Marrubium velutinum</i>		V		V		III															
<i>Satureja parmassica</i>		I			II	III															
<i>Draba parmassica</i>					4	II	III														
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	I	V		III																	
<i>Thymus leucoides</i> subsp. <i>leucoides</i>		I				3															
<i>Sideritis naseri</i> subsp. <i>naseri</i>		4																			
<i>Thymus parmassicus</i>						3															
<i>Erysimum parmassi</i>																				IV	
<i>Centaura affinis</i> subsp. <i>affinis</i>						III															
<i>Eriogon glabratum</i> subsp. <i>gnacium</i>							II														
Char. al. FESTUCO ACHAICAE-MARRUBION CYLLENEI																					
<i>Marrubium cyllenium</i>													I	V	IV	I			IV	I	
<i>Festuca jaegerii</i> subsp. <i>achaica</i>																				II	
<i>Sideritis clandestina</i> subsp. <i>peloponesiaca</i>																				II	
<i>Endium chrysanthum</i>																				II	
<i>Allium fistulosum</i>																				II	
<i>Centaura affinis</i> subsp. <i>laconica</i>																				II	
<i>Astragalus cyllenius</i>																				II	
<i>Taraxacum cyllenium</i>																				II	
<i>Aster cyllenius</i>																				III	
Char. al. SIDERITIDO CLANDESTINAE-ASPERULION MUNGIERI																					
<i>Sideritis clandestina</i> subsp. <i>clandestina</i>																				I III V	
<i>Achillea taygetea</i>																				II III I	
<i>Asperula mungieri</i>																				III II	
<i>Erysimum pusillum</i>																				III	
Char. Ord. (ERYNGIO MULTIFIDI-ARMERETALIA ORPHANIDIS)																					
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	1	1	4		II		IV	I	I	II	I		I	II		II	III	V	I	II	
<i>Eryngium multifidum</i>	2	IV		II			III	IV	IV	V	I			II	I				II	IV	
<i>Alyssum repens</i> var. <i>brachyphyllum</i>																				III II V	
<i>Galium taygeteum</i>																				II	
<i>Cirsium leucopetalum</i>																				II	
<i>Asterochloa agropyroides</i>																				I IV	
<i>Scutellaria peregrina</i> s.l.	2	I																		III	
<i>Acut. holmum gnacium</i>																				V	
<i>Armeria orphanidis</i>																				II	
<i>Astragalus rumelicus</i> subsp. <i>taygeticus</i>	I																				

Table A5. Cont.

Char. Ord. NOAEO MUCRONATAE-SILENETALIA URVILLEI									
<i>Centaurea urovillei</i> subsp. <i>urovillei</i>	IV	V	III	V	V	V	V	V	.
<i>Atraphaxis billardierei</i>	IV	III	II	IV	I	.	I	.	.
<i>Inula heterolepis</i>	V	V	V	V	V	.	IV	.	.
<i>Sideritis sypilea</i>	V	III	II	V	V	.	II	.	.
<i>Silene urovillei</i>	IV	V	I	.	V	.	I	V	.
<i>Acantholimon aegaeum</i>	IV	V	I	.	.	I	.	V	.
<i>Aethionema saxatile</i> subsp. <i>creticum</i>	II	I	I	V	V	.	.	.	.
<i>Astragalus angustifolius</i> subsp. <i>aegeicus</i>	III	.	.	I	V	V	.	IV	.
<i>Koeleria lobata</i>	IV	V	.	III	V	.	.	.	2
<i>Pteroccephalus pinardii</i>	IV	III	I	V	.	.	V	.	.
<i>Dianthus zonatus</i>	III	V	III	V	.	.	.	.	.
<i>Draba heterocoma</i> subsp. <i>archipelagi</i>	III	I	I	II	.	.	.	.	.
<i>Galium heldreichii</i>	II	I	.	V	V	.	.	.	.
<i>Minuartia anatolica</i> var. <i>polymorpha</i>	.	I	.	IV	V	.	.	.	2
<i>Noaea mucronata</i>	IV	V	.	V	V	.	.	.	.
<i>Bunium microcarpum</i> subsp. <i>microcarpum</i>	III	IV	.	V	.	.	.	.	.
<i>Jurinea cadmea</i>	II	III	.	V	.	.	.	.	.
<i>Sesleria anatolica</i>	V	.	III	V	.	.	.	.	.
<i>Verbascum pycnostachyum</i>	.	III	I	.	I	.	.	.	.
<i>Alopecurus davisii</i>	II	.	.	V	.	.	.	.	.
<i>Erysimum hayekii</i>	IV	.	.	V	.	.	.	.	.
<i>Paracaryum aucheri</i>	.	III	.	IV	.	.	.	.	.
<i>Stachys cretica</i> subsp. <i>smyrnaea</i>	IV	III	.	.	.	.	.	.	.
<i>Paronychia chionaea</i> subsp. <i>chionaea</i>	.	.	.	.	V	.	.	.	.
Char. Class CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI									
<i>Teucrium montanum</i> var. <i>parnassicum</i>	III	.	.	.	II	.	.	.	2
<i>Minuartia attica</i> subsp. <i>attica</i>	III	.	I	.	.	.	.	.	.
<i>Thesium bergeri</i>	.	II	.	II	.	.	.	.	.
<i>Crepis fraasii</i> subsp. <i>fraasii</i>	.	IV	.	V	.	.	.	.	.
<i>Poa thessala</i>	.	.	.	.	.	.	.	.	2
<i>Stipa endotricha</i>	.	.	.	.	.	.	.	.	1
<i>Podospermum canum</i> var. <i>alpinum</i>	.	.	.	.	.	.	.	.	2
<i>Centaurea pichleri</i>	.	.	.	.	.	.	.	.	2
<i>Alyssum montanum</i> subsp. <i>graecum</i>	.	.	.	.	.	.	.	.	2
<i>Asperula thessala</i>	.	.	.	.	.	.	.	.	2
<i>Scutellaria orientalis</i> subsp. <i>alpina</i>	.	V	.	.	.	.	.	.	.
Diff. Class CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI									
<i>Aubrieta deltoidea</i> subsp. <i>deltoidea</i>	III	III	II	V	V	.	.	V	.
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	V	V	V	V	.	.	.	.	.
<i>Euphorbia herniariifolia</i>	III	IV	.	V	.	.	V	.	.
<i>Asyneuma limonifolium</i>	.	.	.	III	III	.	.	.	.
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	.	.	.	.	.	.	.	III	2
<i>Thymus chaubardii</i>	I	.	.	.	.	.	.	.	.
<i>Draba lasiocarpa</i>	.	.	.	.	.	.	.	.	2
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	.	.	V	.	.	.
Trasgressive PINO-JUNIPERETEA									
<i>Juniperus oxycedrus</i>	IV	II	II	V	.	.	.	II	2
<i>Cerasus prostrata</i>	I	II	.	.	III	III	V	.	.
<i>Rhamnus saxatilis</i> subsp. <i>prunifolia</i>	.	.	.	.	.	V	V	IV	.
<i>Berberis cretica</i>	.	.	.	.	.	.	V	.	.

Ass. 56 - *Astragaletum samii* ass. nov. (Table A56)
 Ass. 57 - *Thymo samii*-*Astragaletum condensati* ass. nov. (Table A57)
 Ass. 58 - *Campanulo lyratae*-*Genistetum parnassicae* ass. nov. (Table A58)
 Ass. 59 - *Arenario guicciardii*-*Seslerietum anatolicae* ass. nov. (Table A59)
 Ass. 60 - *Anthemido discoideae*-*Astragaletum aegeici* ass. nov. (Table A60a)
 Ass. 61 - *Diantho zonati*-*Astragaletum lesbiaci* ass. nov. (Table A60b)
 Ass. 62 - *Galio insularis*-*Thymetum sypilei* ass. nov. (Table A60c)
 Ass. 63 - *Acantholimo aegaei*-*Astragaletum lesbiaci* ass. nov. (Table A60d)
 Ass. 64 - *Paronychio bormmuelleri*-*Astragaletum odoniani* ass. nov. (Table A61)

Table A7. Astragalo lactei-Convolutum cochlearis Quézel 1964.

Relevé number	1	2	3	4	5	6	7	8	9	Presences	Presence class
Altitude (dam)	181	180	178	177	180	175	170	180	180		
Surface (m ²)	100	50	50	100	100	20	30	50	40		
Coverage (%)	70	80	60	70	60	80	80	75	75		
Slope (°)	5	5	5	5	5	5	5	2	2		
Exposition	SO	SO	SO	S	S	N	NE	N	NO		
Char. Association											
<i>Astragalus lacteus</i>	2	1	1	1	2	1	1	1	+	9	V
<i>Convolvulus boissieri</i> subsp. <i>parnassicus</i>	+	3	2	4	3	3	2	2	.	8	V
<i>Koeleria carniolica</i>	.	1	+	.	+	.	.	.	.	3	II
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)											
<i>Thymus parnassicus</i>	2	2	2	1	+	3	2	2	.	8	V
<i>Festuca graeca</i> subsp. <i>graeca</i>	2	1	2	1	+	.	.	.	.	5	III
<i>Marrubium velutinum</i>	+	+	.	.	+	.	.	.	.	3	II
<i>Galium circae</i>	.	.	+	.	+	.	.	.	.	2	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)											
<i>Astragalus angustifolius</i> subsp. <i>erinaceu</i>	3	2	1	1	1	2	1	2	1	9	V
<i>Draba parnassica</i>	.	.	.	.	.	+	1	1	+	4	III
<i>Asperula rigidula</i>	.	.	.	.	.	1	.	1	1	3	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)											
<i>Cerastium candidissimum</i>	2	2	1	2	1	1	1	1	1	9	V
<i>Poa thessala</i>	1	1	1	2	2	1	1	1	1	9	V
<i>Teucrium montanum</i> var. <i>parnassicum</i>	2	2	1	2	1	1	1	1	2	9	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	1	+	+	+	+	1	.	8	V
<i>Stipa endotricha</i>	2	1	1	1	2	+	.	.	+	7	IV
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	1	2	+	+	.	+	.	.	2	6	IV
<i>Asperula lutea</i>	2	1	1	1	+	.	.	.	.	5	III
<i>Festuca polita</i>	2	1	2	1	2	.	.	.	.	5	III
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	+	+	+	+	.	.	.	.	.	4	III
<i>Draba lacaitae</i>	+	.	+	.	+	.	.	.	.	3	II
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	.	.	.	.	.	1	.	.	1	2	II
<i>Veronica thymifolia</i>	.	.	.	.	.	+	1	.	.	2	II
<i>Alyssum montanum</i> subsp. <i>graecum</i>	.	.	.	.	.	+	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)											
<i>Koeleria mitrushi</i>	2	2	2	2	2	1	1	.	1	8	V
<i>Morina persica</i>	1	1	+	+	.	1	.	.	2	6	IV
<i>Bromopsis lacmonica</i>	1	1	1	+	+	.	.	.	.	5	III
<i>Euphorbia herniariifolia</i>	+	+	+	+	.	.	.	.	+	5	III
<i>Semprevivum marmoreum</i>	+	.	.	+	.	+	1	2	.	5	III
<i>Achillea holosericea</i>	.	.	.	.	.	.	.	.	+	1	I
<i>Asyneuma limonifolium</i>	.	.	.	.	.	.	.	.	+	1	I
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	.	.	.	.	.	.	1	.	.	1	I
Other species											
<i>Juniperus hemisphaerica</i>	1	1	1	+	1	1	.	+	2	8	V
<i>Daphne oleoides</i>	1	1	1	+	+	+	+	1	.	8	V
<i>Melica ciliata</i>	+	+	+	+	+	.	.	.	.	5	III
<i>Sedum ochroleuchum</i>	+	+	.	1	+	.	.	.	.	4	III
<i>Sedum acre</i>	.	+	.	+	.	.	+	.	.	3	II
<i>Saxifraga adscendens</i>	.	.	.	.	.	+	+	+	.	3	II
<i>Ptilostemon afer</i>	+	+	.	.	+	.	.	.	.	3	II
<i>Cerastium brachypetalum</i> subsp. <i>roeseri</i>	.	.	.	.	.	1	.	+	1	3	II
<i>Euphorbia myrsinites</i>	.	.	+	.	+	.	.	.	.	2	II
<i>Echinops</i> sp.	+	.	+	.	.	.	.	.	.	2	II
<i>Teucrium chamaedrys</i>	+	.	.	.	.	.	.	.	.	1	I
<i>Teucrium capitatum</i>	+	.	.	.	.	.	.	.	.	1	I
<i>Juniperus foetidissima</i>	.	.	.	.	.	.	.	.	+	1	I
<i>Iberis sempervirens</i>	.	.	.	.	.	.	1	.	.	1	I
<i>Arenaria serpyllifolia</i>	.	.	.	.	.	.	+	.	.	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Parnassus - 07.07.06; rel. 6-9: Mt. Parnassus, Quézel [35] - Table 21.

Table A8. *Nepeto epiroticae-Astragaletum corynthisiaci* (Quézel 1964) Musarella, Brullo & Giusso nom. nov.

Relevé number	1	2	3	4	5	6	7	8	9	10	11	
Altitude (dam)	175	178	185	188	170	170	175	180	210	185	175	
Surface (m ²)	50	100	100	100	100	200	100	200	200	100	200	
Coverage (%)	70	80	100	80	100	90	100	80	100	100	85	
Slope (°)	10	20	20	15	3	5	5	5	5	5	10	
Exposition	E	N	E	N	-	-	-	-	N	-	SO	
Char. Association												
<i>Astragalus corynthisiacus</i>	3	3	4	4	1	4	3	3	2	2	1	11 V
<i>Nepeta nuda</i> var. <i>epirotica</i>	1	2	1	2	+	3	1	1	1	1	1	10 V
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)												
<i>Marrubium velutinum</i>	2	2	2	2	+	3	2	1	3	2	2	11 V
<i>Erysimum parnassi</i>	1	1	+	1	.	.	.	.	.	.	.	4 II
<i>Galium circae</i>	1	1	1	+	.	.	.	.	.	.	.	4 II
<i>Thymus leucospermus</i>	+	+	.	.	.	.	.	.	.	.	.	3 II
<i>Thymus parnassicus</i>	.	+	+	1	.	.	.	.	.	.	.	3 II
<i>Verbascum parnassicum</i>	+	.	+	.	.	.	.	.	.	.	.	3 II
<i>Centaurea affinis</i> subsp. <i>affinis</i>	+	.	.	+	.	.	.	.	.	.	.	2 I
<i>Dianthus viscidus</i> var. <i>viscidus</i>	.	.	.	.	+	.	1	.	.	.	.	2 I
<i>Festuca graeca</i> subsp. <i>graeca</i>	+	.	.	1	.	.	.	.	.	.	.	2 I
<i>Sideritis raseri</i> subsp. <i>raseri</i>	.	.	+	1	.	.	.	.	.	.	.	2 I
<i>Euphorbia deflexa</i>	+	.	.	.	.	.	.	.	.	.	.	1 I
<i>Lactuca intricata</i>	+	.	.	.	.	.	.	.	.	.	.	1 I
<i>Linaria parnassica</i>	.	.	.	+	.	.	.	.	.	.	.	1 I
<i>Satureia parnassica</i>	.	+	.	.	.	.	.	.	.	.	.	1 I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANDIS)												
<i>Eryngium multifidum</i>	+	1	+	+	.	.	.	.	+	.	.	6 III
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	+	.	.	.	.	.	.	.	.	.	.	1 I
<i>Dianthus biflorus</i>	.	.	.	.	+	.	.	.	.	.	.	1 I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)												
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	+	1	1	+	2	1	.	2	.	.	.	7 IV
<i>Campanula radicata</i>	.	+	+	+	1	.	.	2	.	1	.	7 IV
<i>Galium thymifolium</i>	2	1	+	1	.	.	.	.	1	1	.	6 III
<i>Poa thessala</i>	1	.	.	.	1	1	.	3	.	2	.	6 III
<i>Cerastium candidissimum</i>	1	.	2	1	.	.	.	.	1	1	.	5 III
<i>Festuca polita</i>	1	2	3	3	.	.	.	.	.	.	.	4 II
<i>Minuartia attica</i> subsp. <i>attica</i>	1	+	+	1	.	.	.	.	.	.	.	4 II
<i>Trisetum tenuiforme</i>	1	1	2	1	.	.	.	.	.	.	.	4 II
<i>Alyssum montanum</i> subsp. <i>graecum</i>	.	+	+	1	.	.	.	.	.	.	.	3 II
<i>Draba lacatae</i>	3	+	.	.	.	.	.	.	.	.	.	3 II
<i>Festuca jeanpertiae</i> subsp. <i>jeanpertiae</i>	.	.	.	.	.	1	.	.	+	.	1	3 II
<i>Podospermum canum</i> var. <i>alpinum</i>	1	+	.	+	.	.	.	.	.	.	.	3 II
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	.	.	+	+	.	.	.	.	.	.	.	2 I
<i>Minuartia confusa</i>	+	+	.	.	.	.	.	.	.	.	.	2 I
<i>Lamium pictum</i>	.	.	.	+	.	.	.	.	.	.	.	1 I
<i>Lysimachia serpyllifolia</i>	+	.	.	.	.	.	.	.	.	.	.	1 I
<i>Pteroccephalus perennis</i> subsp. <i>perennis</i>	.	.	.	1	.	.	.	.	.	.	.	1 I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)												
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	+	2	1	1	+	1	.	+	1	.	+	9 V
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	.	1	+	+	.	1	.	3	+	1	.	7 IV
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	1	+	+	1	.	.	.	.	1	.	.	6 III
<i>Carduus imoleus</i>	2	1	1	.	.	.	.	1	.	.	.	5 III
<i>Koeleria mitrushi</i>	2	1	.	1	.	.	.	.	1	.	.	5 III
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	1	1	+	.	.	.	.	.	.	.	4 II
<i>Bromopsis lacmonica</i>	2	.	+	1	.	.	.	.	1	.	.	4 II
<i>Geranium subcaulescens</i>	1	+	+	2	.	.	.	.	.	.	.	4 II
<i>Stachys heldreichii</i>	.	.	.	.	1	.	.	1	.	+	.	3 II
<i>Achillea frassii</i>	+	.	.	.	.	.	.	.	.	.	.	1 I
<i>Achillea holosericea</i>	.	.	.	+	.	.	.	.	.	.	.	1 I
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	.	.	.	+	.	.	.	.	.	.	.	1 I
<i>Helictotrichon aetolicum</i>	.	.	.	.	.	.	.	1	.	.	.	1 I
<i>Morina persica</i>	.	.	.	+	.	.	.	.	.	.	.	1 I
Other species												
<i>Daphne olivoides</i>	1	1	1	1	.	1	+	.	1	1	1	9 V
<i>Alopecurus gerardii</i>	1	2	2	1	1	.	.	+	+	.	.	7 IV
<i>Lepidium nebrodense</i>	+	.	+	+	.	1	+	.	+	+	.	7 IV
<i>Poa bulbosa</i>	.	+	1	+	.	.	.	1	.	+	1	6 III
<i>Euphorbia myrsinites</i>	+	+	1	+	.	.	.	.	.	.	.	4 II
<i>Poa timoleontis</i>	+	2	+	1	.	.	.	.	.	.	.	4 II
<i>Trifolium parnassi</i>	.	.	.	.	2	+	.	2	.	+	.	4 II
<i>Veronica aroensis</i>	.	.	.	.	.	+	.	1	+	.	+	4 II
<i>Crocus</i> sp.	.	.	.	.	.	.	.	1	1	.	.	3 II
<i>Dactylis hispanica</i>	.	1	1	1	.	.	.	.	.	.	.	3 II
<i>Digitalis laevigata</i>	.	.	.	.	1	.	.	+	.	1	.	3 II
<i>Erophila verna</i>	.	.	.	.	1	.	.	.	+	.	+	3 II
<i>Lotus corniculatus</i>	.	.	.	.	3	.	.	1	.	.	+	3 II
<i>Phleum montanum</i>	.	+	+	+	.	.	.	.	.	.	.	3 II
<i>Pilosella hopponae</i> subsp. <i>testimoniae</i>	.	.	.	.	+	.	1	+	.	.	.	3 II
<i>Stachys tymphaea</i>	.	2	2	+	.	.	.	.	.	.	.	3 II
<i>Veronica chamaedrys</i>	.	.	.	.	.	.	+	1	.	.	.	3 II
<i>Arenaria serpyllifolia</i>	.	.	.	.	.	.	.	.	+	1	.	2 I
<i>Aram maculatum</i>	.	.	.	.	.	.	.	.	+	.	.	2 I
<i>Capsella bursa-pastoris</i>	.	.	.	.	.	+	1	.	.	.	.	2 I
<i>Cerastium brachypetalum</i> subsp. <i>roseri</i>	.	.	.	.	.	1	.	.	+	.	.	2 I
<i>Echinops</i> sp.	+	1	.	.	.	.	.	.	.	.	.	2 I
<i>Muscari kernerii</i>	+	.	.	+	.	.	.	.	.	.	.	2 I
<i>Ornithogalum</i> sp.	+	.	.	+	.	.	.	.	.	.	.	2 I
<i>Phleum alpinum</i>	.	.	.	.	1	.	.	2	.	.	.	2 I
<i>Petrorhagia</i> sp.	+	+	.	.	.	.	.	.	.	.	.	2 I
<i>Ranunculus sartorius</i>	.	.	.	.	.	1	.	.	+	.	.	2 I
<i>Sedum acre</i>	+	.	.	+	.	.	.	.	.	.	.	2 I
<i>Allium sardoum</i>	.	.	.	+	.	.	.	.	.	.	.	1 I
<i>Cerastium prostratum</i>	.	.	.	.	.	.	.	.	1	.	.	1 I
<i>Colchicum</i> sp.	.	.	.	+	.	.	.	.	.	.	.	1 I
<i>Cynosurus echinatus</i>	.	.	.	.	.	.	.	.	1	.	.	1 I
<i>Filago arvensis</i>	.	.	.	.	.	.	.	.	+	.	.	1 I
<i>Pilosella cinnosa</i> subsp. <i>subina</i>	.	.	.	.	1	.	.	.	.	.	.	1 I
<i>Juniperus hemisphaerica</i>	+	.	.	.	.	.	.	.	.	.	.	1 I
<i>Melica ciliata</i>	.	+	.	.	.	.	.	.	.	.	.	1 I
<i>Plantago atrata</i> subsp. <i>graeca</i>	.	.	.	.	.	.	.	2	.	.	.	1 I
<i>Poa trichophylla</i>	.	.	.	.	.	.	.	1	.	.	.	1 I
<i>Sedum ochroleucum</i>	+	.	.	.	.	.	.	.	.	.	.	1 I
<i>Taraxacum laevigatum</i>	.	.	.	.	.	.	.	1	.	.	.	1 I

Localities and dates of relevés. Rel. 1-4: Mt. Parnassus - 07.07.06; rel. 5-11: Mt. Parnassus, Quézel [35] - Table 30, rel. 1-7.

Table A9. *Nepeta spruneri*-*Astragaletum corynthisci* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8	9	10	11	12	13		
Altitude (dam)	170	173	172	173	172	175	164	175	196	203	172	175	175		
Surface (m ²)	100	100	100	100	100	100	100	100	100	100	100	100	100		
Coverage (%)	80	80	90	70	80	90	80	80	80	80	80	70	90		
Slope (°)	15	15	-	10	-	5	25	25	15	10	10	15	25	Presences	Presence class
Exposition	E	E	-	SO	-	O	NO	S	S	O	S	S	S		
Char. Association															
<i>Astragalus corynthisci</i>	2	3	2	3	2	4	4	2	1	+	3	2	4	13	V
<i>Nepeta spruneri</i>	2	+	1	1	+	.	1	1	1	+	.	+	1	11	V
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)															
<i>Marrubium velutinum</i>	2	2	3	3	2	3	2	2	3	3	2	2	2	13	V
<i>Satureja parnassica</i>	2	2	1	1	1	+	2	2	1	+	1	1	2	13	V
<i>Centaurea affinis</i> subsp. <i>affinis</i>	1	+	2	1	1	+	1	1	+	.	1	+	+	12	V
<i>Galium circae</i>	.	.	1	1	1	+	+	1	1	1	1	+	+	11	V
<i>Linaria parnassica</i>	.	+	+	+	.	.	+	+	.	.	+	.	+	7	III
<i>Paronychia polygonifolia</i>	.	.	+	.	+	+	+	.	+	.	+	.	.	6	III
<i>Verbascum parnassicum</i>	+	+	+	+	.	.	.	.	.	+	.	.	.	6	III
<i>Geocaryum parnassicum</i>	.	.	.	.	.	.	.	.	.	.	+	+	+	3	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)															
<i>Eryngium multifidum</i>	1	2	2	1	2	1	1	1	1	1	1	1	1	13	V
<i>Avenochloa agropyroides</i>	1	2	1	1	1	1	2	2	1	+	1	1	1	13	V
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	.	.	.	.	.	.	.	.	.	2	.	.	.	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)															
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	3	3	4	3	3	2	2	4	4	4	3	3	1	13	V
<i>Poa thessala</i>	2	2	1	+	2	1	+	1	+	1	1	1	+	13	V
<i>Cerastium candidissimum</i>	2	2	2	1	1	1	2	1	3	2	+	+	1	13	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	2	1	1	1	1	1	1	+	+	+	+	13	V
<i>Galium thymifolium</i>	2	2	2	1	1	1	+	1	1	2	1	1	1	13	V
<i>Trisetum tenuiforme</i>	1	1	1	2	2	1	1	1	1	+	+	+	+	13	V
<i>Leontodon graecus</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	13	V
<i>Stipa endotricha</i>	2	2	1	1	2	1	2	1	1	.	2	1	2	12	V
<i>Draba lacaïtae</i>	+	+	+	+	+	+	+	+	+	.	+	+	+	12	V
<i>Ptercephalus perennis</i> subsp. <i>perennis</i>	2	1	1	+	1	.	2	1	1	.	1	1	1	11	V
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	2	2	2	.	2	3	1	.	2	2	.	2	2	10	IV
<i>Silene radicata</i> subsp. <i>radicata</i>	1	+	+	+	.	.	1	+	+	.	+	+	1	10	IV
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	.	.	.	.	.	.	.	.	.	.	+	+	+	3	II
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)															
<i>Koeleria mitrushi</i>	2	2	2	1	2	2	2	2	2	1	1	2	2	13	V
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	1	1	2	1	1	1	1	1	+	2	1	+	+	13	V
<i>Asyneuma limonifolium</i>	+	+	+	+	+	+	1	+	+	+	+	+	+	13	V
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	2	2	3	3	2	2	3	2	1	3	3	2	2	13	V
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	13	V
<i>Bromopsis lacmonica</i>	.	.	.	2	1	2	2	2	1	+	2	.	2	9	IV
<i>Thymus leucotrichus</i>	2	1	2	.	1	.	.	.	.	.	.	.	.	4	II
<i>Traopogon crocifolius</i> subsp. <i>samaritanus</i>	.	.	.	.	.	.	.	+	+	.	.	+	+	4	II
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	.	.	.	.	.	.	.	.	.	.	2	+	1	3	II
<i>Minuartia stellata</i>	.	.	.	.	.	.	.	.	.	1	.	.	.	1	I
Other species															
<i>Daphne oleoides</i>	1	1	1	+	1	1	1	+	+	1	1	+	1	13	V
<i>Erysimum cuspidatum</i>	+	+	+	+	+	+	1	+	+	+	+	+	+	13	V
<i>Poa bulbosa</i>	2	2	2	2	2	2	1	+	1	1	1	+	1	13	V
<i>Melica ciliata</i>	1	+	1	1	1	+	2	1	1	.	1	1	2	12	V
<i>Euphorbia myrsinites</i>	1	1	+	+	1	1	+	+	+	.	+	+	+	12	V
<i>Malcolmia bicolor</i>	+	+	+	+	.	.	+	+	+	+	+	+	+	12	V
<i>Sedum acre</i>	+	+	+	+	.	.	+	+	+	2	+	+	+	11	V
<i>Teucrium chamaedrys</i>	1	2	1	+	1	.	+	+	1	.	1	+	1	11	V
<i>Sedum album</i>	+	+	+	+	+	.	+	+	+	+	+	+	.	11	V
<i>Carduus taygeteus</i>	+	+	+	+	+	.	+	+	+	+	+	+	.	11	V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	+	+	+	+	.	.	1	.	.	.	+	+	1	10	IV
<i>Nepeta nuda</i> var. <i>epirotica</i>	+	.	+	+	.	.	.	1	1	.	+	.	+	7	III
<i>Scleranthus marginatus</i>	.	+	+	+	.	+	1	.	.	.	+	.	.	6	III
<i>Allium stamineum</i>	+	+	.	.	.	.	+	.	.	.	1	+	+	6	III
<i>Phleum montanum</i>	.	.	.	.	.	.	.	2	.	.	1	+	+	4	II
<i>Plantago holostium</i> var. <i>alpestris</i>	.	.	.	+	1	.	.	.	.	1	.	1	.	4	II
<i>Echinops</i> sp.	.	.	.	.	.	.	.	.	.	.	1	+	1	3	II
<i>Muscari</i> sp.	.	.	.	.	.	.	.	.	.	.	+	+	+	3	II
<i>Teucrium capitatum</i>	.	.	+	.	.	.	2	.	.	.	.	.	.	2	I
<i>Sedum ochroleuchum</i>	.	.	.	.	.	.	.	.	.	+	.	.	1	2	I
<i>Allium sardoum</i>	.	.	.	.	.	.	+	.	.	.	+	.	.	2	I
<i>Colchicum</i> sp.	.	.	.	.	.	.	.	.	.	.	+	+	.	2	I
<i>Salvia argentea</i> var. <i>alpina</i>	.	.	.	.	.	.	.	.	.	.	2	+	.	2	I
<i>Astragalus depressus</i>	.	.	.	.	.	.	.	.	.	.	.	+	.	1	I

Localities and dates of relevés. Rel. 1-6: Mt. Giona - Amfissa, Patimata - 04/07/07; rel. 7-10: Mt. Giona - Amfissa, near Makrilakos - 05/07/07; rel. 11-13: Mt. Giona - Mavri Korfi, near Viniani - 06/07/07.

Table A10. Thymo parnassici-Paronychietum polygonifoliae Quézel 1964 corr.

Relevé number	1	2	3	4	5	6	7	8		
Altitude (dam)	215	218	240	235	180	190	195	205		
Surface (m ²)	200	200	200	200	50	200	200	50		
Coverage (%)	50	35	50	50	40	60	60	40	Presences	Presence class
Slope (°)	2	5	5	3	10	15	15	20		
Exposition	N	O	E	E	O	O	O	SE		
Char. Association										
<i>Paronychia polygonifolia</i>	2	2	2	2	2	1	.	1	7	V
<i>Edraianthus graminifolius</i> f. <i>minor</i>	1	+	1	2	.	.	+	.	5	IV
<i>Dianthus haematocalyx</i> subsp. <i>ventricosus</i>	1	+	.	1	2	+	.	.	5	IV
Char. Subassociation										
<i>Festuca halleri</i> subsp. <i>riloensis</i>	.	1	+	1	.	.	.	.	3	II
<i>Carex kitaibeliana</i>	.	1	.	+	.	.	.	.	2	II
<i>Euphrasia salisburgensis</i>	+	.	1	.	.	.	.	.	2	II
<i>Minuartia condensata</i>	1	+	.	.	.	.	.	.	2	II
<i>Galium plebeium</i>	1	.	.	.	.	.	.	.	1	I
<i>Ptilotrichium cyclocarpum</i> subsp. <i>cyclocarpum</i>	.	.	.	.	2	1	2	2	4	III
<i>Linum tenuifolium</i>	.	.	.	.	1	+	.	1	3	II
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)										
<i>Thymus parnassicus</i>	2	2	2	1	1	.	.	.	5	IV
<i>Erigeron glabratus</i> subsp. <i>graecus</i>	.	.	.	.	1	+	.	.	2	II
<i>Satureja parnassica</i>	.	.	.	.	1	.	1	.	2	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)										
<i>Acantholimon graecum</i>	.	1	+	.	.	.	+	.	3	II
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	1	.	.	+	.	.	+	.	3	II
<i>Draba parnassica</i>	.	.	1	.	.	.	1	.	2	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)										
<i>Poa thessala</i>	1	1	+	1	.	1	.	+	6	IV
<i>Cerastium candidissimum</i>	.	1	1	.	1	+	.	+	5	IV
<i>Asperula boissieri</i>	1	2	+	1	.	.	.	.	4	III
<i>Stipa endotricha</i>	.	.	.	.	1	.	1	+	3	II
<i>Trinia frigida</i>	1	1	.	+	.	.	.	.	3	II
<i>Viola graeca</i>	.	1	.	.	.	1	.	+	3	II
<i>Minuartia attica</i> subsp. <i>attica</i>	.	.	.	.	1	+	.	.	2	II
<i>Veronica erinoides</i>	.	+	.	.	.	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)										
<i>Sesleria vaginalis</i>	1	2	1	2	.	+	.	1	6	IV
<i>Koeleria mitraushii</i>	.	.	.	.	1	+	1	1	4	III
<i>Sempervivum marmoreum</i>	.	.	+	+	.	.	.	.	2	II
Other species										
<i>Iberis sempervirens</i>	.	.	+	.	+	1	2	+	5	IV
<i>Globularia cordifolia</i>	.	.	.	.	1	.	1	+	3	II
<i>Juniperus hemisphaerica</i>	.	.	.	.	3	4	.	2	3	II
<i>Trifolium ottonis</i>	1	.	2	2	.	.	.	.	3	II
<i>Veronica jacquinii</i>	.	+	.	.	.	1	.	.	2	II
<i>Daphne oleoides</i>	.	.	.	.	.	1	.	.	1	I
<i>Scabiosa ochroleuca</i>	.	.	.	.	.	1	.	.	1	I

Localities and dates of relevés. Rel. 1-8: Mt. Giona, Quézel [35] - Table 23.

Table A11. *Nepeta sprunerii*-*Astragalium tymphrestei* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	
Altitude (dam)	120	130	
Surface (m ²)	20	50	
Coverage (%)	90	80	Presences
Slope (°)	10	15	
Exposition	NO	S	
Char. Association			
<i>Astragalus tymphresteus</i>	5	4	2
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)			
<i>Galium circae</i>	1	+	2
<i>Nepeta spruneri</i>	+	2	2
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)			
<i>Eryngium multifidum</i>	1	2	2
<i>Dianthus biflorus</i>	+	+	2
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)			
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	+	+	2
<i>Leontodon graecus</i>	1	1	2
<i>Minuartia attica</i> subsp. <i>attica</i>	2	2	2
<i>Stipa endotricha</i>	+	+	2
<i>Cerastium candidissimum</i>	+	.	1
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)			
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	2	1	2
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	1	+	2
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	2	2	2
<i>Koeleria mitrushi</i>	2	2	2
<i>Thymus chaubardii</i>	2	3	2
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	2
<i>Asyneuma limonifolium</i>	.	2	1
<i>Helictotrichon aetolicum</i>	.	1	1
Other species			
<i>Centaurea</i> sp.	+	+	2
<i>Euphorbia myrsinites</i>	1	+	2
<i>Erysimum cuspidatum</i>	1	+	2
<i>Hypericum</i> sp.	+	2	2
<i>Phleum montanum</i>	1	+	2
<i>Pilosella leucopsilon</i> subsp. <i>pilisquamama</i>	2	+	2
<i>Poa timoleontis</i>	1	1	2
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	+	+	2
<i>Scleranthus marginatus</i>	+	+	2
<i>Sedum tenuifolium</i>	+	1	2
<i>Silene italica</i> subsp. <i>italica</i>	+	+	2
<i>Arabis collina</i>	1	.	1
<i>Brachypodium retusum</i>	2	.	1
<i>Chamaecytisus hirsutus</i>	.	3	1
<i>Colchicum</i> sp.	.	1	1
<i>Pilosella cymosa</i> subsp. <i>sabina</i>	+	.	1
<i>Iris</i> sp.	.	+	1
<i>Ornithogalum montanum</i>	.	1	1
<i>Plantago holosteum</i> var. <i>alpestris</i>	2	.	1
<i>Polygala nicaeensis</i> subsp. <i>mediterranea</i>	2	.	1
<i>Sedum ochroleuchum</i>	.	1	1
<i>Teucrium capitatum</i>	.	1	1
<i>Trifolium physodes</i>	+	.	1

Localities and dates of relevés. Rel. 1-2: Mt. Giona - 10.06.04.

Table A12. *Violo stojanowii*-*Seslerietum vaginalis* Quézel 1973 corr.

