

Kasos: an unexpected island. Floristic and ecological analysis of Kasos Island (SE Aegean, Dodecanese, Greece), with noteworthy floristic additions

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Abstract. This work aims to be a contribution to the knowledge of the vascular flora of Kasos, highlighting the floristic relevance of the island, especially in terms of endemics. Discovery of the Greek endemics *Eryngium amorginum* and *Allium brachyspathum* on Kasos has expanded the distribution range of these species, including Kasos as the second locality in the phytogeographical region of Kriti and Karpathos (KK). Furthermore, the finding of *Seseli crithmifolium* and of *Jacobaea gnaphalioides* on the island, completes the distribution framework of this taxon across the phytogeographic region of Kriti and Karpathos. Ecological evaluations of some of the sites of considerable floristic interest on Kasos are also provided.

Key words: *Allium brachyspathum*, *Eryngium amorginum*, flora, Kasos

Introduction

Together with 14 small islands and islets known as Kasonisia, Kasos (35° 23 N 26° 56 E) constitutes the southernmost island group of the Dodecanese Archipelago (Fig. 1). The most important of them are: Armathia, Lytra, Makronisi, Megalo Pontikonisi, Mikro Pontikonisi, Kariofila, and Porioni. The largest (Armathia), with an area of 2567 km² and maximum altitude of 111 m, lies NW of Kasos. The smallest (Porioni), with an area 21 km², lies between the islands of Armathia and Makronisi. Kasos is located between the islands of Crete and Karpathos, along the eastern part of the Hellenic Trench. Its exact location is 26 nm east of Capo Sidero (Crete) and 3 nm northwest of Karpathos. The island, with a total area of 66.41 km², has an elongated oval shape with a southwest/northeast direction (Natura 2000 Network Viewer). Unfortunately, Kasos is currently an example of environmental



Fig. 1. Kasos Island with sites of floristic interest. 1 = Lelas Rouaki Gorge; 2 = Megalos Prionas Massif; 3 = Moutsounas Massif; 4 = Frachtis River; 5 = Kakos Potamos.

downgrading due to deforestation, the result of overgrazing and wildfires over the years, which has led to a phryganic landscape whose most representative species are *Sarcopoterium spinosum* (L.) Spach, *Thymbra capitata* (L.) Cav., *Genista fasselata* Decne and *Lithodora hispidula* (Sm.) Griseb. However, the remarkable inland cliffs on the island, are in excellent condition and host a very rich endemic chasmophytic flora and a rare and endemic malacofauna. With its surrounding islands and islets and the marine area that is included up to the depth curve of 50 m, Kasos constitutes a Special Protection Area and a Site of Community Importance according to European directives (GR4210028). It was designated an SCI in 2006 for its invertebrate subfossils (especially terrestrial mollusk subfossils) and an important Bird Area in Europe.

Floristic research on Kasos began in 1886 with Major (Major & Barbey 1894; Stefani & al. 1895). Later, Ciferri (1944) and Rechinger (1944) published an account relying on Pichler and Major materials. Subsequently, Davis visited Kasos and the islet of Makronisi (near Armathia), along with Karpathos and Crete in the summer of 1950 (Davis 1953). Ten years later the Swedish botanists of Lund University, Runemark and Nordestam, undertook a research trip in the Aegean and collected specimens on Kasos, Armathia and on some nearby islets (Runemark & al. 1960). Von Bothmer also visited Kasos and some of the Kasonisia in 1966 (Pawlowski 1971; Bothmer 1974). The greatest contribution to the knowledge of the vascular flora of Karpathos, Kasos and Saria was provided by Greuter (Greuter & al. 1983) and Raus who carried out botanical research on Kasos and the Kasonisia in 1983 and 1984 (Greuter & Raus 1986, 1989; Raus 1989). Finally, the most recent contributions to the flora of Kasos have been provided by Cattaneo & Grano (2019, 2020a).

Material and methods

Botanical research was carried out on Kasos by the authors on three occasions: on 5 August 2019, from 30 July to 10 August 2020 and from 29 May to 1 June 2021. Plant material is deposited in the first author's personal herbarium (Herbarium Cristina Cattaneo). The authors provide an updated checklist of the flora of Kasos (Appendix 1) excluding its offshore islets, which includes all taxa registered to date. Plant identi-

fication mainly relied on Rechinger (1944, 1949), Rechinger & Rechinger, (1951), Davis (1965-1985), Davis & al. (1988), Tutin & al. (1964-1980, 1993), Greuter & al. (1984-1989), Strid & Tan (1997, 2002), Brullo & al. (2001, 2008), Brullo & Erben (2016), and Strid (2016). With regard to the status of alien taxa, Arianooutsou & al. (2010) and Dimopoulos & al. (2018) have been followed. The distribution of the genus *Limonium* complies with Brullo & Erben (2016). Species nomenclature mostly follow Greuter & al. (1984-1989), Greuter & Raab-Straube (2008) and Euro+Med (2006-). Information regarding the occurrence of species on Kasos has been extrapolated from Greuter & al. (1983), Raus (1989), Turland & al. (1993), and Strid (2016). The status of endemic taxa recorded for Kasos is based on Dimopoulos & al. (2018). The life-form and chorological categories follow Raunkiaer (1934) and Dimopoulos & al. (2018). The term "endemic" is used to denote taxa with a distribution area confined to Greece. Place names mentioned in the text follow the map of Karpathos and Kasos produced by Terrain Cartography Group (2017). As for the information concerning the geology of Kasos, the geological map of Kasos produced by the Institute of Geology and Mineral Exploration was consulted (Barrier 1984). The information concerning the toponyms of Kasos has been extrapolated from Μηνάς (1975).

Study area

Kasos is quite mountainous with three mountain ranges. The first occupies the eastern part of the island and consists of Megalos Prionas, the highest peak at 601 m, and the mountain of Agia Kyriaki. The second mountain range starts from the southwest of Megalos Prionas and continues along the south coast with Korakoi, Kapsalos and Latza, respectively. The third mountain range spans the northern coast, southwest of the village of Agia Marina and includes Profitis Ilias, Moutsounas, and Kapsalos. The island has several fault scarps. The flat areas are relatively limited and can be divided into two main sections: the first occupies the northern half of the central part of the island and consists of the Empassia, Skylas and Christos River valleys. The second section occurs in the southwestern part of the island and consists of the Argos, Xargos and Troullos plateaus. The island's coasts are quite inaccessible, furrowed by deep gorges which end in small coves. The most accessible part of the Kasos coast lies along its northern side and extends from

Fry to Antiperatos. The only bays are those of Helatros and Avlaki on the southwestern coast. The climate of Kasos is Mediterranean, characterized by hot and dry summers and mild winters with low rainfall (about 463 mm) (Mastropoulos 2019). Currently, the island is extremely dry with only seasonal streams. Seasonal lakes occur in Skafi and Merta plateau. Similar lakes seem to have formed in the past in other parts of the island, as indicated by the toponyms Limnaki in Omata and Limnias in Argos. Freshwater springs are few, the main ones are located in the area of Agios Georgios of Vrissi on the northern coast and in Agios Mammandos of Apokrani in the southern part of the island. However, according to Melas (1985), fresh water used to be more present, but the complete disappearance of the island's forests, which held water and favored rains, as well as the depletion of several springs led to its diminution. The underground water is brackish, which renders drilling wells irrelevant. Currently, most of the soil is barren. The fertile soil is limited to some pockets in the lowlands, which consist mainly of the large, northern, flat area. However, according to Melas (1985), the ground was likely more fertile in the past, but the expansion of pastures, the reduction of water, and the progressive soil erosion have led to a reduction in its efficiency. Since 1980, there has been an extremely uncontrolled increase in the number of goats and sheep, stretching the ecosystem's ability to recover and adversely affecting the soil and vegetation. The original maquis and the fallow fields have both been downgraded to phrygana, the slopes of the mountains have been stripped of their vegetation and the soil has been eroded. The absence of forests is very evident, although the picture seems to have been different in the past. According to Melas (1985) and Σοφός (1986), the western part of Kasos was covered with forests that were burned during the Kasos Holocaust of 1824. Furthermore, the name Kapsalos, related to a mountain in the western part of the island, derives from the word Kapsali, which refers to the burnt forest (Melas 1985).

Geology and paleogeography

The palaeogeographical history of the Aegean is relatively recent and rather complex, determined by three main geological events that created important dispersal barriers: (1) the formation of the mid-Aegean trench (MAT), (2) the isolation of Kriti from Peloponnese after the Messinian salinity crisis (MSC) and

(3) the separation of the Karpathos island group from Rhodes in the Pliocene (Kougioumoutzis & al. 2016). The opening of the MAT was initiated by the sea intrusion that separated Kriti from the Karpathos island complex 12 Mya. During the Tortonian period (8 Mya) the Karpathos island group became isolated but was reintegrated with the continents in the Messinian period (5-6 Mya). The Karpathos island complex was joined with Rhodes and Anatolia in the Lower Pliocene (Daams & van der Weerd 1980) but remained isolated from the Upper Pliocene and during the whole Pleistocene (Dermitzakis 1990). The geological separation between the Karpathos island complex and Rhodes occurred some 3.5 Mya (Barrier 1979; Daams & van de Weerd 1980). Finally, Kasos detached from Karpathos 10 Kya, during the late Pleistocene (Kougioumoutzis & al. 2016). Kasos lies on the eastern boundary of the S Aegean Island Arc connecting the Balkans to the Anatolian mainland. It is mainly formed of Mesozoic and Palaeogene limestones. In the lowlands of the island, some marine Neogene deposits unconformably cover the substratum. Quaternary deposits are piedmont scree and alluvions in riverbeds, especially in the northern and western parts of the island (Barrier 1979, 1984), in addition to karst deposits that may have been formed locally in caves, fissures or fault scarps (Sen & al. 2014).

Results

Floristic analysis

To date, the vascular flora of Kasos consists of 82 families, 336 genera and 613 taxa, including cultivated and alien taxa. *Austrocylindropuntia subulata* (Muehlenpf.) Backeb., and *Euphorbia hypericifolia* L., alien taxa not yet well established in Greece, are disregarded. The richest families are Asteraceae (83 taxa), Fabaceae (77 taxa) and Poaceae (68 taxa). As for life-forms, therophytes predominate (55.1%), followed by hemicryptophytes (17.1%), geophytes (12.2%) and chamaephytes (10.6%). The alien flora of Kasos comprises 10 species (1.63%) belonging to eight families and nine genera. So far, none seems to have an invasive character. This percentage is quite low compared to that of Chalki (Tsakiri & al. 2016), even though Kasos is located as a bridge between the routes Crete-Karpathos-Rhodes. Kasos falls in the phytogeographical region of Kriti and Karpathos (KK) and shares

the highest number of taxa with the phytogeographical regions of East Aegean Islands (EAe), and Kiklades (Kik) with 563 taxa, followed by the phytogeographical region of Peloponnisos (Pe) with 539 taxa. From a chorological point of view, the Mediterranean group predominates, constituting 72.4% of the flora of the island. More specifically, species with a circum-Mediterranean distribution constitute about 38.9% of the flora (239 taxa), followed by species restricted to the E Mediterranean with 13.7% (84 taxa) (Table 1). The high percentage of E Mediterranean elements underlines the westward migration of many taxa from Anatolia to the Central Aegean during paleogeographic events. A good example of this is *Medicago heyniana* Greuter, a species distributed in Kasos, Karpathos, Zafora, Tilos, Rhodes, Amorgos, Anafi, and the Marmaris Peninsula (Turkey) (Thanopoulos in Phitos & al. 2009; Kougioumoutzis & al. 2012).

Greek endemics

Kasos is part of the floristic region of the Cretan area, one of the most important centres of endemism in Greece and the whole Mediterranean area (Rechinger 1949; Greuter 1972; Strid 1997; Médail & Quézel 1999; Georghiou & Delipetrou 2010). The Cretan area, comprising Crete, Karpathos, Kasos and the adjacent smaller islands is the central remnant of the South Aegean Island Arc, which once connected South Greece with Southwest Turkey. The link with the mainland is completed by the islands of Kythera and Antikythera to the northwest of Crete, and by Rhodes to the northeast of Karpathos (Turland & al. 1993). Kasos hosts 53 Greek endemics, i.e. 8.64% of the total vascular flora (Table 2). This percentage is quite high, if we consider the size of the island, the unfavourable climate, and human pressure which has had a significant impact on the island since ancient times. Despite seemingly living in the shadow of Karpathos, Kasos has its own features and a certain degree of environmental heterogeneity from an edaphic and morphological point of view, with the presence of deep gorges characterized by distinctive microhabitats that have allowed the existence of several endemics. Kasos falls into the thermo-Mediterranean zone (0-600 m), an altitudinal range that in the island regions is rich in local endemics (Georghiou & Delipetrou 2010). Kasos endemics belong to 19 families and 39 genera. The *Asteraceae* shows the highest rate of endemism, followed by *Caryophyllaceae* and *Plumbaginaceae*. These results are in keeping with the trend observed

Table 1. Chorological spectrum of the native flora of Kasos Island (chorological groups are as defined by Dimopoulos & al. 2018).