Relevé number	1	2	3	4	Presences
Altitude (dam)	230	225	230	220	
Surface (m ²)	100	50	100	100	
Coverage (%)	50	60	60	50	
Slope (°)	15	20	20	20	
Exposition	O	NO	N	E	
Char. Association					
<i>Viola stojanowii</i>	1	1	1	1	4
<i>Thymus striatus</i>	+	.	.	.	1
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)					
<i>Thymus teucrioides</i> subsp. <i>teucrioides</i>	1	.	1	+	3
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)					
<i>Eryngium multifidum</i>	.	+	.	.	1
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)					
<i>Viola graeca</i>	+	.	+	+	3
<i>Cerastium candidissimum</i>	+	+	.	.	2
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	.	.	1	1	2
<i>Lamium pictum</i>	.	+	1	.	2
<i>Poa thessala</i>	.	.	1	+	2
<i>Veronica thymifolia</i>	.	+	.	1	2
<i>Veronica erinoides</i>	.	+	.	.	1
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)					
<i>Sesleria vaginalis</i>	2	3	3	2	4
<i>Minuartia stellata</i>	.	+	.	1	2
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	+	.	+	.	2
<i>Myosotis suaveolens</i>	+	.	+	.	2
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	.	+	.	.	1
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	1	.	.	.	1
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	+	.	.	.	1
<i>Geranium subcaulescens</i>	.	+	.	.	1
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	.	1	.	.	1
<i>Koeleria mitrushi</i>	.	.	.	+	1
Other species					
<i>Valantia aprica</i>	.	+	1	.	2
<i>Daphne oleoides</i>	.	+	.	.	1
<i>Dianthus integer</i> subsp. <i>minutiflorus</i>	+	.	.	.	1
<i>Juniperus hemisphaerica</i>	.	.	+	.	1
<i>Laserpitium pseudomeum</i>	.	+	.	.	1
<i>Senecio thapsoides</i>	.	+	.	.	1
<i>Thymus sibthorpii</i>	.	.	+	.	1

Localities and dates of relevés. Rel. 1-4: Mt. Vardoussia, Quézel [38] - Table 3, rel 9-12.

Table A13. Erysimo parnassi-Minuartietum stellatae Quézel 1964.

Relevé number	1	2	3	4	5	6	7	8	9	Presences	Presence class
Altitude (dam)	210	218	220	225	228	230	230	235	230		
Surface (m ²)	100	50	50	50	50	200	200	200	200		
Coverage (%)	80	60	70	70	70	60	50	45	50		
Slope (°)	25	5	30	10	10	45	45	35	40		
Exposition	O	N	NO	NO	N	E	S	E	NE		
Char. Association											
<i>Minuartia stellata</i>	3	3	2	2	3	2	3	3	1	9	V
<i>Astragalus apollineus</i>	1	+	+	+	1	.	.	.	.	5	III
<i>Anthemis sprunerii</i>	+	1	2	1	1	.	.	.	.	5	III
<i>Allium parnassicum</i>	.	.	+	+	+	.	.	.	.	3	II
<i>Anthemis tinctoria</i> subsp. <i>parnassica</i>	.	.	.	.	.	.	1	+	.	2	II
<i>Erigeron alpinus</i>	.	.	.	.	.	.	+	.	1	2	II
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)											
<i>Satureja parnassica</i>	2	1	2	1	2	1	+	1	1	9	V
<i>Erysimum parnassi</i>	+	1	+	1	1	1	.	+	1	8	V
<i>Marrubium velutinum</i>	1	+	2	1	1	.	+	1	.	7	IV
<i>Galium circae</i>	1	+	1	+	1	.	.	.	.	5	III
<i>Verbascum parnassicum</i>	+	+	+	.	1	.	.	.	.	4	III
<i>Sideritis raeseri</i> subsp. <i>raeseri</i>	.	+	.	+	1	.	.	.	.	3	II
<i>Lactuca intricata</i>	.	.	.	.	.	1	.	+	.	2	II
<i>Dianthus viscidus</i> var. <i>viscidus</i>	.	.	.	+	1	.	.	.	.	2	II
<i>Geocaryum parnassicum</i>	.	+	.	.	+	.	.	.	.	2	II
<i>Linaria parnassica</i>	.	.	.	.	.	.	.	+	.	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)											
<i>Draba parnassica</i>	.	.	.	1	+	.	+	1	+	5	III
<i>Astragalus angustifolius</i> subsp. <i>erinacei</i>	.	.	+	2	1	.	2	.	.	4	III
<i>Euphorbia deflexa</i>	.	.	.	.	.	.	+	+	.	2	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)											
<i>Poa thessala</i>	1	1	1	1	+	+	1	.	1	8	V
<i>Viola graeca</i>	+	+	+	1	+	.	+	.	1	7	IV
<i>Cerastium candidissimum</i>	+	+	+	2	1	.	1	.	.	6	IV
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	4	3	3	3	2	.	.	.	.	5	III
<i>Minuartia confusa</i>	+	+	+	+	1	.	.	.	.	5	III
<i>Galium thymifolium</i>	1	1	+	1	1	.	.	.	.	5	III
<i>Minuartia attica</i> subsp. <i>attica</i>	.	+	+	1	+	.	.	.	.	4	III
<i>Asperula boissieri</i>	.	.	.	.	.	.	1	+	.	2	II
<i>Trinia guicciardi</i>	.	.	.	.	.	.	.	1	+	2	II
<i>Veronica erinoides</i>	.	.	.	.	.	.	+	1	.	2	II
<i>Veronica thymifolia</i>	.	.	.	.	.	+	.	1	.	2	II
<i>Galium citraceum</i>	.	.	.	.	.	+	.	.	.	1	I
<i>Fritillaria guicciardii</i>	.	.	.	.	.	.	.	+	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)											
<i>Sesleria vaginalis</i>	2	3	2	3	3	3	1	2	2	9	V
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	+	+	1	1	1	+	.	+	.	7	IV
<i>Myosotis suaevoleus</i>	1	+	1	1	1	+	1	.	.	7	IV
<i>Geranium subcaulescens</i>	1	+	2	2	2	.	1	.	.	6	IV
<i>Asyneuma limonifolium</i>	.	.	+	+	1	1	.	.	+	5	III
<i>Bromopsis laconica</i>	1	+	1	1	1	.	.	.	.	5	III
<i>Sedum laconicum</i>	+	+	+	+	1	.	.	.	.	5	III
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	.	+	+	+	1	.	.	.	.	4	III
<i>Carduus tmoleus</i>	.	.	+	+	+	.	.	.	.	3	II
<i>Pimpinella tragium</i> subsp. <i>polyclada</i>	.	.	+	1	+	.	.	.	.	3	II
<i>Euphorbia herniariifolia</i>	.	.	+	+	.	.	.	.	.	2	II
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	.	.	.	.	.	+	+	.	.	2	II
<i>Semperivium marmoreum</i>	.	.	.	.	.	.	.	+	.	1	I
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	.	.	.	.	.	.	1	.	.	1	I
<i>Koeleria mitruchii</i>	.	.	.	.	.	.	.	.	+	1	I
Other species											
<i>Daphne oleoides</i>	1	1	1	1	1	.	.	1	.	6	IV
<i>Astragalus depressus</i>	+	+	1	1	+	.	.	.	.	5	III
<i>Colchicum</i> sp.	+	+	+	+	1	.	.	.	.	5	III
<i>Dactylis glomerata</i>	1	+	1	1	+	.	.	.	.	5	III
<i>Doronicum columnae</i>	+	+	1	1	+	.	.	.	.	5	III
<i>Pilosella cymosa</i> subsp. <i>sabina</i>	1	1	+	+	+	.	.	.	.	5	III
<i>Stachys alopecurus</i>	+	1	+	1	2	.	.	.	.	5	III
<i>Silene</i> sp.	+	+	+	.	+	.	.	.	.	4	III
<i>Euphorbia myrsinites</i>	1	+	+	.	1	.	.	.	.	4	III
<i>Muscari kernerii</i>	.	+	+	+	.	.	.	.	.	3	II
<i>Juniperus hemisphaerica</i>	+	.	.	.	1	1	.	.	.	3	II
<i>Ajuga orientalis</i>	+	+	.	.	+	.	.	.	.	3	II
<i>Silene vulgaris</i> subsp. <i>prostrata</i>	+	.	+	.	+	.	.	.	.	3	II
<i>Veronica jacquinii</i>	.	.	.	.	.	1	1	.	.	2	II
<i>Hippocrepis comosa</i>	.	+	.	.	+	.	.	.	.	2	II
<i>Phleum montanum</i>	.	.	.	+	+	.	.	.	.	2	II
<i>Rumex nebroides</i>	.	.	1	+	.	.	.	.	.	2	II
<i>Scorzonera</i> sp.	.	.	.	.	.	.	+	1	.	2	II
<i>Senecio squalidus</i>	.	.	+	.	+	.	.	.	.	2	II
<i>Senecio thapsoides</i>	+	+	.	.	.	.	.	.	.	2	II
<i>Arabis collina</i>	.	.	.	.	.	+	.	.	.	1	I
<i>Trifolium parnassi</i>	.	.	.	.	.	.	.	+	.	1	I
<i>Cerasus prostrata</i>	+	.	.	.	.	.	.	.	.	1	I
<i>Laserpitium pseudomeum</i>	.	+	.	.	.	.	.	.	.	1	I
<i>Stenbergia colchiciflora</i>	.	.	.	.	+	.	.	.	.	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Parnassus - 07/07/06; rel. 6-9: Mt. Parnassus,

Quézel [35] - Table 22. rel. 1-4.

Table A14. *Aurinia gionae-Minuartietum stellatae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8	9	10		
Altitude (dam)	235	235	230	245	240	212	214	216	220	215		
Surface (m ²)	200	200	200	200	200	20	50	100	50	40		
Coverage (%)	60	50	60	50	50	60	50	70	70	70		
Slope (°)	40	20	40	40	40	10	5	25	25	20		
Exposition	E	N	O	O	E	E	S	S	SE	S		
Char. Association												
<i>Minuartia stellata</i>	1	1	2	+	1	4	3	3	4	4	10	V
<i>Aurinia gionae</i>	.	+	1	1	1	+	+	1	.	+	8	IV
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)												
<i>Marrubium velutinum</i>	2	1	.	2	.	1	1	1	+	+	8	IV
<i>Nepeta spruneri</i>	.	.	.	.	.	.	.	.	1	.	2	I
<i>Satureja parnassica</i>	.	.	.	1	.	.	.	.	.	.	1	I
<i>Lactuca intricata</i>	.	.	+	.	.	.	.	.	.	.	1	I
<i>Linaria parnassica</i>	.	.	+	.	.	.	.	.	.	.	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)												
<i>Astragalus angustifolius</i> subsp. <i>erinaceu</i>	2	2	2	1	+	.	2	2	1	+	9	V
<i>Draba parnassica</i>	.	1	.	.	.	+	+	+	+	+	7	IV
<i>Acantholimon graecum</i>	.	+	.	.	1	.	+	+	.	.	5	III
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)												
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	3	3	2	1	2	1	1	+	2	1	10	V
<i>Poa thessala</i>	+	.	+	.	1	2	1	1	2	1	8	IV
<i>Minuartia attica</i> subsp. <i>attica</i>	1	+	1	.	.	1	2	1	2	2	8	IV
<i>Asperula boissieri</i>	1	.	+	.	+	2	2	2	2	1	8	IV
<i>Cerastium candidissimum</i>	1	1	.	.	1	.	2	1	1	1	7	IV
<i>Viola graeca</i>	1	.	+	+	.	+	.	.	.	+	6	III
<i>Trinia guicciardi</i>	.	1	.	.	+	+	.	+	+	+	6	III
<i>Minuartia confusa</i>	.	.	.	.	.	+	+	1	+	+	5	III
<i>Podospermum canum</i> var. <i>alpinum</i>	.	.	.	.	.	+	+	+	+	+	5	III
<i>Veronica erinoides</i>	1	.	+	1	+	.	.	.	.	.	4	II
<i>Leontodon graecus</i>	.	.	.	.	.	+	+	.	+	1	4	II
<i>Veronica thymifolia</i>	.	1	.	1	+	.	.	.	.	.	3	II
<i>Galium citraceum</i>	1	+	.	+	.	.	.	.	.	.	3	II
<i>Erysimum cephalonicum</i>	+	+	.	1	.	.	.	.	.	.	3	II
<i>Galium thymifolium</i>	.	.	.	.	.	.	.	1	+	.	2	I
<i>Fritillaria guicciardii</i>	+	.	.	+	.	.	.	.	.	.	2	I
<i>Draba lacaitae</i>	.	1	.	+	.	.	.	.	.	.	2	I
<i>Lamium pictum</i>	.	+	.	+	.	.	.	.	.	.	2	I
<i>Lysimachia serpyllifolia</i>	1	.	.	.	.	.	.	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)												
<i>Asyneuma limonifolium</i>	+	.	1	+	.	1	+	+	+	1	8	IV
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	.	.	+	.	.	1	+	+	+	1	6	III
<i>Thymus chaubardii</i>	.	.	.	.	.	2	1	1	+	1	5	III
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	1	.	.	.	.	.	.	+	1	1	4	II
<i>Geranium subcaulescens</i>	.	1	.	.	.	.	.	+	+	+	4	II
<i>Semprevivum marmoreum</i>	.	+	.	1	+	+	.	.	.	.	4	II
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	.	.	.	+	+	+	+	4	II
<i>Galium incanum</i> subsp. <i>incanum</i>	.	.	.	.	.	.	1	+	+	.	3	II
<i>Myosotis suaveolens</i>	.	+	1	.	.	.	.	.	.	.	2	I
<i>Carduus imoleus</i>	.	.	.	.	.	+	.	.	+	.	2	I
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	.	.	+	.	.	.	.	.	.	.	1	I
<i>Aubrieta deltoidea</i> var. <i>integrifolia</i>	.	.	.	1	.	.	.	.	.	.	1	I
<i>Sesleria vaginalis</i>	.	.	.	2	.	.	.	.	.	.	1	I
Other species												
<i>Daphne oleoides</i>	2	1	1	1	1	1	+	1	1	.	9	V
<i>Iberis sempervirens</i>	+	+	1	1	+	.	.	.	.	.	5	III
<i>Allium stamineum</i>	.	.	.	.	.	.	+	+	+	1	5	III
<i>Sedum acre</i>	.	.	.	.	.	1	1	1	+	1	5	III
<i>Alopecurus gerardii</i>	.	.	.	.	.	1	+	+	1	1	5	III
<i>Silene</i> sp.	.	.	.	.	.	.	1	+	+	+	4	II
<i>Trifolium pignanii</i>	.	.	.	.	.	.	+	+	+	.	4	II
<i>Campanula albanica</i> subsp. <i>albanica</i>	.	.	+	+	+	.	.	.	.	.	3	II
<i>Festuca olympica</i>	1	.	+	1	.	.	.	.	.	.	3	II
<i>Ranunculus brevifolius</i>	.	.	.	.	.	.	1	+	.	+	3	II
<i>Muscari kernerii</i>	.	1	.	.	+	.	.	.	.	.	2	I
<i>Veronica jacquinii</i>	.	1	.	+	.	.	.	.	.	.	2	I
<i>Arabis collina</i>	.	.	+	.	+	.	.	.	.	.	2	I
<i>Juniperus hemisphaerica</i>	.	.	.	.	1	.	.	.	.	.	1	I
<i>Hippocrepis comosa</i>	1	.	.	.	.	.	.	.	.	.	1	I
<i>Trifolium parnassi</i>	.	.	1	.	.	.	.	.	.	.	1	I
<i>Globularia cordifolia</i>	1	.	.	.	.	.	.	.	.	.	1	I
<i>Paronychia polygonifolia</i>	.	+	.	.	.	.	.	.	.	.	1	I
<i>Ornithogalum</i> sp.	.	.	.	.	.	.	.	+	.	.	1	I
<i>Verbascum</i> sp.	.	.	.	.	.	.	+	.	.	.	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Giona, Quézel [35] - Table 22. rel. 5-9; rel. 6-10: Mt. Giona - Amíssa, near Makrilakos - 04/07/07.

Table A15. *Achillea fraisii*-*Dianthetum tymphrestei* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5		
Altitude (dam)	171	172	173	172	172		
Surface (m ²)	100	100	50	100	100		
Coverage (%)	80	70	80	90	80		
Slope (°)	10	5	5	5	-	Presences	Presence class
Exposition	S	S	S	O	-		
Char. Association							
<i>Dianthus tymphresteus</i>	3	3	3	2	1	5	V
<i>Valeriana bertiscea</i>	.	.	+	1	1	3	III
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)							
<i>Centaurea affinis</i> subsp. <i>affinis</i>	2	1	1	2	2	5	V
<i>Astragalus corynthiacus</i>	1	+	.	1	1	4	IV
<i>Marrubium velutinum</i>	.	.	.	+	+	2	II
<i>Nepeta spruneri</i>	.	.	.	.	+	1	I
<i>Verbascum parnassicum</i>	.	.	.	.	+	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)							
<i>Eryngium multifidum</i>	+	+	.	1	+	4	IV
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Poa thessala</i>	2	2	1	1	1	5	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	1	+	1	5	V
<i>Galium thymifolium</i>	1	1	+	+	1	5	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	1	+	+	+	1	5	V
<i>Leontodon graecus</i>	+	+	+	+	+	5	V
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	1	+	+	1	.	4	IV
<i>Stipa endotricha</i>	.	+	+	.	1	3	III
<i>Alyssum montanum</i> subsp. <i>graecum</i>	+	.	.	+	.	2	II
<i>Asperula lutea</i>	.	.	+	.	+	2	II
<i>Cerastium candidissimum</i>	.	.	.	.	2	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Achillea fraasii</i>	2	1	1	4	3	5	V
<i>Euphorbia herniariifolia</i>	1	+	+	+	+	5	V
<i>Koeleria mitrushi</i>	3	3	3	3	3	5	V
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	3	2	2	2	3	5	V
<i>Geranium subcaulescens</i>	1	+	+	1	+	5	V
<i>Thymus chaubardii</i>	+	+	1	1	+	5	V
<i>Achillea holosericea</i>	.	.	1	.	1	2	II
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	.	.	.	.	1	1	I
<i>Carduus tmoleus</i>	.	.	.	.	+	1	I
Other species							
<i>Euphorbia myrsinites</i>	+	+	+	+	+	5	V
<i>Sedum acre</i>	2	1	2	1	1	5	V
<i>Sedum album</i>	1	+	+	+	+	5	V
<i>Poa timoleontis</i>	2	2	2	2	2	5	V
<i>Astragalus lacteus</i>	2	2	2	1	2	5	V
<i>Plantago atrata</i> subsp. <i>graeca</i>	1	+	1	1	2	5	V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	.	+	+	+	+	4	IV
<i>Sedum ochroleuchum</i>	.	.	+	+	+	3	III
<i>Silene multicaulis</i> subsp. <i>multicaulis</i>	1	+	.	.	+	3	III
<i>Nepeta nuda</i> var. <i>epirotica</i>	.	.	.	+	+	2	II
<i>Allium sardoum</i>	.	+	.	.	+	2	II
<i>Fritillaria</i> sp.	.	.	+	.	+	2	II
<i>Salvia argentea</i> var. <i>alpina</i>	.	.	.	+	+	2	II
<i>Taraxacum</i> sp.	+	.	.	.	+	2	II
<i>Daphne oleoides</i>	+	.	.	.	.	1	I
<i>Pilosella cymosa</i> subsp. <i>sabina</i>	.	.	+	.	.	1	I
<i>Anthyllis montana</i> subsp. <i>jacquinii</i>	.	.	.	.	+	1	I
<i>Hippocrepis comosa</i>	.	.	.	.	1	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Giona - Liritsa - 06/07/07.

Table A16. *Asperulo luteae-Achilleetum umbellatae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	Presences	Presence class
Altitude (dam)	175	174	176	178	176		
Surface (m ²)	50	100	50	50	50		
Coverage (%)	70	70	70	60	70		
Slope (°)	40	50	50	35	30		
Exposition	S	S	S	S	S		
Char. Association							
<i>Achillea umbellata</i>	1	3	4	2	1	5	V
<i>Carex caryophylla</i>	2	1	1	+	+	5	V
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)							
<i>Satureja parnassica</i>	+	+	1	+	1	5	V
<i>Marrubium velutinum</i>	+	+	+	.	+	4	IV
<i>Lactuca intricata</i>	+	.	.	.	.	2	II
<i>Sideritis raeseri</i> subsp. <i>raeseri</i>	.	.	.	+	+	2	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)							
<i>Eryngium multifidum</i>	+	+	1	+	1	5	V
<i>Avenochloa agropyroides</i>	.	1	+	+	+	4	IV
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Asperula lutea</i>	3	2	2	3	3	5	V
<i>Poa thessala</i>	1	1	1	1	1	5	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	1	+	1	5	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	1	2	1	1	2	5	V
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	2	3	2	2	2	5	V
<i>Stipa endotricha</i>	2	2	1	2	2	5	V
<i>Viola chelmea</i>	1	+	+	+	+	5	V
<i>Erysimum cephalonicum</i>	+	+	.	+	+	4	IV
<i>Leontodon graecus</i>	.	.	.	+	+	2	II
<i>Galium thymifolium</i>	.	.	.	.	+	1	I
<i>Viola graeca</i>	+	.	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Koeleria mitrushi</i>	2	2	2	3	2	5	V
<i>Asyneuma limonifolium</i>	+	+	+	+	+	5	V
<i>Euphorbia hernia riifolia</i>	1	+	+	+	+	5	V
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	2	1	2	1	2	5	V
<i>Bromopsis lacmonica</i>	2	1	+	.	1	4	IV
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	+	.	+	4	IV
<i>Achillea holosericea</i>	1	.	1	.	.	2	II
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	.	.	.	+	+	2	II
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	.	.	.	.	+	1	I
Other species							
<i>Daphne oleoides</i>	1	+	1	+	1	5	V
<i>Melica ciliata</i>	+	+	+	+	+	5	V
<i>Juniperus hemisphaerica</i>	1	1	1	+	1	5	V
<i>Sedum ochroleuchum</i>	1	1	+	+	1	5	V
<i>Anthyllis montana</i> subsp. <i>jacquinii</i>	2	1	+	+	+	5	V
<i>Arabis bryoides</i>	+	+	+	+	.	4	IV
<i>Sedum acre</i>	+	+	.	.	+	3	III
<i>Muscari</i> sp.	+	+	+	.	.	3	III
<i>Astragalus lacteus</i>	2	1	+	.	.	3	III
<i>Euphorbia myrsinites</i>	1	+	.	.	.	2	II
<i>Allium stamineum</i>	+	+	.	.	.	2	II
<i>Ornithogalum montanum</i>	+	.	.	+	.	2	II
<i>Astragalus apollineus</i>	+	.	.	+	.	2	II
<i>Rosa</i> sp.	.	.	.	+	+	2	II
<i>Salvia argentea</i> var. <i>alpina</i>	+	+	.	.	.	2	II
<i>Silene multicaulis</i> subsp. <i>multicaulis</i>	.	+	+	.	.	2	II
<i>Teucrium capitatum</i>	.	+	.	.	.	1	I
<i>Sedum dasyphyllum</i>	+	.	.	.	.	1	I
<i>Sorbus graeca</i>	.	.	+	.	.	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Giona - Liritsa - 06/07/07.

Table A17. *Astragalo lactei-Asperuletum apiculatae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6		
Altitude (dam)	154	153	155	156	157	157		
Surface (m ²)	100	50	50	50	50	100		
Coverage (%)	70	70	60	60	60	70		
Slope (°)	30	40	70	80	40	50		
Exposition	SO	O	O	O	S	SO	Presences	Presence class
Char. Association								
<i>Asperula purpurea</i> subsp. <i>apiculata</i>	2	3	3	3	2	2	6	V
<i>Astragalus lacteus</i>	2	2	1	1	2	1	6	V
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)								
<i>Satureja parnassica</i>	1	1	+	2	+	+	6	V
<i>Centaurea affinis</i> subsp. <i>affinis</i>	1	+	1	+	1	1	6	V
<i>Lactuca intricata</i>	.	+	+	.	.	+	3	III
<i>Linaria parnassica</i>	.	.	.	.	+	1	2	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Poa thessala</i>	1	1	+	1	1	1	6	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	+	+	+	1	6	V
<i>Galium thymifolium</i>	1	1	+	2	1	2	6	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	3	1	3	3	2	1	6	V
<i>Leontodon graecus</i>	1	+	+	+	+	1	6	V
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	+	+	+	+	+	+	6	V
<i>Draba lacaitae</i>	+	.	+	+	+	+	5	V
<i>Erysimum cephalonicum</i>	.	.	.	+	+	+	3	III
<i>Cerastium candidissimum</i>	.	.	.	+	+	.	2	II
<i>Alyssum montanum</i> subsp. <i>graecum</i>	.	.	.	.	.	+	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Achillea holosericea</i>	2	2	2	1	1	2	6	V
<i>Koeleria mitrushi</i>	3	3	2	2	2	2	6	V
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	2	1	2	1	1	+	6	V
<i>Asyneuma limonifolium</i>	2	2	1	+	1	1	6	V
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	2	1	2	2	2	3	6	V
<i>Helictotrichon aetolicum</i>	1	1	1	+	1	2	6	V
<i>Thymus chaubardii</i>	2	1	2	+	1	2	6	V
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	+	+	.	+	+	4	IV
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	+	.	.	+	+	+	4	IV
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	.	.	+	.	3	III
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	+	+	.	.	.	+	3	III
Other species								
<i>Melica ciliata</i>	1	+	+	1	1	1	6	V
<i>Sedum acre</i>	2	1	1	+	1	1	6	V
<i>Poa bulbosa</i>	1	+	+	+	+	+	6	V
<i>Sedum album</i>	1	1	+	1	1	1	6	V
<i>Allium</i> sp.	1	+	+	+	+	+	6	V
<i>Poa timoleontis</i>	2	2	1	1	1	2	6	V
<i>Micromeria juliana</i>	1	+	+	+	1	1	6	V
<i>Petrorhagia illyrica</i> subsp. <i>illyrica</i>	1	1	1	+	1	+	6	V
<i>Teucrium capitatum</i>	+	1	+	.	+	+	5	V
<i>Ononis pusilla</i>	+	+	+	.	+	+	5	V
<i>Sedum ochroleuchum</i>	.	.	+	1	3	1	4	IV
<i>Hypericum</i> sp.	1	+	+	.	+	.	4	IV
<i>Muscari</i> sp.	+	+	+	.	.	+	4	IV
<i>Teucrium chamaedrys</i>	.	.	.	1	+	+	3	III
<i>Hieracium</i> sp.	.	+	2	1	.	.	3	III
<i>Daphne oleoides</i>	+	.	.	.	.	+	2	II
<i>Arabis</i> sp.	.	.	.	.	+	+	2	II
<i>Sedum hispanicum</i>	.	.	.	+	+	.	2	II
<i>Pimpinella</i> sp.	.	.	.	.	.	2	1	I

Localities and dates of relevés. Rel. 1-6: Mt. Giona - Prioni, near Mavrikorfi - 06/07/07.

Table A18. *Diantho minutiflori-Festucetum cyllenicae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6		
Altitude (dam)	198	199	198	197	198	199		
Surface (m ²)	100	50	50	50	50	100		
Coverage (%)	60	60	50	60	70	70	Presences	Presence class
Slope (°)	25	25	25	20	20	30		
Exposition	O	O	O	O	O	O		
Char. Association								
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	3	3	3	3	4	4	6	V
<i>Dianthus integer</i> subsp. <i>minutiflorus</i>	+	1	+	1	2	1	6	V
<i>Silene roemerii</i> subsp. <i>macrocarpa</i>	1	+	+	1	1	1	6	V
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)								
<i>Marrubium velutinum</i>	1	+	+	+	+	+	6	V
<i>Satureja parnassica</i>	1	2	1	2	1	1	6	V
<i>Nepeta spruneri</i>	1	+	1	1	+	+	6	V
<i>Lactuca intricata</i>	+	.	+	+	+	+	5	V
<i>Verbascum parnassicum</i>	+	+	.	.	+	+	4	IV
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	1	1	+	+	1	1	6	V
<i>Cerastium candidissimum</i>	1	1	1	1	2	1	6	V
<i>Erysimum cephalonicum</i>	+	+	+	+	+	+	6	V
<i>Galium thymifolium</i>	2	1	2	1	2	2	6	V
<i>Viola graeca</i>	1	1	1	+	+	1	6	V
<i>Poa thessala</i>	.	2	1	1	1	1	5	V
<i>Minuartia attica</i> subsp. <i>attica</i>	+	+	+	+	.	+	5	V
<i>Draba lacaitae</i>	.	+	+	1	+	+	5	V
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Asyneuma limonifolium</i>	1	+	+	+	+	+	6	V
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	+	+	+	+	+	+	6	V
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	1	1	1	1	1	1	6	V
<i>Sesleria vaginalis</i>	2	2	1	1	2	1	6	V
<i>Carum graecum</i> subsp. <i>graecum</i>	.	+	1	1	+	+	5	V
<i>Euphorbia herniariifolia</i>	+	.	+	+	+	+	5	V
<i>Galium incanum</i> subsp. <i>incanum</i>	.	.	1	+	+	1	4	IV
<i>Thymus chaubardii</i>	.	.	+	.	+	+	3	III
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	+	.	+	.	2	II
<i>Carduus tmoleus</i>	1	.	.	.	+	.	2	II
<i>Myosotis suaveolens</i>	.	.	.	.	.	+	1	I
Other species								
<i>Daphne oleoides</i>	1	+	+	1	+	1	6	V
<i>Melica ciliata</i>	+	+	+	+	+	+	6	V
<i>Teucrium chamaedrys</i>	1	1	1	+	2	1	6	V
<i>Sedum album</i>	+	+	+	+	+	+	6	V
<i>Sedum ochroleuchum</i>	1	1	+	+	+	+	6	V
<i>Muscari</i> sp.	+	+	+	+	+	+	6	V
<i>Ranunculus breviofolius</i>	2	1	1	2	2	2	6	V
<i>Noccaea boeotica</i>	.	+	+	+	.	+	4	IV
<i>Rosa</i> sp.	.	.	.	1	+	+	3	III
<i>Ptilostemon afer</i>	.	.	.	.	+	+	2	II
<i>Arabis</i> sp.	.	.	.	.	.	1	1	I
<i>Polygala nicaeensis</i> subsp. <i>mediterranea</i>	.	.	+	.	.	.	1	I

Localities and dates of relevés. Rel. 1-6: Mt. Giona - Amfissa, near Pirghakia - 05/07/07.

Table A19. *Scabiosa ochroleuca-Sideridetum raeseri* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5		
Altitude (dam)	180	181	180	179	182		
Surface (m ²)	100	50	50	50	50		
Coverage (%)	80	80	70	80	90		
Slope (°)	25	30	40	40	20		
Exposition	S	S	S	S	E	Presences	Presence class
Char. Association							
<i>Scabiosa ochroleuca</i>	2	2	2	3	1	5	V
<i>Vincetoxicum hirundinaria</i> subsp. <i>nivale</i>	1	1	1	1	+	5	V
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)							
<i>Marrubium velutinum</i>	2	1	+	+	2	5	V
<i>Satureja parnassica</i>	2	2	2	2	1	5	V
<i>Sideritis raeseri</i> subsp. <i>raeseri</i>	2	2	3	2	2	5	V
<i>Centaurea affinis</i> subsp. <i>affinis</i>	2	1	2	1	1	5	V
<i>Nepeta sprunerii</i>	1	1	+	+	1	5	V
<i>Galium circae</i>	.	.	2	1	1	3	III
<i>Geocaryum parnassicum</i>	+	+	+	.	.	3	III
<i>Astragalus corynthiacus</i>	1	.	.	.	+	2	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)							
<i>Eryngium multifidum</i>	1	2	2	2	1	5	V
<i>Avenochloa agropyroides</i>	.	.	.	2	1	2	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Asperula lutea</i>	2	2	1	2	1	5	V
<i>Poa thessala</i>	1	1	1	1	1	5	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	1	1	+	5	V
<i>Galium thymifolium</i>	2	1	1	1	2	5	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	2	1	1	1	1	5	V
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	2	2	1	2	2	5	V
<i>Stipa endotricha</i>	2	2	2	2	3	5	V
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	2	1	.	1	+	4	IV
<i>Leontodon graecus</i>	.	1	+	+	+	4	IV
<i>Teucrium montanum</i> var. <i>parnassicum</i>	+	+	+	1	.	4	IV
<i>Draba lacaitae</i>	.	+	+	.	+	3	III
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	+	+	.	+	.	3	III
<i>Minuartia confusa</i>	.	.	+	+	+	3	III
<i>Alyssum montanum</i> subsp. <i>graecum</i>	.	.	+	.	1	2	II
<i>Scutellaria rupestris</i> subsp. <i>parnassica</i>	+	.	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Koeleria mitrushi</i>	1	2	1	1	2	5	V
<i>Asyneuma limonifolium</i>	+	+	+	+	+	5	V
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	2	3	2	2	2	5	V
<i>Bromopsis lacmonica</i>	2	1	2	3	2	5	V
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	+	+	1	5	V
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	+	+	+	5	V
<i>Thymus chaubardii</i>	2	1	1	1	2	5	V
<i>Carduus tmoleus</i>	+	+	+	.	+	4	IV
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	.	.	+	+	1	3	III
<i>Sesleria vaginalis</i>	.	.	.	2	1	2	II
<i>Euphorbia herniariifolia</i>	+	+	.	.	.	2	II
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	.	+	.	.	.	1	I
<i>Achillea holosericea</i>	+	.	.	.	.	1	I
Other species							
<i>Melica ciliata</i>	1	1	1	1	+	5	V
<i>Teucrium chamaedrys</i>	1	+	1	1	1	5	V
<i>Juniperus hemisphaerica</i>	1	2	1	1	1	5	V
<i>Echinops</i> sp.	+	+	+	+	1	5	V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	+	+	+	+	.	4	IV
<i>Sedum album</i>	1	+	+	1	.	4	IV
<i>Noccaea boeotica</i>	+	+	+	+	.	4	IV
<i>Petrorhagia illyrica</i> subsp. <i>illyrica</i>	.	1	+	+	+	4	IV
<i>Salvia argentea</i> var. <i>alpina</i>	1	+	+	+	.	4	IV
<i>Linum tenuifolium</i>	.	1	+	1	.	3	III
<i>Sedum acre</i>	.	.	.	1	1	2	II
<i>Hypericum</i> sp.	.	.	1	+	.	2	II
<i>Achillea nobilis</i>	.	.	.	.	+	1	I
<i>Allium stamineum</i> s.l.	.	+	.	.	.	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Giona - Amfissa, near Pirghakia - 05/07/07.

Table A20. Ranunculo psilostachydis-Festucetum cyllenicae Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5		
Altitude (dam)	172	172	173	174	172		
Surface (m ²)	100	100	100	100	100		
Coverage (%)	80	90	80	80	80		
Slope (°)	35	25	30	30	30	Presences	Presence class
Exposition	E	O	O	O	O		
Char. Association							
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	4	4	5	3	4	5	V
<i>Ranunculus psilostachys</i>	2	2	3	3	2	5	V
<i>Lasertium pseudomeum</i>	1	1	1	1	3	5	V
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)							
<i>Marrubium velutinum</i>	1	2	1	2	1	5	V
<i>Galium circae</i>	1	1	1	1	1	5	V
<i>Nepeta spruneri</i>	1	1	1	1	1	5	V
<i>Verbascum parnassicum</i>	+	+	.	+	+	4	IV
<i>Lactuca intricata</i>	+	+	+	.	.	3	III
<i>Linaria parnassica</i>	+	.	.	.	+	2	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)							
<i>Eryngium multifidum</i>	+	1	1	1	1	5	V
<i>Avenochloa agropyroides</i>	2	1	1	1	2	5	V
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Poa thessala</i>	1	1	1	2	1	5	V
<i>Cerastium candidissimum</i>	1	3	1	2	2	5	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	1	1	1	5	V
<i>Galium thymifolium</i>	2	2	2	2	2	5	V
<i>Trisetum tenuiforme</i>	1	2	1	1	2	5	V
<i>Viola graeca</i>	2	1	1	+	1	5	V
<i>Erysimum cephalonicum</i>	+	+	.	+	.	3	III
<i>Stipa endotricha</i>	+	.	.	1	1	3	III
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	.	.	.	.	1	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	+	+	+	5	V
<i>Thymus chaubardii</i>	2	1	1	+	2	5	V
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	2	1	2	1	1	5	V
<i>Carduus imoleus</i>	+	+	.	+	+	4	IV
<i>Euphorbia hermiariifolia</i>	+	.	+	+	+	4	IV
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	.	.	+	2	+	3	III
Other species							
<i>Daphne oleoides</i>	1	1	1	1	1	5	V
<i>Melica ciliata</i>	1	1	1	1	1	5	V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	1	+	+	+	+	5	V
<i>Sedum album</i>	+	+	+	+	+	5	V
<i>Dactylis glomerata</i>	1	2	2	1	2	5	V
<i>Pilosella cimosia</i> subsp. <i>sabina</i>	2	1	1	+	1	5	V
<i>Rosa</i> sp.	1	+	+	1	+	5	V
<i>Rumex nebroides</i>	2	2	2	2	2	5	V
<i>Silene multicaulis</i> subsp. <i>multicaulis</i>	1	+	2	1	1	5	V
<i>Silene vulgaris</i> subsp. <i>prostrata</i>	+	+	1	+	+	5	V
<i>Sedum acre</i>	+	+	+	.	+	4	IV
<i>Poa bulbosa</i>	.	+	1	2	1	4	IV
<i>Nepeta nuda</i> var. <i>epirotica</i>	.	+	+	+	+	4	IV
<i>Astragalus depressus</i>	+	+	+	.	+	4	IV
<i>Potentilla</i> sp.	.	+	+	+	+	4	IV
<i>Arabis</i> sp.	+	+	.	.	+	3	III
<i>Noccaea boeotica</i>	.	+	.	.	+	2	II
<i>Geum</i> sp.	.	+	.	.	+	2	II
<i>Trifolium repens</i>	.	+	+	.	.	2	II
<i>Carum graecum</i> subsp. <i>graecum</i>	.	.	.	.	1	1	I
<i>Polygala nicaeensis</i> subsp. <i>mediterranea</i>	.	.	.	.	1	1	I
<i>Primula</i> sp.	.	.	.	.	1	1	I
<i>Stachys alopecurus</i>	.	.	.	.	+	1	I
<i>Trifolium pratense</i>	.	.	.	.	+	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Giona - Amfissa, near Pirghakia - 05/07/07.

Table A21. *Edraiantho parnassici-Globularietum cordifoliae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8	9		
Altitude (dam)	172	170	170	172	214	215	175	180	194		
Surface (m ²)	50	50	50	50	10	40	50	100	100		
Coverage (%)	60	70	60	60	50	60	60	60	60	Presences	Presence class
Slope (°)	30	5	5	5	25	20	-	40	20		
Exposition	E	S	E	S	O	S	-	S	S		
Char. Association											
<i>Globularia cordifolia</i>	3	3	3	2	2	3	3	3	3	9	V
<i>Halacsysella parnassica</i>	2	2	2	2	2	1	2	+	2	9	V
<i>Anthyllis montana</i> subsp. <i>jacquinii</i>	2	2	3	2	1	2	2	2	2	9	V
<i>Silene auriculata</i>	1	2	1	.	2	2	1	1	1	8	V
Char. Ail. (MARRUBION VELUTINI-THYMION PARNASSICI)											
<i>Paronychia polygonifolia</i>	1	+	1	2	.	1	1	+	2	8	V
<i>Satureja parnassica</i>	+	1	+	1	.	.	+	1	1	7	IV
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)											
<i>Eryngium multifidum</i>	.	+	+	1	.	.	+	+	.	5	III
<i>Astragalus angustifolius</i> subsp. <i>erinaeus</i>	.	.	.	1	+	2	.	.	.	3	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)											
<i>Poa thessala</i>	2	1	2	2	2	1	2	1	2	9	V
<i>Minuartia attica</i> subsp. <i>attica</i>	2	1	1	2	1	1	1	1	1	9	V
<i>Galium thymifolium</i>	+	+	+	+	+	+	+	+	+	9	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	2	1	1	1	1	+	1	1	1	9	V
<i>Leontodon graecus</i>	+	+	+	+	+	+	1	+	+	9	V
<i>Draba lacaitae</i>	+	+	1	+	+	+	+	+	+	9	V
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	.	1	+	1	2	2	2	1	2	8	V
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	+	1	1	1	.	.	1	1	+	7	IV
<i>Cerastium candidissimum</i>	+	+	+	.	.	+	+	1	2	7	IV
<i>Stipa endotricha</i>	1	1	+	2	.	.	2	2	2	7	IV
<i>Teucrium montanum</i> var. <i>parnassicum</i>	+	+	1	1	.	.	+	+	1	7	IV
<i>Dianthus tymphresteus</i>	.	+	1	1	.	.	1	.	.	4	III
<i>Asperula lutea</i>	.	.	.	.	.	.	.	+	.	1	I
<i>Viola graeca</i>	.	.	.	.	.	+	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)											
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	+	1	1	1	+	+	+	+	+	9	V
<i>Asyneuma limonifolium</i>	+	+	+	+	1	+	+	1	+	9	V
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	2	2	1	2	1	1	1	1	1	9	V
<i>Thymus leucotrichus</i>	3	3	2	3	.	.	2	2	2	7	IV
<i>Koeleria mitrushi</i>	2	2	3	2	.	.	2	2	2	7	IV
<i>Galium incanum</i> subsp. <i>incanum</i>	.	.	.	.	1	+	.	.	1	3	II
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	.	.	+	.	+	.	2	II
<i>Thymus chaubardii</i>	.	.	+	.	.	.	.	+	.	2	II
Other species											
<i>Sedum ochroleuchum</i>	1	1	+	1	.	+	1	+	1	8	V
<i>Daphne oleoides</i>	1	1	1	1	.	1	.	1	1	7	IV
<i>Juniperus hemisphaerica</i>	1	1	1	1	.	.	1	1	1	7	IV
<i>Arabis bryoides</i>	+	.	+	.	+	+	+	+	1	7	IV
<i>Carex caryophylla</i>	1	1	1	+	.	.	1	1	1	7	IV
<i>Thymus</i> sp.	.	.	2	1	.	.	1	1	+	5	III
<i>Carlina frigida</i>	1	+	+	.	.	.	+	.	.	4	III
<i>Sedum</i> sp.	+	+	+	+	.	.	.	.	.	4	III
<i>Polygala nicaeensis</i> subsp. <i>mediterranea</i>	+	+	+	.	.	.	.	.	.	3	II
<i>Ptilostemon afer</i>	+	+	.	+	.	.	.	.	.	3	II
<i>Euphorbia herniariifolia</i>	.	.	.	.	.	.	.	+	.	1	I
<i>Taraxacum</i> sp.	.	.	.	.	.	.	.	.	+	1	I

Localities and dates of relevés. Rel. 1-4: Mt. Giona - Amfissa, Patimata - 04/07/07; Rel. 5-6: Mt. Giona - Amfissa, near Makrilakos - 04/07/07; rel. 7-9: Mt. Giona - Amfissa, near Pirghakia - 05/07/07.

Table A22. *Thymo parnassici-Astragaletum parnassi* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8	9	10	Presence class
Altitude (dam)	105	107	109	110	111	120	110	120	121	131	
Surface (m ²)	100	50	50	50	50	50	50	100	50	50	
Coverage (%)	80	70	80	80	90	90	70	90	70	80	
Slope (°)	15	15	15	5	10	5	-	15	-	5	
Exposition	O	O	O	NO	SO	N	-	O	-	O	
Car. Associazione											
<i>Astragalus parnassi</i>	4	3	4	4	3	3	4	4	4	3	10 V
Car. MARRUBION VELUTINI-THYMION PARNASSICI											
<i>Festuca graeca</i> subsp. <i>graeca</i>	2	2	2	2	2	3	2	.	.	.	7 IV
<i>Thymus parnassicus</i>	2	2	2	3	2	2	.	.	.	.	6 III
<i>Erysimum parnassi</i>	+	+	.	.	+	.	+	.	.	.	1 6 III
<i>Lactuca intricata</i>	+	+	.	.	+	.	+	.	.	.	5 III
<i>Geocaryum parnassicum</i>	+	+	.	.	.	+	.	.	.	.	4 II
<i>Verbascum parnassicum</i>	.	.	.	.	+	+	.	.	.	.	3 II
<i>Satureja parnassica</i>	.	.	.	.	.	.	.	2	2	1	3 II
<i>Centaurea affinis</i> subsp. <i>affinis</i>	.	.	.	.	.	.	.	1	1	1	3 II
<i>Nepeta parnassica</i>	.	.	.	.	.	.	.	.	.	+	1 I
Car. ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS											
<i>Eryngium multifidum</i>	1	2	1	1	1	1	1	+	1	+	2 10 V
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	2	1	1	.	.	.	2	1	1	.	6 III
<i>Euphorbia deflexa</i>	.	.	.	.	.	+	.	.	.	.	1 3 II
<i>Armeria orphanidis</i>	.	.	.	.	.	.	+	1	.	.	2 I
Car. CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI											
<i>Leontodon graecus</i>	+	+	+	+	+	+	+	1	1	+	1 10 V
<i>Minuartia attica</i> subsp. <i>attica</i>	2	2	2	1	1	2	1	2	1	1	10 V
<i>Stipa endotricha</i>	2	2	1	1	+	+	+	2	2	1	10 V
<i>Asperula lutea</i>	1	1	+	+	+	.	.	2	2	1	9 V
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	+	+	+	+	+	+	.	.	.	.	6 III
<i>Cerastium candidissimum</i>	1	.	.	.	+	1	1	1	.	.	5 III
<i>Silene radicata</i> subsp. <i>radicata</i>	.	.	.	1	+	+	1	.	.	.	4 II
<i>Alysium montanum</i> subsp. <i>graecum</i>	.	.	.	.	.	+	1	.	2	2	4 II
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	.	.	.	.	.	+	1	.	.	.	3 3 II
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	.	.	.	.	.	.	.	.	.	+	2 I
<i>Pterocarpus perennis</i> subsp. <i>perennis</i>	.	.	.	.	.	.	.	.	.	+	1 I
<i>Lysimachia serpyllifolia</i>	.	.	.	.	.	.	.	.	.	+	1 I
Dif. CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI											
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	1	1	+	+	+	+	1	1	1	2	10 V
<i>Asyneuma limonifolium</i>	+	+	1	+	+	1	1	1	+	+	10 V
<i>Festuca jeanperetii</i> subsp. <i>jeanperetii</i>	2	2	2	2	2	2	1	2	2	2	10 V
<i>Koeleria mitrastii</i>	2	2	2	2	2	2	2	2	2	1	10 V
<i>Aethionema saxatile</i> subsp. <i>oreophyllum</i>	.	+	+	+	+	+	+	+	+	.	8 IV
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	.	.	.	+	+	+	+	.	7 IV
<i>Anthemis cretica</i> subsp. <i>cretica</i>	.	.	1	1	+	.	1	1	+	1	7 IV
<i>Stachys heldreichii</i>	+	+	+	+	+	.	.	.	.	.	6 III
<i>Thymus chaubardii</i>	.	.	.	.	3	.	1	1	+	+	6 III
<i>Sedum laconicum</i>	+	+	.	.	.	.	.	.	.	.	3 II
<i>Helictotrichon aetolicum</i>	.	.	.	.	.	+	.	.	.	.	1 I
<i>Campanula spatulata</i> subsp. <i>spatulata</i>	.	.	.	.	.	.	.	.	.	+	1 I
Other species											
<i>Euphorbia myrsinites</i>	1	+	+	+	1	1	2	1	+	+	10 V
<i>Petrorhagia illyrica</i> subsp. <i>illyrica</i>	1	1	+	1	1	1	+	+	+	1	10 V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	+	+	+	+	+	+	1	+	+	+	10 V
<i>Poa bulbosa</i>	1	1	1	1	1	1	+	.	.	.	8 IV
<i>Teucrium capitatum</i>	1	2	1	+	.	.	.	.	.	.	8 IV
<i>Medicago lupulina</i>	+	+	+	+	+	+	.	.	.	.	7 IV
<i>Convolvulus cantabrica</i>	1	1	+	+	.	.	.	.	.	.	5 III
<i>Convolvulus elegantissimus</i>	.	+	+	1	+	+	.	.	.	.	5 III
<i>Crocus</i> sp.	+	+	+	+	+	+	.	.	.	.	5 III
<i>Pilosella hoppeana</i> subsp. <i>testimoniae</i>	.	.	1	+	+	+	.	.	.	.	5 III
<i>Iris attica</i>	.	+	.	.	.	.	.	1	.	.	5 III
<i>Stipa holosericea</i>	2	1	+	1	2	.	.	.	.	.	5 III
<i>Carex</i> sp.	.	+	.	.	.	.	+	1	+	.	4 II
<i>Poa timolontis</i>	.	.	.	.	+	1	+	1	.	.	4 II
<i>Sedum tenuifolium</i>	+	+	.	.	.	.	+	.	.	.	4 II
<i>Helianthemum caenum</i> subsp. <i>caenum</i>	.	.	.	.	1	.	.	.	+	.	3 II
<i>Medica ciliata</i>	.	.	.	.	.	.	.	.	.	.	3 II
<i>Muscari neglectum</i>	+	.	.	.	.	.	.	.	.	.	3 II
<i>Ornithogalum montanum</i>	+	.	.	.	.	.	.	.	.	.	3 II
<i>Scleranthus marginatus</i>	.	.	+	+	.	.	.	.	.	.	3 II
<i>Polygala nicaensis</i> subsp. <i>mediterranea</i>	.	.	.	.	.	.	.	.	+	+	3 II
<i>Salvia argentea</i> var. <i>alpina</i>	.	.	.	1	1	1	.	.	.	.	3 II
<i>Brachypodium rupestre</i>	.	.	.	.	.	.	.	2	1	.	2 I
<i>Anthyllis vulneraria</i> subsp. <i>bulgarica</i>	.	.	.	.	.	.	1	.	.	.	2 I
<i>Orobancha</i> sp.	.	.	.	.	.	.	.	.	.	.	2 I
<i>Sedum acre</i>	.	.	.	1	+	.	.	.	.	.	2 I
<i>Ononis spinosa</i> subsp. <i>antiquorum</i>	.	.	.	.	.	.	.	1	1	.	2 I
<i>Pheum montanum</i>	.	.	.	.	.	.	.	.	+	.	2 I
<i>Dorycnium herbaceum</i>	.	.	.	.	.	.	.	1	1	.	2 I
<i>Pteridium aquilinum</i>	.	.	.	.	.	.	.	.	+	+	2 I
<i>Teucrium chamaedris</i>	.	.	.	.	.	.	.	.	1	+	2 I
<i>Carlina</i> sp.	.	.	.	.	.	.	.	.	.	+	2 I
<i>Astragalus depressus</i>	.	.	.	.	.	.	.	.	.	+	2 I
<i>Allium rhodapeum</i>	.	.	.	.	.	.	.	.	.	.	1 I
<i>Dasypyrum villosum</i>	.	+	.	.	.	.	.	.	.	.	1 I
<i>Pilosella cinnosa</i> subsp. <i>sabina</i>	.	.	.	.	1	.	.	.	.	.	1 I
<i>Ononis pusilla</i>	.	.	.	.	.	.	.	.	.	+	1 I
<i>Rumex nebroides</i>	.	.	.	.	.	.	.	.	.	.	1 I
<i>Silene italica</i> subsp. <i>italica</i>	.	.	.	.	.	.	.	.	.	+	1 I
<i>Lotus corniculatus</i>	.	.	.	.	.	.	.	.	.	+	1 I
<i>Astragalus monspessulanus</i>	.	.	.	.	.	.	.	.	.	+	1 I
<i>Acinos arvensis</i>	.	.	.	.	.	.	.	.	.	+	1 I
<i>Iberis sempervirens</i>	.	.	.	.	.	.	.	.	.	+	1 I
<i>Prunella</i> sp.	.	.	.	.	.	.	.	.	.	+	1 I
<i>Echinops</i> sp.	.	.	.	.	.	.	.	.	.	+	1 I
<i>Rosa</i> sp.	.	.	.	.	.	.	.	.	.	+	1 I

Localities and dates of relevés. Rel. 1-5: Mt. Parnassus, Arachovas - 07.06.07; rel. 6: Mt. Parnassus, Ambelonas - 07.06.07; rel. 7: Mt. Parnassus, Livadia near Arachova - 03.07.07; rel. 8-10: Mt. Parnassus, Skamnos - 03.07.07.

Table A23. *Chamaecytiso hirsuti-Astragaletum parnassii* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8	9		
Altitude (dam)	126	128	127	135	134	130	130	151	152		
Surface (m ²)	100	100	50	50	50	100	100	100	50		
Coverage (%)	90	90	80	80	80	90	90	90	80		
Slope (°)	10	10	15	10	10	10	20	20	15	Presences	Presence class
Exposition	O	O	O	E	S	SE	S	SO	S		
Char. Association											
<i>Astragalus parnassii</i>	4	3	4	3	2	4	4	5	4	9	V
<i>Chamaecytisus hirsutus</i>	.	+	+	1	1	2	1	.	.	6	IV
Char. AIL (MARRUBION VELUTINI-THYMION PARNASSICI)											
<i>Satureja parnassica</i>	+	+	1	2	2	1	+	2	1	9	V
<i>Centaurea affinis</i> subsp. <i>affinis</i>	1	1	1	1	2	1	1	1	2	9	V
<i>Lactuca intricata</i>	+	1	+	+	+	+	+	+	.	8	V
<i>Nepeta spruneri</i>	.	.	+	.	.	+	.	+	1	4	III
<i>Marrubium velutinum</i>	+	.	+	.	.	1	.	.	.	3	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)											
<i>Eryngium multifidum</i>	2	1	2	1	1	2	2	1	2	9	V
<i>Galium talygetum</i>	1	1	+	1	1	1	1	1	+	9	V
<i>Avenochloa agropyroides</i>	2	1	+	+	.	2	+	1	+	8	V
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)											
<i>Leontodon graecus</i>	1	1	+	+	+	1	+	1	+	9	V
<i>Minuartia attica</i> subsp. <i>attica</i>	+	+	+	+	+	1	+	1	+	9	V
<i>Podospermum canum</i> var. <i>alpinum</i>	1	+	+	+	+	1	+	+	+	9	V
<i>Galium thymifolium</i>	+	+	+	1	+	1	+	2	1	9	V
<i>Ptercephalus perennis</i> subsp. <i>perennis</i>	+	1	+	+	.	2	2	1	2	8	V
<i>Silene radicata</i> subsp. <i>radicata</i>	1	1	2	1	1	1	1	.	+	8	V
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	.	.	+	+	.	+	.	+	+	5	III
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	.	.	.	3	3	.	.	1	+	4	III
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)											
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	2	2	1	1	1	1	+	2	2	9	V
<i>Asyneuma limonifolium</i>	+	+	+	+	+	1	1	+	+	9	V
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	3	3	2	2	2	2	2	2	3	9	V
<i>Koeleria mitrushi</i>	1	2	2	2	3	2	2	2	1	9	V
<i>Thymus chaubardii</i>	2	2	1	3	3	2	1	2	2	9	V
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	+	+	1	+	+	+	+	+	1	9	V
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	+	.	+	+	+	+	+	8	V
<i>Anthemis cretica</i> subsp. <i>cretica</i>	+	.	+	+	.	+	+	+	.	6	IV
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	.	+	+	+	+	+	5	III
<i>Linaria peloponnesiaca</i>	.	.	.	+	+	.	.	1	+	4	III
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	.	.	+	.	.	.	.	.	.	2	II
<i>Dianthus viscidus</i> var. <i>viscidus</i>	+	.	.	.	.	.	.	.	.	1	I
Other species											
<i>Arabis collina</i>	+	+	2	+	+	1	+	+	1	9	V
<i>Petrorhagia illyrica</i> subsp. <i>illyrica</i>	1	1	1	+	+	2	2	1	1	9	V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	1	+	+	+	+	1	+	+	+	9	V
<i>Sedum acre</i>	1	1	+	+	+	1	1	1	1	9	V
<i>Astragalus depressus</i>	+	+	1	+	2	+	.	1	1	8	V
<i>Sedum tenuifolium</i>	+	+	+	+	+	+	.	+	+	8	V
<i>Teucrium chamaedris</i>	+	+	+	.	+	1	1	2	2	8	V
<i>Erysimum cuspidatum</i>	+	1	+	+	+	+	.	1	+	8	V
<i>Convolvulus elegantissimus</i>	1	2	1	+	+	1	1	.	.	7	IV
<i>Phleum montanum</i>	1	1	+	.	.	1	+	1	1	7	IV
<i>Poa bulbosa</i>	.	+	+	1	1	.	2	1	2	7	IV
<i>Teucrium capitatum</i>	1	+	+	.	.	1	1	1	+	7	IV
<i>Trifolium pratense</i>	1	+	+	+	+	1	+	.	.	7	IV
<i>Hypericum</i> sp.	1	+	+	.	.	+	1	1	+	7	IV
<i>Dactylis hispanica</i>	+	+	.	.	.	+	+	1	+	6	IV
<i>Pilosella leucopsilon</i> subsp. <i>pilisquamana</i>	2	2	+	+	+	+	.	.	.	6	IV
<i>Melica ciliata</i>	.	.	.	1	+	+	+	1	1	6	IV
<i>Plantago holosteum</i> var. <i>alpestris</i>	1	1	+	.	.	1	1	+	.	6	IV
<i>Carduus nutans</i> subsp. <i>scabrisquamus</i>	+	+	.	.	.	+	+	+	.	5	III
<i>Iris attica</i>	+	1	+	.	.	+	1	.	.	5	III
<i>Euphorbia myrsinites</i>	.	.	+	+	.	+	+	.	.	4	III
<i>Potentilla</i> sp.	+	+	+	.	+	.	.	.	.	4	III
<i>Ononis pusilla</i>	.	.	1	.	.	.	.	+	+	3	II
<i>Rosa</i> sp.	+	.	.	.	.	.	.	1	+	3	II
<i>Pilosella cymosa</i> subsp. <i>sabina</i>	.	.	1	+	.	.	.	.	.	2	II
<i>Pilosomon afer</i>	+	+	.	.	.	.	.	.	.	2	II
<i>Sedum hispanicum</i>	.	.	+	.	.	.	.	+	.	2	II
<i>Silene italica</i> subsp. <i>italica</i>	.	.	+	+	.	.	.	.	.	2	II
<i>Sedum ochroleuchum</i>	.	.	.	+	.	.	.	+	.	2	II
<i>Allium sardoum</i>	.	+	+	.	.	.	.	.	.	2	II
<i>Brachypodium retusum</i>	1	.	.	.	.	.	.	.	.	1	I
<i>Polygala nicaeensis</i> subsp. <i>mediterranea</i>	.	.	.	+	.	.	.	.	.	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Giona, southern slope near Amfissa -04.07.07; rel. 6-7: Mt. Giona, southern slope near Amfissa -05.07.07; rel. 8-9: Mt. Giona, Pavliani -06.07.07.

Table A24. *Onobrychido laconicae-Genistetum parnassicae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8		
Altitude (dam)	110	113	115	116	117	120	120	113		
Surface (m ²)	100	100	100	100	100	100	100	100		
Coverage (%)	90	90	90	90	90	90	100	90		
Slope (°)	15	15	10	10	15	10	10	10	Presences	Presence class
Exposition	N	N	N	N	N	N	N	N		
Char. Association										
<i>Genista parnassica</i>	4	5	4	4	4	4	3	4	8	V
<i>Onobrychis alba</i> subsp. <i>pentelica</i>	2	2	2	1	2	1	1	1	8	V
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)										
<i>Festuca graeca</i> subsp. <i>graeca</i>	3	3	2	3	2	2	2	3	8	V
<i>Thymus parnassicus</i>	2	1	1	1	2	1	2	2	8	V
<i>Geocaryum parnassicum</i>	.	1	+	+	1	1	+	+	7	V
<i>Lactuca intricata</i>	.	.	+	+	+	+	+	+	6	IV
<i>Astragalus parnassi</i>	.	.	.	+	+	+	+	.	4	III
<i>Verbascum parnassicum</i>	.	.	.	.	.	+	+	+	3	II
<i>Nepeta parnassica</i>	.	.	.	.	.	+	+	.	2	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)										
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	+	1	+	2	3	3	3	+	8	V
<i>Eryngium multifidum</i>	1	1	+	1	1	1	2	1	8	V
<i>Galium talygeleum</i>	.	.	+	1	1	1	1	+	6	IV
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)										
<i>Asperula lutea</i>	+	1	1	1	+	1	+	1	8	V
<i>Cerastium candidissimum</i>	3	2	3	2	3	2	3	1	8	V
<i>Leontodon graecus</i>	1	1	1	1	1	+	+	1	8	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	3	3	2	2	2	3	2	8	V
<i>Silene radicata</i> subsp. <i>radicata</i>	+	+	1	.	+	+	+	1	7	V
<i>Astragalus rumelicus</i> subsp. <i>rumelicus</i>	.	.	+	+	+	+	+	.	5	IV
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	.	.	.	1	+	+	2	.	4	III
<i>Stipa endotricha</i>	.	.	.	.	+	1	1	+	4	III
<i>Pedicularis graeca</i>	+	.	.	.	.	.	.	+	2	II
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	.	.	.	.	.	.	+	.	1	I
<i>Alyssum montanum</i> subsp. <i>graecum</i>	.	.	.	.	.	.	.	1	1	I
<i>Centaurea pichleri</i>	.	.	.	.	.	.	.	1	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)										
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	1	1	1	+	1	1	+	1	8	V
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	2	2	1	2	2	2	2	1	8	V
<i>Koeleria mitrushi</i>	3	3	2	2	3	2	2	2	8	V
<i>Sedum laconicum</i>	1	+	+	+	+	+	+	+	8	V
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	+	+	1	+	+	+	8	V
<i>Asyneuma limonifolium</i>	.	+	1	+	+	1	+	1	7	V
Other species										
<i>Euphorbia myrsinites</i>	2	1	2	1	1	+	1	1	8	V
<i>Medicago lupulina</i>	+	1	+	+	+	+	+	1	8	V
<i>Melica ciliata</i>	1	1	+	+	+	+	+	2	8	V
<i>Petrorhagia illyrica</i> subsp. <i>illyrica</i>	1	1	1	+	1	1	+	1	8	V
<i>Poa bulbosa</i>	1	2	1	1	1	1	1	+	8	V
<i>Stipa holosericea</i>	2	1	2	2	2	1	2	2	8	V
<i>Crocus</i> sp.	+	+	+	+	+	+	+	.	7	V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	+	+	+	+	+	.	+	+	7	V
<i>Iris attica</i>	1	+	+	+	+	+	+	+	6	IV
<i>Sedum tenuifolium</i>	.	+	1	+	+	+	+	.	6	IV
<i>Allium sardoum</i>	.	+	.	+	+	+	.	+	5	IV
<i>Muscari neglectum</i>	+	+	.	.	+	+	.	+	5	IV
<i>Teucrium capitatum</i>	+	+	+	.	.	+	+	+	5	IV
<i>Allium</i> sp.	+	+	.	.	.	.	+	+	4	III
<i>Dasypyrum villosum</i>	.	.	2	+	1	+	.	.	4	III
<i>Ornithogalum montanum</i>	+	+	.	.	.	+	+	.	4	III
<i>Anthyllis vulneraria</i> subsp. <i>bulgarica</i>	.	.	+	+	+	+	.	.	3	II
<i>Carduus nutans</i> subsp. <i>scabrisquamus</i>	.	.	.	+	+	+	.	.	3	II
<i>Orobancha</i> sp.	+	+	.	.	.	.	.	+	3	II
<i>Ranunculus</i> sp.	+	+	.	+	.	.	.	.	3	II
<i>Scleranthus marginatus</i>	.	+	.	.	.	+	.	+	3	II
<i>Allium rhodopeum</i>	+	+	.	.	.	.	.	.	2	II
<i>Ballota acetabulosa</i>	.	.	+	.	.	.	.	.	1	I
<i>Carlina graeca</i>	.	.	.	.	.	.	.	+	1	I
<i>Dorycnium germanicum</i>	.	.	.	.	.	.	.	1	1	I
<i>Euphorbia deflexa</i>	.	.	.	.	.	.	.	1	1	I
<i>Fumana</i> sp.	.	.	.	.	.	.	.	+	1	I
<i>Pilosella</i> sp.	.	.	.	.	.	.	.	+	1	I
<i>Prunella vulgaris</i>	.	.	.	.	.	.	.	+	1	I

Localities and dates of relevés. Rel. 1-7: Mt. Parnassus, along the road between Stavros and Arachovas - 07.06.07. rel. 8. Mt. Parnassus, along the road between Stavros and Arachovas - 03.07.07.

Table A25. *Allio cithaeronis-Dianthetum serratifolii* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5		
Altitude (m)	1400	1340	1360	1380	1390		
Surface (m ²)	100	100	100	100	100		
Coverage (%)	70	70	70	70	60		
Slope (°)	10	10	15	10	30		
Exposition	N	S	S	S	S	Presences	Presence class
Char. Association							
<i>Dianthus serratifolius</i> subsp. <i>serratifolius</i>	1	2	2	2	1	5	V
<i>Allium cithaeronis</i>	2	+	+	1	+	5	V
<i>Petrorhagia armerioides</i>	+	1	+	+	1	5	V
<i>Paronychia macedonica</i>	1	1	+	+	.	4	IV
<i>Scabiosa ochroleuca</i>	+	+	+	+	.	4	IV
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)							
<i>Thymus parnassicus</i>	+	+	2	2	1	5	V
<i>Verbascum parnassicum</i>	.	+	+	+	+	4	IV
<i>Erysimum parnassi</i>	.	+	+	+	.	3	III
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANDIS)							
<i>Crepis incana</i>	3	1	+	+	+	5	V
<i>Asperula rigidula</i>	1	1	1	1	+	5	V
<i>Avenochloa agropyroides</i>	.	+	1	1	+	4	IV
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Leontodon graecus</i>	+	+	+	+	+	5	V
<i>Minuartia attica</i> subsp. <i>attica</i>	2	2	1	+	+	5	V
<i>Cerastium candidissimum</i>	2	4	3	2	3	5	V
<i>Silene radicata</i> subsp. <i>radicata</i>	1	2	2	1	1	5	V
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	+	1	+	+	+	5	V
<i>Galium thymifolium</i>	1	+	+	1	1	5	V
<i>Galium citraceum</i>	1	1	+	1	+	5	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	1	+	+	+	+	5	V
<i>Nepeta argolica</i> subsp. <i>argolica</i>	.	1	+	.	2	3	III
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	.	+	.	+	.	2	II
<i>Podospermum canum</i> var. <i>alpinum</i>	+	.	.	+	.	2	II
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	3	2	2	2	1	5	V
<i>Koeleria mitrushi</i>	2	2	2	3	1	5	V
<i>Acinus alpinus</i> subsp. <i>meridionalis</i>	1	1	+	+	+	5	V
<i>Draba lasiocarpa</i>	1	+	+	+	+	5	V
<i>Anthemis cretica</i> subsp. <i>cretica</i>	1	+	+	+	+	5	V
<i>Achillea holosericea</i>	2	+	+	1	+	5	V
<i>Asyneuma limonifolium</i>	1	+	+	+	.	4	IV
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	2	+	+	+	.	4	IV
<i>Dianthus viscidus</i> var. <i>viscidus</i>	.	+	+	+	+	4	IV
Other species							
<i>Ballota acetabulosa</i>	+	2	3	2	2	5	V
<i>Melica ciliata</i>	1	1	1	+	+	5	V
<i>Poa bulbosa</i>	1	1	+	+	+	5	V
<i>Poa timoleonis</i>	3	1	1	1	+	5	V
<i>Geranium pyrenaicum</i>	+	1	1	+	2	5	V
<i>Herniaria incana</i>	+	1	+	1	+	5	V
<i>Festuca graeca</i> subsp. <i>graeca</i>	1	2	2	1	+	5	V
<i>Dactylis glomerata</i>	1	1	2	1	1	5	V
<i>Euphorbia myrsinites</i>	.	1	1	1	+	4	IV
<i>Onopordon</i> sp.	.	+	+	+	+	4	IV
<i>Silene conica</i>	+	+	+	+	.	4	IV
<i>Micromeria juliana</i>	.	+	1	+	+	4	IV
<i>Iris attica</i>	+	+	+	.	.	3	III
<i>Sedum album</i>	1	.	+	+	.	3	III
<i>Teucrium capitatum</i>	.	.	2	+	+	3	III
<i>Fritillaria</i> sp.	.	+	+	+	.	3	III
<i>Sedum hispanicum</i>	+	+	.	.	+	3	III
<i>Inula</i> sp.	.	+	.	.	1	2	II
<i>Allium sardoum</i>	.	+	.	.	.	1	I
<i>Ornithogalum</i> sp.	+	.	.	.	.	1	I
<i>Rosa</i> sp.	.	.	.	.	1	1	I
<i>Daphne oleoides</i>	+	.	.	.	.	1	I
<i>Salvia argentea</i> var. <i>alpina</i>	.	.	.	.	+	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Kithaeronas - 03.07.07.

Table A26. *Inulo methanaeae-Sideritetum atticae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6		
Altitude (dam)	120	125	127	115	121	119		
Surface (m ²)	100	100	100	100	100	100		
Coverage (%)	70	80	70	80	70	70		
Slope (°)	5	5	5	10	10	10		
Exposition	S	S	E	N	SO	S	Presences	Presence class
Char. Association								
<i>Sideritis raeseri</i> subsp. <i>attica</i>	2	2	4	3	4	4	6	V
<i>Inula verbascifolia</i> subsp. <i>methanae</i>	3	3	1	2	3	1	6	V
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	+	+	+	+	6	V
Char. All. (MARRUBION VELUTINI-THYMION PARNASSICI)								
<i>Alyssum montanum</i> var. <i>hymettium</i>	.	.	+	+	+	+	4	IV
<i>Centaurea affinis</i> subsp. <i>pallidior</i>	+	.	.	+	+	+	4	IV
<i>Thymus parnassicus</i>	.	.	.	.	1	1	2	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)								
<i>Eryngium multifidum</i>	+	+	+	1	+	+	6	V
<i>Asperula rigidula</i>	.	1	+	.	.	+	3	III
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	.	.	.	+	.	.	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	+	+	+	+	+	+	6	V
<i>Cerastium candidissimum</i>	1	1	+	1	1	1	6	V
<i>Galium thymifolium</i>	2	1	2	2	1	2	6	V
<i>Leontodon graecus</i>	2	1	1	+	1	+	6	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	2	1	1	1	6	V
<i>Paronychia albanica</i> subsp. <i>graeca</i>	1	1	2	1	1	2	6	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	+	2	1	+	+	1	6	V
<i>Fritillaria graeca</i>	.	.	+	+	+	+	4	IV
<i>Nepeta argolica</i> subsp. <i>argolica</i>	.	.	.	.	+	.	1	I
<i>Stipa endotricha</i>	.	.	.	2	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	1	2	1	1	+	+	6	V
<i>Anthemis cretica</i> subsp. <i>cretica</i>	1	1	1	1	1	1	6	V
<i>Asyneuma limonifolium</i>	2	2	1	1	1	1	6	V
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	3	3	3	3	2	2	6	V
<i>Koeleria mitrushi</i>	1	2	1	2	1	1	6	V
<i>Achillea holosericea</i>	+	+	+	.	2	1	5	V
<i>Helictotrichon aetolicum</i>	.	+	+	2	+	+	5	V
<i>Silene bupleuroides</i> subsp. <i>stacifolia</i>	+	+	+	.	.	+	4	IV
Other species								
<i>Anthyllis vulneraria</i> subsp. <i>praepropera</i>	2	1	2	2	1	2	6	V
<i>Convolvulus elegantissimus</i>	1	+	+	+	+	+	6	V
<i>Euphorbia myrsinites</i>	1	1	2	1	+	+	6	V
<i>Pilosella leucopsilon</i> subsp. <i>pilisquama</i>	1	1	1	+	2	+	6	V
<i>Iris attica</i>	1	1	+	1	1	1	6	V
<i>Lactuca viminea</i>	+	+	+	+	+	+	6	V
<i>Micromeria juliana</i>	1	1	+	1	+	+	6	V
<i>Poa timoleontis</i>	2	2	2	2	1	1	6	V
<i>Sedum hispanicum</i>	1	+	+	+	+	+	6	V
<i>Teucrium capitatum</i>	+	1	1	1	2	1	6	V
<i>Verbascum graecum</i>	1	1	1	+	1	+	6	V
<i>Stipa holosericea</i>	2	+	2	1	+	.	5	V
<i>Euphorbia deflexa</i>	1	1	1	.	+	.	4	IV
<i>Melica ciliata</i>	1	+	.	+	.	+	4	IV
<i>Sedum laconicum</i>	.	1	1	+	.	+	4	IV
<i>Sedum tenuifolium</i>	.	+	+	+	.	+	4	IV
<i>Silene italica</i> subsp. <i>peloponnesiaca</i>	.	+	+	+	+	.	4	IV
<i>Thesium arvense</i>	.	+	+	.	+	+	4	IV
<i>Hieracium cimosum</i>	.	.	+	.	+	+	3	III
<i>Linaria simplex</i>	+	.	.	+	+	.	3	III
<i>Neotinea maculata</i>	+	.	.	+	.	.	2	II
<i>Allium sardoum</i>	.	.	.	+	.	.	1	I
<i>Jurinea mollis</i>	.	.	.	.	.	+	1	I
<i>Ononis pusilla</i>	.	.	.	+	.	.	1	I

Localities and dates of relevés. Rel. 1-6: Mt. Parnis, 05/06/07.

Table A27. Helictotricho convoluti-Thymetum holosericei Musarella, Brullo & Giusso ass. nov. (a) rel. 1–5; Saturejo cuneifoliae-Thymetum holosericei Musarella, Brullo & Giusso ass. nov. (b) rel. 6–9; Scutellario cephalonicae-Astragaletum cephalonici Musarella, Brullo & Giusso ass. nov. (c) rel. 10–12; Paronychio graecae-Astragaletum erinacei Musarella, Brullo & Giusso ass. nov. (d) rel. 13–19.