Chorological group	Number of taxa	%	Total number of taxa	%
Widely distributed taxa			101	16.47
European	2	0.32		
European-SW Asian	48	7.83		
Euro-Siberian	3	0.48		
Paleotemperate	20	3.26		
Circumtemperate	1	0.16		
IT	1	0.16		
Subtropical	8	1.30		
Cosmopolitan	18	2.93		
Mediterranean Taxa			444	72.43
E Mediterranean	84	13.70		
Mediterranean	239	38.98		
Mediterranean-Atlantic	19	3.09		
Mediterranean-European	42	6.85		
Mediterranean-SW Asian	60	9.78		
Balkan Taxa			5	0.81
Balkan	0	0		
Balkan-Italian	0	0		
Balkan-Anatolian	5	0.81		
Endemic Taxa			53	8.64
Endemic	53	8.64		
Alien taxa			10	1.63
Am.	1	0.16		
N-Am.	2	0.32		
S-Am.	1	0.16		
S-Afr.	3	0.48		
Neotrop.	2	0.32		
Pantrop.	1	0.16		
Total	613	100.00	613	100.00

in the whole of the Greek endemic flora (Georghiou & Delipetrou 2010). Kasos, along with its offshore islets, is characterized by rocks, cliffs, grazed phrygana, grassland, and habitats affected by wind and salt spray. The lifeform pattern of the endemics and of the entire flora of the island is indicative of their kind of habitat and adaptive strategy to the difficult climatic and edaphic factors. The lifeform spectrum of Kasos endemics shows a predominance of chamaephytes (30.1%) due to the presence of inland cliffs, rocks and screes, and of therophytes (24.5%) due to the high temperatures and extended drought periods that characterize the island.

The high percentage of chamaephytes and hemicryptophytes (22.6%) reveals the flora's adaptation to Kasos' adverse environmental conditions. In fact, this island is beaten by strong winds especially from the north, and the stress-tolerant leaves, taproots and underground woody parts of these type of plants can effectively withstand wind blowdowns. The high percentage of geophytes (18.8%) and hemicryptophytes indicates rather dry, poor soil with phrygana, resulting in a decrease in grazing (Snogerup & Snogerup 1987; Bergmeier & Dimopoulos 2003; Panitsa & al. 2008). Kasos shares the most endemic taxa with the phytogeographical region of Kiklades (Kik) (28 taxa) which is part of the 'Cardaegan' area (Greuter 1971, 1972, 1975). The linkage with the phytogeographical region of the East Aegean Island (EAe), and with the Peloponnese (Pe) is also highlighted by a high number of endemics (15 and 16 taxa, respectively). The central part of the South Aegean Arc, namely Antikythera, Crete and the Karpathos island group not only belongs to the South Aegean Arc, but is also related to the Kiklades, constituting a part of the Aegean which is phytogeographically more isolated from the mainland. Greuter (1971, 1972) named this region Cardaegan, which is mainly characterized by a unique endemic element, namely endemics occurring exclusively in the Cretan area and in the South and Central Kiklades, and by the lack of species which spread during the Pleistocene. The Cardaegan acted as a refuge in which several plants survived as relics of ancient flora (Greuter 1971, 1972, 1975). This strong linkage between the Cretan area and the Kiklades is highlighted by the occurrence on Kasos of several bi-regional endemics, exclusively shared between Kik and KK, namely *Anthemis ammanthus* Greuter subsp. *ammanthus*, *Centaurea raphanina* Sm. subsp. *raphanina*, *Eryngium amorginum* Rech. f., *Lutzia cretica* (L.) Greuter & Burdet, *Dianthus cinnamomeus* Sm. subsp. *cinnamomeus*, *Salsola carpatha* P. H. Davis, *Ophrys argolica* subsp. *aegaea* (Kalteisen & H. R. Reinhard) H. A. Pedersen & Faurh., and *Aegilops biuncialis* subsp. *archipelagica* (Eig) Raus. Particularly noteworthy is the phytogeographical connection with some of the dry, xeric south-eastern Cycladic islands and islets, such as Anafi, Folegandros, Vrachonisides, Astypalea, Zofrano, Stefania, Amorgos, Sirna, etc., where these species occur (Strid & Tan 1997; Kougioumoutzis & al. 2012, 2014). The close palaeogeographical distance between South Kiklades and Crete during the Messinian salinity crisis favoured the spread of many endemic taxa from south

to north, since Crete and Karpathos were the driving force of many bi-regional endemics present in the phytogeographical region of the Kiklades (Kougioumoutzis & al. 2014). It is probable that the aforementioned taxa would settle on islands with similar climatic and edaphic environments, even if located at different latitudes. The exclusive sharing with Karpathos of some endemics such as *Allium brachyspathum* Brullo, Pavone & Salmeri, *Campanula carpatha* Halácsy, *C. pinatzii* Greuter & Phitos, *Arenaria fragillima* Rech. f., *Dianthus fruticosus* subsp. *carpathus* Runemark, *Silene ammophila* subsp. *carpathae* Chowdhuri, *Hypericum cuisinii* Barbey, *Phlomis pichleri* Vierh., *Limonium ampicum* Erben & Brullo, and *Nigella carpatha* Strid, reveals how both islands constitute a single biogeographical unit. Kasos and Karpathos became isolated from the landmass during the Tortonian (8 Mya), even though they were joined to the landmass during the Messinian until the early Pliocene (4-5 Mya). Kasos became isolated from Karpathos in very recent times, and this would explain the absence of single-island endemics for Kasos. Kasos hosts several endemics of the Cretan area, such as *Allium tardans* Greuter & Zahar, *Aristolochia cretica* Lam., *Crepis cretica* Boiss., *Arenaria fragillima*, *Sedum creticum* C. Presl, *Iris unguicularis* Poir., *Limonium stenotatum* (Rech. f.) Erben & Brullo, and some of these are restricted between E Crete and Kasos, such as *Carlina sitiensis* Rech. f., while others are restricted between E Crete, Kasos, Karpathos, and Saria such as *Jacobaea gnaphalioides* (Spreng.) Veldkamp (also present on Astachida), *Caroxylon carpathum* (P.H. Davis) Akhani & Roalson, *Stachys mucronata* Spreng., and *Teucrium gracile* Barbey & Fors.-Major. The link between the major islands may have occurred thanks to land bridges between the aforementioned islands during the late Cenozoic era (Greuter 1975), or during the Messinian salinity crisis. Taxa such as *Trifolium rechingeri* Rothm., and *Limonium fragile* Erben & Brullo (Cattaneo & Grano 2020b) occurring on Kasos, Karpathos, Saria (for the first taxon), Crete, Kythera (for the first taxon) and Antikythera (for the second taxon) emphasize the strong connection between the floristic regions Pe (Peloponnisos) and KK (Kriti and Karpathos), following the S Aegean Island Arc connecting the Balkans to Anatolia (Georghiou & Delipetrou 2010). From the late Tortonian until the Messinian, it is possible that there were connections with Peloponnisos and the area of western Crete, either for the entire period or periodically through certain continental corridors (Fas-

Family	Taxon	IoI	NPI	SPi	Pe	StE	EC	NC	NE	NAe	WAe	Kik	KK	EAc
Lamiaceae	<i>Phlomis pichleri</i> Vierh.												*	
	<i>Stachys mucronata</i> Spreng.												*	
	<i>Teucrium gracile</i> Barbey & Major												*	
Orchidaceae	<i>Ophrys argolica</i> subsp. <i>aegaea</i> (Kalteisen & H.R. Reinhard) H.A. Pedersen & Faurh.											*	*	
	<i>Ophrys cretica</i> (Vierh.) E. Nelson subsp. <i>cretica</i>				*	*						*	*	*
	<i>Ophrys cretica</i> subsp. <i>karpathensis</i> E. Nelson				*							*	*	*
Plumbaginaceae	<i>Limonium amopicum</i> Erben & Brullo												*	
	<i>Limonium crateriforme</i> Erben & Brullo												*	
	<i>Limonium fragile</i> Erben & Brullo				*								*	
	<i>Limonium proliferum</i> (d'Urv.) Erben & Brullo					*						*	*	*
	<i>Limonium stenotatum</i> (Rech. f.) Erben & Brullo												*	
Poaceae	<i>Achnatherum fallacinum</i> H. Scholz & Raus				*						*	*	*	*
	<i>Aegilops biuncialis</i> subsp. <i>archipelagica</i> (Eig) Raus											*	*	
	<i>Melica rectiflora</i> Boiss. & Heldr.				*						*	*	*	
Ranunculaceae	<i>Anemone hortensis</i> subsp. <i>heldreichii</i> (Boiss.) Rech. f.												*	
	<i>Nigella carpatha</i> Strid												*	
Rutaceae	<i>Ruta chalepensis</i> subsp. <i>fumariifolia</i> (Boiss. & Heldr.) Nyman				*							*	*	

soulas 2018). The Karpathos islands group was joined with Rhodes and Anatolia until the Late Miocene (Dermitzakis & Papanikolaou 1981; Dermitzakis & Triantaphyllou 1992), and this is highlighted by the presence of *Astragalus austroaegaeus* Rech. f. exclusively on the three islands.

New additions to the flora of Kasos

Amaryllidaceae

Allium brachyspathum Brullo, Pavone & Salmeri - G - Endemic

So far, this taxon has been known only for the island of Karpathos (Brullo & al. 2001). The specimens found on Kasos show several differences from those on Karpathos, both from a morphological and ecological point of view. The samples from Karpathos have been detected on Mt. Kollas, Mt. Kali Limni and Mt. Stroumboulas, on limestone rocks with different exposure, but also in the litter of a pine forest between 200 m to 1000 m, whereas the specimens from Kasos have been found on Moutsounas Massif, in the plain of Maritsa, and inside the Frachtis River, exclusively among north-facing rocks of gorge beds, and in crev-

ices or pavement of north-facing limestone cliffs with a certain degree of moisture between 150 m and 400 m (Fig. 2). Compared to the Karpathos specimens, the Kasos samples are smaller in terms of the stem, spathe valves, inflorescence, and tepals, and are almost totally covered by leaf sheaths (Table 3). These differences between the Karpathos and Kasos populations are most likely the result of the species' adaptation to different environments, since Kasos is drier than Karpathos, devoid of tree cover and has lower altitudes. The discontinuity observed in some of the characteristics of the Kasos population, linked to a different ecology, could confirm the hypothesis of incipient evolution. Indeed, the differences detected in the Kasos specimens could be indicative of good specificity, but further research would be needed.

07.08.2021, Cattaneo 1624 (herb. Cattaneo)

Allium dentiferum Webb & Berthel. - G - Me

This species has been found at the edge of a fallow field close to the village of Arvanithochori (Fig. 3). Within the Cretan area, it has so far only been recorded on Crete. *Allium dentiferum* is a synanthropic species linked to nitrophilous habitats, where it occurs in small, scattered populations. Plants be-

Table 3. Morphological features compared between 13 specimens of *Allium brachyspathum* from Karpathos and 25 specimens of *Allium brachyspathum* from Kasos.

Character	<i>Allium brachyspathum</i> (Karpathos)	<i>Allium brachyspathum</i> (Kasos)
Bulb	7-16 × 10-25 mm	5-8 × 1-15 mm
Scape	9-26(-32) cm	1-19(-23) cm
Leaf sheaths	1/2-4/5	1/2-5/5
Leaf	4-6, filiform, glabrous	3-4(-6), filiform, glabrous
Spathe valves	shorter valve 0.6-1.7 cm longer valve 0.7-3.5(-4.1) cm	shorter valve 0.1-1.5 cm larger valve 0.3-1.7(-2.8) cm
Inflorescence	Lax, fastigate, 1-4.5 cm, 6-30 flowered	Lax, fastigate, 1-2.5 cm, 3-25 flowered
Perigon shape	campanulate	campanulate
Tepal colour	white-greenish, white-pinkish with a brown-purplish mid-vein	white-greenish, white-pinkish with a brown-purplish mid-vein
Tepal length and width	5 × 2-2.2 mm	4-5 × 2 mm
Stamens	slightly exerted, 5.5 mm,	mostly included within the perigon or slightly exerted, 4 mm
Style length	2 mm	2 mm
Style colour	white	white
Ovary	cylindrical-obovoid, papillose	cylindrical-obovoid, papillose



Fig. 2. *Allium brachyspathum* Brullo, Pavone & Salmeri (Moutsounas Massif).

longing to *Allium dentiferum* were often misidentified and assigned to various allied taxa of *A.* sect. *Codonoprasum*, namely *A. paniculatum* L., *A. fuscum* Waldst. & Kit. and *A. pallens* L., since these species are large in size and feature very long, divaricate spathe valves. However, *A. dentiferum* has its own distinct features, such as dark brown bulb tunics, tall and robust stem, very long appendiculate spathe valves, compact and fastigiate inflorescence, green yellowish tepals suffused with brown, usually included stamens, interstaminal teeth, and cylindrical ovary papillose in its upper part (Brullo & al. 2008). The analysis of the Kasos specimens revealed the existence of these features thus excluding its belonging to *A. paniculatum*.

29.05.2021, Cattaneo 1504 (herb. Cattaneo)

Apiaceae

Eryngium amorginum Rech. f. - H - Endemic



Fig. 3. *Allium dentiferum* Webb & Berthel. (Arvanithochori).

This distinctive and taxonomically isolated endemic of the South Aegean Area was discovered by Rechinger on Amorgos, on north-facing limestone shady cliffs. Usually, the species occurs on inland limestone gorges and rock walls (Monastiraki Gorge on Crete, Lelas Rouaki Gorge on Kasos). In one single place on Crete, the species was found in a pine forest in deep soil. It is the only chasmophyte in the genus *Eryngium* and is most likely a Pliocene relic (Wörz 2006). So far, this taxon has been only known for several Cycladic islands such as Amorgos, Anydros, the islets between Folegandros and Sikinos, the eastern side of Astypalea, the islet of Ofidoussa (west to Astypalea), and from two locations in E. Crete (Afenidis and Kavousi). On Kasos, this species was found inside Lelas Rouaki, a hardly accessible gorge, at 200 m ca. s.l.m., on limestone shady cliffs, together with *Hirtellina fruticosa* (L.) Dittrich and *Linum arboreum* L. (Fig. 4). The discovery on Kasos of this rare and specialized taxon underlines how the occurrence of paleoendemics is linked to specific environmental conditions, such as the presence of a certain degree of stability and continuity of the substrate, and to a specific microclimate.

01.06.2021, Cattaneo obs. (photo).

Seseli crithmifolium (DC.) Boiss. - C - Endemic

This is the first record of this perennial chasmophytic endemic for Kasos; it shows a distributional range very similar to that of *Eryngium amorginum*. It was found in the deepest and highest part of the Lelas Rouaki Gorge, in crevices of vertical limestone cliffs, together with *Helichrysum orientale* (L.) Vaill., *Hirtellina fruticosa*, *Brassica cretica* subsp. *aegaea* (Heldr. & Halácsy) Snogerup, M. A. Gust. & Bothmer, and *Linum arboreum*. Compared to *Eryngium amorginum*, *S. crithmifolium* seems to have a greater ecological value as it grows in drier sites, even with direct sun exposure. The discovery of *Seseli crithmifolium* on Kasos completes the distribution of this taxon across the phytogeographic region of Kriti and Karpathos.

30.05.2021, Cattaneo obs. (photo).

Asteraceae

Jacobaea gnaphalioides (Spreng.) Veldkamp - C - Endemic

To date this chasmophytic endemic species has been reported for Karpathos, Saria, few localities in



Fig. 4. *Eryngium amorginum* Rech. f. (Lelas Rouaki Gorge).

eastern Crete, and for the islet of Astachida (near Kasos). Its discovery on limestone cliffs inside the Lelas Rouaki Gorge in Kasos, allows to fill the gap between Crete and Karpathos.

30.05.2021, Cattaneo obs. (photo).

Brassicaceae

Maresia nana (DC.) Batt. - T - MS

This species was found in the Lelas Rouaki Gorge, on sandy soil near the mouth of the river. Within the Cretan area, it has only been recorded for Crete.

01.06.2021, Cattaneo 1489 (herb. Cattaneo)

Cactaceae

Austrocylindropuntia subulata (Muehlenpf.) Backeb.

- P - S-Am

This alien species has been found in two locations, at the border of Fry, the main town of Kasos. Its occurrence on Kasos is still negligible, therefore it does not show an invasive character. This is its first record for the phytogeographical region of KK.

30.05.2021, Cattaneo obs. (photo)

Papaveraceae

Glaucium flavum Crantz - H - ME

The occurrence of this fairly common taxon has not been reported for Kasos until now. It has been observed along the coast of Aperi together with *Tetraena alba* (L. f.) Beier & Thulin, on limestone and sandy gravel comprised of pebbles.

01.06.2021, Cattaneo obs. (photo)

Discussion

This study underlines the floristic richness of Kasos, an island perhaps slightly neglected as compared to the closest major islands of Crete and Karpathos. The wealth of endemics is mainly due to its belonging to the Cretan area, a hotspot for endemic taxa, and to its topography and geological conformation. In the phytogeographical region of Kriti and Karpathos, both island and mountain isolation have played a major role in plant endemism. Indeed, topography-driven isolation increases speciation rates and endemism in mountainous areas (Georghiou & Delipetrou 2010; Trigas & al. 2013; Steinbauer & al. 2016; Panitsa & Kontopanou 2017; Kontopanou & Panitsa 2020). Certainly, the short distance from the nearest major islands (Crete and Karpathos) has played a major role in shaping the plant diversity pattern of Kasos. It is a fact that the proximity of continental islands to the mainland or other islands and their history of connections via land bridges that existed in previous eras are reflected in their similar flora (Kallimanis & al. 2011). The contrast among the remarkable floristic richness in terms of endemics, and the sterility of the Kasos landscape combined with a very dry climate further deepen the conviction that Kasos is a very interesting island from an ecological and floristic point of view. The strongly Mediterranean character of Kasos flora is highlighted by the high proportion of therophytes (Table 4), combined with the high number of Mediterranean elements (Christodoulakis 1996), but it is also the result of disturbances in the ecosystem from human intervention (Naveh 1974; Arianoutsou & al. 2010; Panitsa & Tzanoudakis 1998). The abundance of hemicryptophytes and chamaephytes is due to the frequency of limestone cliffs. Very similar values in the biological spectrum can also be observed in the flora of Tilos Island (Cattaneo & Grano 2014). Both islands are presently very dry and rather degraded, characterized by a phryganic landscape, interspersed by calcareous rocky slopes with chasmophytic vegetation. The exploration of the island of Kasos made it possible to highlight some sites of considerable floristic interest. These locations are mainly linked to north-facing inland cliffs built up of lower Eocene limestones, with an altitudinal range between 100 m and 600 m a.s.l. Based on the stratigraphic study of these sites, the limestones alternate with white flint, while towards the top there are banks of limestone and limestone-

Table 4. Life-form spectrum of Kasos's flora (life-forms are as defined by Dimopoulos & al. 2018).

Life-forms	Number of species	%
Therophytes	338	55.2
Phanerophytes	28	4.5
Hemicryptophytes	105	17.1
Geophytes	75	12.2
Chamaephytes	65	10.6
Aquatic	2	0.3
Total	613	100.00

schists (Barrier 1984). The observation of the distribution of chasmophilous species in these sites (Table 5) shows how these "habitat specialists" are distributed according to different ecological requirements and able to colonize sites and exploit ecological niches that would otherwise remain empty (Snogerup 1971; Panitsa & Kontopanou 2017). Rare endemic and non-endemic plants, such as *Eryngium amorginum*, *Hirtellina fruticosa*, *Dianthus fruticosus* subsp. *carpathus*, *Seseli crithmifolium*, and *Linum arboreum* have been observed where such conditions as continuity and stability of available surface, greater presence of moisture and shade occur. These factors were mainly detected within gorges, which, due to their conformation, are able to maintain a different microclimate as compared to that of the adjacent open environments (Fig. 5). In fact, the inland cliffs within the gorge especially, are less subject to erosion compared to sea cliffs, also are more sheltered and show a greater degree of moisture. On the other hand, taxa with a broader ecological value, such as *Silene fruticosa* L., *Lutzia cretica*, *Brassica cretica* subsp. *aegaea*, *Helichrysum orientale*, and *Coronilla valentina* subsp. *glauc*a (L.) Batt., have been observed in conditions of lower humidity and of greater irradiation. Such species as *Allium brachyspathum*, *A. rubrovittatum* Boiss. & Heldr., *Nigella carpatha* (Fig. 6), and *Limonium fragile* have been found in the same environments, but occupying different niches, such as the pavements at the base of cliffs, and the fissures and cracks of limestone rocks. The floristic and faunistic richness that distinguishes the inland cliffs of Kasos is due to several physical factors related to the bedrock composition (hard limestone very rich in solution pockets, cracks, crevices, and cavities, which creates a huge variation in the microclimate, and consequently in the microhabitat); to the northern expo-



Fig. 5. *Eryngium amorginum* Rech. f. (Lelas Rouaki Gorge).

sure of the cliffs, linked to a low radiant incident energy; to the moisture whose presence became evident from blackish gray patines of microphytic coatings that follow water runoff routes observed in some places at Antiperatos Bay (the low water-holding capacity of the limestone rocks is balanced with the matric potential that allows plants to easily extract water (Larson & al. 2000); to the high reflective power given by the white colour of the limestone (albedo), which means that only a low percentage of light is absorbed. Thus, it can be inferred that the examined cliffs tend to be cooler and wetter than the surrounding habitat types, since they receive less direct radiation, have water availability, and enjoy high cooling rates, thanks to the conduction, convection and evaporation processes favored by the strong winds that characterize the island. Based on the observation of these locations, as well as the comparison of similar sites in other Aegean islands such as Crete, Karpathos, Chalki, Tilos, Symi, Astypalea, it is possible to deduce that cliffs are not such inhospitable environments for the subsistence of organisms. Cliffs experience a range of microclimatic conditions that make them a very moderate habitat, suitable for the occurrence of small populations that will be more stable over time than populations in the surrounding terrain.



Fig. 6. Lelas Rouaki Gorge with its limestone cliffs arranged on different levels.

Table 5. Sites of Kasos of floristic interest with a short overview on the chasmophilous species observed in the microhabitats of limestone cliffs (cracks, crevices, pockets, ledges, pavements) and on rock outcrops.

Sites of Kasos	Description of the sites	Chasmophilous species detected in cracks, pockets, ledges and step crevices of limestone cliffs	Species of particular interest detected in the pavement of limestone cliffs, on rock outcrops
Lelas Rouaki (northeast end of Kasos).	This is an ancient large river that runs from Megalos Prionas, the tallest peak in Kasos (N-E). This river has shaped a very deep meandering gorge characterized by steep escarpments with limestone cliffs arranged on different levels and with different exposures. The microclimate inside this gorge is much cooler and more humid than the one outside.	<i>Eryngium amorginum</i> , <i>Seseli crithmifolium</i> , <i>Helichrysum orientale</i> , <i>Hirtellina fruticosa</i> , <i>Jacobaea gnaphalioides</i> , <i>Lactuca acanthifolia</i> , <i>Brassica cretica</i> subsp. <i>aegaea</i> , <i>Linum arboreum</i> .	<i>Allium rubrovittatum</i> , <i>Centaurea raphanina</i> subsp. <i>raphanina</i> , <i>Arenaria fragillima</i> , <i>Hypericum cuisinii</i> , <i>Limonium fragile</i> , <i>Nigella carpatha</i> .
Panaghia Potamitissa (central part of Kasos).	Western outposts of Mt. Kapsalos (central part of Kasos) formed by steep slopes of Eocene limestone.	<i>Helichrysum orientale</i> , <i>Hirtellina fruticosa</i> , <i>Linum arboreum</i> .	<i>Allium brachyspathum</i> , <i>Allium rubrovittatum</i> , <i>Hypericum cuisinii</i> .
Frachtis river (central part of Kasos)	This inactive river crosses the central part of the island from the Moutsounas Massif to the capital, Fry. The river bed is made up of limestone pebbles and clay from the Holocene era. The banks are made up of steep slopes of Eocene limestone, which are mostly in the shade, and therefore more humid.	<i>Helichrysum orientale</i> , <i>Hirtellina fruticosa</i> , <i>Silene fruticosa</i> , <i>Lutzia cretica</i> .	<i>Allium brachyspathum</i> , <i>Hypericum cuisinii</i> .
Moutsounas, Kapsalos and Vitsila Massifs (Antiperatos Bay, NW of Kasos).	The northern slopes of these massifs are furrowed by faults and by ancient, now inactive, rivers, that have created rather deep gorges with meandering shape characterized by very steep slopes remarkable for height and continuity. Very interesting are the clearly visible fault cliffs north of Kapsalos Mountain. The presence of a dwarf elephant was recently discovered in this site.	<i>Allium bourgeaui</i> subsp. <i>bourgeaui</i> , <i>Helichrysum orientale</i> , <i>Hirtellina fruticosa</i> , <i>Lutzia cretica</i> , <i>Silene fruticosa</i> , <i>Coronilla valentina</i> subsp. <i>glauca</i> , <i>Drimia numidica</i> , <i>Linum arboreum</i> .	<i>Allium brachyspathum</i> (limestone rocks in river beds), <i>Stachys mucronata</i> , <i>Cynara cornigera</i> , <i>Arenaria fragillima</i> , <i>Hypericum cuisinii</i> , <i>Limonium fragile</i> .
Kakos Potamos. Tributary of Foulia river (northwest end of Kasos).	This now inactive watercourse occupies a fault that extends longitudinally along the slopes of the Vitsila Massif.	<i>Helichrysum orientale</i> , <i>Silene fruticosa</i> , <i>Linum arboreum</i> .	

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References

- Arianoutsou, M., Bazos, I., Delipetrou, P. & Kokkoris, Y. 2010. The alien flora of Greece taxonomy, life traits and habitat preferences. – *Biol. Invas.*, **12**: 3525-3549.
- Barrier, E. 1979. Précisions sur l'édifice des nappes helléniques dans l'arc égéen oriental: le jalon de Kassos (Dodécanèse, Grèce). – *Compt. Rend. Acad. Sci. Paris*, **D289**: 453-456.
- Barrier, E. 1984. Geological Map of Greece, 1/50 000, Kassos Island. Institute of Geology and Mineral Exploration. Athens.
- Bergmeier, E. & Dimopoulos, P. 2003. The vegetation of islets in the Aegean and the relation between the occurrence of islet specialists, island size, and grazing. – *Phytocoenologia*, **33**(2-3): 447-474.
- Bothmer, R. von. 1974. Studies in the Aegean flora XXI. Biosystematic studies in the *Allium ampeloprasum* complex. – *Opera Bot.*, **34**: 1-104.
- Brullo, S., Pavone, P. & Salmeri, C. 2001. *Allium brachyspathum*, a new species from the island of Karpathos (S Aegean area Greece). – *Boccone*, **13**: 413-417.
- Brullo, S., Guglielmo, A., Pavone, P. & Salmeri, C. 2008. Taxonomic study on *Allium dentiferum* Webb & Berthel. (*Alliaceae*) and its relations with allied species from the Mediterranean. – *Taxon*, **57**(1): 243-253.
- Brullo, S. & Erben, M. 2016. The genus *Limonium* (*Plumbaginaceae*) in Greece. – *Phytotaxa*, **240**: 1-212.