Relevé number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				
Altitude (dam)	80	80	85	100	100	100	100	100	83	120	120	140	160	160	161	160	160	160	160				
Surface (m ²)	50	50	50	50	50	50	50	50	50	50	50	30	25	25	25	50	25	50					
Coverage (%)	100	90	90	80	90	100	100	100	100	80	70	70	70	70	80	90	70	90	90				
Slope (°)	5	5	10	5	10	15	5	10	10	20	5	10	15	20	10	20	20	25	25				
Exposition	W	SW	W	W	W	SW	E	E	W	W	SW	W	W	W	W	W	W	W	W				
Associations	a	a	a	a	a	b	b	b	b	c	c	c	d	d	d	d	d	d	d				
Char. Association																							
<i>Helictotrichon convolutum</i> subsp. <i>convolutum</i>	5	4	4	3	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.		V	.	.
<i>Ononis pusilla</i>	1	+	+	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.		V	.	.
<i>Erysimum linearifolium</i>	.	1	1	2	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.		IV	.	.
<i>Allium lefkadensis</i>	+	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		III	.	.
<i>Aurinia saxatilis</i> subsp. <i>saxatilis</i>	.	1	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.		III	.	.
<i>Allium cephalonicum</i>	.	.	.	.	.	1	+	+	+	.	.	.	.	.	.	.	.	.	.		.	4	.
<i>Centaurea spruneri</i> subsp. <i>guicciardi</i>	.	.	.	.	.	2	2	1	3	.	.	.	.	.	.	.	.	.	.		.	4	.
<i>Satureja cuneifolia</i>	.	.	.	.	.	2	2	2	1	.	.	.	.	.	.	.	.	.	.		.	4	.
<i>Galium ionicum</i>	.	.	.	.	.	.	.	.	.	1	+	+	.	.	.	.	.	.	.		.	.	3
<i>Erysimum cephalonicum</i>	.	.	.	.	.	.	.	.	.	.	2	1	.	.	.	.	.	.	.		.	.	2
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	.	.	.	.	.	.	.	.	.	.	.	.	2	2	3	2	2	3	4		.	.	V
<i>Paronychia albanica</i> subsp. <i>graeca</i>	.	.	.	.	.	.	.	.	.	.	.	.	2	1	1	2	1	1	+		.	.	V
<i>Galium circae</i>	.	.	.	.	.	.	.	.	.	.	.	.	2	1	2	3	1	2	+		.	.	V
<i>Trinia glauca</i> subsp. <i>pin dica</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	1	2	1	2	1	+		.	.	V
<i>Aubrieta deltoidea</i> subsp. <i>deltoidea</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	+	1	1	+	+	.		.	.	V
<i>Viola cephalonica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1	1	+	1	1		.	.	V
<i>Astragalus depressus</i> subsp. <i>depressus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	+	.	+	1		.	.	IV
<i>Verbascum guicciardii</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	.	1	+	.	+	.		.	.	III
Char. ASTRAGALION CEPHALONICI																							
<i>Centaurea subciliaris</i> subsp. <i>subciliaris</i>	2	2	1	2	1	2	2	1	1	2	1	2	2	1	2	1	1	+	+		V	4	3
<i>Petrorhagia fasciculata</i> var. <i>cephallenica</i>	.	.	.	.	.	1	1	+	1	2	1	2	3	2	2	3	2	2	1		.	4	3
<i>Astragalus cephalonicus</i>	2	2	1	2	1	2	1	2	2	4	3	3	.	.	.	.	.	.	.		V	4	3
<i>Scutellaria rupestris</i> subsp. <i>cephalonica</i>	.	.	.	.	.	.	.	.	.	+	+	2	2	3	3	2	2	1	+		.	3	V
<i>Thymus holosericeus</i>	3	2	3	3	1	3	3	2	2	.	.	.	.	.	.	.	.	.	.		V	4	.
Char. ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS																							
<i>Festuca jeanperronii</i> subsp. <i>achaia</i>	2	1	2	2	2	3	2	3	3	2	2	3	1	2	2	4	2	2	1		V	4	3
<i>Geocaryum peloponnesiacum</i>	+	.	+	+	.	.	.	+	+	.	+	.	1	1	1	1	+	+	1		III	2	1
<i>Armeria orphanidis</i>	2	1	2	2	1	1	2	2	2	1	2	.	.	.	.	.	.	.	.		V	4	3
Char. CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI																							
<i>Arenaria guicciardii</i>	.	.	.	.	.	.	+	+	+	+	.	.	2	1	2	2	1	2	1		.	4	.
<i>Cerastium candidissimum</i>	.	.	.	.	.	.	.	.	.	1	2	2	2	2	3	2	1	3	2		.	3	V
<i>Crepis fraasii</i> subsp. <i>fraasii</i>	.	.	.	.	.	.	+	+	1	+	1	+	1	.	.	.	.	.	.		.	4	3
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	.	.	.	.	.	.	.	.	.	2	1	2	.	.	.	.	.	.	.		.	.	3
Diff. CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI																							
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	2	1	2	2	+	1	2	1	1	.	.	.	1	+	1	1	2	+	2		V	4	.
<i>Aethionema saxatile</i> subsp. <i>oreophilum</i>	1	+	1	+	+	+	+	+	+	.	.	.	.	.	.	.	.	.	.		.	V	4
<i>Helianthemum nummularium</i> var. <i>graecum</i>	1	1	2	+	1	2	2	1	.	.	.	.	.	.	.	.	.	.	.		.	V	4
<i>Koeleria mitrushi</i>	2	1	2	1	1	1	+	+	1	.	.	.	.	.	.	.	.	.	.		.	V	4
<i>Asyneuma limonifolium</i>	1	+	+	+	1	1	1	+	.	.	.	.	.	.	.	.	.	.	.		.	V	3
Other species																							
<i>Poa timoleontis</i>	1	+	+	1	1	2	2	+	1	2	1	2	2	1	2	2	2	2	1		V	4	3
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	+	.	+	+	+	1	+	+	+	.	1	+	1	+	1	+	+	+	.		IV	4	2
<i>Carlina graeca</i>	1	1	1	2	1	1	1	2	1	2	1	1	.	.	.	.	.	.	.		.	V	4
<i>Teucrium capitatum</i>	2	1	2	2	1	2	2	1	1	1	+	2	.	.	.	.	.	.	.		.	V	4
<i>Euphorbia myrsinites</i>	1	1	1	1	+	3	2	2	2	.	2	2	.	.	.	.	.	.	.		.	V	4
<i>Anthoxanthum ovatum</i>	1	+	+	1	2	2	2	2	2	.	.	.	.	.	.	.	.	.	.		.	V	4
<i>Anthyllis vulneraria</i> subsp. <i>rubriflora</i>	1	+	+	1	1	1	+	+	+	.	.	.	.	.	.	.	.	.	.		.	V	4
<i>Phlomis fruticosa</i>	1	2	2	1	1	2	2	3	3	.	.	.	.	.	.	.	.	.	.		.	V	4
<i>Sedum tenuifolium</i>	1	+	+	.	+	+	1	+	.	.	.	.	.	.	.	.	.	.	.		.	IV	4
<i>Silene italica</i> subsp. <i>italica</i>	.	+	.	1	1	1	+	.	1	1	+	.	.	.	.	.	.	.	.		.	III	3
<i>Rhamnus oleoides</i> subsp. <i>graecus</i>	1	+	.	1	.	+	1	+	.	.	.	.	.	.	.	.	.	.	.		.	III	3
<i>Leontodon graecus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1	+	1	+	+		.	.	V
<i>Crataegus monogyna</i>	1	.	1	.	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.		.	III	2
<i>Crepis rubra</i>	1	1	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.	IV	.
<i>Petrorhagia illyrica</i> subsp. <i>illyrica</i>	+	+	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.	IV	.
<i>Allium sardoum</i>	+	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.	III	.
<i>Silene ungeri</i>	+	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.	III	.
<i>Micromeria juliana</i>	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.		.	.	2
<i>Taraxacum</i> cfr. <i>graecum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.	II

Localities and dates of relevés. Rel. 1-5: Lefkada, Mt. Elati - 16.07.2011; rel. 6-8: Cephalonia, Mt. Ainos - 17.07.2011; rel. 9: Cephalonia, Mt. Roudhi - 18.07.2011; rel. 10-12: Cephalonia, Mt. Ainos - 17.07.2011; rel. 13-19: Cephalonia, Mt. Ainos, near the top - 27.09.2019.

Table A28. *Sideritido euboaeae-Astragaletum euboici* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	
Altitude (dam)	110	113	118	109	109	110	106	
Surface (m ²)	100	100	100	100	100	100	50	
Coverage (%)	80	80	70	70	80	70	70	
Slope (°)	30	40	25	30	35	35	20	
Exposition	O	O	O	S	E	E	S	Presence class
Char. Association								
<i>Astragalus rumelicus</i> subsp. <i>euboicus</i>	3	3	2	3	2	2	3	7 V
<i>Cytisus villosus</i>	+	+	1	3	2	3	.	6 V
Char. All. (ASTRAGALION EUBOICID)								
<i>Sideritis euboea</i>	3	2	4	3	3	2	3	7 V
<i>Hieracium pamosum</i> subsp. <i>euboicum</i>	+	+	1	1	+	+	.	6 V
<i>Nepeta dirphyia</i>	1	+	1	+	.	+	+	6 V
<i>Verbascum delphicum</i>	+	+	+	.	.	+	+	5 IV
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)								
<i>Eryngium multifidum</i>	+	1	2	+	1	1	1	7 V
<i>Avenochloa agropyroides</i>	1	1	1	1	1	1	+	7 V
<i>Inula candida</i> subsp. <i>limonella</i>	2	2	2	1	1	3	2	7 V
<i>Euphorbia deflexa</i>	1	1	1	1	1	+	+	7 V
<i>Asperula rigidula</i>	+	1	2	2	2	2	.	6 V
<i>Draba parnassica</i>	.	.	+	+	+	+	.	4 III
<i>Thesium bergeri</i>	.	.	+	+	+	.	.	3 III
<i>Crepis incana</i>	.	.	+	+	.	.	.	2 II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELIC)								
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	+	+	1	1	+	+	1	7 V
<i>Cerastium candidissimum</i>	+	1	2	1	+	+	1	7 V
<i>Leontodon graecus</i>	1	1	1	+	+	1	1	7 V
<i>Lysimachia serpyllifolia</i>	2	1	1	+	1	2	.	6 V
<i>Mimartia attica</i> subsp. <i>attica</i>	.	+	1	1	1	+	1	6 V
<i>Centaurea pichleri</i>	1	+	+	+	+	.	+	6 V
<i>Alyssum montanum</i> subsp. <i>graecum</i>	.	.	2	1	1	1	1	5 IV
<i>Pterocarpus perennis</i> subsp. <i>perennis</i>	.	.	1	1	+	2	1	5 IV
<i>Stipa endotricha</i>	.	2	1	+	+	.	+	5 IV
<i>Erysimum microstylum</i>	+	.	1	+	+	.	+	5 IV
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELIC)								
<i>Anthemis cretica</i> subsp. <i>cretica</i>	1	1	1	+	1	+	1	7 V
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	1	+	+	+	+	+	7 V
<i>Koeleria mitrushi</i>	2	2	3	2	2	2	2	7 V
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	2	2	2	2	1	2	3	7 V
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	2	2	1	1	1	1	+	7 V
<i>Thymus chaubardii</i>	2	2	2	1	2	1	1	7 V
<i>Stachys heldreichii</i>	+	1	+	+	.	+	+	6 V
<i>Carduus imoleus</i>	1	+	+	+	.	+	+	6 V
<i>Asyneume limonifolium</i>	.	+	2	1	2	1	+	6 V
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	.	.	+	+	.	1	+	4 III
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	+	+	.	.	+	.	+	4 III
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	.	.	.	+	1	.	+	3 III
<i>Myosotis sylvatica</i> subsp. <i>cyanea</i>	+	+	+	.	.	.	.	3 III
Other species								
<i>Asphodeline lutea</i>	1	1	+	+	+	1	+	7 V
<i>Carlina graeca</i>	+	1	+	+	+	+	1	7 V
<i>Dactylis glomerata</i>	2	2	2	1	1	+	1	7 V
<i>Daphne oleoides</i>	1	1	1	1	1	+	+	7 V
<i>Juniperus oxycedrus</i>	1	+	+	1	1	1	+	7 V
<i>Lactuca viminea</i>	1	+	+	+	+	+	+	7 V
<i>Melica ciliata</i>	+	+	+	+	1	+	+	7 V
<i>Micromeria juliana</i>	1	1	1	+	+	+	+	7 V
<i>Poa bulbosa</i>	+	+	+	+	+	+	+	7 V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	1	+	+	+	+	+	+	7 V
<i>Scabiosa webbiana</i>	2	2	1	1	1	+	1	7 V
<i>Plisella officinarum</i>	+	1	1	+	+	.	+	6 V
<i>Helianthemum nummularium</i> subsp. <i>nummularium</i>	1	1	+	+	+	.	+	6 V
<i>Hypericum olympicum</i>	1	2	1	+	+	.	1	6 V
<i>Medicago lupulina</i>	+	+	+	+	+	+	.	6 V
<i>Rosa</i> sp.	+	+	+	+	+	+	.	6 V
<i>Sedum album</i>	1	2	+	+	+	+	.	6 V
<i>Sedum tenuifolium</i>	+	+	+	+	+	.	+	6 V
<i>Teucrium capitatum</i>	1	1	1	1	1	+	.	6 V
<i>Origanum hirtum</i>	2	2	1	1	+	+	.	6 V
<i>Piloscleron afer</i>	+	+	+	+	.	.	+	5 IV
<i>Sedum acre</i>	1	+	+	+	.	.	.	5 IV
<i>Astragalus depressus</i>	+	+	.	.	.	+	.	4 III
<i>Brachypodium retusum</i>	+	1	1	+	.	.	.	4 III
<i>Acinos arvensis</i>	+	+	+	1	.	.	.	4 III
<i>Muscari neglectum</i>	.	.	+	.	+	+	+	4 III
<i>Sedum ochroleuchum</i>	.	.	1	+	+	+	.	4 III
<i>Teucrium divaricatum</i>	+	.	+	+	+	.	.	4 III
<i>Alkanna graeca</i> subsp. <i>baeotica</i>	+	+	+	.	.	.	.	3 III
<i>Anthoxanthum odoratum</i>	+	.	+	.	.	.	+	3 III
<i>Aristolochia rotunda</i>	.	.	1	+	+	.	.	3 III
<i>Silene italica</i> subsp. <i>italica</i>	+	.	+	.	1	.	.	3 III
<i>Stipa holosericea</i>	1	1	.	.	.	+	.	3 III
<i>Nocca euboica</i>	+	+	.	.	.	+	.	3 III
<i>Asphodeline liburnica</i>	.	.	+	.	.	.	+	2 II
<i>Cynoglossum montanum</i>	.	.	+	+	.	.	.	2 II
<i>Scleranthus marginatus</i>	+	.	+	.	.	.	.	2 II
<i>Lepidium nebrodense</i>	+	.	.	.	.	.	.	1 I

Localities and dates of relevés. Rel. 1-6: Euboea, Mt. Dirfis - 06.06.07; rel. 7: Euboea, Mt. Dirfis -

Table A29. *Scabiosa webbiana*-*Phlomidetum samiae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5		
Altitude (dam)	106	105	109	110	110		
Surface (m ²)	100	100	50	100	100		
Coverage (%)	100	100	100	100	100		
Slope (°)	20	15	10	10	20	Presences	Presence class
Exposition	S	S	S	S	S		
Char. Association							
<i>Phlomis samia</i>	3	4	4	4	2	5	V
<i>Scabiosa webbiana</i>	3	1	3	2	3	5	V
<i>Viola euboaea</i>	1	2	1	1	1	5	V
<i>Helleborus cyclophyllus</i>	1	1	2	2	2	5	V
Char. All. (ASTRAGALION EUBOICI)							
<i>Sideritis euboaea</i>	1	+	2	2	2	5	V
<i>Hieracium pannosum</i> subsp. <i>euboicum</i>	2	1	1	+	1	5	V
<i>Astragalus rumelicus</i> subsp. <i>euboicus</i>	+	.	+	+	.	3	III
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)							
<i>Eryngium multifidum</i>	2	1	1	1	1	5	V
<i>Euphorbia deflexa</i>	+	+	1	1	+	5	V
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	1	+	+	1	1	5	V
<i>Cerastium candidissimum</i>	1	1	1	1	2	5	V
<i>Leontodon graecus</i>	1	1	+	+	+	5	V
<i>Alyssum montanum</i> subsp. <i>graecum</i>	1	+	1	1	+	5	V
<i>Erysimum microstylum</i>	+	+	+	+	.	4	IV
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Festuca callieri</i> subsp. <i>callieri</i>	3	2	3	3	2	5	V
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	1	+	1	+	+	5	V
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	1	1	+	2	1	5	V
<i>Koeleria mitrae</i>	2	+	+	1	+	5	V
<i>Thymus chaubardii</i>	3	2	2	2	1	5	V
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	1	1	1	1	1	5	V
<i>Stachys heldreichii</i>	2	2	2	1	2	5	V
<i>Dianthus viscidus</i> var. <i>viscidus</i>	1	2	1	1	+	5	V
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	+	.	+	4	IV
<i>Anthemis cretica</i> subsp. <i>cretica</i>	1	+	1	.	1	4	IV
Other species							
<i>Allium sardoum</i>	+	+	+	+	+	5	V
<i>Anthoxanthum odoratum</i>	+	2	2	2	1	5	V
<i>Brachypodium retusum</i>	2	1	+	1	1	5	V
<i>Dactylis glomerata</i>	2	2	2	2	3	5	V
<i>Hypericum olympicum</i>	2	1	1	2	+	5	V
<i>Poa bulbosa</i>	+	+	+	1	+	5	V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	+	+	1	1	+	5	V
<i>Phleum</i> sp.	+	2	1	1	2	5	V
<i>Pteridium aquilinum</i>	3	1	1	2	1	5	V
<i>Hordeum bulbosum</i>	2	2	1	2	2	5	V
<i>Carlina graeca</i>	1	2	1	1	.	4	IV
<i>Potentilla recta</i>	+	.	+	+	+	4	IV
<i>Teucrium capitatum</i>	.	.	+	1	+	3	III
<i>Allium</i> sp.	+	.	+	+	.	3	III
<i>Lychnis coronaria</i>	.	+	.	+	+	3	III
<i>Asphodeline liburnica</i>	+	.	.	+	.	2	II
<i>Asphodeline lutea</i>	.	.	+	+	.	2	II
<i>Sedum acre</i>	.	.	+	.	.	1	I

Localities and dates of relevés. Rel. 1-5: Euboaea, Mt. Dirfis - 02/07/07.

Table A30. *Sideritido euboae-Festucetum cyllenicae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7		
Altitude (dam)	143	151	159	161	165	163	164		
Surface (m ²)	100	100	100	100	100	100	100		
Coverage (%)	70	70	80	80	70	80	70		
Slope (°)	30	25	25	25	30	35	35		
Exposition	S	S	S	S	S	S	SE	Presences	Presence class
Char. Association									
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	2	1	3	4	4	4	4	7	V
<i>Carum graecum</i> subsp. <i>graecum</i>	+	1	+	+	1	+	1	7	V
<i>Bolanthus graecus</i>	2	1	2	1	1	1	1	7	V
<i>Arenaria filicaulis</i> subsp. <i>euboica</i>	1	1	+	+	.	+	1	6	V
Char. All. (ASTRAGALION EUBOICI)									
<i>Sideritis euboica</i>	3	3	3	2	2	1	2	7	V
<i>Asperula suffruticosa</i>	+	+	+	+	1	+	1	7	V
<i>Nepeta dirphyia</i>	1	+	.	+	+	+	1	6	V
<i>Astragalus rumelicus</i> subsp. <i>euboicus</i>	1	1	.	.	1	+	1	5	IV
<i>Verbascum delphicum</i>	.	.	+	+	1	.	+	4	III
<i>Paronychia euboica</i>	+	+	.	.	.	+	.	3	III
<i>Hieracium pamosum</i> subsp. <i>euboicum</i>	.	+	.	.	.	.	.	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)									
<i>Eryngium multifidum</i>	+	+	1	1	1	+	1	7	V
<i>Avenochloa agropyroides</i>	1	+	2	+	1	+	2	7	V
<i>Euphorbia deflexa</i>	+	+	1	+	+	+	1	7	V
<i>Inula candida</i> subsp. <i>limonella</i>	+	2	2	1	1	.	+	6	V
<i>Draba parnassica</i>	+	1	+	+	.	+	+	6	V
<i>Crepis incana</i>	2	2	1	.	1	1	+	6	V
<i>Rindera graeca</i>	+	1	+	+	.	+	+	6	V
<i>Geocaryum parnassicum</i>	.	.	+	+	+	+	+	5	IV
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)									
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	+	1	1	+	+	+	+	7	V
<i>Cerastium candidissimum</i>	2	2	3	3	2	3	2	7	V
<i>Galium citraceum</i>	1	2	2	1	2	1	1	7	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	1	+	+	1	1	7	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	2	2	2	1	1	+	1	7	V
<i>Stipa endotricha</i>	2	2	4	2	1	2	1	7	V
<i>Poa thessala</i>	1	+	1	+	+	1	1	7	V
<i>Alyssum montanum</i> subsp. <i>graecum</i>	1	1	+	+	+	.	+	6	V
<i>Galium thymifolium</i>	+	+	+	+	+	.	.	5	IV
<i>Leontodon graecus</i>	+	.	.	+	+	.	+	4	III
<i>Lysimachia serpyllifolia</i>	.	.	.	.	+	.	+	2	II
<i>Viola chelmea</i>	.	.	+	+	.	.	.	2	II
<i>Teucrium montanum</i> var. <i>parnassicum</i>	.	.	+	.	.	.	+	2	II
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)									
<i>Acinus alpinus</i> subsp. <i>meridionalis</i>	1	1	+	+	1	1	1	7	V
<i>Koeleria mitrushi</i>	2	1	2	1	2	2	2	7	V
<i>Thymus chaubardii</i>	+	+	1	+	+	+	+	7	V
<i>Asyneuma limonifolium</i>	+	1	+	+	+	1	+	7	V
<i>Festuca callieri</i> subsp. <i>callieri</i>	2	2	2	2	2	1	1	7	V
<i>Sesleria vaginalis</i>	3	4	2	+	1	1	1	7	V
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	1	+	.	1	+	+	1	6	V
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	+	+	.	.	+	6	V
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	+	.	+	.	+	5	IV
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	+	.	.	+	+	.	+	4	III
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	+	+	.	.	.	.	+	3	III
<i>Achillea holosericea</i>	.	1	.	.	.	.	.	1	I
Other species									
<i>Daphne oleoides</i>	+	1	1	1	1	+	+	7	V
<i>Melica ciliata</i>	1	1	2	1	1	2	1	7	V
<i>Allium sardoum</i>	+	+	+	+	.	+	+	6	V
<i>Teucrium capitatum</i>	+	+	1	+	.	+	+	6	V
<i>Sedum album</i>	.	+	+	+	.	+	+	5	IV
<i>Sedum ochroleuchum</i>	.	.	+	+	+	+	+	5	IV
<i>Teucrium divaricatum</i>	.	+	+	+	.	+	1	5	IV
<i>Dianthus biflorus</i>	.	.	+	+	1	+	1	5	IV
<i>Asphodeline lutea</i>	.	+	+	.	.	+	+	4	III
<i>Carduus taygeteus</i>	+	+	+	.	+	.	.	4	III
<i>Lactuca viminea</i>	+	.	+	+	.	.	+	4	III
<i>Juniperus oxycedrus</i>	+	.	.	+	.	.	.	2	II
<i>Micromeria juliana</i>	+	.	+	.	.	.	.	2	II
<i>Salvia argentea</i> var. <i>alpina</i>	.	.	+	+	.	.	.	2	II
<i>Muscari neglectum</i>	.	.	.	.	+	.	.	1	I
<i>Nocca boeotica</i>	+	.	.	.	.	.	.	1	I

Localities and dates of relevés. Rel. 1-7: Euboea, Mt. Dirfis - 02/07/07.

Table A31. *Inulo limonellae-Seslerietum vaginalis* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8		
Altitude (dam)	117	134	115	117	115	120	122	126		
Surface (m ²)	50	50	100	100	100	100	100	100		
Coverage (%)	80	70	70	70	80	80	90	80		
Slope (°)	25	40	30	25	20	20	20	20		
Exposition	SE	S	S	SE	S	SE	SE	SE	Presences	Presence class
Char. Association										
<i>Sesleria vaginalis</i>	+	1	4	4	3	5	4	4	8	V
<i>Inula candida</i> subsp. <i>limonella</i>	2	1	2	1	2	1	+	+	8	V
Char. All. (ASTRAGALION EUBOICI)										
<i>Sideritis euboea</i>	3	3	2	1	2	2	2	2	8	V
<i>Astragalus rumelicus</i> subsp. <i>euboicus</i>	3	3	1	1	+	+	1	.	7	V
<i>Nepeta dirphyia</i>	2	1	.	+	1	+	1	.	6	IV
<i>Bolanthus graecus</i>	.	2	.	.	.	.	.	.	1	2
<i>Paronychia euboea</i>	.	.	.	.	.	.	+	+	2	II
<i>Asperula suffruticosa</i>	.	+	.	.	.	.	.	.	1	I
<i>Hieracium pamosum</i> subsp. <i>euboicum</i>	.	.	+	.	.	.	.	.	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)										
<i>Eryngium multifidum</i>	1	+	1	1	1	+	+	+	8	V
<i>Euphorbia deflexa</i>	+	+	1	1	1	1	1	+	8	V
<i>Asperula rigidula</i>	2	+	1	1	2	1	1	+	8	V
<i>Crepis incana</i>	+	2	1	1	1	+	1	2	8	V
<i>Avenochloa agropyroides</i>	+	+	.	1	1	1	+	1	7	V
<i>Draba parnassica</i>	+	+	+	+	.	.	.	+	6	IV
<i>Rindera graeca</i>	.	+	.	.	.	.	.	.	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)										
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	+	1	1	+	1	1	+	1	8	V
<i>Cerastium candidissimum</i>	2	2	2	1	2	2	2	2	8	V
<i>Leontodon graecus</i>	+	+	+	+	1	+	+	+	8	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	1	1	1	+	1	+	8	V
<i>Alyssum montanum</i> subsp. <i>graecum</i>	+	1	+	1	+	+	1	1	8	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	+	2	1	1	1	+	1	2	8	V
<i>Lysimachia serpyllifolia</i>	+	+	+	1	+	+	+	.	7	V
<i>Poa thessala</i>	+	+	+	+	+	.	.	+	1	7
<i>Galium thymifolium</i>	.	.	1	+	+	1	1	1	6	IV
<i>Viola chelmea</i>	.	+	.	.	.	.	+	+	3	II
<i>Galium citraceum</i>	.	+	.	.	.	.	.	+	2	II
<i>Stipa endotricha</i>	+	.	.	.	.	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)										
<i>Acinus alpinus</i> subsp. <i>meridionalis</i>	1	1	+	+	1	1	1	+	8	V
<i>Koeleria mitrushi</i>	1	1	2	1	2	1	1	1	8	V
<i>Thymus chaubardii</i>	2	+	1	2	1	1	1	+	8	V
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	+	+	+	+	+	+	8	V
<i>Festuca callieri</i> subsp. <i>callieri</i>	3	2	2	2	2	1	2	2	8	V
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	1	+	+	+	1	+	1	8	V
<i>Achillea holosericea</i>	+	+	.	+	+	1	+	.	6	IV
<i>Asyneuma limonifolium</i>	+	+	+	+	+	.	.	.	5	IV
<i>Campnula spathulata</i> subsp. <i>spathulata</i>	+	+	.	.	.	.	+	+	4	III
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	.	+	.	.	.	.	+	.	3	II
<i>Carum graecum</i> subsp. <i>graecum</i>	.	+	.	.	.	.	.	+	2	II
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	.	1	.	.	.	.	.	.	1	I
Other species										
<i>Melica ciliata</i>	1	1	1	+	1	1	1	1	8	V
<i>Micromeria juliana</i>	1	+	1	+	1	+	+	+	8	V
<i>Teucrium divaricatum</i>	+	+	1	1	1	+	1	1	8	V
<i>Allium sardoum</i>	+	+	+	+	+	+	+	.	7	V
<i>Juniperus oxycedrus</i>	1	.	+	1	1	+	1	1	7	V
<i>Daphne oleoides</i>	1	+	.	.	+	+	1	1	6	IV
<i>Carduus luyetetus</i>	+	.	+	+	+	.	+	.	5	IV
<i>Rosa</i> sp.	1	.	+	+	+	+	.	.	5	IV
<i>Sedum ochroleuchum</i>	.	.	+	+	+	1	+	.	5	IV
<i>Teucrium capitatum</i>	+	+	1	1	1	.	.	.	5	IV
<i>Asphodeline lutea</i>	+	.	.	+	+	+	.	.	4	III
<i>Sedum tenuifolium</i>	+	.	+	+	+	.	.	.	4	III
<i>Helianthemum nummularium</i> subsp. <i>nummularium</i>	.	.	1	+	+	.	.	.	3	II
<i>Scabiosa webbiana</i>	.	.	1	+	+	.	.	.	3	II
<i>Nocca boeotica</i>	+	.	.	.	.	+	+	.	3	II
<i>Ballota acetabulosa</i>	.	1	.	.	+	.	.	.	2	II
<i>Lactuca viminea</i>	.	+	.	.	+	.	.	.	2	II
<i>Muscari neglectum</i>	.	+	.	.	.	.	+	.	2	II
<i>Polygala nicaeensis</i> subsp. <i>tomentella</i>	.	.	.	.	.	.	1	+	2	II
<i>Dichoropetalum vittijugum</i>	.	.	.	.	.	.	+	+	2	II
<i>Aristolochia rotunda</i>	+	.	.	.	.	.	.	.	1	I
<i>Arum</i> sp.	+	.	.	.	.	.	.	.	1	I
<i>Hypericum olympicum</i>	.	.	+	.	.	.	.	.	1	I
<i>Origanum hirtum</i>	.	.	.	.	+	.	.	.	1	I
<i>Anthyllis vulneraria</i> subsp. <i>praepropera</i>	.	.	.	.	+	.	.	.	1	I

Localities and dates of relevés. Rel. 1-8: Euboea, Mt. Dirfis - 02/07/07.

Table A32. Cont.
(b)

Relevé number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Presences	Presences/days	
Altitude (dam)	160	168	177	160	165	165	160	170	170	165	170	195	185	185	190	190	195	200	180	175	175	170	165			
Surface (m ²)	200	200	200	200	200	200	100	100	200	200	150	150	150	150	100	100	200	200	150	200	150	100	150			
Coverage (%)	70	40	40	40	70	60	40	50	40	50	55	80	90	80	80	60	80	60	80	40	80	70	50			
Slope (°)	35-	35-	35-	21-	21-	35-	35-	21-	35-	35-	21-	11-	21-	21-	35-	21-	21-	21-	21-	35-	21-	21-	35-			
Exposition	O	N	S	N	NE	SE	N	NE	NE	N	E	S	S	N	O	S	S	S	S	N	E	S	E	NE	Presences	Presences/days
Char. Association																										
<i>Astragalus rumelicus</i> subsp. <i>laygelicus</i>	2	1	1	1	1	1	3	5	4	2	2	4	1	3	2	3	4	2	3	2	2	4	2	23	V	
Char. Ail. (FESTUCO ACHAICAE-MARRUBION CYLLENE)																										
<i>Marrubium cylleneum</i>	1	1	1	1	1	1	+	1	1	1	1	2	1	2	2	4	3	2	2	2	1	2	+	23	V	
<i>Sideritis clandestina</i> subsp. <i>peloponnesiaca</i>	1					1	2		1											1			2	6	II	
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)																										
<i>Eryngium multifidum</i>	1	2	1	2	1	2	1	1	1		1		1	1	2		1	1	2		1		2	18	IV	
<i>Festuca jasperitii</i> subsp. <i>achaica</i>	1	1		1		2	2				2	2		2	2	1	2	1	2	1		1		15	IV	
<i>Galium tageteum</i>	1	1	1	1		1	1	1	1	1				+	1	1			1			+		14	IV	
<i>Cirsium hypopsilium</i>	1		1		1		+	1	+			1	1		+	+					1	1	+	13	III	
<i>Alyssum repens</i> var. <i>brachyphyllum</i>					1		1	1					1		1			1		2			1	8	II	
<i>Astragalus argusifolius</i> subsp. <i>erinaeus</i>											2			4	2	2		1	3	1				7	II	
<i>Avenochloa agropyroides</i>	1	1	1	1																				4	I	
<i>Centaurea affinis</i> subsp. <i>laconiae</i>						1															1			1	3	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)																										
<i>Cerastium candidissimum</i>	1	1	1	+	1		2	1	1	2	1	1	1	1	2	1	1	1	2	1	1	2	1	22	V	
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1		1	1	1	+			1			1						1	+		1	1	12	III	
<i>Leontodon graecus</i>		+		+	1	1	1			1	1		+		+					1				1	11	III
<i>Galium thymifolium</i>						2	2	1				1	+	1	1					1				1	9	II
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	1	+		1	+	+				+	+									+	+			9	II	
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>						1				1			1	1		1	1	2	1	2	2			9	II	
<i>Pterocarpus perennis</i> subsp. <i>perennis</i>	1		1			2	2		1		3									2	+			2	9	II
<i>Podospermum canum</i> var. <i>alpinum</i>	1		+									1			+	1	+	1	+					8	II	
<i>Poa thessala</i>		+				1			1		1	1	1		1		1					2		8	II	
<i>Erysimum cephalonicum</i>				+								1	1			1	1	1				+		7	II	
<i>Stipa endotricha</i>		1	1		1		2	2	1															1	7	II
<i>Scutellaria rupestris</i> subsp. <i>parnassica</i>				1		1				1	1						1			1		1		1	7	II
<i>Centaurea pichleri</i>												+		1	1	1	1	1	1	+				7	II	
<i>Fritillaria guicciardii</i>					+		+													+				1	5	II
<i>Nepeta argolica</i> subsp. <i>argolica</i>					1	1	1	1	1															5	II	
<i>Asperula lutea</i>					1	2															2			1	4	I
<i>Teucrium montanum</i> var. <i>parnassicum</i>					2	+															1			1	4	I
<i>Verbascum epixanthinum</i> var. <i>epixanthinum</i>					+		1	1																3	I	
<i>Erysimum pectinatum</i>								1			1										+			3	I	
<i>Hieracium lazistanum</i> subsp. <i>leitneri</i>								1																1	2	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)																										
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	1	+	1	1	1	+	1	1	+		1		1	1	1	1		1	1	1	1	1	+	20	V	
<i>Carduus toleus</i>	+	1	1		1		1	+	+					1	1	+	1		1	2	+	1		15	IV	
<i>Koeleria mitrashi</i>	1	1		+		2		1					1	2		1		1	1					2	11	III
<i>Morina persica</i>	+	3	2	2	1				1	1		2									+		1	10	III	
<i>Aubrieta deltoidea</i> var. <i>integrifolia</i>	1	1	1				1			+	1					1							1	1	9	II
<i>Geranium subcaulescens</i>						2	+	1	+	+	+	+												8	II	
<i>Thymus chaubardii</i>	1			1	+		2						2	1	+						+			8	II	
<i>Telephium orientale</i>		1	+		1			+								1		+				+		7	II	
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+		1	1		+																	6	II	
<i>Sesleria vaginalis</i>		2		1				1		1											2			1	6	II
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>						1	+		1												1			1	5	II
<i>Asyneuma limonifolium</i>				1		1													1		1			1	5	II
<i>Campanula spathulata</i> subsp. <i>spathulata</i>				+			+	1	1															+	5	II
<i>Anthemis cretica</i> subsp. <i>cretica</i>				+			1	1	1															1	5	II
<i>Carum meoides</i>				1			1			1					+									4	I	
<i>Achillea fraasii</i>						1		2													+			3	I	
Other species																										
<i>Dactylis hispanica</i>		1		1	1		2	2	2	1	1			1	1				1		1	1	1	14	IV	
<i>Crataegus pycnoloba</i>	3	1	1	2	2								1	2	3	1	1	1	1		1		1	12	III	
<i>Malcolmia bicolor</i>		1	1		+	1				1	1					1	1	1			+	+		11	III	
<i>Bromus squarrosus</i>	1		1								2	1		1		1	1	2	1			1		10	III	
<i>Melica ciliata</i>							1	+	1	2	1					1	+			2	1			9	II	
<i>Juniperus oxycedrus</i>	2	1	+	2	2	1				1												1		1	9	II
<i>Prunus cocomilia</i>		1	+	1		1	1		1	+	1													8	II	
<i>Ribes uva-crispa</i>	+	1	1	+	2		2			1	2													8	II	
<i>Microblaspis perfoliatum</i>		1				+		+					1	1			+	+					+	8	II	
<i>Medicago lupulina</i>			1	+	1						+					+							1	6	II	
<i>Micromeria juliana</i>			2		1	1				1														1	5	II
<i>Alyssum siculum</i>													+	1			1		1			+		5	II	
<i>Cerasus prostrata</i>						2						+					1		+					4	I	
<i>Phleum montanum</i>	2			1							1		1											4	I	
<i>Bromus tectorum</i>											1					1	1		+					4	I	
<i>Scandix australis</i>		+													1		1	+						4	I	
<i>Viola mercurii</i>		+										+	+				+							4	I	
<i>Pilosolenon afer</i>						+														1		2		3	I	
<i>Arabis caucasica</i>		1		+						1														3	I	
<i>Cachrys ferulacea</i>							1	+	3															3	I	
Sporic: <i>Salvia argentea</i> rel. 32, 49 (1); <i>Polygala nicaensis</i> subsp. <i>mediterranea</i> rel. 26 (+); <i>Rumex nebrodes</i> rel. 26 (+); <i>Sedum album</i> rel. 26 (+); <i>Sedum ochroleucum</i> rel. 26 (+).																										
Localities and dates of relevés. Rel. 1-23: Mt. Killini, Georgiads & Dimopoulos [42] - Table 2.																										