- Cattaneo, C. & Grano, M.** 2014. Contribution to the flora of Tilos Island (Dodecanese Islands, Greece). – *Parnassiana Archives*, **6**: 41-53.
- Cattaneo, C. & Grano, M.** 2019. Reports 74–77. – In: **Vladimirov, V. & al.** (comp.), *New floristic records in the Balkans*: 40. – *Phytol. Balcan.*, **25**(3): 304-305.
- Cattaneo, C. & Grano, M.** 2020a. Reports 27–32. – In: **Vladimirov, V. & al.** (comp.), *New floristic records in the Balkans*: 43. – *Phytol. Balcan.*, **26**(3): 542-544.
- Cattaneo, C. & Grano, M.** 2020b. Checklist updating and analysis of the flora of Symi island and of the nearby island of Seskli (Dodecanese, Greece). – *Bocconea*, **28**: 425-463.
- Christodoulakis, D.** 1996. The flora of Ikaria (Greece, E. Aegean Islands). – *Phyton*, **36**: 63-91.
- Ciferri, R.** 1944. Flora e vegetazione delle isole italiane dell'Esopo. – *Ist. Bot. Reale Univ. Reale Lab. Crittog. Pavia, Atti ser. 5, suppl. A*.
- Daams, R. & van der Weerd, A.** 1980. Early Pliocene small mammals from the Aegean Island of Karpathos (Greece) and their paleogeographic significance. – *Geol. Mijnbouw.*, **59**(4): 327-331.
- Davis, P.H.** 1953. Notes on the summer flora of the Aegean. – *Notes Roy. Bot. Gard. Edinburgh*, **21**(3): 101-142.
- Davis, P.H.** (ed.). 1965-1985. *Flora of Turkey and the East Aegean Islands*. Vols. 1–9. Univ. Press, Edinburgh.
- Davis, P.H., Mill, R.R. & Tan, K.** (ed.). 1988. *Flora of Turkey and the East Aegean Islands*. Vol. 10 (Supplement). Edinburgh Univ. Press, Edinburgh.
- Dermitzakis, D.M.** 1990. Paleogeography, geodynamic processes and event stratigraphy during the late Cenozoic of the Aegean area. – *Accademia Nazionale dei Lincei*, **85**: 263-288.
- Dermitzakis, D.M. & Papanikolaou, D.J.** 1981. Paleogeography and geodynamics of the Aegean region during the Neogene. – *Ann. Géol. Pays Hellén.*, **30**: 245-289.
- Dermitzakis, D. & Triantaphyllou, M.** 1992. Contribution to the stratigraphy of Miocene sediments of Kassos island (South Sporades). – *Neues Jahrb. Geol. Paläontol., Monatsh.*, **1**: 52-64.
- Dimopoulos, P., Raus, Th. & Strid, A.** (eds). 2018. *Flora of Greece Web. Vascular Plants of Greece. An Annotated Checklist Version II* (June 2018). – <http://portal.cybertaxonomy.org/flora-greece/> [Last Accessed 10.09.2021].
- Euro+Med** (2006-). *Euro+Med PlantBase – the information resource for Euro-Mediterranean plant diversity*. – <http://ww2.bgbm.org/EuroPlusMed/> [Last Accessed 10.09.2021].
- Fassoulas, C.** 2018. The geodynamic and paleogeographic evolution of the Aegean in the Tertiary and Quaternary times: A review. – In: **Sfentourakis, S. & al.** (eds), *Biogeography and Biodiversity of the Aegean*. In honor of Prof. Moysis Mylonas. Pp. 25-45. Broken Hill Publishers Ltd, Nicosia, Cyprus.
- Georghiou, K. & Delipetrou, P.** 2010. Patterns and traits of the endemic plants of Greece. – *Bot. J. Linn. Soc.*, **162**: 130-422.
- Greuter, W.** 1971. Betrachtungen zur Pflanzengeographie der Südägäis. – *Op. Bot. Soc. Bot. Lund*, **30**: 49-64.
- Greuter, W.** 1972. The relict element of the flora of Crete and its evolutionary significance. – In: **Valentine, D.H.** (ed.), *Taxonomy, Phylogeography and Evolution*. Pp. 161-177. Academic Press, London.
- Greuter, W.** 1975. Historical phytogeography of the southern half of the Aegean Area. – In: **Jordanov, D. & al.** (eds), *Problems of Balkan Flora and Vegetation. Proceedings of the First International Symposium on Balkan Flora and Vegetation, 7-14 June 1973, Varna*. Pp. 17-21. Sofia.
- Greuter, W. & Raus, Th.** 1986. *Med-checklist Notulae*, **13**. – *Willdenowia*, **16**: 103-116.
- Greuter, W. & Raus, Th.** 1989. *Med-checklist Notulae*, **15**. – *Willdenowia*, **19**: 26-48.
- Greuter, W. & von Raab-Straube, E.** 2008. *Med-Checklist. A Critical Inventory of Vascular Plants of the Circum-Mediterranean Countries*. Vol. 2. Palermo, Genève, Berlin.
- Greuter, W., Pleger, R. & Raus, Th.** 1983. The vascular flora of the Karpathos island group (Dodekanesos, Greece). A preliminary checklist. – *Willdenowia*, **13**: 43-78.
- Greuter, W., Burdet, H.M. & Long, G.** 1984–1989. *Med-Checklist. A critical inventory of vascular plants of the circum-Mediterranean countries*. Vols. 1, 3, 4. Genève, Berlin.
- Kallimanis, A.S., Panitsa, M., Bergmeier, E. & Dimopoulos, P.** 2011. Examining the relationship between total species richness and single island palaeo- and neo-endemics. – *Acta Oecologica*, **37**: 65-70.
- Kontopanou, A. & Panitsa, M.** 2020. Habitat islands on the Aegean Islands (Greece): elevational gradient of chasmophytic diversity, endemism, phytogeographical patterns and need for monitoring and conservation. – *Diversity*, **12**(33): 1-20.
- Kougioumoutzis, K., Tiniakou, A., Georgiou, O. & Georgiadis, T.** 2012. Contribution to the flora of the South Aegean Volcanic Arc: Anafi Island (Kyklades, Greece). – *Willdenowia*, **42**(1): 127-141.
- Kougioumoutzis, K., Tiniakou, A., Georgiou, O. & Georgiadis, T.** 2014. Contribution to the flora of the South Aegean Volcanic Arc: Kimolos Island (Kyklades, Greece). – *Edinburgh J. Bot.*, **71**(2): 135-160.
- Kougioumoutzis, K., Valli, A.T., Georgopoulou, E., Simaiakis, S.M., Triantis, K.A. & Trigas, P.** 2016. Network biogeography of a complex island system: The Aegean Archipelago revisited. – *J. Biogeogr.*, **44**(3): 651-660.
- Larson, D.W., Matthes, U. & Kelly, P.E.** 2000. *Cliff Ecology: Pattern and Process in Cliff Ecosystems*. Cambridge Univ. Press.
- Major, C.J.F. & Barbey, W.** 1894. *Kasos. Etude botanique*. – *Bull. Herb. Boissier*, **2**: 329-341.
- Mastropoulos, G.** 2019. *Kasos: monumental topography and ceramic finds from the geometric until the Hellenistic period. Thesis*. Thessaloniki University (In Greek, unpubl.).
- Médail, F. & Quézel, P.** 1999. Biodiversity hotspots in the Mediterranean Basin: setting global conservation priorities. – *Conserv. Biol.*, **13**: 1510-1513.
- Melas, M.** 1985. *The Islands of Karpathos, Saros and Kasos in the Neolithic and Bronze Age, Studies in Mediterranean Archaeology*. LXVIII, Göteborg.
- Minas, K.** 1975. The toponym of Kasos, Athens [Μηνάς, Κ. 1975. Το τοπωνυμικό της Κάσου. Αθήνα].
- Naveh, Z.** 1974. Effects of fire in the Mediterranean region. Fire and ecosystems. – In: **Kozłowski, T.T. & Ahlgren, C.E.** (eds), *Fire and Ecosystems*. Pp. 401-434. Academic Press.

- Panitsa, M. & Tzanoudakis, D.** 1998. Contribution to the study of the Greek flora: Flora and vegetation of the E Aegean islands Agathonisi and Pharmakonisi. – *Willdenowia*, **28**(1/2): 95-116.
- Panitsa, M., Tzanoudakis, D. & Sfenthourakis, S.** 2008. Turnover of plants on small islets of the eastern Aegean Sea within two decades. – *J. Biogeogr.*, **35**(6): 1049-1061.
- Panitsa, M. & Kontopanou, A.** 2017. Diversity of chasmophytes in the vascular flora of Greece: floristic analysis and phytogeographical patterns. – *Bot. Serb.*, **41**(2): 199-211.
- Pawlowski, B.** 1971: De genera *Procopiana* Guselac – rodzaj *Procopiana* Guselac. – *Fragm. Florist. Geobot.*, **17**: 39-58.
- Phitos, D., Constantinidis, T. & Kamari, G.** (eds). 2009. The Red Data Book of Rare and Threatened Plants of Greece. Patra.
- Raus, T.** 1989. Die Flora von Armathia und der Kleininseln um Kasos (Dodekanes, Griechenland). – *Bot. Chron.*, **9**(1-2): 18-39.
- Raunkiaer, C.** 1934. The Life Forms of Plants and Statistical Plant Geography. Oxford.
- Rechinger, K.H.** 1944. Flora Aegaea. Flora der Inseln und Halbinseln des ägäischen Meeres. – *Akad. Wiss. Wien, Math. – Naturwiss. Kl., Denkschr.*, **105**(1).
- Rechinger, K.H.** 1949. Florae Aegeae Supplementum. – *Phyton*, **1**: 194-228.
- Rechinger, K.H. & Rechinger-Moser F.** 1951: Phytogeographia Aegaea. – *Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr.*, **105**(2).
- Runemark, H.** 1969. Reproductive drift a neglected principle in reproductive biology. – *Bot. Not.*, **122**(1): 90-129.
- Runemark, H., Snogerup, S. & Nordestam, B.** 1960. Studies in the Aegean flora 1. Floristic notes. – *Bot. Not.*, **113**: 421-450.
- Sen, S., Barrier, E. & Crété, X.** 2014. Late Pleistocene dwarf elephants from the Aegean islands of Kassos and Dilos, Greece. – *Ann. Zool. Fennici*, **51**: 27-42.
- Snogerup, S.** 1971. Evolutionary and Plant Geographical Aspects of Chasmophytic Communities. – In: *Plant Life of South West Asia*. Pp. 157-170.
- Snogerup, S. & Snogerup, B.** 1987. Repeated floristical observations on islets in the Aegean. – *Pl. Syst. Evol.*, **155**: 143-164.
- Sofos, A.M.** 1986. The folklore of Kasos. V. A. The agriculture, Athens [Σοφός, Α.Μ. 1986. λαογραφικά της Κάσου. Τόμος Α'. Τα γεωργικά, Αθήνα].
- Steinbauer, M.J., Field, R., Grytnes, J.A., Trigas, P., Ah-Peng, C., Attorre, F., ... & Beierkuhnlein, C.** 2016. Topography-driven isolation, speciation and a global increase of endemism with elevation. – *Global Ecol. Biogeogr.*, **25**(9): 1097-1107.
- Stefani, C. de, Major, C.J.F. & Barbey, W.** 1895. Karpathos. Étude Géologique, Paléontologique et Botanique. Lausanne
- Strid, A.** 2016. Atlas of the Aegean Flora. Part 1: Text & Plates. Part 2: Maps. Berlin.
- Strid, A. & Tan, K.** (eds). 1997. Flora Hellenica. Vol. 1. Königstein.
- Strid, A. & Tan, K.** (eds) 2002. Flora Hellenica. Vol. 2. Ruggell.
- Terrain Cartography Group.** 2017. Karpathos / Kasos Terrain Map 345 (scale: 1: 30.000).
- Tsakiri, M., Kougioumoutzis, K. & Iatrou, G.** 2016. Contribution to the vascular flora of Chalki Island (East Aegean, Greece) and biomonitoring of a local endemic taxon. – *Willdenowia*, **46**(1): 175-190.
- Turland, N.J., Chilton, L. & Press, J.R.** 1993. Flora of the Cretan Area: Annotated Checklist & Atlas. The Natural History Museum, London.
- Trigas, P., Panitsa, M. & Tsiftsis, S.** 2013. Elevational gradient of vascular plant species richness and endemism in Crete - The effect of post-isolation mountain uplift on a continental island system. – *PLoS One*, **8**(3) e59425: 1-13.
- Tutin, T.G., Heywood, V.H., Burges, N.A., Moore, D.M., Valentine, D.H., Walters, S.M. & Webb, D.A.** (eds). 1964-1980. Flora Europaea. Vols. 1-5. Cambridge Univ. Press, Cambridge.
- Tutin, T.G., Burges, N.A., Chater, A.O., Edmondson, J.R., Heywood, V.H., Moore, D.M., Valentine, D.H., Walters, S.M. & Webb, D.A.** (eds) 1993. Flora Europaea. 2nd ed., Vol. 1. Cambridge Univ. Press, Cambridge.
- Wagenitz, G. & Runemark, H.** 1970. Die Gattung *Filago* L. s.l. (*Compositae – Inuleae*) in der Ägäis. – *Willdenowia*, **6**: 115-138.
- Wörz, A.** 2006. Systematics and distribution patterns of the Balkan species of *Eryngium* (*Apiaceae, Saniculoideae*). – *Phytol. Balcan.*, **12**(2): 221-230.

Annex 1. Updated inventory of the flora of Kasos

Abbreviations and symbols used:

Life forms:

P = Phanerophyte
C = Chamaephyte
H = Hemicryptophyte
G = Geophyte
T = Therophyte
A = Aquatic

Chorological groups:

Widely distributed taxa:

Eu = European
EA = European-SW Asian
ES = Euro-Siberian
Pt = Paleotemperate
Ct = Circumtemperate
IT = Irano-Turanian
ST = Subtropical-Tropical
Co = Cosmopolitan

Mediterranean taxa:

EM = Eastern Mediterranean
Me = Mediterranean
MA = Mediterranean-Atlantic
ME = Mediterranean-European
MS = Mediterranean-SW Asian

Balkan taxa:

BA = Balkan-Anatolian

Endemic taxa

Endemic

Alien taxa:

Am. = American
N-Am. = North American
S-Am. = South American
S-Afr. = South African
Neotrop. = Neotropical
Pantrop. = Pantropical

Record information:

AS = Arne Strid's Atlas
Both = Bothmer
CF = Ciferri
Fae = Rechinger's Flora aegaea
RA = Raus
GR = Greuter
C = observed by the authors
Cattaneo's = own findings
C* = first observation
(!) = names placed between parentheses refer to literature records not confirmed.
" " = quotation marks refers to misapplied or not validly published names.

Aspleniaceae

Asplenium ceterach L. - H - EA; GR, AS, C.

Ophioglossaceae

Ophioglossum lusitanicum L. - G - MA; AS.

Polypodiaceae

Polypodium cambricum L. - G - MA; GR, as *Polypodium cambricum* subsp. *australe* (Fée) Greuter & Burdet., AS.

Pteridaceae

Adiantum capillus-veneris L. - G - ST; GR, AS, C.
Allosurus acrosticus (Balb.) Christenh. - G - Me; Fae, CF, both as *Cheilanthes fragrans* SW., GR, as *Cheilanthes pteridioides* (Reichard) C. Chr., AS.
Anogramma leptophylla (L.) Link - T - Co; GR, AS, C.

Selaginellaceae

Selaginella denticulata (L.) Spring. - H - Me; GR, AS, C.

Cupressaceae

Juniperus turbinata Guss. - P - MA; GR, as *Juniperus phoenicea* L., C.

Ephedraceae

Ephedra foeminea Forssk. - P - Me; GR, as *Ephedra campylopoda* C. A. Mey., C.

Pinaceae

Pinus brutia Ten. - P - Me; AS, C.

Acanthaceae

Acanthus spinosus L. - H - Me; Fae, as *Acanthus spinosissimus* Pers., GR, AS, C.

Aizoaceae

Carpobrotus edulis (L.) N. E. Br. - C - S-Afr.; AS, C.
Malephora purpureocrocea (Haw.) Schwantes - P - S-Afr.; AS.
Mesembryanthemum nodiflorum L. - T - Me; GR, AS, C.

Amaryllidaceae

Allium ampeloprasum L. - G - Me; Both, AS, Cattaneo's.
Allium bourgeaui Rech. f. subsp. *bourgeaui* - G - EM; Both, GR, AS, Cattaneo's.
Allium brachyspathum Brullo & al. - G - Endemic; C*.
Allium commutatum Guss. - G - Me; Both, AS, Cattaneo's.

Allium dentiferum Webb & Berthel. - G - Me; C*.
Allium hirtovaginatatum Kunth - G - Me; AS.
Allium neapolitanum Cirillo - G - Me; RA, AS.
Allium rubrovittatum Boiss. & Heldr. - G - EM; RA, AS, Cattaneo's.
Allium subhirsutum L. - G - Me; Fae, CF, GR, AS.
Allium tardans Greuter & Zahar. - G - Endemic; RA, AS.
Narcissus tazetta L. - G - MS; RA, AS.
Pancreatum maritimum L. - G - Me; AS, C.
Sternbergia lutea subsp. *greuteriana* (Kamari & R. Ar-telari) Strid - G - Endemic; AS.

Amaranthaceae

Amaranthus blitoides S. Watson - T - N-Am.; AS.

Anacardiaceae

Pistacia lentiscus L. - P - Me; Fae, GR, AS, C.

Apiaceae

Bifora testiculata (L.) Spreng. - T - MS; AS.
Bunium ferulaceum Sm. - G - EM; AS.
Bupleurum gracile d'Urv - T - Me; Fae, CF, both as *Bupleurum flavum* Forssk., GR, AS.
Bupleurum lancifolium Hornem - T - MS; Gr, AS.
Bupleurum semicompositum L. - T - MS; RA, AS.
Bupleurum subovatum Spreng. - T - EA; AS.
Bupleurum trichopodium Boiss. & Spruner - T - Me; AS.
Cachrys cristata DC. - H - Me; AS, C.
Crithmum maritimum L. - C - ME; RA, AS, C.
Daucus carota subsp. *maximus* (Desf.) Ball - T - Me; AS, C.
Daucus involucratus Sm. - T - EM; GR, AS.
Eryngium amorginum Rech. f. - H - Endemic; C*.
Eryngium maritimum L. - G - ME; GR, AS, C.
Ferula communis subsp. *glauca* (L.) Rouy & E.G. Camus - H - ME; RA, AS.
Foeniculum vulgare Mill. - H - Me; AS, C.
Hellenocarum multiflorum (Sm.) H. Wolff - G - Me; GR as *Carum multiflorum*, AS.
Lagoecia cuminoides L. - T - ME; Fae, CF, GR, AS, C.
Opopanax hispidus (Friv.) Griseb. - H - MS; AS.
Orlaya daucooides (L.) Greuter - T - MS; Fae, CF, both as *Orlaya platycarpus* W.D.J. Koch, GR, AS.
Pimpinella cretica Poir. - T - EM; GR, AS.
Pseudorlaya pumila (L.) Grande - H - Me; GR, AS.
Scaligeria napiformis (Spreng.) Grande - H - EM; Fae, CF, as *Scaligeria cretica* (Mill.) Boiss., GR, AS.

Scandix australis L. subsp. *australis* - T - ME; AS.
Scandix pecten-veneris L. - T - EA; GR, AS.
Seseli crithmifolium (DC.) Boiss. - C - Endemic; C*.
Smyrniolum olusatrum L. - H - MA; AS.
Tordylium apulum L. - T - Me; Fae, CF, GR, AS.
Torilis leptophylla (L.) Rchb. f. - T - EA; Fae, CF, as *Caucalis leptophylla* L., Runemark 1969, GR, AS.
Torilis nodosa (L.) Gaertn. - T - ES; GR, AS.

Araceae

Arisarum vulgare O. Targ. Tozz. - G - Me; AS.
Arum creticum Boiss. & Heldr. - G - EM; GR, AS, C.
Dracunculus vulgaris Schott - G - Me; Fae, CF, as *Dracunculus vulgaris* var. *creticus* (Schott) Engler, GR, AS, C.

Aristolochiaceae

Aristolochia cretica Lam. - G - Endemic; GR, AS, C.
Aristolochia parvifolia Sm. - H - Me; GR, AS.

Asparagaceae

Asparagus aphyllus L. - C - ME; GR, AS.
Asparagus horridus L. - C - Me; AS, AS.

Asphodelaceae

Asphodelus fistulosus L. - G - Me; Fae, CF, GR, AS, C.
Asphodelus ramosus L. - G - Me; GR as *Asphodelus aestivus* Brot., AS, C.
 According to Dimopoulos & al. (2013) *Asphodelus aestivus* L. is absent from Greece and confined to the W Mediterranean area. Greek records refer to *A. ramosus* L. subsp. *ramosus*.

Asteraceae

Achillea maritima (L.) Ehrend. & Y. P. Guo - H - MA; GR, as *Otanthus maritimus* (L.) Hoffmanns. & Link, AS, C.
Aetheorhiza bulbosa subsp. *microcephala* Rech. f. - G - EM; Fae, CF, both as "*Crepis bulbosa*", GR, AS.
Anthemis ammanthus Greuter subsp. *ammanthus* - T - Endemic; GR, AS, Cattaneo's.
Anthemis arvensis L. - T - EA; Fae, CF, AS, C.
Anthemis chia L. - T - Me; AS.
Anthemis rigida Heldr. subsp. *rigida* - H - EM; Fae, CF, both as *Anthemis cretica*, GR, AS.
Artemisia arborescens (Vaill.) L. - C - Me; AS, C.
Asteriscus aquaticus (L.) Less. - T - ME; AS.
Atractylis cancellata L. - T - Me; GR, AS, C.
Bellis annua L. - T - Me; AS.

- Bellium minutum* (L.) L. - T - Me; Fae, CF, GR, AS, Cattaneo's.
- Calendula arvensis* (Vaill.) L. - T - ME; Fae, CF, GR, AS.
- Carduus argentatus* L. - T - EM; Fae, as "*Tyrimnus leucogrpahus*", GR, AS.
- Carduus pycnocephalus* L. - T - ME; GR, AS.
- Carlina corymbosa* subsp. *graeca* (Heldr. & Sartori) Nyman - H - BA; GR, AS, C.
- Carlina sitiensis* Rech. f. - H - Endemic; RA, AS, Cattaneo's.
- Carlina tragacanthifolia* Klatt - H - EM; GR, AS, C.
- Carthamus caeruleus* L. - H - Me; Fae, as *Carthamus caeruleus* var. *incisus* (DC.) Hayek, CF, GR, both as *Carduncellus caeruleus* (L.) C. Presl, AS.
- Carthamus lanatus* subsp. *baeticus* (Boiss. & Reut.) Nyman - T - Me; AS.
- Carthamus leucocaulos* Sm. - T - Endemic; AS.
- Centaurea aegialophila* Wagenitz - H - EM; GR, AS.
- Centaurea raphanina* Sm. subsp. *raphanina* - H - Endemic; Fae, CF, Runemark 1969, GR, AS, C.
- Chondrilla juncea* L. - H - ME; C*.
- Cichorium pumilum* Jacq. - T - MS; Fae, CF, GR, AS.
- Cichorium spinosum* L. - C - Me; GR, AS, C.
- Crepis commutata* (Spreng.) Greuter - H - EM; GR, AS.
- Crepis fraasii* Sch. Bip. - H - EM; GR, AS.
- Crepis micrantha* Czerep. - T - EA; GR, AS.
- Crepis multiflora* Sm. - T - EM; Fae, CF, GR, AS.
- Crepis neglecta* subsp. *cretica* (Boiss.) Hayek - T - Endemic; Fae, CF, both as "*Crepis neglecta*", GR, as *Crepis cretica* Boiss., AS.
- Crepis pusilla* (Sommier) Merxm. - T - Me, AS.
- Crepis tybakiensis* Vierh. - T - Endemic; GR, AS.
- Crupina crupinastrum* (Moris) Vis. - T - EA; Fae, CF, GR, AS.
- Cynara cornigera* Lindl. - H - EM; Fae, CF, Runemark & al. 1960, all as *Cynara sibthorpiana* Boiss. & Heldr., GR, AS, C.
- Dittrichia graveolens* (L.) Greuter - T - Me; RA, AS, C.
- Dittrichia viscosa* (L.) Greuter - C - Me; GR, AS, C.
- Echinops spinosissimus* subsp. *spinosissimus* - H - Me; GR, AS, C.
- Erigeron bonariensis* L. - H - Neotrop; AS, C.
- Filago aegaea* Wagenitz subsp. *aegaea* - T - Endemic; AS.
- Filago aegaea* subsp. *aristata* Wagenitz - T - EM; AS.
- Filago contracta* (Boiss.) Chrtek & Holub - T - EM; Fae, CF, as *Evax contracta* Boiss., GR, AS.
- (*Filago cretensis* Gand. subsp. *cretensis*; Wagenitz 1970).
- Filago cretensis* subsp. *cycladum* Wagenitz - T - Endemic; GR, AS.
- Filago eriocephala* Guss. - T - Me; AS.
- Filago gallica* L. - T - MA; AS.
- Filago pygmaea* L. - T - Me; RA, AS.
- Filago pyramidata* L. - T - Me; Fae, CF, both as *Filago spathulata* C. Presl., GR, AS.
- Glebionis coronaria* (L.) Spach - T - Me; GR, as *Chrysanthemum coronarium* L., AS.
- Glebionis segetum* (L.) Fourr. - T - Me; GR, as *Chrysanthemum segetum* L., AS.
- Hedypnois rhagadioloides* (L.) F.W. Schmidt subsp. *rhagadioloides* - T - Me; Fae, CF, both as *Hedypnois rhagadioloides* subsp. *cretica* (L.) Hayek, GR, AS.
- Hedypnois rhagadioloides* subsp. *tubaeformis* (Ten.) Hayek - T - Me; GR, AS.
- Helichrysum orientale* (L.) Vaill. - H - EM; Fae, CF, GR, AS, Cattaneo's.
- Helichrysum stoechas* subsp. *barrelieri* (Ten.) Nyman - C - Me; Fae, CF, both as *Helichrysum siculum* (Sprengel) Boiss., Gr, as *Helichrysum barrelieri* (Ten.) Greuter, AS, C.
- Hirtellina fruticosa* (L.) Dittrich - C - Endemic; Fae, CF, Gr, as *Staelina fruticosa* (L.) L., AS, Cattaneo's.
- Hyoseris scabra* L. - T - Me; GR, AS.
- Hypochaeris achyrophorus* L. - T - Me; GR, AS.
- Jacobaea gnaphalioides* (Spreng.) Veldkamp - C - Endemic; C*.
- Lactuca acanthifolia* (Willd.) Boiss. - C - EM; RA, as *Scariola acanthifolia* (Willd.) Soják, AS, C.
- Lactuca serriola* L. - H - Pt; AS, C.
- Lactuca tuberosa* Jacq. - H - EA; Fae, CF, as *Lactuca cretica* Desf., GR, as *Steptorhamphus tuberosus* (Jacq.) Grossh., AS.
- Leontodon tuberosus* L. - H - Me; GR, AS, C.
- Matricaria recutita* L. - T - Co; AS.
- Notobasis syriaca* (L.) Cass. - T - Me; Fae, CF, AS.
- Pallenis spinosa* (L.) Cass. - H - Me; Fae, CF, as *Pallenis spinosa* var. *microcephala* Halácsy, GR, AS, C.
- Phagnalon rupestre* subsp. *graecum* (Boiss. & Heldr.) Batt. - C - Me; GR, as *Phagnalon graecum* Boiss. & Heldr., AS, Cattaneo's.
- Phagnalon rupestre* (L.) DC. subsp. *rupestre* - C - Me; AS, C.
- Picnomon acarna* (L.) Cass. - T - Pt; AS, C.
- Picris rhagadioloides* (L.) Desf. - T - Pt; AS, C.