Table A32. Cont.
(c)

Relevé number	1	2	3	4	5	6	7	8	9	10	11			
Altitude (dam)	160	158	145	160	162	160	158	167	170	150	168			
Surface (m²)	100	100	50	50	100	100	50	50	50	100				
Coverage (%)	60	80	90	60	60	60	90	70	70	90	80			
Slope (°)	50	40	15	40	30	35	30	45	30	15	20			
Exposition	S	SO	NE	O	NO	N	N	NO	N	NO	S	Presence class		
Char. Association														
<i>Astragalus rumelicus</i> subsp. <i>lygeticus</i>	2	3	3	2	2	1	3	3	3	3	11	V		
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENEI)														
<i>Marrubium cyllenum</i>	1	2	2	2	1	1	2	1	1	2	2	11	V	
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)														
<i>Eryngium multifidum</i>	+	1	2	+	+	1	1	1	1	2	2	11	V	
<i>Festuca jasperti</i> subsp. <i>achaica</i>	2	3	2	2	3	2	2	2	2	2	3	11	V	
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	2	1	2	1	1	1	2	2	1	.	1	10	V	
<i>Allium achaium</i>	+	+	+	+	+	+	+	+	+	+	+	10	V	
<i>Erodium chrysanthum</i>	1	2	.	3	3	3	2	3	+	+	3	10	V	
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	2	2	.	2	2	+	.	2	2	2	3	9	V	
<i>Crepis incana</i>	+	1	.	1	+	1	.	+	1	+	1	9	V	
<i>Gocaryum pedopomiesiacum</i>	.	.	1	.	+	.	.	+	1	+	+	7	IV	
<i>Echinops lygeticus</i>	+	1	.	.	.	.	.	.	.	1	.	3	II
<i>Galium lygeticum</i>	.	.	2	.	.	.	.	.	.	.	.	2	1
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)														
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	1	+	1	1	+	1	+	+	+	+	+	11	V	
<i>Cerastium candidissimum</i>	2	2	2	2	2	2	1	2	1	3	2	11	V	
<i>Minuartia altica</i> subsp. <i>altica</i>	1	1	2	1	1	2	1	2	2	+	1	11	V	
<i>Podospermum canum</i> var. <i>alpinum</i>	+	1	1	1	1	+	+	+	+	+	+	11	V	
<i>Erysimum cephalicum</i>	+	1	.	+	+	+	+	+	1	1	1	10	V	
<i>Pterocarpus perennis</i> subsp. <i>perennis</i>	2	1	.	1	+	+	.	2	1	.	1	8	IV	
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	.	.	.	+	+	+	+	+	+	.	.	6	III	
<i>Stipa endobricha</i>	2	2	1	+	3	5	III
<i>Verbascum epixanthinum</i> var. <i>epixanthinum</i>	+	.	+	.	.	.	.	.	+	+	+	5	III
<i>Erysimum pectinatum</i>	.	.	.	+	.	.	.	.	+	.	.	3	II
<i>Asperula lutea</i>	1	+	.	.	.	.	.	.	.	.	.	3	II
<i>Scutellaria rupestris</i> subsp. <i>parnassica</i>	+	1	.	.	.	.	.	.	.	.	.	3	II
<i>Dianthus lymphrisatus</i>	1	+	.	.	.	.	.	.	.	.	.	2	1
<i>Trisetum tenuiforme</i>	.	.	1	.	.	.	.	.	.	.	.	2	1
<i>Centaurea pichleri</i>	.	.	.	.	.	.	1	.	.	.	.	1	1
<i>Galium thymifolium</i>	.	.	.	.	.	.	.	1	.	.	.	1	1
<i>Poa thessala</i>	.	.	.	.	.	.	.	.	+	.	.	1	1
<i>Trinia frigida</i>	.	.	.	.	.	.	.	.	+	.	.	1	1
<i>Draba lacaitae</i>	.	.	.	.	.	.	.	.	.	.	+	1	1
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)														
<i>Anthemis cretica</i> subsp. <i>cretica</i>	1	1	+	1	1	1	3	1	2	+	+	11	V	
<i>Bromopsis lacmonica</i>	2	2	2	2	2	2	2	2	2	2	2	11	V	
<i>Asyneura limonifolium</i>	.	.	1	1	+	1	1	+	+	1	1	9	V	
<i>Koeleria microbachne</i>	2	+	.	+	+	+	+	1	+	.	.	1	9	V
<i>Carduus tmoles</i>	+	1	1	1	+	+	+	+	+	+	.	8	IV	
<i>Acinus alpinus</i> subsp. <i>meridionalis</i>	1	1	1	+	.	.	1	6	III
<i>Geranium subcaulescens</i>	.	.	.	+	+	1	1	1	2	.	.	6	III	
<i>Aubrieta deltoidea</i> var. <i>integrifolia</i>	.	.	.	.	.	1	1	+	1	.	.	4	II
<i>Campanula sputulata</i> subsp. <i>sputulata</i>	.	.	2	.	.	.	1	+	.	1	+	5	III	
<i>Achillea holoserica</i>	+	+	.	.	.	.	.	.	.	.	.	3	II
<i>Geranium macrorrhynchum</i>	.	.	1	.	.	.	.	.	.	.	+	3	II
<i>Dianthus integer</i> subsp. <i>minutiflorus</i>	+	+	.	.	.	.	.	.	.	.	.	2	1
<i>Myosotis sylvatica</i> subsp. <i>cyanea</i>	.	.	+	.	.	.	.	.	.	.	+	2	1
<i>Thymus chaubardii</i>	.	.	1	.	.	.	.	.	.	1	.	2	1
<i>Achillea fraasii</i>	.	.	.	.	.	+	+	.	.	.	.	2	1
<i>Euphorbia herniariifolia</i>	.	.	+	.	.	.	.	.	.	.	.	1	1
<i>Linaria pedopomiesiaca</i>	.	.	.	.	.	.	.	.	.	.	+	1	1
<i>Morina persica</i>	.	.	.	.	.	.	.	.	.	2	.	1	1
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	.	.	.	.	.	.	.	.	.	.	1	1
Other species														
<i>Lactuca viminea</i>	1	+	1	1	1	1	+	+	+	1	+	11	V	
<i>Sedum tenuifolium</i>	.	.	+	+	+	+	+	+	+	+	+	9	V	
<i>Nonia pulla</i>	.	.	1	+	+	1	1	.	.	+	+	8	IV	
<i>Stipa holoserica</i>	1	+	.	2	+	+	+	.	.	2	1	8	IV	
<i>Allium saridoum</i>	+	.	.	+	+	+	+	+	+	.	.	7	IV	
<i>Malcolmia bicolor</i>	.	.	.	+	+	+	+	+	+	+	.	7	IV	
<i>Muscari bobryoides</i>	.	.	1	.	.	.	.	.	.	+	+	7	IV
<i>Ornithogalum montanum</i>	+	.	.	+	+	+	+	+	+	.	.	7	IV	
<i>Poa timoleonis</i>	.	.	.	1	.	1	+	+	1	.	.	1	6	III
<i>Astragalus depressus</i>	+	.	.	.	.	1	+	.	.	.	.	4	II
<i>Bolilotia pseudodictamnus</i>	1	+	.	.	.	.	.	.	.	2	.	4	II
<i>Cerastium prostratum</i>	+	1	.	.	.	.	.	.	.	.	1	4	II
<i>Scleranthus marginatus</i>	.	.	.	+	.	+	.	.	.	.	1	4	II
<i>Acinus aereus</i>	.	.	.	+	.	.	.	.	.	.	.	3	II
<i>Leonodon asper</i>	1	+	.	.	.	.	.	.	.	.	.	3	II
<i>Ptilostemon afer</i>	.	.	.	+	.	.	.	.	.	.	.	3	II
<i>Sedum acre</i>	.	.	+	.	.	.	.	.	.	+	.	3	II
<i>Asphodeline lutea</i>	.	.	1	.	.	.	.	.	.	.	.	2	1
<i>Carduus nutans</i> subsp. <i>scabrisquamus</i>	.	.	.	.	.	.	.	.	.	.	+	2	1
<i>Carlina frigida</i>	.	.	1	.	.	.	.	.	.	.	.	2	1
<i>Lamium sp.</i>	.	.	+	.	.	.	.	.	1	.	.	2	1
<i>Medica ciliata</i>	.	.	+	.	.	.	.	.	.	.	1	2	1
<i>Pheum montanum</i>	.	.	+	.	.	.	.	.	.	.	.	2	1
<i>Poa bulbosa</i>	.	.	2	.	.	.	.	.	.	.	1	2	1
<i>Rosa sp.</i>	.	.	.	+	.	.	.	.	.	.	.	2	1
<i>Secale strictum</i>	.	.	2	.	.	.	.	.	.	.	1	2	1
<i>Trifolium physoides</i>	.	.	1	.	.	.	.	.	.	.	.	2	1
<i>Trifolium pratense</i>	.	.	+	.	.	.	.	.	.	.	.	2	1
<i>Cachrys sp.</i>	.	.	1	.	.	.	.	.	.	.	.	1	1
<i>Colchicum sp.</i>	+	.	.	.	.	.	.	.	.	.	.	1	1
<i>Convolvulus cantabrica</i>	.	.	.	.	.	.	.	.	.	.	+	1	1
<i>Crocus sp.</i>	.	.	.	.	.	.	.	.	.	+	.	1	1
<i>Medicago lupulina</i>	.	.	.	.	.	+	.	.	.	.	.	1	1
<i>Micromeria juliana</i>	+	.	.	.	.	.	.	.	.	.	.	1	1
<i>Peucedanum sp.</i>	.	.	.	.	.	.	.	.	.	+	.	1	1
<i>Ranunculus sp.</i>	.	.	.	.	.	.	.	.	1	.	.	1	1
<i>Sedum album</i>	.	.	.	.	.	.	.	.	+	.	.	1	1
<i>Silene conica</i>	.	.	.	+	.	.	.	.	.	.	.	1	1
<i>Taraxacum sp.</i>	.	.	+	.	.	.	.	.	.	.	.	1	1
<i>Valeriana tuberosa</i>	.	.	.	+	.	.	.	.	.	.	.	1	1

Localities and dates of relevés. Rel. 1-2: Mt. Klokos - 04/07/06; rel. 3-9: Mt. Klokos - 02/06/07; rel. 10-11 - Mt. Klokos - 30/

Table A32. Cont.
(d)

Relevé number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Presence	Presence class
Altitude (dam)	150	155	160	164	170	175	184	170	185	140	140	145	150	155		
Surface (m ²)	30	50	100	100	100	100	50	50	100	100	50	100	100	100		
Coverage (%)	100	100	90	90	90	70	70	70	80	80	80	90	80	90		
Slope (°)	15	20	15	5	5	25	30	15	25	15	15	25	20	20		
Exposition	SO	NE	E	S	O	O	NO	O	E	O	N	O	NO	N		
Char. Association																
<i>Astragalus rumeticus</i> subsp. <i>tageticus</i>	4	3	2	3	1	3	4	3	1	3	4	5	3	4	14	V
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENE)																
<i>Marrubium cylleneum</i>	+	1	1	+	+	2	1	+	1	2	1	1	1	3	14	V
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)																
<i>Eryngium multifidum</i>	1	2	1	2	1	2	1	+	1	2	1	2	1	1	14	V
<i>Festuca jaupertii</i> subsp. <i>achaica</i>	3	2	3	3	2	2	1	2	2	2	2	2	2	3	14	V
<i>Allium achaicum</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	13	V
<i>Astragalus angustifolius</i> subsp. <i>erinaeus</i>	1	3	4	1	5	3	+	3	4	.	2	2	4	.	12	V
<i>Galium taugeteum</i>	2	1	2	1	+	1	+	+	+	.	1	+	1	12	V	
<i>Avenochloa agropyroides</i>	1	1	2	2	1	2	.	+	.	.	2	1	1	2	11	IV
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	.	.	.	.	.	.	2	1	1	.	.	.	.	2	5	II
<i>Centaurea affinis</i> subsp. <i>laconiae</i>	.	.	.	.	.	.	+	+	+	+	.	.	.	.	5	II
<i>Cirsium hypophyllum</i>	.	+	.	1	.	.	1	+	.	.	.	.	.	.	4	II
<i>Geocaryum peloponnesiacum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	II
<i>Dianthus androsaceus</i>	.	.	.	.	.	.	.	+	+	.	.	.	.	.	2	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)																
<i>Erysimum cephalonicum</i>	.	.	.	.	.	.	.	+	+	+	+	.	.	+	9	IV
<i>Pederspernum canium</i> var. <i>alpinum</i>	+	+	1	1	+	.	.	.	.	.	.	.	.	.	9	IV
<i>Herniaria parussica</i> subsp. <i>parussica</i>	.	.	.	.	.	.	.	+	+	+	+	+	+	.	8	III
<i>Centaurea pichleri</i>	.	.	.	.	.	.	.	1	+	+	+	+	+	.	7	III
<i>Mimurtha attica</i> subsp. <i>attica</i>	.	.	.	.	.	.	.	1	1	1	1	+	+	.	7	III
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	.	.	.	.	.	.	.	+	1	.	1	1	+	.	6	III
<i>Erysimum pectinatum</i>	.	.	.	.	.	.	.	+	1	.	.	.	.	1	6	III
<i>Cerastium candidissimum</i>	.	.	1	.	.	1	.	.	1	+	.	.	.	.	5	II
<i>Stipa endobricha</i>	.	.	2	+	.	.	.	.	.	.	1	+	.	2	5	II
<i>Galium thymifolium</i>	.	2	.	.	.	1	.	.	+	1	.	.	.	.	4	II
<i>Trinia frigida</i>	.	.	.	.	.	.	.	.	.	.	1	+	+	.	4	II
<i>Viola graeca</i>	.	.	.	.	.	.	.	.	.	.	.	+	+	.	4	II
<i>Asperula thessala</i>	.	.	.	.	.	.	.	.	1	+	.	.	.	.	2	I
<i>Achillea umbellata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
<i>Dianthus tymphrisicus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)																
<i>Asyneuma limonifolium</i>	1	1	+	2	1	+	1	1	+	1	2	1	2	1	14	V
<i>Koeleria nitens</i>	+	3	2	+	3	2	2	2	2	1	1	2	1	2	14	V
<i>Campylosiphon sputulata</i> subsp. <i>sputulata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	+	8	III
<i>Morina persica</i>	+	1	.	.	.	.	.	.	+	1	.	1	.	.	8	III
<i>Thymus chaubardii</i>	.	.	.	.	.	.	.	.	+	1	.	.	+	.	8	III
<i>Tragopogon coccifolius</i> subsp. <i>samaritanii</i>	+	+	+	+	+	+	+	+	+	+	.	.	.	.	8	III
<i>Bromopsis lacmonica</i>	1	2	1	2	1	1	.	.	.	.	.	.	.	.	7	III
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	III
<i>Carlina frigida</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	II
<i>Saichys heldreichii</i>	1	+	+	+	+	+	+	+	+	+	.	.	.	.	5	II
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	.	.	.	.	.	.	2	+	1	.	.	.	.	.	3	II
<i>Carduus imoleus</i>	.	.	.	.	.	.	1	.	1	.	.	.	.	.	2	I
<i>Geranium subcaulescens</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
Other species																
<i>Rosa agrestis</i>	+	1	1	+	+	+	+	+	.	2	2	1	1	1	13	V
<i>Sedum tenuifolium</i>	+	+	+	+	+	+	1	+	.	1	+	.	.	.	12	V
<i>Poa bulbosa</i>	1	1	+	1	+	3	.	.	.	2	1	1	1	1	11	IV
<i>Verbascum</i> sp.	+	+	+	+	+	+	+	+	+	+	+	.	.	.	11	IV
<i>Carduus nutans</i> subsp. <i>scabrisquamis</i>	+	+	1	+	1	.	.	.	.	.	.	.	.	.	10	IV
<i>Medica ciliata</i>	1	1	1	1	+	1	.	.	.	.	.	.	.	.	8	III
<i>Poa timoleontis</i>	.	.	.	.	.	.	.	.	.	2	+	+	1	+	7	III
<i>Pilosomon afer</i>	.	.	.	.	.	.	.	1	1	1	+	+	+	1	7	III
<i>Centaurea</i> sp.	1	1	1	2	+	1	.	.	.	.	.	.	.	.	6	III
<i>Crapina crupinastrum</i>	+	+	+	1	+	+	.	.	.	.	.	.	.	.	6	III
<i>Hordeum</i> sp.	1	+	1	1	+	1	.	.	.	.	.	.	.	.	6	III
<i>Muscari neglectum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	III
<i>Nonea pulla</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	III
<i>Omithogalum oligophyllum</i>	+	+	+	+	+	+	+	+	+	+	+	.	.	.	6	III
<i>Phleum montanum</i>	.	.	.	.	.	1	2	1	1	.	.	.	.	.	6	III
<i>Polygala nicaensis</i> subsp. <i>mediterranea</i>	.	.	.	.	.	.	.	.	.	+	1	.	.	.	6	III
<i>Ballota pseudodictamnus</i>	1	+	+	.	.	.	.	.	.	.	.	.	.	.	5	II
<i>Brachypodium retusum</i>	2	1	2	.	.	1	.	.	.	.	.	.	.	.	5	II
<i>Crepis</i> sp.	.	.	.	.	.	.	.	.	.	1	1	1	1	1	5	II
<i>Crocus</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	II
<i>Legousia</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	II
<i>Malcolmia bicolor</i>	.	.	.	.	.	.	.	.	.	2	+	1	1	1	5	II
<i>Daphne oleoides</i>	.	.	.	.	.	.	+	1	1	1	.	.	.	.	4	II
<i>Medicago lupulina</i>	.	.	.	.	.	.	.	.	.	.	1	+	.	.	4	II
<i>Ononis spinosa</i> subsp. <i>leiosperma</i>	+	.	.	1	.	.	.	.	.	.	.	.	.	.	4	II
<i>Taraxacum minimum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	II
<i>Trifolium physodes</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	4	II
<i>Allium saridoum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	II
<i>Astragalus depressus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	II
<i>Bupleurum glumaceum</i>	+	+	.	.	.	.	.	.	.	.	.	.	.	.	3	II
<i>Dactylis glomerata</i>	.	.	.	.	.	.	2	1	1	.	.	.	.	.	3	II
<i>Eryngium caespitose</i>	.	.	1	1	.	.	.	.	.	.	.	.	.	.	3	II
<i>Lactuca viminea</i>	+	+	.	.	.	.	.	.	.	.	.	.	.	.	3	II
<i>Pilosella leucopila</i> subsp. <i>pilisquamia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	II
<i>Urospermum</i> sp.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	3	II
<i>Bellis perennis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	I
<i>Brachypodium retusum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	I
<i>Lotus corniculatus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	I
<i>Petrohagia illyrica</i> subsp. <i>illyrica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	I
<i>Sedum album</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	I
<i>Veronica thymifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	I
<i>Geranium pyrenaeicum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
<i>Myosotis</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
<i>Sedum ochroleucum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
<i>Silene</i> sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
<i>Teucrium chamaedrys</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I

Spadic: *Lepidium nebrodense* rel. 8 (1), 9 (+), 13, 14 (+); *Sanguisorba minor* subsp. *muricata* rel. 8, 9 (+); *Prunus prostrata* rel. 8, 9 (+); *Hypochaeris cretensis* rel. 4 (+), 6 (1); *Arum maculatum* rel. 8, 9 (+); *Polygonum acarna* rel. 1 (+), 2 (1); *Tulipa australis* rel. 1, 2 (+); *Lolium perenne* rel. 6 (+); *Hieracium cymosum* subsp. *heldreichianum* rel. 2 (+); *Stipa holosericea* rel. 4 (1); *Colchicum graecum* 9 (+); *Rumex*

Localities and dates of relevés. Rel. 1-9: Mt. Panachaiko - 24.06.06; rel. 10-14: Mt. Panachaiko - 01.06.07.

Table A33. Asteri cyllenei-Globularietum stygiae Quézel 1964.

Relevé number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				
Altitude (dam)	230	225	230	220	220	190	210	200	195	230	220	220	180	165	167	169	208	228				
Surface (m ²)	200	200	200	100	50	100	100	100	100	100	100	50	100	50	100	50	40	15				
Coverage (%)	45	40	35	50	50	60	60	70	70	50	60	50	70	60	60	70	60	60				
Slope (°)	30	35	30	10	10	20	15	20	25	10	5	10	25	5	25	15	20	10				
Exposition	S	SE	SE	S	S	S	W	E	E	-	-	-	N	N	N	N	O	O				
Char. Association																						
<i>Globularia stygia</i>	1	2	2	+	+	1	2	2	1	1	2	1	4	3	4	3	3	2	18	V		
<i>Taraxacum bythinicum</i>	1	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	+	+	5	II
<i>Macrotomia cephalotes</i>	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1	I
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENE)																						
<i>Aster cylleneus</i>	1	2	1	.	.	+	1	1	+	+	.	.	.	.	.	.	.	.	.	9	III
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)																						
<i>Festuca jeanpertiae</i> subsp. <i>achaica</i>	.	.	.	1	1	.	+	.	1	1	.	.	2	2	2	2	+	1	11	IV		
<i>Avenochloa agropyroides</i>	.	.	.	1	1	2	1	.	+	1	.	1	.	.	.	.	.	.	.	7	II
<i>Astragalus angustifolius</i> subsp. <i>erinaeus</i>	1	.	.	.	.	.	.	.	+	1	.	.	.	.	1	.	+	.	.	5	II
<i>Armeria orphanidis</i>	.	.	.	.	.	.	.	.	.	1	1	+	.	.	.	.	.	.	.	3	I
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	.	.	.	.	.	1	.	.	.	+	.	.	.	.	.	.	.	.	.	3	I
<i>Rindera graeca</i>	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
<i>Acantholimon graecum</i>	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)																						
<i>Asperula boissieri</i>	1	+	1	.	.	.	.	1	+	.	1	.	.	+	1	1	+	1	1	12	IV
<i>Helianthemum hymettium</i>	1	+	1	.	1	1	.	1	.	+	.	.	.	2	1	1	1	.	.	11	IV	
<i>Poa thessala</i>	.	.	.	.	.	1	.	1	+	.	+	1	2	2	2	2	2	2	2	10	III
<i>Cerastium candidissimum</i>	.	+	+	+	.	1	.	.	.	+	+	9	III
<i>Draba lacaitae</i>	.	1	.	.	.	+	+	.	.	.	.	.	.	.	+	+	+	+	.	9	III
<i>Minuartia attica</i> subsp. <i>attica</i>	.	.	.	.	+	1	+	.	+	.	+	.	1	.	.	.	.	.	2	8	III
<i>Viola graeca</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	7	II
<i>Minuartia confusa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2	1	+	.	.	4	II
<i>Leontodon graecus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	.	4	II
<i>Paronychia albatica</i> subsp. <i>graeca</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	1	.	4	II
<i>Trinia guiccardii</i>	1	.	.	+	.	+	+	4	II
<i>Veronica thymifolia</i>	1	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	.	.	.	4	II
<i>Thesium parnassi</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	4	II
<i>Silene radicata</i> subsp. <i>radicata</i>	.	.	.	.	.	.	.	.	.	.	.	+	1	1	.	.	.	.	.	3	I
<i>Stipa endotricha</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1	.	+	3	I
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	1	+	2	I
<i>Fritillaria guiccardii</i>	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	2	I
<i>Lysimachia serpyllifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	2	I
<i>Trinia frigida</i>	.	+	+	2	I
<i>Veronica erimoides</i>	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
<i>Viola chelmea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)																						
<i>Sesleria tenerima</i>	1	1	1	1	1	.	1	+	.	1	1	2	2	2	1	2	1	1	1	16	V	
<i>Thymus leucotrichus</i>	1	.	1	+	1	.	2	3	2	2	+	2	1	11	IV
<i>Koeleria mitrushi</i>	1	.	1	+	.	+	+	2	.	.	+	+	.	.	1	10	III
<i>Asyneuma limonifolium</i>	+	+	+	+	1	8	III
<i>Draba lasiocarpa</i>	.	+	+	.	1	.	1	+	1	7	II
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	+	.	.	+	1	.	.	.	.	.	.	.	.	1	1	1	.	.	.	6	II
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	+	+	.	+	5	II
<i>Linum elegans</i>	.	.	.	.	.	.	1	1	1	.	.	.	.	.	.	.	.	.	.	5	II
<i>Thymus chaubardii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2	2	3	1	.	5	II
<i>Bromopsis lacmonica</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	I
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	+	1	I
<i>Euphorbia herniarifolia</i>	+	1	I
<i>Morina persica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	1	I
<i>Myosotis suaevolens</i>	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
<i>Sedum laconicum</i>	+	1	I
Other species																						
<i>Daphne oleoides</i>	.	1	.	.	.	1	1	+	1	2	.	1	+	1	1	+	+	+	+	14	IV	
<i>Carex macrolepis</i>	.	.	.	.	.	+	1	1	2	2	.	1	1	2	2	2	2	.	.	11	IV
<i>Fumana procumbens</i>	.	.	.	.	+	1	.	+	1	.	.	.	.	2	1	1	.	.	.	7	II
<i>Anthyllis vulneraria</i> subsp. <i>praepropera</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	1	2	.	.	6	II
<i>Campanula aizoides</i>	.	.	.	1	1	1	+	5	II
<i>Dactylorhiza sambucina</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	4	II
<i>Hieracium</i> sp.	+	1	1	1	.	4	II
<i>Hippocrepis comosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	1	1	.	.	4	II
<i>Lomelosia graminifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	II
<i>Astragalus depressus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.	3	I
<i>Carex kitaibeliana</i>	1	2	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	I
<i>Helianthemum nummularium</i> subsp. <i>nummularium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	+	.	.	.	3	I
<i>Juniperus hemisphaerica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	+	.	3	I
<i>Plantago holostium</i> var. <i>alpestris</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	1	.	.	.	3	I
<i>Polygala nicaensis</i> subsp. <i>mediterranea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	+	3	I
<i>Sedum album</i>	+	1	+	.	3	I
<i>Pilosella leucopsilon</i> subsp. <i>pilisquama</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	2	I
<i>Pedicularis graeca</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	I
<i>Saponaria bellidifolia</i>	.	.	.	.	.	.	.	.	1	+	.	.	.	.	.	.	.	.	.	2	I
<i>Iberis sempervirens</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I
<i>Veronica austriaca</i> subsp. <i>leucroides</i>	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	I

Localities and dates of relevés. Rel. 1-3: Mt. Killini, Quézel [35] - Table 20; rel. 4-12: Mt. Chelmos, Quézel et Katrabassa [40] - Table 4; Rel. 13: Mt. Chelmos - 16/06/04; Rel. 14-16: Mt. Chelmos, Kendria - 03/06/07; Rel. 17: Mt. Chelmos, Avgcho - 03/06/07; Rel. 18: Mt. Chelmos, Psili Korfi -

Table A34. Euphrasio salisburgensis-Asperuletum oetaeae Quézel & Katrabassa 1974 corr.

Relevé number	1	2	3	4	5	6		
Altitude (dam)	220	200	220	200	210	210		
Surface (m ²)	100	100	100	100	100	100		
Coverage (%)	60	65	60	70	60	60	Presences	Presence class
Slope (°)	5	10	10	-	-	5		
Exposition	W	-	-	-	-	-		
Char. Association								
<i>Asperula oetaea</i>	2	2	2	+	.	1	5	V
<i>Euphrasia salisburgensis</i>	2	+	1	+	+	.	5	V
<i>Iberis saxatilis</i> subsp. <i>saxatilis</i>	.	.	+	+	1	+	4	IV
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENEI)								
<i>Globularia stygia</i>	.	.	.	.	.	+	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)								
<i>Erodium chrysanthum</i>	.	.	.	2	2	1	3	III
<i>Acantholimon graecum</i>	.	.	.	1	1	1	3	III
<i>Festuca jeanpertii</i> subsp. <i>achaica</i>	.	.	1	.	.	.	1	I
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	.	.	.	1	.	.	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Paronychia albanica</i> subsp. <i>graeca</i>	1	1	1	1	1	1	6	V
<i>Poa thessala</i>	2	2	1	.	1	1	5	V
<i>Trinia frigida</i>	1	1	1	+	+	.	5	V
<i>Helianthemum hymettium</i>	.	1	.	2	1	2	4	IV
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	2	2	2	.	.	.	3	III
<i>Asperula boissieri</i>	.	1	.	+	.	1	3	III
<i>Viola graeca</i>	.	+	1	.	+	.	3	III
<i>Minuartia confusa</i>	+	+	1	.	.	.	3	III
<i>Teucrium montanum</i> var. <i>parnassicum</i>	.	.	.	1	1	1	3	III
<i>Cerastium candidissimum</i>	.	+	.	.	.	1	2	II
<i>Minuartia attica</i> subsp. <i>attica</i>	.	+	.	.	.	.	1	I
<i>Veronica thymifolia</i>	.	.	.	1	.	.	1	I
<i>Silene radicata</i> subsp. <i>radicata</i>	.	.	.	1	.	.	1	I
<i>Trinia guicciardii</i>	.	+	.	.	.	.	1	I
<i>Fritillaria guicciardii</i>	.	.	.	+	.	.	1	I
Diff. Classe CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI								
<i>Koeleria mitraushii</i>	.	+	+	+	1	1	5	V
<i>Thymus leucotrichus</i>	1	.	2	2	2	1	5	V
<i>Draba lasiocarpa</i>	1	1	.	2	1	1	5	V
<i>Achillea holosericea</i>	.	+	.	+	+	+	4	IV
<i>Sesleria tenerrima</i>	1	.	.	.	1	1	3	III
<i>Linum elegans</i>	1	.	1	.	.	.	2	II
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	.	.	.	+	+	.	2	II
<i>Asyneuma limonifolium</i>	.	.	+	.	.	+	2	II
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	+	.	.	.	.	1	I
Other species								
<i>Daphne oleoides</i>	1	1	.	+	+	1	5	V
<i>Anthyllis vulneraria</i> subsp. <i>praepropera</i>	1	.	1	.	.	.	2	II
<i>Carex kitaibeliana</i>	1	.	1	.	.	.	2	II
<i>Fumana procumbens</i>	.	.	.	+	1	.	2	II
<i>Carex macrolepis</i>	.	1	.	.	.	+	2	II

Localities and dates of relevés. Rel. 1-6: Mt. Chelmos, Quézel & Katrabassa [40] - Table 4, rel 1-6.

Table A35. *Marrubio cyllenei-Astragaletum calavrytensis* Musarella, Brullo & Giusso ass. nov.

Relevé 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																					
Altitude (dam)	164	148	125	127	126	125	140	141	125	165	167	175	173	176	180	210	220	210	202	205	205	208	209	210	209	209	215																					
Surface (m²)	100	100	50	50	50	100	100	100	100	100	100	100	50	100	100	100	100	100	50	50	100	50	100	100	100	100	100																					
Coverage (%)	90	90	90	90	90	100	90	90	90	90	80	80	80	70	90	80	80	80	80	80	100	80	60	70	90	90	80	80																				
Slope (°)	20	20	25	25	30	25	15	15	20	5	10	15	15	15	15	20	25	20	20	10	10	20	20	30	30	25																						
Exposition	N	NO	N	N	N	N	O	O	N	N	N	N	E	NE	E	NO	E	O	S	SO	NE	O	SO	E	E	E	S	NO																				
Char. Association																																																
<i>Astragalus calavrytensis</i>	4	3	5	4	4	5	4	5	5	3	4	3	4	2	3	2	3	3	3	3	2	1	1	1	4	3	4	9	6	12	V	V	V															
Char. Subassociation																																																
<i>Elytrigia intermedia</i>	+	1	1	2	2	3	2	1	2																							9	0	0	V													
<i>Silene italica</i> subsp. <i>peloponnesiaca</i>	+	3	2	2	2	2	2	2	2																									8	0	0	V											
<i>Hippocrepis comosa</i>										2	1	1	+	+	2																				0	6	0	V										
<i>Tulipa australis</i>																+	+	1	2	2	1	2	2	+	1	+	+	+	+	+					0	0	11	V										
<i>Ornithogalum oligophyllum</i>																		+	+	1	1	2	1	1	2	2	1	+	+	+					0	0	11	V										
<i>Gagea villosa</i>																				+	+	+	+	+	+	+	+	+	+	+					0	0	8	IV										
Char. All. (FESTUCO ACHAICA-MARRUBION CYLLENEI)																																																
<i>Marrubium cylleneum</i>	2	1	2	+	1	1	1	1	2	+	2	2	2	2	1	1	1	+	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	9	6	12	V	V	V								
<i>Taraxacum cylleneum</i>											+	+	1	+																						0	4	7	IV	III								
<i>Onobrychis montana</i> subsp. <i>macrocarpa</i>	+	+	+	1	1	+	+		2												1														8	0	1	V	I									
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)																																																
<i>Armeria orphanidis</i>	+	2	2	2	2	2	2	1	2	1	1	1	1	+	2						1															9	6	2	V	V	I							
<i>Eryngium multifidum</i>	1	2	+	1	1	1	2	+	1	2	3	1	1	1	2																						9	6	1	V	V	I						
<i>Festuca jeampertii</i> subsp. <i>achaica</i>		2	3	3	3	2	2	3	2	2	3	2	2	2	2			+		1	2	3	1	1	2	1	2	2	2	2	2	2	2	2	2	8	6	10	V	V	V							
<i>Galium taylorae</i>		+	2	2	2	2	1	1	2						1	1																							8	4	8	V	IV	IV				
<i>Geocaryum peloponnesiacum</i>		1	1	1	+	1	1	+	+						1	1																						8	4	3	V	IV	II					
<i>Allium achaium</i>		+	+	+	+	+			+																														7	0	1	IV	I					
<i>Centaura affinis</i> subsp. <i>laconiae</i>		+	+	+	+	+	1		2	1	+	+	+	+																									6	5	1	IV	V	I				
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	+			+	+	+			+		1	1	1	+	+						1				1		1											5	5	3	III	V	II					
<i>Avenochloa agropyroides</i>					+	1	1	2	2						+																								5	3	0	III	III					
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	+									3	1	3	2	4	2	+					2		3	4	4	4	+	3	+	1	6	9	1					1	6	9	I	V	IV					
<i>Cirsium hypopsilum</i>	+																					1	2	2	+															1	0	4	I	II				
<i>Allium frigidum</i>											+																													0	2	2	II	I				
<i>Acantholimon graecum</i>																																								1	2	1	I		II			
<i>Astragalus rumelicus</i> subsp. <i>taygeticus</i>																																								2	0	0	I		I			
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)																																																
<i>Leontodon graecus</i>	1	+	2	1	1	1	2	2	1						1	+	1	1																							9	4	2	V	IV	I		
<i>Trisetum tenuiforme</i>		2	1	2	1	1	2	1	2																																	8	0	1	V	I		
<i>Centaura pichleri</i>	+	+	+				+	+	+																																		7	1	8	IV	I	IV
<i>Centaura raphanina</i> subsp. <i>mista</i>	+			+	+	+	1	1	+																																		7	0	0	IV		
<i>Galium thymifolium</i>		+	1	1	1	1		1	2						2	1	1																									2	7	3	2	IV	III	I
<i>Erysimum cephalonicum</i>		+			+	1	+	1	+	+	+	+	+	+																													6	5	3	IV	V	II
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>		+																																								5	4	1	III	IV	I	
<i>Podospermum canum</i> var. <i>alpinum</i>		+				1	+		1	+	+	1	1	1	2																											5	5	3	III	V	II	
<i>Cerastium candidissimum</i>	2	+										1	2	1	1	1	2	1	1	1	2		2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	6	11	11	V	V		
<i>Nepeta argolica</i> subsp. <i>argolica</i>																																											2	0	0	II		
<i>Stipa endotricha</i>	3	2										2	3	2	2	3	3																									2	6	1	II	V	I	
<i>Verbascum epixanthinum</i> var. <i>epixanthinum</i>	+	+										1	+	+																												2	4	1	II	IV	I	
<i>Draba lacatae</i>	+																																									1	4	1	I	IV	I	
<i>Trinia frigidula</i>		1																																								1	0	8	I	IV	I	
<i>Viola graeca</i>	+													1	+																											1	3	7	I	III	III	
<i>Helianthemum hymettium</i>																																																

Table A36. *Plantagini graecae-Astragaletum cyllenei* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5		
Altitude (dam)	191	189	188	185	181		
Surface (m ²)	100	50	50	50	100		
Coverage (%)	10	90	90	90	90	Presences	Presence class
Slope (°)	20	5	5	5	10		
Exposition	S	S	S	S	SE		
Char. Association							
<i>Astragalus cylleneus</i>	4	4	3	3	4	5	V
<i>Plantago atrata</i> subsp. <i>graeca</i>	2	+	2	2	1	5	V
<i>Alopecurus gerardii</i>	1	+	1	1	1	5	V
<i>Potentilla recta</i>	.	1	+	.	+	3	III
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENEI)							
<i>Marrubium cylleneum</i>	2	2	1	1	2	5	V
<i>Onobrychis montana</i> subsp. <i>macrocarpa</i>	2	.	+	+	1	4	IV
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)							
<i>Astragalus rumelicus</i> subsp. <i>taygeticus</i>	1	2	1	2	+	5	V
<i>Festuca jeanpertii</i> subsp. <i>achaica</i>	2	2	2	3	2	5	V
<i>Galium taygeteum</i>	+	+	+	+	1	5	V
<i>Cirsium hypopsilium</i>	+	.	+	.	1	3	III
<i>Geocaryum peloponnesiacum</i>	+	.	+	.	+	3	III
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	+	.	+	.	.	2	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Centaurea pichleri</i>	1	+	+	+	1	5	V
<i>Cerastium candidissimum</i>	2	2	1	2	2	5	V
<i>Galium thymifolium</i>	1	+	1	+	1	5	V
<i>Trisetum tenuiforme</i>	1	2	2	1	1	5	V
<i>Verbascum epixanthinum</i> var. <i>epixanthinum</i>	+	+	+	+	1	5	V
<i>Viola graeca</i>	+	+	+	+	+	5	V
<i>Dianthus tymphristeus</i>	.	+	+	+	1	4	IV
<i>Poa thessala</i>	2	.	+	2	1	4	IV
<i>Minuartia confusa</i>	.	.	.	+	+	2	II
<i>Viola chelmea</i>	+	.	.	.	+	2	II
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	1	+	+	+	1	5	V
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	+	1	+	+	+	5	V
<i>Carduus tmoleus</i>	1	1	+	2	1	5	V
<i>Myosotis sylvatica</i> subsp. <i>cyanea</i>	+	+	+	1	+	5	V
<i>Thymus leucotrichus</i>	1	1	2	1	2	5	V
<i>Geranium subcaulescens</i>	.	+	+	+	1	4	IV
<i>Asyneuma limonifolium</i>	+	+	.	+	.	3	III
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	+	+	2	II
Other species							
<i>Dactylis glomerata</i>	2	3	2	1	2	5	V
<i>Phleum alpinum</i>	1	+	+	+	+	5	V
<i>Daphne oleoides</i>	1	.	1	+	1	4	IV
<i>Poa timoleontis</i>	.	2	2	1	1	4	IV
<i>Campanula radicata</i>	+	+	.	.	+	3	III
<i>Lotus stenodon</i>	1	.	1	.	+	3	III
<i>Bupleurum</i> sp.	+	.	.	.	+	2	II
<i>Pilosella leucopsilon</i> subsp. <i>pilisquama</i>	+	.	+	.	.	2	II

Localities and dates of relevés. Rel. 1-5: Mt. Killini, Mt. Simios - 05/07/06.