Ptilostemon chamaepeuce (L.) Less. - C - EM; GR, AS.
Reichardia intermedia (Sch. Bip.) Samp. - T - Me; GR, AS.
Reichardia picroides (L.) Roth - H - Me; GR, AS, C.
Rhagadiolus stellatus (L.) Gaertn. - T - Me; GR, AS.
Scolymus hispanicus L. - H - ME; GR, AS, C.
Senecio leucanthemifolius Poir. - T - Me; GR, as *Senecio gallicus* Chaix, AS, C.
Senecio vulgaris L. - T - Pt; GR, AS, C.
Sonchus asper subsp. *glaucescens* (Jord.) Ball - T - Pt; AS, C.
Sonchus oleraceus L. - T - ME; GR, AS, C.
Taraxacum hellenicum Dahlst. - H - Me; AS.
Taraxacum sect. *scariosa* Hand.-Mazz. - H - Me; GR, as *Taraxacum megalorhizon* (Forssk.) Hand.-Mazz., AS.
Taraxacum scolopendrinum Dahlst. - H - EM; AS.
Tragopogon coelesyriacus Boiss. - H - EM; Fae, CF, GR, as *Tragopogon longirostris* Bischoff; AS.
Tragopogon dubius Scop. - T - EA; AS.
Tyrimnus leucographus (L.) Cass. - T - Me; AS.
Urospermum picroides (L.) F.W. Schmidt - T - Me; GR; AS, C.

Berberidaceae

Leontice leontopetalum L. - H - MS; CF, GR, AS.

Boraginaceae

Anchusa aegyptiaca (L.) A. DC. - T - EM; Fae, CF, GR, AS.
Anchusa azurea Mill. - H - Me; GR, AS.
Anchusa undulata subsp. *hybrida* (Ten.) Bég. - H - Me; GR, AS.
Asperugo procumbens L. - T - Pt; AS.
Buglossoides arvensis (L.) I.M. Johnst. subsp. *arvensis* - T - Me; AS.
Buglossoides arvensis subsp. *sibthorpiana* (Griseb.) R. Fern. - T - EA; AS.
Cynoglossum creticum Mill. - H - EA; Fae, GR; AS.
Echium angustifolium Mill. - T - EM; Fae, CF, both as *Echium diffusum* var. *hispidum* Sm. Hayek, GR, AS, Cattaneo's.
Echium arenarium Guss. - H - Me; RA, AS.
Echium parviflorum Moench - T - Me; Fae, CF, GR, AS.
Heliotropium dolosum De Not. - T - EA; AS, C.
Lithodora hispidula (Sm.) Griseb. subsp. *hispidula* - C - EM; Fae, CF, both as *Lithospermum hispidulum* Sm., GR, AS, C.

Myosotis ramosissima Rochel - T - EA; CF, as “*Myosotis collina*”, AS.

Neatostema apulum (L.) I.M. Johnst. - T - Me; AS.

Symphytum creticum (Willd.) Greuter & Rech. f. - H - Endemic; GR, as *Symphytum insulare* (Pawł.) Greuter & Burdet, AS.

Brassicaceae

Biscutella didyma L. - T - Me; Fae, as *Biscutella ciliata* DC., CF, GR, AS.

Brassica cretica subsp. *aegaea* (Heldr. & Halácsy) Snogerup, M. A. Gust. & Bothmer - C - EM; AS, C.

Cakile maritima Scop. - T - ME; GR, AS, C.

Capsella bursa-pastoris (L.) Medik. - T - Co; AS.

Cardamine hirsuta L. - T - Co; AS.

Clypeola jonthlaspi L. subsp. *jonthlaspi* - T - MS; AS.

Didesmus aegyptius (L.) Desv. - T - EM; Fae, CF, as *Rapistrum aegyptium* (L.) Crantz, GR, AS.

Diplotaxis viminea (L.) DC. - T - Me; GR, AS.

Draba praecox Steven - T - EA; AS.

Eruca vesicaria (L.) Cav. - T - MS; AS.

Erysimum candicum subsp. *carpathum* Snogerup - C - Endemic; GR, AS.

Hirschfeldia incana (L.) Lagr.-Foss. - T - EA; GR, AS.

Lepidium coronopus (L.) Al-Shehbaz - T - Pt; AS.

Lepidium draba L. - H - Co; Fae, CF, both as *Cardaria draba* (L.) Desv., AS.

Lepidium graminifolium L. - H - EA; C*.

Lutzia cretica (L.) Greuter & Burdet; Fae, CF, Rune-mark & al. 1960, all as *Alyssum creticum* L., AS, C.

Malcolmia chia (L.) DC. - T - EM; GR, AS.

Malcolmia flexuosa (Sm.) Sm. - T - EM; Fae, CF, GR, AS.

Maresia nana (DC.) Batt. - T - MS; C*.

Matthiola incana (L.) R. Br. - H - ME; AS, C.

Matthiola sinuata (L.) R. Br. - H - ME; RA, as *Matthiola sinuata* subsp. *glandulosa* (Vis.) Vierh., AS.

Matthiola tricuspidata (L.) R. Br. - T - Me; AS, Cattaneo's.

Microthlaspi perfoliatum (L.) F.K. Mey - T - Pt; AS.

Raphanus raphanistrum L. - T - EA; AS.

Rapistrum rugosum (L.) All. - T - EA; CF, as *Rapistrum orientale* (L.) Crantz, GR, AS.

Sinapis arvensis L. - T - ES; Fae, CF, GR, AS.

Sisymbrium officinale (L.) Scop. - T - ES; AS.

Sisymbrium orientale L. - T - EA; Fae, CF, GR, AS.

Sisymbrium polyceratium L. - T - Me; Fae, CF, AS.

Cactaceae

Austrocyliodropuntia subulata (Muehlenpf.) Backeb.; C*.

Opuntia ficus-indica (L.) Mill. - P - Neotrop; AS, C.

Caesalpiniaceae

Ceratonia siliqua L. - P - Me; GR, AS, C.

Campanulaceae

Campanula carpatha Halácsy - H - Endemic; CF, as *Campanula tubulosa* var. *carpatha* (Halácsy) Hayek, AS.

Campanula delicatula Boiss. - T - EM; Fae, CF, GR, AS.

Campanula erinus L. - T - ME; Fae, CF, GR, AS.

Campanula pinatzii Greuter & Phitos - T - Endemic; Fae, CF, both as "*Campanula drabifolia*", GR, AS, Cattaneo's.

Legousia hybrida (L.) Delarbre - T - EA; AS.

Capparaceae

Capparis orientalis Veill. - P - Me; RA, AS, C.

Capparis spinosa L. - C - Me; AS, C.

Caryophyllaceae

Arenaria aegaea Rech. f. - T - Endemic; RA, AS.

Arenaria fragillima Rech. f. - T - Endemic; GR, AS, Cattaneo's.

Arenaria leptoclados (Rchb.) Guss. - T - EA; RA, AS.

Cerastium comatum Desv. - T - EM; AS, C.

Cerastium semidecandrum L. - T - EA; AS.

Dianthus cinnamomeus Sm. subsp. *cinnamomeus* - H - Endemic; Fae, as "*Dianthus xylorrhizus*", GR, AS, Cattaneo's.

Dianthus fruticosus subsp. *carpathus* Runemark - C - Endemic; Fae, CF, both as *Dianthus arboreus* L., Runemark 1969, GR, AS, C.

Herniaria hirsuta subsp. *cinerea* (DC.) Cout. - T - MS; GR, as *Herniaria cinerea* DC., AS.

Minuartia hybrida (Vill.) Schischk. - T - EA; GR, AS.

Minuartia lydia (Boiss.) Bornm. - T - EM, AS.

Paronychia argentea Lam. - H - Me; AS, C.

Paronychia macrosepala Boiss. - H - EM; Fae, CF, GR, AS, Cattaneo's.

Petrorhagia dubia (Raf.) G. López & Romo - T - Me; Fae, CF, GR, as *Kohlrauschia velutina* (Guss.) Rchb., AS.

Polycarpon tetraphyllum (L.) L. - T - MS; GR, AS, C.

Sagina apetala Ard. - T - EA; GR, AS.

Sagina maritima Don - T - MA; GR, AS.

Silene ammophila subsp. *carpathae* Chowdhuri - T - Endemic; RA, AS, Cattaneo's.

Silene behen L. - T - Me; Fae, CF, AS.

Silene fruticosa L. - C - Me; Fae, CF, GR, AS, C.

Silene gallica L. - T - ME; AS.

Silene holzmannii Boiss. - T - Endemic; RA, AS, C.

Silene nocturna L. - T - Me; Fae, CF, GR, AS.

Silene sedoides Poir. - T - Me; GR, AS, C.

Silene vulgaris subsp. *macrocarpa* Turrill - H - Me; Fae, as "*Silene vulgaris* subsp. *angustifolia*", CF, as *Silene vulgaris* (Moench) Garcke, GR, AS.

Spergularia bocconei (Scheele) Graebn. - T - MA; GR, AS, C.

Stellaria apetala Ucria - T - EA; AS.

Velezia rigida L. - T - MS; GR, AS.

Chenopodiaceae

Arthrocnemum macrostachyum (Moric.) K. Koch - C - Me; AS.

Atriplex halimus L. - P - MS; AS.

Beta vulgaris subsp. *adanensis* Pamuk - T - EM; AS.

Caroxylon aegaeum (Rech. f.) Akhiani & Roalson - P - Endemic; Runemark 1960, GR, both as *Salsola aegaea* Rech. f., AS, C.

Caroxylon carpathum (P.H. Davis) Akhiani & Roalson - C - Endemic; GR, as *Salsola carpatha* P.H. Davis, AS.

Chenopodium murale (L.) S. Fuentes & al. - T - EA; GR, as *Chenopodium murale* L., AS, C.

Chenopodium giganteum D. Don - T - Pantrop.; AS.

Halimione portulacoides (L.) Aellen - C - ME; RA, as *Atriplex portulacoides* L., AS, C.

Noaea mucronata (Forssk.) Asch. & Schweinf. - C - IT; GR, AS, C.

Salsola tragus L. - T - Pt; GR, as *Salsola kali* L., AS.

Cistaceae

Cistus creticus L. subsp. *creticus* - C - M; CF, as *Cistus villosus* var. *incanus*, GR, AS, C.

Cistus parviflorus Lam. - C - EM; Fae, Runemark 1969, GR, AS, Cattaneo's.

Cistus salvifolius L. - C - Me; AS, C.

Fumana arabica (L.) Spach - C - Me; Fae, CF, GR, AS.

Fumana thymifolia (L.) Webb - C - Me; Fae, GR, AS.

Helianthemum apenninum (L.) Mill. - C - Me; Fae, CF, GR, AS, Cattaneo's.

Helianthemum salicifolium (L.) Mill. - T - EA; Fae, CF, GR, AS.

Tuberaria guttata (L.) Fourr. - T - MA; Fae, CF, GR, AS.

Colchicaceae

Colchicum pusillum Sieber - G - EM; RA, AS.

Convolvulaceae

Convolvulus althaeoides L. - H - Me; Fae, CF, GR, AS, C.

Convolvulus arvensis L. - H - Co; AS, C.

Convolvulus lineatus L. - C - MS; Fae, CF, GR, AS.

Convolvulus oleifolius Desr. - C - Me; GR, AS, C.

Convolvulus siculus L. - T - Me; GR, AS.

Cuscuta palaestina Boiss. - T - Me; Fae, CF, both as "Cuscuta epithymum", GR, AS.

Crassulaceae

Crassula alata (Viv.) A. Berger - T - EM; AS.

Rosularia serrata (L.) A. Berger - H - EM; GR, AS, C.

Sedum creticum C. Presl - C - Endemic; AS.

Sedum litoreum Guss. - T - Me; Fae, CF, GR, AS.

Sedum rubens L. - T - MA; RA, AS.

Sedum sediforme (Jacq.) Pau - C - Me; AS.

Umbilicus horizontalis (Guss.) DC. - G - Me; Fae, CF, both as *Cotyledon horizontalis* Guss., GR, AS, C.

Umbilicus parviflorus (Desf.) DC. - G - BA; AS.

Cucurbitaceae

Bryonia cretica L. - H - EM; GR, AS.

Ecballium elaterium (L.) A. Rich. - G - MS; AS, C.

Cymodoceaceae

Cymodocea nodosa (Ucria) Asch. - A - MA; RA, AS.

Cyperaceae

Carex flacca Schreb. - G - Eu; AS.

Carex illegitima Ces. - H - Me; AS.

Ericaceae

Erica manipuliflora Salisb. - C - Me; GR, AS, C.

Euphorbiaceae

Andrachne telephioides L. - C - MS; Fae, CF, GR, AS, C.

Chrozophora tinctoria (L.) A. Juss. - T - MS; C*.

Euphorbia acanthothamnus Heldr. & Sart. ex Boiss. - C - EM; Fae, CF, Runemark 1969, GR, AS, C.

Euphorbia aleppica L. - T - MS; GR, AS.

Euphorbia dendroides L. - P - Me; GR, AS, C.

Euphorbia dimorphocaulon P.H. Davis - H - EM; AS.

Euphorbia exigua L. - T - ME; AS.

Euphorbia falcata L. - T - EA; AS.

Euphorbia helioscopia L. - T - Co; GR, AS.

Euphorbia hypericifolia L.; C*.

This alien species is reported in EAe (Euro+Med 2006–) as being introduced but of unknown status, hence it has not been counted among the vascular flora of Kasos.

Euphorbia paralias L. - H - ME; RA, AS.

Euphorbia peplis L. - T - ME; AS, C.

Euphorbia peplus L. - T - Co; GR, AS, C.

Euphorbia serpens Kunth - T - N-Am.; AS, C*.

Mercurialis annua L. - T - Pt; Fae, CF, GR, AS, C.

Fabaceae

Anagyris foetida L. - P - Me; GR, AS, C.

Anthyllis vulneraria subsp. *rubriflora* (DC.) Arcang. - H - Me; Fae, as *Anthyllis spruneri* (Boiss.) G. Beck, CF, GR, AS.

Astragalus austroaegaeus Rech. f. - H - Endemic; Fae, CF, both as *Astragalus tauricolus* Boiss., GR, AS.

Astragalus hamosus L. - T - MS; GR, AS.

Astragalus pelecinus (L.) Barneby - T - Me; RA, AS.

Bituminaria bituminosa (L.) C.H. Stirt. - H - ME; GR, as *Aspalthium bituminosum* (L.) Fourr., AS, C.

Coronilla scorpioides (L.) W.D.J. Koch - T - ME; GR, AS.

Coronilla valentina subsp. *glauca* (L.) Batt. - P - Me; C*.

Genista fasselata Decne. - P - EM; Fae, CF, as *Genista sphaelata* Spach, GR, AS, C.

Hippocrepis biflora Spreng. - T - MS; GR, AS.

Hippocrepis ciliata Willd. - T - Me; GR, AS.

Hippocrepis cyclocarpa Murb. - T - Me; AS.

Hymenocarpos circinnatus (L.) Savi - T - Me; GR, AS.

Lathyrus annuus L. - T - MS; AS.

Lathyrus aphaca L. - T - MS; Fae, CF, GR, AS.

Lathyrus cicera L. - T - MS; Fae, CF, GR, AS.

Lathyrus saxatilis (Vent.) Vis. - T - Me; GR, AS.

Lathyrus setifolius L. - T - Me; Fae, CF, GR, AS.

Lathyrus sphaericus Retz. - T - EA; AS.

Lens nigricans (M. Bieb.) Godr. - T - Me; GR, AS.

Lotus cytisoides L. - H - Me; GR, AS, Cattaneo's.

Lotus edulis L. - T - Me; GR, AS.

Lotus halophilus Boiss. & Spruner - T - Me; RA, AS.

Lotus ornithopodioides L. - T - Me; GR, AS.

Lotus peregrinus L. - T - EM; GR, AS.

- Medicago arborea* L. - P - Me; Fae, CF, GR, AS, C.
Medicago coronata (L.) Bartal. - T - MS; Fae, CF, GR, AS.
Medicago disciformis DC. - T - Me; GR, AS.
Medicago heyneana Greuter - T - EM; AS.
Medicago littoralis Loisel - T - MS; GR, AS.
Medicago marina L. - T - ME; AS.
Medicago minima (L.) L. - C - Pt; GR, AS.
Medicago monspeliaca (L.) Trautv. - T - MS; Fae, GR, both as *Trigonella monspeliaca* L., AS.
Medicago orbicularis (L.) Bartal. - T - MS; Fae, CF, GR, AS.
Medicago polymorpha L. - T - Pt; CF, as *Medicago hispida* var. *denticulata* (Willd.) Urban, GR, AS.
Medicago rigidula (L.) All. - T - MS; AS.
Medicago rugosa Desr. - T - Me; GR, AS.
Medicago truncatula Gaertn. - T - MS; GR, AS.
Medicago tuberculata (Retz.) Willd. - T - Me; Fae, CF, GR, AS.
Melilotus indicus (L.) All. - T - EA; AS.
Melilotus sulcatus Desf. - T - Me; Fae, CF, GR, AS.
Onobrychis aequidentata (Sm.) d'Urv. - T - Me; CF, GR, AS.
Onobrychis caput-galli Lam. - T - Me; GR, AS.
Ononis ornithopodioides L. - T - Me; GR, AS, Cattaneo's.
Ononis ramosissima Desf. - C - Me; AS, C.
Ononis reclinata L. - T - ME; Fae, CF, GR, AS.
Ononis viscosa subsp. *breviflora* (DC.) Nyman - T - Me; CF, both as *Ononis breviflora* DC., AS.
Scorpiurus muricatus L. - T - Me; Fae, as *Scorpiurus subvillosus* L., CF, as *Scorpiurus rubrivillosus* L., GR, AS.
Securigera securidaca (L.) Degen & Dörf. - T - Me; AS.
Sulla spinosissima (L.) B.H. Choi & H. Ohashi - T - Me; GR, as *Hedysarum spinosissimum* L., AS.
Tetragonolobus purpureus Moench - T - Me; GR, AS.
Trifolium angustifolium L. - T - EA; GR, AS.
Trifolium campestre Schreb. - T - EA; Fae, CF, GR, AS.
Trifolium clypeatum L. - T - EM; AS.
Trifolium dasyurum C. Presl - T - EM; Fae, AS.
Trifolium infamia-ponertii Greuter - T - Me; GR, AS.
Trifolium physodes M. Bieb. - H - Me; Fae, GR, AS.
Trifolium rechingeri Rothm. - H - Endemic; RA, AS.
Trifolium scabrum L. - T - EA; GR, AS.
Trifolium stellatum L. - T - Me; GR, AS.
Trifolium subterraneum L. - T - ME; AS.
Trifolium suffocatum L. - T - ME; GR, AS.
Trifolium tomentosum L. - T - Me; Fae, GR, AS.
Trifolium uniflorum L. - H - EM; Fae, GR, AS.
Trigonella corniculata subsp. *balansae* (Boiss. & Reut.) Lassen - T - EM; GR, as *Trigonella balansae* Boiss. & Reut., AS.
Trigonella corniculata subsp. *rechingeri* (Širj.) Lassen - T - Endemic; AS.
Trigonella spinosa L. - T - EM; GR; AS.
Tripodion tetraphyllum (L.) Fourr. - T - Me; GR, as *Anthyllis tetraphylla* L., AS.
Vicia angustifolia L. - T - Pt; AS.
Vicia cretica Boiss. & Heldr. - T - EM; AS.
Vicia cuspidata Boiss. - T - EM; AS.
Vicia ervilia (L.) Willd. - T - EA; GR, AS.
Vicia hybrida L. - T - ME; AS.
Vicia lathyroides L. - T - ME; GR, AS.
Vicia sativa L. subsp. *sativa* - T - Pt; CF, as *Vicia angustifolia* var. *nigra* L., AS.
Vicia tenuifolia subsp. *dalmatica* (A. Kern.) Greuter - H - ME; Fae, as *Vicia tenuifolia* Roth, AS.
Vicia villosa subsp. *eriocarpa* (Hauskn.) P.W. Ball - T - EM; AS.
- Frankeniaceae**
- Frankenia hirsuta* L. - C - MS; Fae, CF, GR, AS, Cattaneo's.
Frankenia pulverulenta L. - T - MS; GR, AS.
- Fumariaceae**
- Fumaria macrocarpa* Parl. - T - Me; Fae, CF, GR, AS.
Fumaria parviflora Lam. - T - EA; AS.
Fumaria petteri Rchb. - T - ME; AS.
Hypecoum procumbens L. subsp. *procumbens* - T - Me; GR, as *Hypecoum glaucescens* Guss., AS.
- Gentianaceae**
- Blackstonia perfoliata* (L.) Huds. - T - ME; Fae, CF, GR; AS, C.
Centaurium erythraea subsp. *erythraea* - T - EA; AS.
Centaurium tenuiflorum (Hoffmanns. & Link) Fritsch - T - ME; GR, AS.
- Geraniaceae**
- Erodium chium* (L.) Willd. - T - Me; Fae, CF, GR; AS.
Erodium cicutarium (L.) L'Hér. - T - Ct; GR, AS.
Erodium gruinum (L.) L'Hér. - T - EM; GR, AS.
Erodium malacoides (Cav.) Willd. - T - Me; GR, AS.
Geranium lucidum L. - T - EA; AS.
Geranium molle L. - T - Pt; AS.

Geranium purpureum Vill. - T - Me; GR, AS.

Geranium rotundifolium L. - T - Pt; GR, AS.

Hyacinthaceae

(*Bellevalia dubia* (Guss.) Rchb.; Fae, CF)

Drimia numidica (Jord. & Fourr.) J.C. Manning & Goldblatt - G - Me; GR, as *Drimia maritima* (L.) Stearn, AS, C.

Muscari comosum (L.) Mill. - G - ME; CF, GR, AS.

Muscari neglectum Ten. - G - EA; AS.

Muscari weissii Freyn - G - EM; GR, AS.

Ornithogalum narbonense L. - G - Me; Fae, CF, GR, AS.

Prospero autumnale (L.) Speta - G - Me; RA, as *Scilla autumnalis* L., AS.

Hypericaceae

Hypericum cuisinii Barbey - H - Endemic; GR, AS, Cattaneo's.

Hypericum triquetrifolium Turra - G - MS; GR, AS, C.

Iridaceae

Crocus tournefortii J. Gay - G - Endemic; RA, as *Crocus boryi* subsp. *tournefortii* (J. Gay) Greuter & al., AS.

Gladiolus italicus Mill. - G - MS; Fae, CF, both as "*Gladiolus illyricus*", GR, AS.

Iris unguicularis subsp. *cretensis* (Janka) A.P. Davis & Jury - G - Endemic; GR, as *Iris cretensis* Janka, AS.

Moraea sisyrinchium (L.) Ker-Gawl. - G - Me; Fae, CF, both as *Iris sisyrinchium* L., GR, as *Gynandris sisyrinchium* (L.) Parl., AS.

Romulea bulbocodium (L.) Sebast. & Mauri - G - Me; RA, AS.

Romulea ramiflora Ten. - G - Me; GR, AS.

Juncaceae

Juncus heldreichianus T. Marsson ex Parl. - H - EM; AS, C.

Juncus hybridus Brot. - T - MA; AS.

Luzula nodulosa (Bory & Chaub.) E.H.F. Mey. - H - Me; AS.

Lamiaceae

Ajuga iva (L.) Schreb. - H - Me; GR, AS, C.

Ballota acetabulosa (L.) Benth. - C - BA; CF, GR, AS.

Calamintha incana (Sm.) Boiss. - C - EM; AS, Cattaneo's.

Lamium amplexicaule L. - T - Pt; GR, AS.

Marrubium vulgare L. - H - EA; Fae, CF, GR; AS.

Mentha pulegium L. - H - Me; AS.

Micromeria nervosa (Desf.) Benth. - C - Me; Fae, CF, GR, AS.

Phlomis floccosa D. Don - C - Me; GR, AS.