Table A38. *Alyso taygetei-Plantaginetum alpestris* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	
Altitude (dam)	203	205	205	
Surface (m ²)	100	100	100	
Coverage (%)	60	50	50	Presences
Slope (°)	30	25	35	
Exposition	E	NE	E	
Char. Association				
<i>Alyssum taygeteum</i>	1	1	2	3
<i>Plantago holosteum</i> var. <i>alpestris</i>	2	1	2	3
<i>Scorzonera mollis</i>	+	+	+	3
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENEI)				
<i>Festuca jeanpertia</i> subsp. <i>achaica</i>	1	1	1	3
<i>Marrubium cylleneum</i>	1	+	.	2
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)				
<i>Astragalus rumelicus</i> subsp. <i>taygeticus</i>	3	1	1	3
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	2	2	3	3
<i>Cirsium hypopsilium</i>	+	+	+	3
<i>Verbascum acaule</i>	+	+	+	3
<i>Eryngium multifidum</i>	+	1	1	3
<i>Erodium chrysanthum</i>	2	2	1	3
<i>Acantholimon graecum</i>	1	1	1	3
<i>Armeria orphanidis</i>	.	.	.	1
<i>Centaurea affinis</i> subsp. <i>laconiae</i>	.	+	.	1
<i>Allium achaium</i>	.	.	+	1
<i>Geocaryum peloponnesiacum</i>	.	+	.	1
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)				
<i>Cerastium candidissimum</i>	2	1	1	3
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	3	2	2	3
<i>Poa thessala</i>	1	1	+	3
<i>Minuartia attica</i> subsp. <i>attica</i>	1	1	1	3
<i>Asperula boissieri</i>	2	1	2	3
<i>Trinia frigida</i>	+	1	+	3
<i>Minuartia confusa</i>	+	1	+	3
<i>Erysimum cephalonicum</i>	+	+	1	3
<i>Leontodon graecus</i>	+	+	+	3
<i>Galium thymifolium</i>	.	1	+	2
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	.	+	+	2
<i>Podospermum canum</i> var. <i>alpinum</i>	.	+	+	2
<i>Verbascum epixanthinum</i> var. <i>epixanthinum</i>	+	+	.	2
<i>Dianthus lymphristeus</i>	.	+	.	1
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)				
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	+	+	1	3
<i>Asyneuma limonifolium</i>	+	1	+	3
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	+	3
<i>Minuartia stellata</i>	1	+	1	3
<i>Minuartia juniperina</i>	1	+	1	3
<i>Pimpinella tragium</i> subsp. <i>tragium</i>	+	+	1	3
<i>Telephium orientale</i>	+	1	+	3
<i>Koeleria mitrushi</i>	.	1	1	2
<i>Carduus tmoleus</i>	+	+	.	2
<i>Ranunculus sartorius</i>	+	+	.	2
<i>Semprevivum marmoreum</i>	+	+	.	2
<i>Thymus leucotrichus</i>	.	+	.	1
<i>Sedum laconicum</i>	.	.	+	1
<i>Anthemis orientalis</i>	.	+	.	1
<i>Thymus chaubardii</i>	.	.	+	1
Other species				
<i>Malcolmia bicolor</i>	+	+	+	3
<i>Viola parvula</i>	+	+	.	2
<i>Leontodon asper</i>	+	+	.	2
<i>Colchicum graecum</i>	+	+	.	2
<i>Daphne oleoides</i>	+	.	1	2
<i>Trifolium parnassi</i>	1	+	.	2
<i>Alopecurus gerardii</i>	+	.	+	2
<i>Cerasus prostrata</i>	2	1	.	2
<i>Lactuca viminea</i>	.	+	.	1
<i>Medicago lupulina</i>	+	.	.	1
<i>Trisetum tenuiforme</i>	.	+	.	1
<i>Senecio squavidus</i>	+	.	.	1
<i>Polygala nicaeensis</i> subsp. <i>mediterranea</i>	.	+	.	1
<i>Muscari neglectum</i>	+	.	.	1

Localities and dates of relevés. Rel. 1-3: Mt. Chelmos, Poulou Vrisi - 02/07/06.

Table A40. *Asperulo boissieri-Festucetum cyllenicae* Georgiadis & Dimopoulos ex Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8	9	10	11		
Altitude (dam)	211	210	220	195	190	200	205	210	185	200	208		
Surface (m ²)	100	100	100	100	100	100	100	100	100	100	100		
Coverage (%)	90	80	60	60	80	60	70	70	40	70	50		
Slope (°)	10	21-35	35	35-50	35-50	35-50	50	35-50	35-50	35-50	11-20	Presences	Presence class
Exposition	N	S	E	NO	N	N	O	E	NO	NE	E		
Char. Association													
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	4	4	2	1	4	2	2	2	2	3	2	11	V
<i>Dianthus integer</i> subsp. <i>minutiflorus</i>	.	.	.	.	2	1	.	.	1	1	.	4	II
Char. All. (FESTUCO ACHAICAIE-MARRUBION CYLLENEI)													
<i>Festuca jeanpertii</i> subsp. <i>achaica</i>	2	1	.	.	.	3	.	2	.	.	.	4	II
<i>Astragalus cylleneus</i>	.	+	.	.	.	.	2	.	.	+	.	3	II
<i>Marrubium cylleneum</i>	.	+	.	.	.	.	.	.	1	.	.	2	I
<i>Taraxacum cylleneum</i>	+	.	.	.	.	.	.	.	.	.	.	1	I
<i>Verbascum cylleneum</i>	+	.	.	.	.	.	.	.	.	.	.	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)													
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	3	2	1	2	.	.	3	4	.	.	.	6	III
<i>Allium frigidum</i>	.	+	.	.	.	.	.	+	1	.	.	3	II
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	.	.	.	.	+	1	.	.	1	.	.	3	II
<i>Galium talygeteum</i>	.	.	.	.	2	.	1	.	.	.	1	3	II
<i>Eryngium multifidum</i>	.	.	.	.	.	.	.	.	1	1	.	2	I
<i>Erodium chrysanthum</i>	.	.	.	.	.	.	.	.	.	.	2	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)													
<i>Cerastium candidissimum</i>	1	2	2	+	+	1	2	+	1	2	1	11	V
<i>Asperula boissieri</i>	1	+	+	1	1	2	1	1	1	.	1	10	V
<i>Poa thessala</i>	2	1	1	1	.	2	2	1	2	.	.	8	IV
<i>Galium thymifolium</i>	2	1	.	.	2	1	.	.	1	1	1	7	IV
<i>Minuartia attica</i> subsp. <i>attica</i>	+	1	.	1	.	1	.	1	1	1	.	7	IV
<i>Viola graeca</i>	+	+	.	.	1	2	1	+	.	.	.	6	III
<i>Trinia frigida</i>	.	.	.	+	.	1	.	+	.	.	.	3	III
<i>Centaurea pichleri</i>	.	+	.	.	.	.	.	1	.	.	.	2	I
<i>Festuca polita</i>	.	.	1	.	.	.	2	.	.	.	.	2	I
<i>Paronychia albanica</i> subsp. <i>graeca</i>	.	.	.	.	+	.	.	.	.	.	1	2	I
<i>Veronica thymifolia</i>	.	1	.	.	.	.	.	1	.	.	.	2	I
<i>Minuartia confusa</i>	+	.	.	.	.	.	.	.	.	.	.	1	I
<i>Verbascum epixanthinum</i> var. <i>epixanthinum</i>	.	1	.	.	.	.	.	.	.	.	.	1	I
<i>Veronica erinoides</i>	.	.	.	.	.	.	.	.	.	.	+	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)													
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	+	1	+	.	+	.	1	.	+	1	1	8	IV
<i>Asyneuma limonifolium</i>	+	1	+	+	1	+	1	2	.	.	.	8	IV
<i>Carduus tmoleus</i>	+	1	.	.	+	+	1	.	+	2	.	7	IV
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	+	+	.	.	+	1	+	.	.	1	.	6	III
<i>Euphorbia herniariifolia</i>	.	1	.	1	1	1	.	1	.	.	.	5	III
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	+	.	.	.	.	+	+	+	4	II
<i>Carum meoides</i>	.	.	.	.	1	1	.	.	1	.	.	4	II
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	.	.	+	.	+	.	.	.	.	4	II
<i>Geranium subcaulescens</i>	.	.	.	.	+	1	.	.	.	1	.	3	II
<i>Thymus leucotrichus</i>	.	.	.	1	1	.	.	.	.	.	1	3	II
<i>Sesleria vaginalis</i>	.	.	2	2	.	.	.	.	2	.	.	3	II
<i>Carum graecum</i> subsp. <i>graecum</i>	.	.	.	1	.	.	.	.	.	1	.	2	I
<i>Myosotis sylvatica</i> subsp. <i>cyanea</i>	.	.	.	+	.	.	.	.	1	.	.	2	I
<i>Sesleria tenerrima</i>	.	.	.	.	.	1	.	1	.	.	.	2	I
<i>Koeleria mitrushi</i>	.	.	.	.	.	.	.	1	.	.	.	1	I
<i>Minuartia juniperina</i>	1	.	.	.	.	.	.	.	.	.	.	1	I
<i>Semperivium marmoreum</i>	1	.	.	.	.	.	.	.	.	.	.	1	I
Other species													
<i>Daphne oleoides</i>	2	3	2	+	2	2	3	3	2	2	.	10	V
<i>Ptilostemon afer</i>	.	.	.	+	.	+	.	+	+	.	+	5	III
<i>Rumex nebroides</i>	.	.	+	.	1	1	.	.	1	+	.	5	III
<i>Polygala nicaensis</i> subsp. <i>mediterranea</i>	.	1	.	.	+	+	.	.	+	.	.	4	II
<i>Sedum acre</i>	1	.	.	+	+	.	.	.	.	.	1	4	II
<i>Pilosella cymosa</i> subsp. <i>sabina</i>	.	.	.	.	1	2	.	.	+	.	.	3	II
<i>Pimpinella tragium</i> subsp. <i>tracium</i>	.	.	.	+	.	.	.	.	.	.	+	2	I
<i>Lotus stenodon</i>	.	1	.	.	.	.	.	.	.	1	.	2	I
<i>Galium cyllenum</i>	.	1	1	.	.	.	.	.	.	.	.	2	I
<i>Juniperus hemisphaerica</i>	.	.	+	.	.	.	.	.	.	.	1	2	I
<i>Astragalus depressus</i>	.	1	.	.	.	.	.	.	.	.	.	1	I
<i>Campanula albanica</i> subsp. <i>albanica</i>	.	.	.	.	.	.	1	.	.	.	.	1	I
<i>Campanula radicata</i>	+	.	.	.	.	.	.	.	.	.	.	1	I
<i>Dactylis hispanica</i>	.	1	.	.	.	.	.	.	.	.	.	1	I
<i>Drypis spinosa</i>	.	.	1	.	.	.	.	.	.	.	.	1	I
<i>Hieracium</i> sp.	+	.	.	.	.	.	.	.	.	.	.	1	I
<i>Leontodon asper</i>	+	.	.	.	.	.	.	.	.	.	.	1	I
<i>Ranunculus brevifolius</i>	.	1	.	.	.	.	.	.	.	.	.	1	I
<i>Veronica arvensis</i>	.	+	.	.	.	.	.	.	.	.	.	1	I

Localities and dates of relevés. Rel. 1: Mt. Killini, Mt. Simios - 05/07/06; rel. 2-11: Mt. Killini - Georgiadis & Dimopoulos [42] - Table 3.

Table A41. *Ranunculo brevifolii-Seslerietum tenerrimae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7		
Altitude (dam)	209	210	211	214	211	215	210		
Surface (m ²)	50	100	50	50	100	200	100		
Coverage (%)	80	90	70	70	80	35	40		
Slope (°)	30	40	20	30	20	10	15		
Exposition	NO	N	N	NO	S	S	S	Presences	Presence class
Char. Association									
<i>Sesleria tenerrima</i>	4	3	4	4	3	1	+	7	V
<i>Ranunculus brevifolius</i>	2	2	2	2	2	1	1	7	V
<i>Ranunculus sartorianus</i>	1	1	2	1	.	.	.	4	III
<i>Dianthus serratifolius</i> subsp. <i>abbreviatus</i>	.	.	+	+	+	.	.	3	III
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENED)									
<i>Taraxacum cylleneum</i>	.	+	+	+	+	.	.	4	III
<i>Asperula oetaea</i>	.	.	.	.	.	1	.	1	I
<i>Globularia stygia</i>	.	.	.	.	.	.	+	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)									
<i>Erodium chrysanthum</i>	.	.	.	.	.	2	3	2	II
<i>Acantholimon graecum</i>	.	.	.	.	.	+	.	1	I
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	.	.	.	.	.	.	1	1	I
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	.	.	.	.	.	.	1	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)									
<i>Cerastium candidissimum</i>	2	2	1	+	2	+	.	6	V
<i>Asperula boissieri</i>	.	1	1	+	1	1	.	5	IV
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	3	2	2	1	3	.	.	5	IV
<i>Galium thymifolium</i>	1	2	2	1	1	.	.	5	IV
<i>Poa thessala</i>	2	2	1	1	1	.	.	5	IV
<i>Veronica thymifolia</i>	1	+	+	+	+	.	.	5	IV
<i>Viola graeca</i>	1	2	1	1	2	.	.	5	IV
<i>Achillea umbellata</i>	1	1	1	1	.	.	.	4	III
<i>Trinia frigida</i>	.	.	.	.	.	.	+	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)									
<i>Carum graecum</i> subsp. <i>graecum</i>	1	2	1	+	+	.	.	5	IV
<i>Euphorbia herniariifolia</i>	1	1	+	+	+	.	.	5	IV
<i>Linum elegans</i>	1	1	2	1	+	.	.	5	IV
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	+	+	+	.	.	5	IV
<i>Minuartia stellata</i>	+	1	+	1	.	.	.	4	III
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	1	+	+	+	.	.	.	4	III
<i>Carum meoides</i>	.	+	+	1	1	.	.	4	III
<i>Galium incanum</i> subsp. <i>incanum</i>	.	1	1	1	1	.	.	4	III
<i>Geranium subcaulescens</i>	.	+	+	+	+	.	.	4	III
<i>Myosotis sylvatica</i> subsp. <i>cyanea</i>	.	+	+	+	+	.	.	4	III
<i>Draba lasiocarpa</i>	.	.	.	.	.	1	.	1	I
<i>Myosotis suaveolens</i>	.	.	.	.	.	+	.	1	I
<i>Thymus leucotrichus</i>	.	.	.	.	.	.	1	1	I
Other species									
<i>Daphne oleoides</i>	1	1	1	+	2	.	.	5	IV
<i>Rumex nebroides</i>	+	+	+	+	.	.	.	4	III
<i>Carex kitaibeliana</i>	.	1	1	+	.	.	.	3	III
<i>Valantia aprica</i>	.	+	+	.	+	.	.	3	III
<i>Campanula radicata</i>	.	+	+	.	.	.	.	2	II
<i>Campanula albanica</i> subsp. <i>albanica</i>	.	.	.	.	.	1	1	2	II
<i>Sedum magellense</i>	+	+	.	.	.	.	.	2	II
<i>Senecio squalidus</i>	+	.	.	.	+	.	.	2	II
<i>Galium cyllenium</i>	.	.	.	.	.	.	+	1	I
<i>Hieracium</i> sp.	.	.	.	.	.	.	1	1	I
<i>Ptilostemon afer</i>	.	.	.	.	+	.	.	1	I
<i>Ptilotrichium cyclocarpum</i> subsp. <i>cyclocarpum</i>	.	.	.	.	.	1	.	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Killini, Mt. Simios - 05/07/06; rel. 6-7: Mt. Killini, Quézel [35] - Table 20.

Table A42. *Astragaletum hellenico-erinacei* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6		
Altitude (dam)	154	163	163	162	144	146		
Surface (m ²)	100	100	50	50	50	50		
Coverage (%)	80	80	80	90	80	80		
Slope (°)	35	35	20	20	30	30	Presences	Presence class
Exposition	E	O	SO	SO	SO	SO		
Char. Association								
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	2	3	4	4	3	4	6	V
<i>Astragalus hellenicus</i>	+	.	.	+	1	1	4	IV
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENEI)								
<i>Festuca jeanpertiai</i> subsp. <i>achaica</i>	2	2	2	2	1	2	6	V
<i>Marrubium cylleneum</i>	1	+	1	+	+	1	6	V
<i>Sideritis clandestina</i> subsp. <i>peloponnesiaca</i>	1	2	1	1	+	1	6	V
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)								
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	+	+	+	+	+	+	6	V
<i>Eryngium multifidum</i>	2	1	2	1	2	1	6	V
<i>Allium achaium</i>	+	+	+	+	+	.	5	V
<i>Echinops tygeteus</i>	+	.	1	2	1	1	5	V
<i>Scutellaria rupestris</i> subsp. <i>rupestris</i>	.	+	+	+	+	+	5	V
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	.	.	2	2	+	1	4	IV
<i>Erysimum pusillum</i>	.	.	+	.	+	+	3	III
<i>Galium tygeteum</i>	.	.	.	.	+	+	2	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Asperula lutea</i>	2	+	+	+	1	+	6	V
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	1	1	+	+	+	+	6	V
<i>Cerastium candidissimum</i>	1	1	+	1	1	1	6	V
<i>Mimuartia attica</i> subsp. <i>attica</i>	+	1	+	+	+	1	6	V
<i>Ptercephalus perennis</i> subsp. <i>perennis</i>	2	2	1	+	1	+	6	V
<i>Stipa endotricha</i>	2	1	2	2	3	3	6	V
<i>Galium thymifolium</i>	+	+	+	.	1	+	5	V
<i>Podospermum canum</i> var. <i>alpinum</i>	+	+	+	+	+	.	5	V
<i>Silene radicata</i> subsp. <i>radicata</i>	1	+	.	+	+	1	5	V
<i>Fritillaria guicciardii</i>	+	+	.	+	.	+	4	IV
<i>Poa thessala</i>	.	1	.	+	+	+	4	IV
<i>Viola graeca</i>	.	.	.	+	+	+	3	III
<i>Erysimum pectinatum</i>	.	.	+	.	+	+	3	III
<i>Paronychia albanica</i> subsp. <i>graeca</i>	.	.	.	.	+	+	2	II
<i>Veronica thymifolia</i>	.	.	.	+	+	.	2	II
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Acinus alpinus</i> subsp. <i>meridionalis</i>	1	1	+	1	+	+	6	V
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	1	+	+	+	6	V
<i>Koeleria mitruthii</i>	.	2	2	2	1	2	5	V
<i>Bromus riparius</i>	1	1	+	1	1	1	6	V
<i>Draba lasiocarpa</i>	1	+	+	+	+	+	6	V
<i>Thymus leucotrichus</i>	+	1	1	2	+	1	6	V
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	+	+	+	+	6	V
<i>Asyneuma limonifolium</i>	+	+	.	.	+	+	5	V
<i>Campnula spathulata</i> subsp. <i>spathulata</i>	.	.	.	+	+	+	3	III
<i>Silene bupleuroides</i> subsp. <i>staticifolia</i>	.	.	+	+	.	.	2	II
<i>Sedum laconicum</i>	.	.	.	.	.	+	1	I
<i>Thymus chaubardii</i>	.	+	.	.	.	.	1	I
Other species								
<i>Lactuca viminea</i>	+	+	+	+	+	+	6	V
<i>Daphne oleoides</i>	1	1	+	2	1	+	6	V
<i>Leontodon asper</i>	1	1	+	+	+	1	6	V
<i>Melica ciliata</i>	+	+	+	+	+	+	6	V
<i>Teucrium capitatum</i>	.	1	1	+	1	+	5	V
<i>Micromeria juliana</i>	+	1	.	+	+	+	5	V
<i>Ononis pusilla</i>	+	+	.	+	+	+	5	V
<i>Convolvulus altheoides</i>	1	+	+	.	+	.	4	IV
<i>Colchicum graecum</i>	.	+	+	.	+	+	4	IV
<i>Petrorhagia illyrica</i> subsp. <i>illyrica</i>	.	.	.	+	+	+	3	III
<i>Phleum montanum</i>	.	.	+	1	1	.	3	III
<i>Ptilostemon afer</i>	.	.	.	+	+	+	3	III
<i>Stipa holosericea</i>	.	+	.	.	+	1	3	III
<i>Helictotrichon convolutum</i> subsp. <i>convolutum</i>	3	+	.	.	.	.	2	II
<i>Polygala nicaeensis</i> subsp. <i>mediterranea</i>	+	+	.	.	.	.	2	II
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	+	+	.	.	.	.	2	II
<i>Silene italica</i> subsp. <i>peloponnesiaca</i>	+	.	.	.	.	+	2	II
<i>Verbascum</i> sp.	.	+	.	.	+	.	2	II
<i>Allium sardoum</i>	.	+	.	.	.	.	1	I
<i>Euphorbia rigida</i>	+	.	.	.	.	.	1	I
<i>Malcolmia bicolor</i>	.	.	.	.	.	+	1	I

Localities and dates of relevés. Rel. 1-6: Mt. Menalon (near the top) - 01/07/06.

Table A44. *Arenario filicaulis-Festucetum cyllenicae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5		
Altitude (dam)	155	156	157	157	157		
Surface (m ²)	100	100	40	100	100		
Coverage (%)	70	70	50	90	70		
Slope (°)	30	40	70	30	30	Presences	Presence class
Exposition	N	N	NO	N	N		
Char. Association							
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	4	3	2	3	3	5	V
<i>Arenaria filicaulis</i> subsp. <i>filicaulis</i>	1	1	2	1	+	5	V
<i>Ranunculus psilostachys</i>	1	1	+	2	1	5	V
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENEI)							
<i>Festuca jeanpertia</i> subsp. <i>achaica</i>	1	2	1	2	2	5	V
<i>Marrubium cylleneum</i>	+	+	.	.	+	3	III
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)							
<i>Geocaryum peloponnesiacum</i>	3	2	1	2	1	5	V
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	2	2	+	2	1	5	V
<i>Astragalus rumelicus</i> subsp. <i>taygeticus</i>	2	2	1	2	2	5	V
<i>Avenochloa agropyroides</i>	2	1	+	1	+	5	V
<i>Eryngium multifidum</i>	1	2	+	2	1	5	V
<i>Galium taygeteum</i>	+	+	.	+	+	4	IV
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	.	.	2	2	+	3	III
<i>Allium achaium</i>	+	.	.	+	+	3	III
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Crepis fraasii</i> subsp. <i>fraasii</i>	+	+	+	+	+	5	V
<i>Erysimum pectinatum</i>	+	1	.	+	+	4	IV
<i>Minuartia attica</i> subsp. <i>attica</i>	.	+	1	1	1	4	IV
<i>Cerastium candidissimum</i>	.	+	+	.	1	3	III
<i>Trinia frigida</i>	+	+	+	.	.	3	III
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	.	+	.	.	+	2	II
<i>Erysimum cephalonicum</i>	.	.	.	+	+	2	II
<i>Poa thessala</i>	.	+	.	.	.	1	I
<i>Podospermum canum</i> var. <i>alpinum</i>	.	.	.	+	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Asyneuma limonifolium</i>	1	+	1	1	1	5	V
<i>Aubrieta deltoidea</i> subsp. <i>intermedia</i>	1	1	+	1	+	5	V
<i>Geranium subcaulescens</i>	2	2	2	1	2	5	V
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	+	+	.	+	+	4	IV
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	.	+	+	4	IV
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	1	+	.	1	+	4	IV
<i>Morina persica</i>	+	+	.	+	+	4	IV
<i>Koeleria mitrushi</i>	.	.	1	.	+	2	II
<i>Thymus chaubardii</i>	+	.	.	.	.	1	I
<i>Myosotis sylvatica</i> subsp. <i>cyanea</i>	.	.	.	.	+	1	I
Other species							
<i>Allium sardoum</i>	+	+	+	+	+	5	V
<i>Poa bulbosa</i>	1	+	+	1	2	5	V
<i>Poa timoleontis</i>	1	2	1	2	1	5	V
<i>Taraxacum minimum</i>	1	+	+	1	+	5	V
<i>Carduus nutans</i> subsp. <i>scabrisquamus</i>	+	1	.	+	1	4	IV
<i>Malcolmia bicolor</i>	+	+	+	.	1	4	IV
<i>Muscari neglectum</i>	+	+	.	+	+	4	IV
<i>Ptilostemon afer</i>	1	+	.	+	+	4	IV
<i>Allium</i> sp.	1	+	.	+	+	4	IV
<i>Astragalus depressus</i>	+	+	.	+	.	3	III
<i>Crocus</i> sp.	+	+	.	+	.	3	III
<i>Silene</i> sp.	.	.	2	+	+	3	III
<i>Sedum tenuifolium</i>	.	+	.	.	+	2	II
<i>Valeriana tuberosa</i>	.	.	.	+	+	2	II
<i>Daphne oleoides</i>	.	+	.	.	.	1	I
<i>Geranium pyrenaicum</i>	+	.	.	.	.	1	I
<i>Sedum album</i>	+	.	.	.	.	1	I
<i>Teucrium chamaedrys</i>	.	.	.	.	1	1	I
<i>Verbascum</i> sp.	+	.	.	.	.	1	I

Localities and dates of relevés. Rel. 1-5: Mt Panachaiko -01.06.07.

Table A45. *Aurinio moreanae-Lomelosietum crenatae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8		
Altitude (dam)	162	161	163	165	161	167	168	164		
Surface (m ²)	100	50	50	50	50	50	50	50		
Coverage (%)	60	70	60	70	50	60	70	70		
Slope (°)	40	50	50	30	70	70	80	15		
Exposition	N	N	N	N	N	NO	NO	O	Presence	Presence class
Char. Association										
<i>Lomelosia crenata</i> subsp. <i>crenata</i>	2	2	1	1	3	2	2	2	8	V
<i>Aurinia moreana</i>	+	2	1	1	+	2	1	.	7	V
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENEI)										
<i>Festuca jeanperthii</i> subsp. <i>achaica</i>	2	2	2	1	1	3	2	3	8	V
<i>Marrubium cylleneum</i>	+	.	+	.	.	.	+	.	3	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)										
<i>Astragalus angustifolius</i> subsp. <i>erinaeus</i>	2	2	2	3	1	2	1	3	8	V
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	1	+	+	2	+	2	2	2	8	V
<i>Astragalus rumelicus</i> subsp. <i>taigeticus</i>	1	+	+	1	1	+	+	1	8	V
<i>Crepis incana</i>	1	2	1	2	1	1	1	2	8	V
<i>Eryngium multifidum</i>	+	+	+	+	+	1	+	1	8	V
<i>Geocaryum peloponnesiacum</i>	+	1	1	+	+	+	+	+	8	V
<i>Allium achaium</i>	+	+	+	+	.	+	+	+	7	V
<i>Erodium chrysanthum</i>	.	.	+	1	.	.	.	3	3	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)										
<i>Achillea umbellata</i>	2	3	2	2	2	1	1	1	8	V
<i>Asperula lutea</i>	1	1	+	+	1	1	1	1	8	V
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	1	1	1	1	+	+	2	1	8	V
<i>Cerastium candidissimum</i>	2	1	1	1	1	1	+	1	8	V
<i>Erysimum cephalonicum</i>	1	+	1	+	+	1	2	1	8	V
<i>Minuartia attica</i> subsp. <i>attica</i>	2	1	1	2	1	2	2	2	8	V
<i>Ptercephalus perennis</i> subsp. <i>perennis</i>	+	+	1	1	+	2	+	2	8	V
<i>Galium thymifolium</i>	.	1	+	+	.	2	1	+	6	IV
<i>Poa thessala</i>	.	.	+	+	1	2	1	+	6	IV
<i>Centaurea pichleri</i>	1	+	+	1	+	.	.	.	5	IV
<i>Podospermum canum</i> var. <i>alpinum</i>	.	+	+	+	.	.	.	+	4	III
<i>Stipa endotricha</i>	.	.	.	.	.	+	+	+	3	II
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	.	+	.	.	.	.	.	.	1	I
<i>Trinia frigida</i>	.	.	.	.	1	.	.	.	1	I
<i>Verbascum epixanthinum</i> var. <i>epixanthinum</i>	.	.	.	.	.	.	+	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)										
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	1	2	2	+	1	2	1	1	8	V
<i>Anthemis cretica</i> subsp. <i>cretica</i>	2	2	2	2	+	1	2	1	8	V
<i>Asyneuma limonifolium</i>	1	1	1	1	1	+	+	1	8	V
<i>Bromopsis laconica</i>	2	2	2	2	1	2	2	1	8	V
<i>Koeleria mitrushi</i>	1	2	2	1	+	2	2	2	8	V
<i>Draba lasiocarpa</i>	1	1	1	+	1	1	2	1	8	V
<i>Silene bupleuroides</i> subsp. <i>steticifolia</i>	.	+	+	+	.	1	+	1	6	IV
<i>Dianthus integer</i> subsp. <i>minutiflorus</i>	.	+	+	.	.	1	+	+	5	IV
<i>Thymus chaubardii</i>	2	1	+	.	.	.	1	+	5	IV
<i>Achillea fraasii</i>	1	1	1	+	+	.	.	.	5	IV
<i>Carduus tmoleus</i>	+	+	.	.	+	.	+	.	4	III
<i>Minuartia stellata</i>	.	.	+	+	.	+	+	.	4	III
<i>Aubrieta deltoidea</i> var. <i>integrifolia</i>	.	.	.	.	.	+	+	.	2	II
<i>Euphorbia herniariifolia</i>	.	.	.	.	.	.	+	.	1	I
<i>Geranium subcaulescens</i>	.	.	.	.	.	.	1	.	1	I
<i>Achillea holosericea</i>	.	.	.	.	.	.	.	+	1	I
Other species										
<i>Malcolmia bicolor</i>	+	+	+	+	+	+	+	+	8	V
<i>Leontodon asper</i>	2	1	2	1	1	+	1	+	8	V
<i>Lactuca viminea</i>	1	+	1	1	+	1	+	+	8	V
<i>Sedum album</i>	1	1	+	+	+	+	+	.	7	V
<i>Poa timoleonis</i>	+	+	.	.	+	+	+	2	6	IV
<i>Sedum tenuifolium</i>	+	+	.	.	.	+	+	+	5	IV
<i>Ornithogalum montanum</i>	+	+	1	1	.	.	.	1	5	IV
<i>Sedum acre</i>	.	.	.	+	.	+	+	1	4	III
<i>Allium sardoum</i>	+	+	.	.	.	.	+	+	4	III
<i>Muscari botryoides</i>	.	.	.	.	.	+	+	+	3	III
<i>Acinos arvensis</i>	.	.	1	+	.	.	+	.	3	III
<i>Stipa holosericea</i>	.	.	.	.	.	.	2	1	2	II
<i>Ptilostemon afer</i>	+	.	.	+	.	.	.	.	2	II
<i>Silene conica</i>	.	.	.	+	.	.	.	.	1	I
<i>Peucedanum longifolium</i>	.	.	+	.	.	.	.	.	1	I
<i>Astragalus depressus</i>	.	+	.	.	.	.	.	.	1	I

Localities and dates of relevés. Rel. 1-7: Mt. Klokos -02/06/07; rel. 8: Mt. Klokos -30/06/07.

Table A46. *Onosmo malickyi*-*Astragaletum hellenici* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7		
Altitude (dam)	130	131	132	133	134	131	130		
Surface (m ²)	50	50	50	30	50	50	50		
Coverage (%)	45	70	70	40	80	60	60		
Slope (°)	25	15	30	20	30	30	30		
Exposition	O	O	O	O	O	NO	N	Presences	Presence class
Char. Association									
<i>Onosma erecta</i> subsp. <i>malickyi</i>	1	2	1	1	1	+	2	7	V
<i>Astragalus hellenicus</i>	3	3	2	3	2	3	2	7	V
<i>Alyssum murale</i>	2	1	2	+	3	1	1	7	V
Char. All (FESTUCO ACHAICAE-MARRUBION CYLLENEI)									
<i>Festuca jeanpertii</i> subsp. <i>achaica</i>	2	2	2	1	3	2	3	7	V
<i>Astragalus calavrytensis</i>	.	.	+	.	1	1	1	4	III
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)									
<i>Centaurea affinis</i> subsp. <i>laconiae</i>	+	1	+	+	+	1	+	7	V
<i>Geocaryum peloponnesiacum</i>	+	1	+	+	+	1	1	7	V
<i>Eryngium multifidum</i>	.	.	.	2	+	.	.	2	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)									
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	1	1	1	+	1	+	+	7	V
<i>Helianthemum hymettium</i>	2	1	2	1	2	1	1	7	V
<i>Leontodon graecus</i>	1	+	+	+	+	1	+	7	V
<i>Nepeta argolica</i> subsp. <i>argolica</i>	.	.	.	.	.	.	+	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)									
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	1	2	2	1	2	2	2	7	V
<i>Anthemis cretica</i> subsp. <i>cretica</i>	1	1	2	+	2	1	1	7	V
<i>Bromopsis lacmonica</i>	1	+	+	+	+	+	.	6	V
<i>Asyneuma limonifolium</i>	.	.	+	+	1	+	+	5	IV
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	+	.	.	+	.	+	.	3	III
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	.	.	.	.	.	+	+	2	II
<i>Pimpinella tragium</i> subsp. <i>tragium</i>	.	.	.	.	.	.	+	1	I
Other species									
<i>Convolvulus elegantissimus</i>	1	1	1	1	1	+	+	7	V
<i>Dorycnium herbaceum</i>	2	1	1	2	1	+	+	7	V
<i>Medicago lupulina</i>	1	3	2	+	2	1	+	7	V
<i>Poa bulbosa</i>	+	2	1	+	2	1	1	7	V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	+	+	+	.	+	+	+	6	V
<i>Saponaria calabrica</i>	+	+	1	+	+	.	+	6	V
<i>Teucrium capitatum</i>	1	2	2	1	1	+	.	6	V
<i>Lathyrus grandiflorus</i>	2	2	+	2	1	.	.	5	IV
<i>Ononis pusilla</i>	.	.	+	+	+	+	+	5	IV
<i>Carex kitaibeliana</i>	.	.	+	.	+	+	+	4	III
<i>Astragalus monspessulanus</i>	.	2	.	.	.	.	1	2	II
<i>Lotus corniculatus</i>	.	.	.	.	.	1	+	2	II
<i>Ptilostemon afer</i>	1	+	.	.	.	.	.	2	II
<i>Veronica</i> sp.	1	.	.	.	.	+	.	2	II
<i>Helianthemum nummularium</i> subsp. <i>nummularium</i>	.	.	.	.	.	.	+	1	I
<i>Pilosella cimosia</i> subsp. <i>sabina</i>	.	.	.	.	.	.	1	1	I
<i>Scleranthus marginatus</i>	.	.	.	.	.	+	.	1	I
<i>Stipa holosericea</i>	.	.	.	.	+	.	.	1	I

Localities and dates of relevés. Rel. 1-7: Mt. Chelmos, Mavros Logos - 03/06/07.

Table A47. *Violo grecae-Festucetum cyllenicae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Altitude (dam)	205	207	209	208	207	209	175	201	230	230	220	220	207	224	226					
Surface (m ²)	100	100	50	50	100	100	100	100	100	100	100	100	100	50	100					
Coverage (%)	80	80	70	70	80	60	80	70	60	65	70	75	70	80	80	70				
Slope (°)	15	20	20	15	20	10	25	30	15	20	25	30	30	20	10	15	Presence class			
Exposition	N	N	N	N	SO	O	N	O	S	N	N	NO	SO	N	O	O	Presence class			
Char. Associatio n																				
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	5	5	4	4	4	4	4	4	4	3	4	3	2	4	5	16	V			
<i>Viola grecae</i>	2	2	2	3	+	1	1	1	2	1	1	.	.	.	2	+	2	14	V	
<i>Omalotheca oligophylla</i>	2	2	1	1	2	+	1	1	1	1	+	.	11	IV	
Char. Ail. (FESTUCO ACHAICAE-MARRUBION CYLLENIS)																				
<i>Festuca janpersii</i> subsp. <i>achaea</i>	+	+	+	+	+	1	2	+	1	.	1	.	2	2	1	1	14	V		
<i>Astragalus calavryensis</i>	+	1	.	.	1	.	1	1	+	.	.	1	1	+	.	.	9	III		
<i>Marrubium cyllenium</i>	1	+	.	+	1	.	1	+	.	.	.	.	.	+	.	.	7	III
<i>Sideritis clandestina</i> subsp. <i>peloponnesiaca</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1	1
Char. Ord. (ERYNGIO MULTIFIDI-ARMERETALIA ORPHANIS)																				
<i>Allium frigidum</i>	1	+	1	1	1	+	1	+	.	.	.	.	.	1	1	.	11	IV
<i>Astragalus angustifolius</i> subsp. <i>erinaeus</i>	1	1	+	+	2	+	1	.	+	.	.	.	.	+	1	2	11	IV
<i>Galium talygetum</i>	1	+	+	+	+	1	2	1	+	.	.	.	.	+	.	.	10	IV
<i>Eryngium multifidum</i>	+	+	+	+	+	+	1	+	+	.	.	.	.	+	.	.	9	III
<i>Geocaryum peloponnesiacum</i>	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	4	II
<i>Ameria orphanidis</i>	.	.	.	.	.	.	.	.	+	1	.	.	.	.	.	.	3	1
<i>Acantholimon graecum</i>	.	.	.	.	1	.	.	1	.	.	.	.	.	.	.	.	3	1
<i>Erodium chrysanthum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1
<i>Cirsium hypopsidium</i>	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	1
Char. Class (CERASTIO CANDISSIMI-STRAGALETEA RUMELICI)																				
<i>Poa thessala</i>	1	1	1	+	1	2	1	+	1	.	2	1	1	2	2	1	15	V		
<i>Censtium candidissimum</i>	2	2	1	1	2	1	2	1	2	1	1	.	1	1	.	1	14	V		
<i>Galium thymifolium</i>	.	.	+	+	+	.	.	.	.	1	.	.	.	1	2	1	10	IV
<i>Trinia frigidula</i>	+	+	.	1	1	1	+	.	.	.	.	.	.	.	+	1	10	IV
<i>Erysimum cephalonicum</i>	.	.	.	.	.	.	1	+	1	.	.	.	.	+	+	.	8	III
<i>Mnuartia attica</i> subsp. <i>attica</i>	.	.	.	.	.	.	1	.	1	1	1	.	1	2	1	8	III	
<i>Veronica thymifolia</i>	+	+	+	+	+	.	.	.	.	.	.	.	.	.	.	.	8	III
<i>Pedopernum canum</i> var. <i>alpinum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	.	7	II
<i>Mnuartia confusa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	II
<i>Verbascum epianthum</i> var. <i>epianthum</i>	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	II
<i>Centaurea picchleri</i>	.	.	.	.	.	.	.	.	.	.	.	1	.	+	.	.	4	II
<i>Asperula boissieri</i>	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	2	1
<i>Asperula lutea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1
<i>Draba lacinae</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
<i>Hemiarum parnassica</i> subsp. <i>parnassica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
<i>Leontodon graecus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
<i>Lysimachia serpyllifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
<i>Trinia guccardii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
Diff. Class (CERASTIO CANDISSIMI-STRAGALETEA RUMELICI)																				
<i>Asyneura limnifolium</i>	1	1	+	+	1	+	+	+	+	.	.	.	.	+	1	+	13	V
<i>Carduus imoleus</i>	+	+	1	+	+	+	+	+	+	.	.	.	.	.	.	.	11	IV
<i>Campánula spathulata</i> subsp. <i>spathulata</i>	.	.	.	.	.	.	.	.	.	.	.	1	1	1	+	1	10	IV
<i>Sesleria tenerima</i>	.	.	+	2	1	.	1	3	1	2	2	1	10	IV
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8	III
<i>Achillea alpinum</i> subsp. <i>meridionale</i>	.	.	.	.	.	.	.	.	1	+	.	.	1	1	+	.	7	III
<i>Dianthus integer</i> subsp. <i>minutiflorus</i>	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	6	II
<i>Mnuartia juniperina</i>	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	6	II
<i>Morina persica</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	6	II
<i>Thymus leucotrichus</i>	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	6	II
<i>Euphorbia hemicarphaea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	II
<i>Ranunculus sartorius</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	II
<i>Sedum leucocaulum</i>	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	4	II
<i>Koeleria minor</i>	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	3	1
<i>Anthemis cretica</i> subsp. <i>cretica</i>	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	2	1
<i>Aubrieta deltoidea</i> var. <i>integrifolia</i>	.	.	.	.	.	.	.	.	.	1	.	.	1	.	.	.	2	1
<i>Bromopsis lacmonica</i>	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	2	1
<i>Myosotis suaveolens</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1
<i>Linaria peloponnesiaca</i>	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
<i>Silene bupleuroides</i> subsp. <i>staticifolia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
Other species																				
<i>Taraxacum gracile</i>	1	+	+	+	+	+	+	+	+	.	.	.	.	.	.	.	12	IV
<i>Juniperus hemisphaerica</i>	+	+	.	.	+	1	.	.	1	1	3	3	.	.	.	.	10	IV
<i>Genium macrostylum</i>	1	+	+	+	1	.	.	.	+	+	.	.	.	.	.	.	9	III
<i>Daphne oleoides</i>	.	.	.	.	.	1	.	.	.	.	1	2	2	.	.	.	8	III
<i>Muscari neglectum</i>	.	.	.	.	.	1	.	.	1	.	.	.	.	.	.	.	8	III
<i>Polygala nicaeensis</i> subsp. <i>mediterranea</i>	.	.	.	.	.	1	.	.	1	.	.	.	.	.	.	.	8	III
<i>Tulipa australis</i>	+	+	+	+	+	.	.	.	.	.	.	.	.	.	.	.	8	III
<i>Gagea villosa</i>	+	+	+	+	+	.	.	.	.	.	.	.	.	.	.	.	6	II
<i>Bupleurum fakatum</i> subsp. <i>ceruum</i>	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	5	II
<i>Mnuartia confusa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	II
<i>Sedum album</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	II
<i>Silene multicaulis</i> subsp. <i>multicaulis</i>	.	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	4	II
<i>Dactylis glomerata</i>	.	.	.	.	.	.	.	.	.	2	1	.	1	.	.	.	3	1
<i>Makolmia bicolor</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	1
<i>Ranunculus brevifolius</i>	1	.	.	.	.	.	.	.	2	.	.	.	2	.	.	.	3	1
<i>Senecio vernalis</i>	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	3	1
<i>Euphorbia myrsinites</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1
<i>Pulsatilla cmosa</i> subsp. <i>sabina</i>	+	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	2	1
<i>Beris saxatilis</i> subsp. <i>saxatilis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	2	1
<i>Laserpitium pseudocum</i>	.	.	.	.	.	.	.	.	.	1	+	.	.	.	.	.	2	1
<i>Peucedanum</i> sp.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1
<i>Pulsatilla leucopsida</i> subsp. <i>pilioquama</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1	1
<i>Hippocrepis comosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
<i>Lotus stendon</i>	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	1
<i>Scabiosa ochroleuca</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
<i>Silene auriculata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
<i>Trifolium parnassii</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1	1
<i>Vulnaria aprica</i>	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1	1

Localities and dates of relevés. Rel.19-Mt. Chelmos, Poulou Vrisi-03/06/07; rel.10-B.Mt. Chelmos, Quezel&Katrassia [40]-Tab. 3, rel.10-B; rel.14-B; Mt. Chelmos, Poulou Vrisi-01/07/07; rel.16-Mt. Chelmos, PaikKorfi-01/07/07.

Table A48. *Tripodio graeci-Helictotrichetum heldreichii* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8		
Altitude (dam)	143	146	144	145	142	140	150	152		
Surface (m ²)	50	30	50	50	50	50	100	100		
Coverage (%)	60	50	60	80	60	80	90	80	Presences	Presence class
Slope (°)	30	30	30	25	30	30	15	20		
Exposition	S	S	S	S	S	S	E	E		
Char. Association										
<i>Helictotrichon convolutum</i> subsp. <i>convolutu</i>	4	3	2	2	1	4	3	4	8	V
<i>Tripodion graecum</i>	3	2	3	2	2	2	1	+	8	V
Char. All. (FESTUCO ACHAICAE-MARRUBION CYLLENEI)										
<i>Festuca jeanpertii</i> subsp. <i>achaica</i>	2	2	2	2	2	2	2	2	8	V
<i>Sideritis clandestina</i> subsp. <i>peloponnesia ca</i>	.	+	+	2	.	.	.	.	3	II
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)										
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	+	+	1	1	+	+	+	1	8	V
<i>Eryngium multifidum</i>	1	1	2	2	1	2	2	3	8	V
<i>Galium taygeteum</i>	1	+	1	+	1	1	+	+	8	V
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	+	.	+	.	2	1	2	2	6	IV
<i>Avenochloa agropyroides</i>	.	.	.	.	.	.	2	2	2	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)										
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	1	1	1	1	+	1	1	1	8	V
<i>Minuartia attica</i> subsp. <i>attica</i>	2	2	2	2	1	3	1	2	8	V
<i>Poa thessala</i>	1	1	1	1	+	1	1	2	8	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	+	2	1	1	+	+	2	1	8	V
<i>Cerastium candidissimum</i>	+	.	1	1	+	1	2	1	7	V
<i>Stipa endotricha</i>	+	1	1	1	.	1	4	3	7	V
<i>Astragalus hellenicus</i>	.	.	.	4	3	+	.	.	3	II
<i>Fritillaria guicciardii</i>	.	.	.	.	.	.	+	+	2	II
<i>Podospermum canum</i> var. <i>alpinum</i>	.	.	.	.	.	.	+	+	2	II
<i>Centaurea pichleri</i>	.	.	.	.	.	.	.	+	1	II
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)										
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	2	1	2	1	1	1	1	1	8	V
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	1	1	+	1	+	1	8	V
<i>Carduus tmoleus</i>	+	.	+	1	+	+	1	+	7	V
<i>Koeleria mitrushi</i>	.	+	1	+	+	1	1	+	7	V
<i>Draba lasiocarpa</i>	+	+	+	+	.	.	+	+	6	IV
<i>Campanula spathulata</i> subsp. <i>spathulata</i>	.	.	.	.	.	+	+	+	3	II
<i>Bromus riparius</i>	.	.	.	.	.	.	1	1	2	II
<i>Silene bupleuroides</i> subsp. <i>staticifolia</i>	.	.	.	.	.	.	1	+	2	II
Others species										
<i>Anthyllis vulneraria</i> subsp. <i>praepropera</i>	1	+	+	+	+	1	+	+	8	V
<i>Convolvulus altheoides</i>	1	1	2	1	1	+	1	1	8	V
<i>Leontodon asper</i>	1	1	1	1	+	1	2	2	8	V
<i>Medicago lupulina</i>	1	1	+	1	1	1	+	+	8	V
<i>Micromeria juliana</i>	2	1	1	1	1	1	1	1	8	V
<i>Ononis pusilla</i>	1	1	1	1	+	1	+	+	8	V
<i>Polygala nicaeensis</i> subsp. <i>mediterranea</i>	2	1	2	2	1	1	2	2	8	V
<i>Sanguisorba minor</i> subsp. <i>verrucosa</i>	+	+	+	+	+	+	+	+	8	V
<i>Brachypodium retusum</i>	1	+	2	1	1	1	+	.	7	V
<i>Astragalus monspessulanus</i>	+	2	+	+	+	.	+	.	6	IV
<i>Euphorbia rigida</i>	1	+	.	+	.	+	1	1	6	IV
<i>Geranium macrostylum</i>	.	.	+	+	+	.	1	+	5	IV
<i>Petrorhagia illyrica</i> subsp. <i>illyrica</i>	+	+	+	.	.	.	+	+	5	IV
<i>Silene italica</i> subsp. <i>peloponnesia ca</i>	+	+	+	1	.	.	+	.	5	IV
<i>Pilosella cimos</i> subsp. <i>sabina</i>	+	.	+	+	.	.	.	.	3	II
<i>Carex macrolepis</i>	2	2	.	.	.	.	.	.	2	II
<i>Onosma heterophylla</i>	.	.	+	+	.	.	.	.	2	II
<i>Verbascum</i> sp.	.	.	.	.	.	.	+	1	2	II
<i>Ranunculus</i> sp.	.	.	.	.	.	.	.	+	1	I
<i>Thesium bergeri</i>	.	.	.	.	.	.	.	+	1	I

Localities and dates of relevés. Rel. 1-8: Mt. Menalon, 04/06/07.

Table A50. *Danthoniastro compacti-Fumanetum alpinae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6		
Altitude (dam)	170	170	171	171	170	170		
Surface (m ²)	40	50	50	50	100	100		
Coverage (%)	40	60	60	60	50	40		
Slope (°)	5	10	10	10	10	10		
Exposition	NE	E	E	E	S	SE	Presences	Presence class
Char. Association								
<i>Fumana paphlagonica</i> subsp. <i>alpina</i>	3	3	2	3	3	2	6	V
<i>Danthoniastrum compactum</i>	1	+	2	2	2	2	6	V
Char. All. (SIDERITIDO CLANDESTINAE-ASPERULION MUNGIERI)								
<i>Asperula mungieri</i>	2	2	2	1	2	1	6	V
<i>Anthemis laconica</i>	1	1	+	1	+	1	6	V
<i>Asperula boryana</i>	.	1	1	1	1	1	5	V
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)								
<i>Astragalus angustifolius</i> subsp. <i>erinaeus</i>	1	+	+	1	1	+	6	V
<i>Armeria orphanidis</i>	.	+	+	.	1	1	4	IV
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Helianthemum hymettium</i>	2	3	3	2	2	2	6	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	1	2	2	2	2	1	6	V
<i>Teucrium montanum</i> var. <i>parnassicum</i>	2	1	2	1	1	2	6	V
<i>Cerastium candidissimum</i>	1	+	+	1	+	+	6	V
<i>Stipa endotricha</i>	1	2	1	1	1	1	6	V
<i>Minuartia attica</i> subsp. <i>attica</i>	+	1	+	1	+	+	6	V
<i>Poa thessala</i>	1	1	1	1	1	+	6	V
<i>Paronychia albanica</i> subsp. <i>graeca</i>	+	+	+	+	+	+	6	V
<i>Minuartia confusa</i>	+	+	1	2	+	+	6	V
<i>Achillea umbellata</i>	+	.	+	+	.	.	3	III
<i>Trinia frigida</i>	.	.	.	.	+	+	2	II
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)								
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	2	3	2	2	1	2	6	V
<i>Koeleria mitrushii</i>	2	2	2	2	2	2	6	V
<i>Bromus riparius</i>	1	+	1	1	+	1	6	V
<i>Morina persica</i>	+	1	1	1	1	+	6	V
<i>Dianthus viscidus</i> var. <i>viscidus</i>	1	+	+	1	+	.	5	V
<i>Euphorbia herniariifolia</i>	+	+	+	+	.	.	4	IV
<i>Draba lasiocarpa</i>	+	+	+	+	.	.	4	IV
<i>Thymus leucotrichus</i>	.	1	1	.	+	.	3	III
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	.	+	.	.	3	III
<i>Silene bupleuroides</i> subsp. <i>staticifolia</i>	.	.	.	.	1	1	2	II
Other species								
<i>Carex macrolepis</i>	2	1	1	2	1	1	6	V
<i>Daphne oleoides</i>	+	1	+	+	+	.	5	V
<i>Juniperus hemisphaerica</i>	+	1	1	1	.	.	4	IV
<i>Sedum tenuifolium</i>	+	+	+	.	.	.	3	III
<i>Anthyllis vulneraria</i> subsp. <i>praepropera</i>	+	.	.	+	+	.	3	III

Localities and dates of relevés. Rel. 1-6: Mt. Taygetos - 27.06.06.

Table A52. Rindero graecae-Acantholimetum graeci Quézel 1964 corr.

Relevé number	1	2	3	4	5	6	7	8	9	10	11	12			
Altitude (dam)	239	227	226	225	224	230	225	225	235	230	230	230			
Surface (m ²)	100	100	100	100	100	200	200	200	200	200	200	200			
Coverage (%)	20	70	70	60	60	45	50	50	50	50	40	30			
Slope (°)	40	40	10	30	30	35	40	40	40	45	35	40	Presences	Presence class	
Exposition	NO	N	N	E	E	S	W	SE	E	W	W	E			
Char. Association															
<i>Sesleria vaginalis</i>	2	4	+	2	2	1	1	2	3	.	2	2	11	V	
<i>Jurinea taygetea</i>	.	.	.	2	3	.	.	.	.	.	.	1	3	II
<i>Minuartia condensata</i>	.	1	.	+	+	.	.	.	.	.	.	.	3	II
<i>Campanula papillosa</i>	.	.	.	+	.	.	.	.	1	.	.	.	2	I
<i>Erigeron epiroticus</i>	.	.	1	.	1	.	.	.	.	.	.	.	2	I
<i>Aethionema carlsbergii</i>	+	.	+	.	.	.	.	.	.	.	.	.	2	I
<i>Alyssum taygeteum</i>	.	.	.	.	.	.	.	1	.	.	.	.	1	I
<i>Bupleurum sibthorpiatum</i>	.	+	.	.	.	.	.	.	.	.	.	.	1	I
Char. All. (SIDERITIDO CLANDESTINAE-ASPERULION MUNGIERI)															
<i>Asyneuma psaridis</i>	.	.	.	+	+	+	1	.	+	1	.	1	7	III	
<i>Asperula mungieri</i>	.	.	+	+	+	.	1	.	+	+	+	.	7	III	
<i>Asperula boryana</i>	1	1	1	.	+	.	.	.	.	.	.	.	4	II
<i>Sideritis clandestina</i> subsp. <i>clandestina</i>	+	.	.	+	.	.	.	1	.	.	.	.	3	II
<i>Achillea taygetea</i>	.	.	.	+	.	.	.	1	+	.	.	.	3	II	
<i>Anthemis laconica</i>	.	+	+	.	.	.	.	.	.	.	.	.	2	I
<i>Phitosis crocifolia</i>	.	.	+	+	.	.	.	.	.	.	.	.	2	I
<i>Crepis heldreichiana</i>	.	.	.	+	.	.	.	.	.	.	.	.	1	I
<i>Scabiosa taygetea</i> subsp. <i>taygetea</i>	.	.	.	.	.	.	.	.	.	1	.	.	1	I
<i>Astragalus taygeteus</i>	.	.	.	.	1	.	.	.	.	.	.	.	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)															
<i>Acantholimon graecum</i>	.	+	+	3	2	1	2	2	2	.	+	2	10	V	
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	.	.	3	1	+	1	2	1	2	2	2	2	10	V	
<i>Noccea graeca</i>	.	+	+	+	1	.	1	.	+	1	1	1	9	IV	
<i>Rindera graeca</i>	.	+	.	+	+	+	2	1	.	1	.	1	8	IV	
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	.	+	.	+	+	.	1	.	+	.	.	.	6	III	
<i>Geocaryum peloponnesiacum</i>	1	+	.	.	.	.	.	2	.	.	.	.	3	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)															
<i>Cerastium candidissimum</i>	.	1	+	2	1	1	.	1	1	1	1	1	10	V	
<i>Festuca cyllenica</i> subsp. <i>cyllenica</i>	.	1	1	1	1	3	1	.	+	1	1	+	10	V	
<i>Veronica thymifolia</i>	+	.	1	.	+	1	.	+	1	.	+	+	8	IV	
<i>Minuartia attica</i> subsp. <i>attica</i>	.	.	+	.	+	+	1	.	1	+	.	+	7	III	
<i>Fritillaria guicciardii</i>	.	+	.	+	+	.	1	1	.	.	.	.	7	III
<i>Poa thessala</i>	+	2	2	1	1	.	.	.	.	.	.	1	6	III
<i>Hieracium lazistanum</i> subsp. <i>leithneri</i>	.	1	+	+	+	.	.	.	.	.	.	.	4	II
<i>Galium citraceum</i>	.	.	.	+	+	.	.	1	.	.	.	.	3	II
<i>Trinia guicciardii</i>	.	.	.	+	.	.	1	.	.	.	.	.	2	I
<i>Paronychia albanica</i> subsp. <i>graeca</i>	.	.	+	.	.	.	.	.	.	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)															
<i>Draba lasiocarpa</i>	.	+	+	.	+	1	.	.	.	.	1	1	6	III
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	.	.	+	.	1	.	+	1	1	.	.	+	6	III	
<i>Euphorbia herniariifolia</i>	+	+	+	+	+	.	.	.	.	.	.	.	5	III
<i>Minuartia juniperina</i>	.	.	+	2	2	+	.	+	.	.	.	.	5	III
<i>Sedum laconicum</i>	.	.	.	1	+	+	.	+	.	.	.	.	4	II
<i>Galium incanum</i> subsp. <i>incanum</i>	.	.	+	.	.	.	+	1	.	.	1	.	4	II	
<i>Bromus riparius</i>	.	1	+	2	.	.	.	.	.	.	.	.	3	II
<i>Campanula spathulata</i>	.	.	+	.	.	.	.	.	1	.	+	.	3	II
<i>Tragopogon crocifolius</i> subsp. <i>samaritani</i>	.	+	.	.	.	.	.	.	.	1	.	+	3	II
<i>Aubrieta deltoidea</i> var. <i>integrifolia</i>	.	.	+	.	.	.	.	.	.	.	.	.	1	I
<i>Carum graecum</i> subsp. <i>graecum</i>	.	.	1	.	.	.	.	.	.	.	.	.	1	I
<i>Myosotis sylvatica</i> subsp. <i>cyaenea</i>	.	+	.	.	.	.	.	.	.	.	.	.	1	I
Other species															
<i>Daphne oleoides</i>	.	1	+	2	+	1	1	2	1	1	1	1	11	V	
<i>Lactuca viminea</i>	.	+	.	+	+	+	.	1	.	1	.	+	7	III	
<i>Juniperus hemisphaerica</i>	.	.	+	.	+	+	1	.	.	1	.	+	6	III	
<i>Malcolmia bicolor</i>	.	.	.	+	.	.	.	1	1	1	.	.	1	6	III
<i>Muscari botryoides</i>	.	+	.	+	.	+	+	.	1	.	.	.	5	III	
<i>Verbascum</i> sp.	.	.	.	.	.	+	.	+	.	+	.	.	3	II
<i>Rosa</i> sp.	1	1	1	.	.	.	.	.	.	.	.	.	3	II
<i>Potentilla speciosa</i>	.	.	2	.	.	+	.	.	.	.	.	.	2	I
<i>Valantia aprica</i>	+	.	.	.	+	.	.	.	.	.	.	.	2	I
<i>Sedum album</i>	.	.	.	+	.	.	.	.	.	.	.	.	1	I
<i>Veronica verna</i>	.	.	.	.	.	.	.	.	.	.	+	.	1	I
<i>Bromus</i> sp.	.	.	3	.	.	.	.	.	.	.	.	.	1	I
<i>Juniperus foetidissima</i>	.	.	.	.	.	.	.	.	.	1	.	.	1	I
<i>Ranunculus brevifolius</i>	.	.	+	.	.	.	.	.	.	.	.	.	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Taygetos, near the top of Profitis Ilias - 27.06.06; rel. 6-12: Mt. Taygetos - Quézel [35] - Table 19.

Table A53. *Onosma heterophyllae-Astragaletum erinacei* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5		
Altitude (dam)	130	145	140	150	145		
Surface (m ²)	50	100	100	100	100		
Coverage (%)	80	80	90	90	80		
Slope (°)	40	40	25	30	30		
Exposition	NE	SO	SE	S	SE	Presences	Presence class
Char. Association							
<i>Onosma heterophylla</i>	1	+	2	1	1	5	V
Char. Ail. (SIDERITIDO CLANDESTINAE-ASPERULION MUNGIERI)							
<i>Sideritis clandestina</i> subsp. <i>clandestina</i>	1	+	1	+	+	5	V
<i>Asperula mungieri</i>	.	+	1	.	+	3	III
<i>Allium pycnotrichum</i>	.	+	.	+	+	3	III
<i>Anthemis laconica</i>	.	.	.	.	+	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)							
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	4	3	4	3	3	5	V
<i>Eryngium multifidum</i>	+	+	+	1	1	5	V
<i>Armeria orphanidis</i>	+	2	1	.	1	4	IV
<i>Avenochloa agropyroides</i>	1	1	+	+	.	4	IV
<i>Echinops taygeteus</i>	1	+	+	.	+	4	IV
<i>Allium frigidum</i>	.	+	.	+	+	3	III
<i>Allium achaium</i>	.	.	+	.	+	2	II
<i>Alkanna graeca</i> subsp. <i>baeotica</i>	1	.	.	.	.	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Cerastium candidissimum</i>	2	1	1	1	+	5	V
<i>Pterocephalus perennis</i> subsp. <i>perennis</i>	2	1	1	2	1	5	V
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	+	+	+	+	+	5	V
<i>Stipa endotricha</i>	.	3	1	2	2	4	IV
<i>Minuartia confusa</i>	.	+	1	+	+	4	IV
<i>Galium thymifolium</i>	.	+	+	+	.	3	III
<i>Podospermum canum</i> var. <i>alpinum</i>	.	.	.	+	+	2	II
<i>Fritillaria guiccardii</i>	+	+	.	.	.	2	II
<i>Campanula radicata</i>	+	.	.	.	.	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	2	2	2	3	2	5	V
<i>Koeleria mitrushi</i>	+	2	2	2	3	5	V
<i>Bromus riparius</i>	2	2	2	2	1	5	V
<i>Acinus alpinus</i> subsp. <i>meridionalis</i>	1	1	1	1	1	5	V
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	.	+	+	4	IV
<i>Thymus leucotrichus</i>	.	.	1	1	+	3	III
<i>Draba lasiocarpa</i>	.	1	+	.	+	3	III
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	+	.	.	+	3	III
<i>Aubrieta deltoidea</i> var. <i>integrifolia</i>	+	+	.	+	.	3	III
<i>Sedum laconicum</i>	.	.	+	+	.	2	II
<i>Thymus chaubardii</i>	.	+	.	.	.	1	I
Other species							
<i>Stipa holosericea</i>	+	2	1	3	2	5	V
<i>Thymra capitata</i>	+	2	2	1	2	5	V
<i>Poa bulbosa</i>	+	+	+	+	+	5	V
<i>Phleum montanum</i>	+	+	+	+	+	5	V
<i>Euphorbia rigida</i>	+	1	+	+	+	5	V
<i>Micromeria juliana</i>	+	1	+	1	1	5	V
<i>Leontodon asper</i>	1	+	.	1	+	4	IV
<i>Allium sardoum</i>	+	+	+	.	+	4	IV
<i>Ballota pseudodictamnus</i>	+	1	+	.	+	4	IV
<i>Sedum tenuifolium</i>	.	+	+	+	+	4	IV
<i>Helictotrichon convolutum</i> subsp. <i>convolutum</i>	.	2	1	2	1	4	IV
<i>Ononis pusilla</i>	.	+	.	+	+	3	III
<i>Silene italica</i> subsp. <i>peloponnesiaca</i>	+	+	.	+	.	3	III
<i>Phlomis fruticosa</i>	1	+	.	.	.	2	II
<i>Lactuca viminea</i>	+	+	.	.	.	2	II
<i>Colchicum</i> sp.	.	+	.	+	.	2	II
<i>Viola sieheana</i>	.	.	+	.	+	2	II
<i>Sedum album</i>	+	1	.	.	.	2	II
<i>Verbascum megaphlomos</i>	.	+	.	.	+	2	II
<i>Medicago lupulina</i>	+	+	.	.	.	2	II
<i>Lathyrus</i> sp.	+	.	.	.	.	1	I

Localities and dates of relevés. Rel. 1-5: Mt. Parnon, Prof. Ilias, near Agriani - 29/06/06.

Table A54. *Astragaletum lacteo-taygetici* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8	9	10			
Altitude (dam)	148	150	154	145	140	160	158	170	160	160			
Surface (m ²)	100	100	100	100	100	100	100	100	100	100			
Coverage (%)	80	90	80	80	70	70	80	70	80	80			
Slope (°)	40	40	40	25	30	40	30	15	5	20			
Exposition	S	S	S	SO	SO	O	S	O	O	O	Presence	Class	
Char. Association													
<i>Astragalus rumelicus</i> subsp. <i>taygeticus</i>	3	4	3	4	3	1	3	1	1	1	10	V	
<i>Astragalus lacteus</i>	+	3	II
<i>Cynoglossum pustulatum</i> subsp. <i>paraflorum</i>	+	3	II
Char. All (SIDERITIDO CLANDESTINAE-ASPERULION MUNGIERI)													
<i>Sideritis clandestina</i> subsp. <i>clandestina</i>	+	1	+	1	1	2	2	2	3	3	10	V	
<i>Anthemis laconica</i>	+	+	+	+	+	+	+	+	+	+	5	III	
<i>Asperula mungieri</i>	.	.	+	+	1	+	.	.	.	.	4	II
<i>Allium pycnostachum</i>	+	+	.	.	.	.	.	.	.	.	2	I
<i>Crepis helidrychium</i>	.	.	.	.	.	.	.	.	.	.	1	I
Char. Ord. (GERNGIO MULTIFIDI-ARMERETALIA ORPHANIDIS)													
<i>Astragalus angustifolius</i> subsp. <i>ermacus</i>	2	3	3	+	2	3	2	3	2	4	10	V	
<i>Eryogonum multifidum</i>	+	1	1	+	+	+	2	1	2	2	10	V	
<i>Ameria orphanidis</i>	+	+	.	.	.	.	2	+	1	1	6	III
<i>Dasyrrhizum hondaeceum</i>	+	+	+	+	+	+	.	.	.	.	5	III
<i>Allium achalium</i>	+	+	+	+	+	+	.	.	.	.	4	II
<i>Centurea affinis</i> subsp. <i>laconica</i>	.	.	.	.	.	.	+	+	+	+	4	II
<i>Achillea fransii</i>	.	.	+	+	+	.	.	.	.	.	3	II
<i>Allium frigidum</i>	+	+	.	+	.	.	.	.	.	.	3	II
<i>Galium taygetum</i>	.	.	.	.	.	.	+	+	+	+	3	II
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	.	.	.	.	.	.	1	+	.	.	3	II
<i>Echinops taygetus</i>	.	.	.	.	.	.	+	+	.	.	2	I
<i>Noctua graeca</i>	.	.	.	.	.	.	.	.	+	+	2	I
<i>Cirsium hypopsilum</i>	.	.	.	.	.	.	.	.	.	.	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELIC)													
<i>Cerastium candidissimum</i>	1	1	1	1	1	1	2	1	1	1	10	V	
<i>Festuca juniperi</i> subsp. <i>juniperii</i>	3	2	2	3	2	1	3	1	2	1	10	V	
<i>Stipa endotricha</i>	2	1	2	1	1	2	2	+	3	2	10	V	
<i>Minuartia attica</i> subsp. <i>attica</i>	+	+	+	+	+	1	+	+	+	1	10	V	
<i>Pterocarpus perennis</i> subsp. <i>perennis</i>	2	2	1	2	2	1	+	1	+	.	9	V	
<i>Galium thymifolium</i>	+	+	.	+	1	+	1	+	+	+	9	V	
<i>Centurea raphanina</i> subsp. <i>mixta</i>	+	+	.	.	.	.	+	+	+	1	8	IV
<i>Podospermum canum</i> var. <i>alpinum</i>	.	.	.	.	1	+	+	+	+	+	7	IV
<i>Herniaria parnassica</i> subsp. <i>parnassica</i>	.	.	.	.	.	.	+	+	+	+	5	III
<i>Poa thessala</i>	.	.	.	.	.	.	+	+	1	+	4	II
<i>Paronychia albanica</i> subsp. <i>graeca</i>	.	.	.	.	.	.	+	+	+	+	4	II
<i>Fritillaria guiccardii</i>	.	.	.	.	.	.	+	+	.	.	3	II
<i>Helianthemum hymettium</i>	.	.	.	.	.	.	.	.	1	+	3	II
<i>Scutellaria rupestris</i> subsp. <i>parnassica</i>	+	+	.	.	.	.	.	.	.	.	3	II
<i>Veronica thymifolia</i>	.	.	.	.	.	.	.	.	+	+	3	II
<i>Teucrium montanum</i> var. <i>parnassicum</i>	.	.	.	.	.	.	.	.	+	+	2	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELIC)													
<i>Koeleria mitrasi</i>	2	2	2	2	2	2	2	1	3	2	10	V	
<i>Bromus riparius</i>	2	2	+	3	2	1	2	+	2	1	10	V	
<i>Salvia laconicum</i>	1	1	1	1	2	+	+	+	1	+	10	V	
<i>Thymus leucotrichus</i>	2	2	1	1	1	1	.	.	.	.	6	III
<i>Caryophyllus sphaulatus</i> subsp. <i>sphaulatus</i>	.	.	+	.	.	.	+	+	+	+	6	III	
<i>Carduus imbricatus</i>	.	.	.	.	.	.	+	+	+	+	6	III
<i>Actinostachyum subsp. meridionale</i>	.	.	.	.	.	.	.	.	1	1	4	II
<i>Draha lasiocarpa</i>	.	.	.	.	.	.	.	.	+	1	4	II
<i>Tragopogon crocifolius</i> subsp. <i>samaritanii</i>	+	+	.	.	.	.	.	.	.	.	4	II
<i>Asplenium limosifolium</i>	.	.	.	.	.	.	1	+	1	.	4	II
<i>Aubrieta deltoidea</i> var. <i>integrifolia</i>	.	.	.	.	.	.	+	1	.	.	4	II
<i>Anthemis cretica</i> subsp. <i>cretica</i>	.	.	.	.	.	.	+	1	+	.	4	II
<i>Achillea holosericea</i>	.	.	.	.	.	.	.	.	.	.	3	II
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	.	.	.	.	.	.	.	.	.	.	3	II
<i>Linaria peloponnesiaca</i>	.	.	.	.	.	.	.	.	.	.	2	I
<i>Telephium orientale</i>	.	.	.	.	.	.	.	.	.	.	2	I
<i>Pimpinella tragium</i> subsp. <i>tragium</i>	.	.	.	.	.	.	.	.	.	.	1	I
<i>Dianthus viscidus</i> var. <i>viscidus</i>	.	.	.	.	.	.	.	.	.	.	1	I
<i>Thymus chaubardii</i>	.	.	.	.	.	.	.	.	.	.	1	I
<i>Hypericum olympicum</i>	.	.	.	.	.	.	.	.	.	.	1	I
<i>Sachys helidrychii</i>	.	.	.	.	.	.	.	.	.	.	1	I
Other species													
<i>Verbascum megaphyllum</i>	+	+	+	+	+	+	+	+	+	+	10	V	
<i>Poa bulbosa</i>	+	+	.	.	.	.	.	.	.	.	9	V
<i>Phleum montanum</i>	2	2	+	+	+	+	.	.	.	.	8	IV
<i>Stipa holosericea</i>	1	1	1	1	1	1	2	+	.	.	8	IV	
<i>Poa timolensis</i>	1	+	.	.	.	.	.	.	.	.	7	IV
<i>Leontodon asper</i>	.	.	.	.	.	.	.	.	.	.	7	IV
<i>Balilota pseudodictamnus</i>	1	1	+	+	+	1	.	.	.	.	7	IV
<i>Thymus capitata</i>	1	1	2	+	1	.	.	.	.	.	6	III
<i>Euphorbia rigida</i>	1	+	+	+	+	+	.	.	.	.	6	III
<i>Micromeria juliana</i>	1	1	+	1	1	+	.	.	.	.	6	III
<i>Sedum tenuifolium</i>	+	+	+	+	+	+	.	.	.	.	6	III
<i>Lactuca viminea</i>	+	+	.	.	.	.	.	.	.	.	5	III
<i>Dactylis glomerata</i>	1	+	+	+	+	+	.	.	.	.	5	III
<i>Sedum album</i>	+	+	+	+	+	+	.	.	.	.	5	III
<i>Allium saradom</i>	+	+	.	.	.	.	.	.	.	.	5	III
<i>Silene italica</i> subsp. <i>peloponnesiaca</i>	.	.	.	.	.	.	.	.	.	.	4	II
<i>Juniperus hemisphaerica</i>	.	.	.	.	.	.	.	.	.	.	4	II
<i>Medica ciliata</i>	.	.	.	.	.	.	.	.	.	.	4	II
<i>Helictotrichon convolutum</i> subsp. <i>convolutum</i>	1	+	.	.	.	.	.	.	.	.	4	II
<i>Sanguisorba minor</i> subsp. <i>terraccosa</i>	.	.	.	.	.	.	.	.	.	.	3	II
<i>Scabiosa columbaria</i>	.	.	.	.	.	.	.	.	.	.	3	II
<i>Antyllis vulneraria</i> subsp. <i>praepropera</i>	.	.	.	.	.	.	.	.	.	.	3	II
<i>Juniperus oxycedrus</i>	.	.	.	.	.	.	.	.	.	.	3	II
<i>Orobancha</i> sp.	.	.	.	.	.	.	.	.	.	.	3	II
<i>Viola siebana</i>	.	.	.	.	.	.	.	.	.	.	3	II
<i>Polygala nicaensis</i> subsp. <i>mediterranea</i>	.	.	.	.	.	.	.	.	.	.	3	II
<i>Ononis pusilla</i>	.	.	.	.	.	.	.	.	.	.	3	II
<i>Petrophagia illyrica</i> subsp. <i>illyrica</i>	.	.	.	.	.	.	.	.	.	.	2	I
<i>Trifolium physodes</i>	.	.	.	.	.	.	.	.	.	.	2	I
<i>Astragalus depressus</i>	.	.	.	.	.	.	.	.	.	.	2	I
<i>Hippocrepis comosa</i>	.	.	.	.	.	.	.	.	.	.	2	I
<i>Dactylis hispanica</i>	.	.	.	.	.	.	.	.	.	.	2	I
<i>Medicago lupulina</i>	+	+	.	.	.	.	.	.	.	.	2	I
<i>Malcolmia bicolor</i>	.	.	.	.	.	.	.	.	.	.	2	I
<i>Mascari botryoides</i>	.	.	.	.	.	.	.	.	.	.	2	I
<i>Ornithogalum sibthorpii</i>	.	.	.	.	.	.	.	.	.	.	1	I
<i>Teucrium chamaedrys</i>	.	.	.	.	.	.	.	.	.	.	2	I
<i>Phloximon afr</i>	.	.	.	.	.	.	.	.	.	.	1	I
<i>Thesium arvense</i>	.	.	.	.	.	.	.	.	.	.	1	I
<i>Platella leucopis</i> subsp. <i>pilsquama</i>	.	.	.	.	.	.	.	.	.	.	1	I

Localities and dates of relevés. Rel. 1-6: Mt. Parnon, Prof. Ilias, near Agritari - 29/06/06; rel. 7-10: Mt. Parnon, Prof. Ilias, near Polidrosos - 29/06/06.

Table A55. *Viola parnoniae*-*Astragaletum erinacei* Musarella, Brullo & Giusso ass. nov. (a) *astragaletosum erinacei* Musarella, Brullo & Giusso subass. nov. (b) *asperuletosum malevonensis* Musarella, Brullo & Giusso subass. nov.

Relevé number	1	2	3	4	5	6	7	8	9	10	11		
Altitude (dam)	172	178	180	173	174	175	175	178	180	185	190		
Surface (m ²)	100	100	100	100	50	100	50	50	50	100	50		
Coverage (%)	80	80	90	60	50	60	60	50	80	80	90		
Slope (°)	30	30	30	45	50	40	40	45	45	45	50		
Exposition	NO	N	N	N	N	N	N	N	N	NE	NO		
Subassociation	a	a	a	b	b	b	b	b	b	b	b	Presences	Presence class
Char. Association													
<i>Viola parnonia</i>	1	1	2	2	1	1	1	+	1	1	1	11	V
<i>Astragalus agraniotii</i>	.	.	.	.	.	.	.	.	.	+	+	2	I
<i>Centaurea parnonia</i>	.	.	.	.	.	.	.	.	.	1	.	1	I
Diff. of Subass.													
<i>Achillea umbellata</i>	.	.	.	3	3	3	3	2	2	2	3	8	IV
<i>Asperula malevonensis</i>	.	.	.	2	1	2	3	2	2	1	2	8	IV
<i>Helianthemum canum</i> subsp. <i>canum</i>	.	.	.	.	.	.	.	.	.	1	1	2	I
Char. All. (SIDERITIDO CLANDESTINAE-ASPERULION MUNGIERI)													
<i>Sideritis clandestina</i> subsp. <i>clandestina</i>	2	2	2	1	1	+	1	+	1	2	+	11	V
<i>Crepis heldreichiana</i>	1	1	1	1	+	+	.	1	+	.	.	8	IV
<i>Anthemis laconica</i>	+	+	+	+	.	+	+	.	.	+	+	7	IV
<i>Phytolacca crocifolia</i>	.	.	.	.	.	.	.	.	.	.	+	1	I
Char. Ord. (ERYNGIO MULTIFIDI-ARMERIETALIA ORPHANIDIS)													
<i>Astragalus angustifolius</i> subsp. <i>erinaceus</i>	3	4	3	2	2	3	1	2	1	2	1	11	V
<i>Eryngium multifidum</i>	1	1	+	+	.	.	.	+	.	+	1	7	IV
<i>Galium taygeteum</i>	+	.	+	.	+	.	.	.	.	2	.	5	III
<i>Acantholimon graecum</i>	.	.	+	.	.	.	.	.	.	+	2	4	II
<i>Allium frigidum</i>	+	.	+	.	.	.	.	+	.	+	.	4	II
<i>Alyssum repens</i> var. <i>brachyphyllum</i>	+	+	1	.	.	.	.	.	.	1	.	4	II
<i>Armeria orphanidis</i>	+	+	.	.	.	.	.	.	.	.	+	3	II
<i>Rindera graeca</i>	.	1	1	.	.	.	.	.	.	1	.	3	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)													
<i>Cerastium candidissimum</i>	2	2	2	2	1	+	+	+	1	2	1	11	V
<i>Minuartia attica</i> subsp. <i>attica</i>	1	+	1	1	+	+	1	+	+	1	+	11	V
<i>Stipa endotricha</i>	2	2	2	+	+	+	.	+	+	2	+	10	V
<i>Poa thessala</i>	1	1	+	+	+	.	+	1	+	+	+	10	V
<i>Pterocarpus perennis</i> subsp. <i>perennis</i>	1	2	2	+	+	+	.	.	+	1	.	8	IV
<i>Galium thymifolium</i>	1	1	+	+	+	+	.	.	.	+	+	8	IV
<i>Silene radicata</i> subsp. <i>radicata</i>	.	.	.	1	1	+	1	.	2	1	2	7	IV
<i>Centaurea raphanina</i> subsp. <i>mixta</i>	+	+	+	+	+	.	.	.	.	.	+	6	III
<i>Teucrium montanum</i> var. <i>parnassicum</i>	+	+	+	.	.	.	.	.	.	+	.	4	II
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)													
<i>Festuca jeanpertia</i> subsp. <i>jeanpertia</i>	2	3	2	1	+	+	+	1	+	1	+	11	V
<i>Koeleria mitrushi</i>	2	2	2	2	1	2	2	2	1	2	1	11	V
<i>Draba lasiocarpa</i>	+	1	+	+	+	+	+	+	+	+	+	11	V
<i>Aethionema saxatile</i> subsp. <i>graecum</i>	+	1	+	+	+	+	+	+	+	1	+	11	V
<i>Pimpinella tragium</i> subsp. <i>tragium</i>	1	+	1	+	+	+	+	+	+	1	1	11	V
<i>Acinus alpinus</i> subsp. <i>meridionalis</i>	1	1	+	+	+	+	+	+	+	+	.	10	V
<i>Thymus leucotrichus</i>	+	1	+	+	+	.	+	+	+	+	+	10	V
<i>Euphorbia herniariifolia</i>	1	+	1	2	1	+	+	1	+	.	+	10	V
<i>Asyneuma limonifolium</i>	+	+	+	+	+	+	.	.	.	1	+	9	V
<i>Tragopogon crocifolius</i> subsp. <i>samaritanus</i>	+	+	+	.	.	.	+	+	.	+	.	6	III
<i>Aubrieta deltoidea</i> var. <i>integrifolia</i>	+	+	.	.	+	.	.	.	.	+	+	5	III
<i>Anthemis cretica</i> subsp. <i>cretica</i>	+	+	+	.	.	.	.	.	.	1	2	5	III
<i>Carum graecum</i> subsp. <i>graecum</i>	.	.	.	+	+	.	.	.	.	+	.	3	II
<i>Onobrychis alba</i> subsp. <i>pentelica</i>	.	.	.	.	.	.	.	.	.	+	2	2	I
<i>Dianthus viscidus</i> var. <i>viscidus</i>	.	.	.	.	.	.	.	.	.	1	.	1	I
<i>Linum elegans</i>	.	.	.	.	.	.	.	.	.	+	.	1	I
Other species													
<i>Leontodon asper</i>	1	1	.	+	.	.	.	.	+	+	+	6	III
<i>Malcolmia bicolor</i>	+	+	+	+	.	.	.	.	+	.	.	6	III
<i>Sedum album</i>	+	+	+	.	.	.	.	.	.	.	+	5	III
<i>Melica ciliata</i>	+	1	+	+	.	.	.	.	.	+	.	5	III
<i>Polygala nicaeensis</i> subsp. <i>mediterranea</i>	1	1	+	.	.	.	.	.	.	1	+	5	III
<i>Thesium aroense</i>	+	+	+	.	+	.	.	.	.	.	.	4	II
<i>Muscari botryoides</i>	+	+	.	+	.	.	.	.	.	+	.	4	II
<i>Ornithogalum sibthorpii</i>	+	+	.	+	.	.	.	.	.	.	.	3	II
<i>Ptilostemon afer</i>	+	1	+	.	.	.	.	.	.	.	.	3	II
<i>Hieracium</i> sp.	+	.	+	.	.	.	.	.	.	.	+	3	II
<i>Allium sardoum</i>	+	+	.	.	.	.	.	.	.	.	.	2	I
<i>Dianthus serratifolius</i> subsp. <i>abbreviatus</i>	.	.	.	+	+	.	.	.	.	.	.	2	I

Localities and dates of relevés. Rel. 1-11: Mt. Parnon, Megali Tourla -29/06/06.

Table A56. *Astragaletum samii* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8	9	10	Presence	Presence class
Altitude (dam)	100	110	110	100	105	110	115	120	110	110		
Surface (m ²)	50	50	100	50	50	50	50	50	25	16		
Coverage (%)	60	80	70	60	70	70	70	70	40	95		
Slope (°)	25	35	30	35	30	25	30	35	35	35		
Exposition	NO	NO	N	NE	N	N	N	N	NO	NO		
Char. Association												
<i>Astragalus creticus</i> subsp. <i>samius</i>	2	3	3	2	3	3	3	2	2	3	10	V
<i>Allium orosamium</i>	+	+	+	.	.	.	.	.	.	.	3	II
Char. All. (ASPERULION SAMIAE)												
<i>Allium hirtovaginatatum</i> subsp. <i>samium</i>	1	+	+	+	+	+	+	+	.	.	8	IV
<i>Anthemis samia</i>	1	1	2	.	+	+	.	+	+	+	8	IV
<i>Asperula samia</i>	1	+	+	1	+	1	+	1	.	.	8	IV
<i>Erodium sibthorpiantum</i> subsp. <i>vetteri</i>	2	1	2	2	2	2	2	2	.	.	8	IV
<i>Satureja spinosa</i> var. <i>glabra</i>	1	1	1	2	1	1	1	2	.	.	8	IV
<i>Thymus samius</i>	1	+	1	1	1	2	1	2	.	.	8	IV
<i>Alyssum samium</i>	1	+	1	+	+	.	.	.	.	.	7	IV
Char. Ord. (NOAEO MUCRONATAE-SILENETALIA URVILLEI)												
<i>Inula heterolepis</i>	2	2	2	2	3	2	2	3	+	+	10	V
<i>Sesleria anatolica</i>	2	2	2	2	2	2	2	2	.	1	9	V
<i>Sideritis sipylea</i>	+	1	1	1	2	1	+	1	+	.	9	V
<i>Atraphaxis billardierei</i>	+	+	1	2	1	2	3	2	.	.	8	IV
<i>Centaurea urvillei</i> subsp. <i>urvillei</i>	1	1	1	1	+	1	.	+	+	.	8	IV
<i>Erysimum hayekii</i>	+	+	+	1	+	+	1	1	.	.	8	IV
<i>Koeleria lobata</i>	2	2	3	1	2	1	1	+	.	.	8	IV
<i>Noaea mucronata</i>	2	1	2	2	1	2	2	1	.	.	8	IV
<i>Perocephalus pinardii</i>	1	1	+	1	1	1	1	+	.	.	8	IV
<i>Silene urvillei</i>	1	+	2	2	2	2	+	1	.	.	8	IV
<i>Stachys cretica</i> subsp. <i>smyrnaea</i>	+	+	1	1	+	1	1	+	.	.	8	IV
<i>Acantholimon aegaeum</i>	+	.	+	1	+	.	1	.	+	+	7	IV
<i>Astragalus angustifolius</i> subsp. <i>aegeicus</i>	2	1	+	+	.	1	+	.	.	.	6	III
<i>Bunium microcarpum</i> subsp. <i>microcarpum</i>	.	+	.	+	1	+	+	.	.	.	6	III
<i>Dianthus zonatus</i>	1	+	1	.	.	.	.	.	+	+	5	III
<i>Alopecurus davisii</i>	.	.	.	+	+	.	+	1	.	.	4	II
<i>Aethionema saxatile</i> subsp. <i>creticum</i>	+	+	+	.	.	.	.	.	.	.	3	II
<i>Draba heterocoma</i> subsp. <i>archipelagi</i>	+	+	+	.	.	.	.	.	.	.	3	II
<i>Galium heldreichii</i>	+	1	+	.	.	.	.	.	.	.	3	II
<i>Jurinea cadmea</i>	+	+	+	.	.	.	.	.	.	.	3	II
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)												
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	2	2	3	2	2	2	1	2	2	2	10	V
<i>Minuartia attica</i> subsp. <i>attica</i>	.	.	.	1	+	+	+	1	.	.	5	III
<i>Teucrium montanum</i> var. <i>parmassicum</i>	1	+	1	.	.	.	.	.	.	.	3	II
<i>Thymus chaubardii</i>	.	.	.	.	.	.	.	.	.	+	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)												
<i>Aubrieta deltoidea</i> var. <i>deltoidea</i>	.	.	.	1	1	1	+	1	.	.	5	III
<i>Euphorbia herniariifolia</i>	1	+	+	.	.	.	.	.	.	.	3	II
Other species												
<i>Euphorbia rigida</i>	1	1	2	1	1	1	1	+	+	+	10	V
<i>Juniperus oxycedrus</i>	2	2	1	1	1	+	.	.	+	.	7	IV
<i>Rhamnus oleoides</i> subsp. <i>graecus</i>	+	2	1	1	+	+	+	.	.	.	7	IV
<i>Teucrium capitatum</i>	.	.	.	1	+	1	+	+	.	.	5	III
<i>Thymbra capitata</i>	1	1	+	.	.	.	.	.	.	.	3	II
<i>Micromeria juliana</i>	+	+	+	.	.	.	.	.	.	.	3	II
<i>Poa timoleonis</i>	1	1	2	.	.	.	.	.	.	.	3	II
<i>Stipa holosericea</i>	1	+	+	.	.	.	.	.	.	.	3	II
<i>Arrhenatherum palestinum</i>	.	+	+	.	.	.	.	.	.	.	2	I
<i>Aurinia saxatilis</i> subsp. <i>megalocarpa</i>	.	+	+	.	.	.	.	.	.	.	2	I
<i>Ballota acetabulosa</i>	+	1	.	.	.	.	.	.	.	.	2	I
<i>Centaurea spinosa</i>	.	.	.	.	.	.	.	.	1	+	2	I
<i>Cerasus prostrata</i>	1	.	+	.	.	.	.	.	.	.	2	I
<i>Dactylis hispanica</i>	.	.	.	.	.	.	.	.	+	+	2	I
<i>Echinops spinosissimus</i>	+	.	+	.	.	.	.	.	.	.	2	I
<i>Helichrysum orientale</i>	+	.	+	.	.	.	.	.	.	.	2	I
<i>Majorana onites</i>	.	+	+	.	.	.	.	.	.	.	2	I
<i>Nigella arvensis</i> subsp. <i>glauca</i>	.	.	.	.	.	.	.	.	+	+	2	I
<i>Trifolium campestre</i>	.	.	.	.	.	.	.	.	+	+	2	I
<i>Alyssum fulvescens</i>	.	.	.	.	.	.	.	.	+	.	1	I
<i>Ephedra procera</i>	.	+	.	.	.	.	.	.	.	.	1	I
<i>Erica manipuliflora</i>	.	+	.	.	.	.	.	.	.	.	1	I
<i>Euphorbia acanthotamos</i>	+	.	.	.	.	.	.	.	.	.	1	I
<i>Poa bulbosa</i>	.	.	.	.	.	.	.	.	+	.	1	I
<i>Salvia fruticosa</i>	.	.	.	.	.	.	.	.	+	.	1	I

Localities and dates of relevés. Rel. 1-3: Samos, Mt. Kerkis - 02.07.03; rel. 4-8: Samos, Mt. Kerkis - 09.06.05; rel. 9-10: Samos, Mt. Kerkis, Christodoulakis & Georgiadis [41].

Table A57. *Thymo samii*-*Astragaletum condensati* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	6	7	8	9	10	11	12	13		
Altitude (dam)	110	110	110	110	115	115	115	115	115	115	115	115	114		
Surface (m ²)	50	50	50	50	50	50	50	50	50	100	100	50	16		
Coverage (%)	80	70	70	70	80	70	50	60	60	60	60	50	10		
Slope (°)	10	15	15	10	20	10	25	-	-	-	5	10	-		
Exposition	S	S	S	S	S	S	S	-	-	-	S	S	SE	Presences	Presence class
Char. Association															
<i>Astragalus condensatus</i>	2	2	3	3	3	3	+	2	3	3	3	2	+	13	V
<i>Valeriana dioscoridis</i>	+	+	+	+	+	+	+	+	.	+	+	.	.	10	IV
<i>Phlomis grandiflora</i>	1	1	1	+	1	+	1	.	.	+	+	.	.	9	IV
<i>Fritillaria carica</i>	+	+	+	+	.	+	.	.	+	+	.	+	.	8	IV
<i>Centaurea cariensis</i> subsp. <i>maculiceps</i>	.	.	.	.	+	3	.	2	1	1	2	.	1	7	III
<i>Petrorhagia armerioides</i>	+	+	+	+	+	+	.	.	.	.	.	.	.	6	III
<i>Vincetoxicum canescens</i> subsp. <i>pedunculatum</i>	1	1	1	2	+	+	.	.	.	.	.	.	.	6	III
<i>Allium karvounis</i>	+	+	1	1	+	.	.	.	.	.	.	.	.	5	II
<i>Lomelosia polykratis</i>	.	.	.	.	.	.	.	2	+	+	1	1	.	5	II
<i>Ranunculus rumelicus</i>	.	.	.	.	.	.	+	.	+	+	.	.	.	3	II
<i>Crocus oliveri</i> subsp. <i>balansae</i>	.	.	.	.	.	.	.	.	.	+	.	+	.	2	I
Char. All. (ASPERULION SAMIAE)															
<i>Thymus samius</i>	1	2	2	2	2	+	1	1	1	1	+	1	+	13	V
<i>Satureja spinosa</i> var. <i>glabra</i>	1	2	2	1	2	1	.	1	1	1	1	+	.	11	V
<i>Anthemis samia</i>	1	1	1	1	1	+	.	.	.	.	.	.	+	7	III
<i>Asperula samia</i>	+	+	.	.	.	.	.	2	1	2	2	2	.	7	III
<i>Erodium sibthorpiantum</i> subsp. <i>vetteri</i>	.	.	.	.	.	.	+	1	1	1	2	1	1	7	III
<i>Allium hirtovaginatatum</i> subsp. <i>samium</i>	.	.	.	.	.	.	+	+	+	+	+	+	.	6	III
Char. Ord. (NOAEO MUCRONATAE-SILENETALIA URVILLEI)															
<i>Centaurea urvillei</i> subsp. <i>urvillei</i>	2	1	1	2	1	1	2	1	1	1	1	1	+	13	V
<i>Inula heterolepis</i>	+	+	1	+	+	+	1	+	1	1	1	+	+	13	V
<i>Koeleria lobata</i>	1	1	+	1	+	1	3	2	2	2	1	+	+	13	V
<i>Silene urvillei</i>	2	2	1	1	1	+	2	1	2	1	1	2	+	13	V
<i>Acantholimon aegaeum</i>	2	2	2	1	2	2	+	+	+	.	.	+	+	12	V
<i>Noaea mucronata</i>	+	1	1	+	.	1	+	+	2	1	1	2	+	12	V
<i>Dianthus zonatus</i>	2	1	1	2	1	1	.	+	+	+	+	1	.	11	V
<i>Bunium microcarpum</i> subsp. <i>microcarpum</i>	.	.	.	.	+	+	1	+	+	+	+	+	.	8	IV
<i>Jurinea cadmea</i>	.	.	.	.	+	+	.	1	+	+	.	+	.	6	III
<i>Paracaryum aucheri</i>	.	.	.	.	+	1	1	+	.	+	.	.	+	6	III
<i>Sideritis sipylea</i>	.	.	.	.	.	.	1	+	+	+	.	1	+	6	III
<i>Verbascum pycnostachyum</i>	.	.	.	.	.	.	+	+	+	+	1	+	.	6	III
<i>Pterocephalus pinardii</i>	.	.	.	.	.	.	2	+	1	1	+	.	.	5	III
<i>Stachys cretica</i> subsp. <i>smymaea</i>	.	.	.	+	.	+	1	.	.	+	+	.	.	5	III
<i>Atraphaxis billardiieri</i>	.	.	.	.	.	.	.	2	+	.	+	.	.	3	II
<i>Aethionema saxatile</i> subsp. <i>creticum</i>	.	.	+	.	+	.	.	.	.	.	.	.	.	2	I
<i>Draba heterocoma</i> subsp. <i>archipelagi</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	1	I
<i>Galium heldreichii</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	1	I
<i>Minuartia anatolica</i> var. <i>polymorpha</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)															
<i>Scutellaria orientalis</i> subsp. <i>alpina</i>	+	1	+	+	+	+	1	+	+	1	+	+	.	12	V
<i>Crepis fraasii</i> subsp. <i>fraasii</i>	+	.	+	+	+	+	+	+	.	.	+	.	.	8	IV
<i>Thesium bergeri</i>	.	.	.	.	.	.	.	.	+	+	+	.	.	4	II
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)															
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	.	.	+	1	1	1	2	1	1	1	1	+	+	11	V
<i>Euphorbia herniariifolia</i>	.	.	.	+	+	+	+	+	+	1	+	+	+	10	IV
<i>Aubrieta deltoidea</i> subsp. <i>deltoidea</i>	.	.	.	.	+	+	1	+	+	+	.	+	.	7	III
Other species															
<i>Poa bulbosa</i>	2	2	2	3	3	2	2	1	1	+	+	1	.	12	V
<i>Stipa holosericea</i>	2	1	1	2	2	2	2	1	1	2	1	1	.	12	V
<i>Quercus calliprinos</i>	1	1	1	1	1	1	.	.	.	.	.	.	.	6	III
<i>Arrhenatherum palestinum</i>	.	.	.	.	+	.	+	1	.	1	.	+	.	5	II
<i>Cerasus prostrata</i>	.	.	.	.	.	.	+	.	+	+	+	.	+	5	II
<i>Muscari neglectum</i>	.	.	.	.	.	.	.	+	+	+	+	+	.	5	II
<i>Iris suaevolens</i>	+	+	+	+	.	.	.	.	.	.	.	.	.	4	II
<i>Juniperus oxycedrus</i>	.	.	.	.	+	1	.	.	.	.	.	.	.	2	I
<i>Teucrium capitatum</i>	+	.	.	.	.	+	.	.	.	.	.	.	.	2	I
<i>Alyssum fulvescens</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	1	I
<i>Briza humilis</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	1	I
<i>Bromus intermedius</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	1	I
<i>Legousia pentagonia</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	1	I
<i>Phleum graecum</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	1	I
<i>Sedum hispanicum</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	1	I

Localities and dates of relevés. Rel. 1-12: Samos, Mt. Ambelos, Mt. Profitis Elias - 11.06.05; rel. 13: Ibid., Christodoulakis & Georgiadis [41] - Table 11, ril. 8.

Table A58. *Campanulo lyratae-Genistetum parnassicae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5		
Altitude (dam)	95	95	95	95	95		
Surface (m ²)	4	4	2	12	25		
Coverage (%)	10	10	10	10	15		
Slope (°)	40	85	80	80	60		
Exposition	N	N	NO	N	NO	Presences	Presence class
Char. Association							
<i>Genista parnassica</i>	2	1	+	2	1	5	V
<i>Campanula lyrata</i> subsp. <i>lyrata</i>	.	+	+	+	+	4	IV
Char. All. ASPERULION SAMIAE							
<i>Alyssum samium</i>	1	1	1	1	+	5	V
<i>Anthemis samia</i>	.	.	.	.	+	1	I
Char. Ord. (NOAEO MUCRONATAE-SILENETALIA URVILLEI)							
<i>Inula heterolepis</i>	+	2	+	1	1	5	V
<i>Centaurea urvillei</i> subsp. <i>urvillei</i>	+	.	.	+	+	3	III
<i>Dianthus zonatus</i>	.	+	.	+	+	3	III
<i>Sesleria anatolica</i>	+	.	.	+	+	3	III
<i>Atraphaxis billardierei</i>	.	.	.	+	+	2	II
<i>Sideritis sipylea</i>	.	.	.	+	+	2	II
<i>Acantholimon aegaeum</i>	.	.	.	+	.	1	I
<i>Aethionema saxatile</i> subsp. <i>creticum</i>	.	.	.	.	+	1	I
<i>Draba heterocoma</i> subsp. <i>archipelagi</i>	.	.	.	.	+	1	I
<i>Pterocephalus pinardii</i>	.	.	.	.	+	1	I
<i>Silene urvillei</i>	.	.	.	.	+	1	I
<i>Verbascum pycnostachyum</i>	.	.	+	.	.	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	+	+	+	+	1	5	V
<i>Minuartia attica</i> subsp. <i>attica</i>	.	.	.	.	1	1	I
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Aubrieta deltoidea</i> var. <i>deltoidea</i>	.	.	.	+	+	2	II
Other species							
<i>Dactylis hispanica</i>	+	+	+	+	+	5	V
<i>Euphorbia rigida</i>	+	.	+	+	+	4	IV
<i>Micromeria juliana</i>	+	.	+	.	+	3	III
<i>Poa bulbosa</i>	.	.	+	+	+	3	III
<i>Allium guttatum</i>	+	.	.	+	.	2	II
<i>Juniperus oxycedrus</i>	.	.	.	+	+	2	II
<i>Bupleurum trichopodium</i>	.	.	.	+	.	1	I
<i>Cerastium comatum</i>	.	.	.	+	.	1	I
<i>Ceterach officinarum</i>	.	.	+	.	.	1	I
<i>Echinops spinosissimus</i>	.	.	.	.	+	1	I
<i>Origanum sypileum</i>	.	.	.	.	+	1	I
<i>Sedum hispanicum</i>	.	.	.	.	+	1	I
<i>Senecio vernalis</i>	.	.	.	+	.	1	I

Localities and dates of relevés. Rel. 1-5: Samos, Mt. Kerkis - Christodoulakis & Georgiadis [41] - Table 11, rel. 1-5.

Table A59. *Arenario guicciardii-Seslerietum anatolicae* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	3	4	5	Presences	Presence class
Altitude (dam)	95	95	100	100	100		
Surface (m ²)	50	50	50	50	40		
Coverage (%)	60	50	70	70	70		
Slope (°)	40	45	45	30	40		
Exposition	NO	N	NO	NO	N		
Char. Association							
<i>Sesleria anatolica</i>	3	2	3	3	3	5	V
<i>Arenaria guicciardii</i>	+	+	+	+	+	5	V
<i>Pimpinella peregrina</i>	1	+	+	1	.	4	IV
Char. All. (ASPERULION SAMIAE)							
<i>Satureja spinosa</i> var. <i>glabra</i>	1	2	2	2	2	5	V
<i>Anthemis samia</i>	1	1	1	1	+	5	V
<i>Asperula samia</i>	1	1	+	1	+	5	V
<i>Thymus samius</i>	1	+	1	1	+	5	V
<i>Allium hirtovaginatatum</i> subsp. <i>samium</i>	+	+	+	+	+	5	V
<i>Alyssum samium</i>	.	+	+	+	+	4	IV
<i>Erodium sibthorpiantum</i> subsp. <i>vetteri</i>	+	.	1	.	+	3	III
Char. Ord. (NOAEO MUCRONATAE-SILENETALIA URVILLEI)							
<i>Inula heterolepis</i>	2	1	2	2	2	5	V
<i>Sideritis sipylea</i>	2	2	1	2	1	5	V
<i>Noaea mucronata</i>	1	1	1	2	2	5	V
<i>Pterocephalus pinardii</i>	+	1	1	2	1	5	V
<i>Aethionema saxatile</i> subsp. <i>creticum</i>	+	1	+	+	1	5	V
<i>Alopecurus davisii</i>	+	1	1	+	+	5	V
<i>Bunium microcarpum</i> subsp. <i>microcarpum</i>	1	1	+	1	1	5	V
<i>Centaurea urvillei</i> subsp. <i>urvillei</i>	1	+	+	1	1	5	V
<i>Dianthus zonatus</i>	1	1	+	1	+	5	V
<i>Erysimum hayekii</i>	+	+	+	+	+	5	V
<i>Galium heldreichii</i>	+	+	2	1	+	5	V
<i>Jurinea cadmea</i>	+	+	+	+	1	5	V
<i>Atraphaxis billardieri</i>	.	1	2	1	2	4	IV
<i>Minuartia anatolica</i> var. <i>polymorpha</i>	1	+	.	+	+	4	IV
<i>Paracaryum aucheri</i>	+	+	+	.	+	4	IV
<i>Koeleria lobata</i>	+	+	1	.	.	3	III
<i>Draba heterocoma</i> subsp. <i>archipelagi</i>	.	.	+	+	.	2	II
<i>Thesium bergeri</i>	.	+	.	.	+	2	II
<i>Astragalus angustifolius</i> subsp. <i>aegeicus</i>	.	.	+	.	.	1	I
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Festuca jeanpertii</i> subsp. <i>jeanpertii</i>	2	2	2	2	3	5	V
<i>Crepis fraasii</i> subsp. <i>fraasii</i>	+	+	+	+	+	5	V
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)							
<i>Aubrieta deltoidea</i> subsp. <i>deltoidea</i>	+	+	+	2	1	5	V
<i>Euphorbia herniariifolia</i>	+	1	+	1	+	5	V
<i>Asyneuma limonifolium</i>	+	+	.	+	.	3	III
Other species							
<i>Allium subhirsutum</i>	+	1	+	+	+	5	V
<i>Arrhena therum palestinum</i>	1	+	+	+	1	5	V
<i>Thymbra capitata</i>	2	+	+	1	1	5	V
<i>Dactylis hispanica</i>	+	1	+	+	+	5	V
<i>Euphorbia rigida</i>	+	1	1	+	+	5	V
<i>Juniperus oxycedrus</i>	+	+	1	1	1	5	V
<i>Teucrium capitatum</i>	+	1	+	1	1	5	V
<i>Bellevalia trifoliata</i>	+	+	+	+	.	4	IV

Localities and dates of relevés. Rel. 1-5: Samos, Mt. Kerkis -09.06.05.

Table A61. *Paronychio bornmuelleri-Astragaletum odoniani* Musarella, Brullo & Giusso ass. nov.

Relevé number	1	2	
Altitude (dam)	95	95	
Surface (m ²)	100	100	
Coverage (%)	80	60	Presences
Slope (°)	15	5	
Exposition	SO	SO	
Char. Association			
<i>Astragalus angustifolius</i> subsp. <i>odonianus</i>	4	3	2
<i>Paronychia bornmuelleri</i>	2	1	2
<i>Minuartia verna</i> var. <i>thasia</i>	2	1	2
<i>Cerastium decalvans</i> subsp. <i>glutinosum</i>	1	1	2
<i>Dianthus gracilis</i> subsp. <i>xanthianus</i>	2	+	2
<i>Allium cremnophilum</i>	+	+	2
Char. All. (SESLERIO ACHTAROVII-ANTHEMIDION TENUILOBAE)			
<i>Festuca hirtovaginata</i>	2	1	2
<i>Inula aschersoniana</i> var. <i>athoa</i>	2	2	2
<i>Galium insulare</i>	1	+	2
<i>Anthemis tenuiloba</i>	1	+	2
<i>Satureja montana</i> subsp. <i>macedonica</i>	1	+	2
<i>Sesleria achtarovii</i>	+	.	1
Char. Ord. (NOAEO MUCRONATAE-SILENETALIA URVILLEI)			
<i>Minuartia anatolica</i> var. <i>polymorpha</i>	1	1	2
<i>Asperula thessala</i>	+	1	2
<i>Koeleria lobata</i>	1	+	2
Char. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)			
<i>Alyssum montanum</i> subsp. <i>graecum</i>	+	+	2
<i>Centaurea pichleri</i>	+	+	2
<i>Poa thessala</i>	+	+	2
<i>Podospermum canum</i> var. <i>alpinum</i>	+	+	2
<i>Teucrium montanum</i> var. <i>parnassicum</i>	1	+	2
<i>Stipa endotricha</i>	+	.	1
Diff. Class (CERASTIO CANDIDISSIMI-ASTRAGALETEA RUMELICI)			
<i>Acinos alpinus</i> subsp. <i>meridionalis</i>	2	1	2
<i>Draba lasiocarpa</i>	+	+	2
Other species			
<i>Carduus taygeteus</i>	1	+	2
<i>Euphorbia myrsinites</i>	1	1	2
<i>Juniperus oxycedrus</i>	1	+	2
<i>Juniperus excelsa</i>	+	+	2
<i>Micromeria juliana</i>	+	.	1
<i>Ornithogalum nutans</i>	+	.	1
<i>Poa timoleonis</i>	1	1	2
<i>Sedum album</i>	1	1	2
<i>Sedum urvillei</i>	+	.	1
<i>Silene italica</i> subsp. <i>italica</i>	+	+	2
<i>Teucrium capitatum</i>	1	+	2
<i>Thymus striatus</i>	2	1	2
<i>Verbascum densiflorum</i>	1	+	2
<i>Achillea ageratifolia</i> subsp. <i>ageratifolia</i>	+	+	2

Localities and dates of relevés. Rel. 1-2: Thassos, Mt. Ipsario - 26.06.03.

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