Phlomis pichleri Vierh. - P - Endemic; Fae, CF, both as "*Phlomis fruticosa*", GR, AS, Cattaneo's.

Prasium majus L. - P - Me; Fae, CF, GR, AS.

Salvia fruticosa Mill. - P - EM; CF, as *Salvia triloba*, GR, AS, C.

Salvia verbenaca L. - H - MA; Fae, CF, GR, AS, Cattaneo's.

Salvia viridis L. - T - Me; GR, AS.

Satureja thymbra L. - C - Me; Fae, CF, GR, AS, C.

Sideritis curvidens Stapf - T - EM; GR, AS.

Stachys mucronata Spreng. - H - Endemic; Fae, CF, GR, AS, C.

Teucrium brevifolium Schreb. - C - Me; Fae, CF, GR, AS, C.

Teucrium divaricatum Heldr. - C - EM; Fae, CF, GR, AS, Cattaneo's.

Teucrium gracile Barbey & Major - C - Endemic; GR, AS, Cattaneo's.

Thymbra capitata (L.) Cav. - C - Me; GR, as *Thymus capitatus* (L.) Hoffmanns. & Link, AS, C.

Liliaceae

Gagea graeca (L.) Irmisch - G - BA; Fae, CF, both as *Lloydia graeca* (L.) Kunth, GR, AS.

Gagea peduncularis (J. Presl & C. Presl) Pascher - G - Me; AS.

Linaceae

Linum arboreum L. - C - EM; Fae, CF, GR; AS, C.

Linum bienne Mill. - T - Me; Fae, CF, both as *Linum angustifolium* Huds., AS, C.

Linum decumbens Desf. - T - Me; Fae, AS.

Linum strictum L. - T - Me; Fae, CF, GR, as *Linum strictum* L. subsp. *spicatum* (Pers.) Nyman, AS.

Linum trigynum L. - T - Me; AS.

Lythraceae

Lythrum hyssopifolia L. - T - EA; GR; AS.

Malvaceae

Malva aegyptia L. - T - MS; GR, AS.

Malva arborea (L.) Webb & Berthel. - P - Me; RA, as *Lavatera arborea* L., AS, C.

Malva cretica Cav. subsp. *cretica* - T - Me; AS.

Malva multiflora (Cav.) Soldano & al. - T - Me; AS.
Malva nicaeensis All. - T - Me; GR, AS.
Malva parviflora L. - T - MS; GR, AS.
Malva sylvestris L. - T - EA; GR, AS, C.

Moraceae

Ficus carica L. - P - MS; CF, GR, AS, C.

Myrtaceae

Myrtus communis L. - P - Me; GR, AS.

Oleaceae

Olea europaea L. - P - Me; GR, as *Olea europaea* subsp. *oleaster* (Hoffmanns. & Link) Negodi, AS, C.
Phillyrea latifolia L. - P - Me; Fae, CF, both as *Phillyrea media* L., AS.

Orchidaceae

Anacamptis pyramidalis (L.) Rich. - G - Eu; CF, GR, AS.
Anacamptis sancta (L.) R.M. Bateman, Pridgeon & M. W. Chase - G - EM; GR, as *Orchis sancta* L., AS.
Himantoglossum robertianum (Loisel.) P. Delforge - G - Me; AS.
Ophrys argolica subsp. *aegaea* (Kalteisen & H.R. Reinhard) H.A. Pedersen & Faurh. - G - Endemic; AS.
Ophrys bombyliflora Link - G - Me; GR, AS.
Ophrys cretica (Vierh.) E. Nelson subsp. *cretica* - G - Endemic; AS.
Ophrys cretica subsp. *karpathensis* E. Nelson - G - Endemic; AS.
Ophrys fusca subsp. *cinereophila* (Paulus & Gack) Faurh. - G - EM; AS.
Ophrys fusca Link subsp. *fusca* - G - Me; Fae, CF, AS.
Ophrys holoserica (Burm. f.) Greuter - G - ME; GR, as *Ophrys holosericea* (Burm. Fil.) Greuter, AS.
Ophrys lutea subsp. *galilaea* (H. Fleischm. & Bornm.) Soó - G - Me; AS.
Ophrys lutea Cav. subsp. *lutea* - G - Me; AS.
Ophrys scolopax subsp. *heldreichii* (Schltr.) E. Nelson - G - EM; AS.
Ophrys sphegodes subsp. *mammosa* (Desf.) E. Nelson - G - ME; AS.
Ophrys tenthredinifera Willd. - G - Me; GR; AS.
Orchis anatolica Boiss. - G - EM; CF, GR; AS.
Orchis anthropophora (L.) All. - G - MA; AS.

Orobanchaceae

Bellardia latifolia (L.) Cuatrec. - T - MS; AS.

Bellardia trixago (L.) All. - T - MS; R, CF, AS.
Orobanche grisebachii Reut. - T - ME; Fae; AS.
Orobanche pubescens d'Urv. - T - Me; Fae, GR, AS.
Orobanche sanguinea C. Presl - T - Me; RA; AS.
Phelipanche mutelii (F.W. Schultz) Pomel - T - Pt; GR, as *Orobanche ramosa* L., AS, C.

Oxalidaceae

Oxalis pes-caprae L. - G - S-Afr; GR, AS.

Papaveraceae

Glaucium flavum Crantz - H - ME; C*.
Papaver hybridum L. - T - EA; GR, AS.
Papaver nigrotinctum Fedde - T - BA; AS.
Papaver purpureomarginatum Kadereit - T - EM; AS, Cattaneo's.
Papaver rhoeas L. - T - Pt; GR, AS, C.

Plantaginaceae

Plantago afra L. - T - Me; GR, AS.
Plantago albicans L. - H - Me; AS.
Plantago bellardii subsp. *deflexa* (Pilg.) Rech. f. - T - EM; GR, AS.
Plantago coronopus L. - T - MA; GR, as *Plantago weldenii* Rchb. (sensu Strid), AS.
Plantago cretica L. - T - EM; Fae, CF, GR, AS.
Plantago lagopus L. - T - Me; Fae, CF, as *Plantago lagopus* var. *eristachya* (Ten.) Guss., GR, AS.

Plumbaginaceae

Limonium amopicum Erben & Brullo - C - Endemic; Brullo & Erben 2016, AS, Cattaneo's.
Limonium aucheri (Girard) Greuter & Burdet - C - EM; Brullo & Erben 2016.
Limonium crateriforme Erben & Brullo - C - Endemic; Brullo & Erben 2016, Cattaneo's.
(Limonium echioides (L.) Mill. - T - Me; RA. Sensu Brullo & Erben (2016) this taxon does not occur on Kasos)
Limonium fragile Erben & Brullo - C - Endemic; C*.
Limonium proliferum (d'Urv.) Erben & Brullo - C - Endemic; Brullo & Erben 2016, AS.
(Limonium roridum (Sm.) Brullo & Guarino - C - Endemic; GR, as *Limonium hyssopifolium* (Girard) Rech. f. Sensu Brullo & Erben (2016) this taxon is reported only for Karpathos and not for Kasos)
Limonium stenotatum (Rech. f.) Erben & Brullo - C - Endemic; Brullo & Erben 2016, Cattaneo's.

Poaceae

- Achnatherum bromoides* (L.) P. Beauv. - H - Me; AS.
Achnatherum fallacinum H. Scholz & Raus - H - Endemic; AS.
Aegilops biuncialis subsp. *archipelagica* (Eig) Raus - T - Endemic; GR, as *Triticum lorentii* (Hochst.) Zeven, AS.
Aegilops markgrafii (Greuter) K. Hammer - T - EM; AS.
Aegilops peregrina (Hack.) Maire & Weiller - T - EM; AS.
Aeluropus lagopoides (L.) Thwaites - G - MS; RA, AS.
Aira cupaniana Guss. - T - Me; AS.
Aira elegans Willd. ex Roem. & Schult. - T - MS; GR, as *Aira elegantissima* Schur, AS.
Andropogon distachyos L. - H - ST; Fae, CF, both as *Andropogon distachius* L., GR, AS.
Arrhenatherum palaestinum Boiss. - H - EM; GR, AS.
Avena barbata Link - T - Me; GR, AS.
Avena sterilis L. - T - MS; GR, AS.
Brachypodium distachyon L. - H - ST; Fae, GR, as *Trachynia distachya* Link., AS.
Brachypodium retusum (Pers.) P. Beauv. - H - Me; CF, as *Brachypodium ramosum* Roemer & Schultes, GR, AS, Cattaneo's.
Briza maxima L. - T - ST; GR, AS.
Bromus alopecuroides Poir. - T - Me; GR, AS.
Bromus diandrus Roth - T - Me; AS.
Bromus fasciculatus C. Presl - T - Me; GR, AS.
Bromus intermedius Guss. - T - Me; Fae, CF, GR, AS.
Bromus madritensis L. - T - MS; Fae, CF, GR, AS.
Bromus rubens L. - T - MS; RA, AS.
Bromus sterilis L. - T - MS; GR, AS.
Catapodium balearicum (Willk.) H. Scholz - T - Me; AS.
Catapodium marinum (L.) C.E. Hubb. - T - MA; Fae, CF, both as *Catapodium loliaceum* Link, AS.
Catapodium rigidum (L.) C.E. Hubb. - T - Me; GR, AS.
Cutandia maritima (L.) Barbey - T - Me; GR, AS.
Cynodon dactylon (L.) Pers. - G - Co; GR, AS.
Cynosurus echinatus L. - T - Me; AS.
Dactylis glomerata subsp. *hackelii* Asch. & Graebn.) Cif. & Giacom. - H - MA; RA, AS.
Dactylis glomerata subsp. *hispanica* (Roth) Nyman - H - Me; GR, AS.
Echinaria capitata (L.) Desf. - T - M; GR, AS.
Elytrigia juncea (L.) Nevski - G - Me; AS, C.
Elytrigia sartorii (Boiss. & Heldr.) Holub - H - EM; RA, as *Elymus rechingeri* (Runemark) Runemark, AS.
Gastridium ventricosum (Gouan) Schinz & Thell. - T - Me; AS.
Hainardia cylindrica (Willd.) Greuter - T - Me; AS.
Hordeum murinum subsp. *leporinum* (Link) Arcang. - T - Me; GR, as *Hordeum leporinum* Link, AS.
Hordeum vulgare subsp. *spontaneum* (K. Koch) Thell. - T - MS; CF, AS.
Hyparrhenia hirta (L.) Stapf - H - ST; GR, AS.
Lagurus ovatus L. - T - Me; GR, AS.
Lolium perenne L. - H - ES; AS.
Lolium rigidum Gaudin - T - ST; GR, AS.
Lolium subulatum Vis. - T - Me; AS.
Lolium temulentum L. - T - Co; AS.
Maillea crypsoides (d'Urv.) Boiss. - T - EM; GR, as *Phleum crypsoides* (d'Urv.) Hack., AS.
Melica minuta L. - H - Me; Fae, GR, as *Melica ramosa* Vill., AS.
Melica rectiflora Boiss. & Heldr. - H - Endemic; CF, GR, AS.
Parapholis incurva (L.) C.E. Hubb. - T - MA; GR, AS.
Parapholis marginata Runemark - T - Me; AS.
Phalaris aquatica L. - H - Me; GR, AS.
Phalaris brachystachys Link - T - Me; AS.
Phalaris minor Retz. - T - ST; GR, AS.
Phalaris paradoxa L. - T - Me; AS.
Piptatherum coeruleum (Desf.) P. Beauv. - H - Me; GR, AS.
Piptatherum miliaceum (L.) Coss. subsp. *miliaceum* - C - Me; GR, AS.
Poa annua L. - T - Co; AS.
Poa infirma Kunth - T - Me; AS.
Poa pelasgis H. Scholz - H - EM; RA, AS.
Polypogon maritimus Willd. - T - Me; AS.
Polypogon monspeliensis (L.) Desf. - T - ST; AS.
Psilurus incurvus (Gouan) Schinz & Thell. - T - Me; GR, AS.
Rostraria cristata (L.) Tzvelev - T - Co; Fae, GR as *Lophochloa cristata* (L.) Hyl., AS.
Sporobolus pungens (Schreb.) Kunth - G - ST; AS.
Stipa capensis Thunb. - T - Me; GR, AS.
Triplachne nitens (Guss.) Link - T - Me; RA.
Vulpia ciliata Dumort. - T - MS; GR.
Vulpia fasciculata (Forssk.) Fritsch - T - Me; RA, AS.
Vulpia muralis (Kunth) Nees - T - Me; AS.
Vulpia myuros (L.) C.C. Gmel. - T - Me; AS.

Polygalaceae

- Polygala venulosa* Sm. - H - EM; Fae, CF, GR, AS.

Polygonaceae

- Emex spinosa* (L.) Campd. - T - Me; GR, AS.
Polygonum maritimum L. - H - ME; RA, AS.
Rumex acetosella L. - H - Co; AS.
Rumex pulcher subsp. *raulinii* (Boiss.) Rech. f. - H - EM; GR, AS.
Rumex pulcher subsp. *woodsii* (De Not.) Arcang. - H - MS; GR, AS.
Rumex tuberosus subsp. *creticus* (Boiss.) Rech. f. - G - EM; Fae, as *Rumex creticus* Boiss., CF, as *Rumex tuberosus* L. GR, AS.

Portulacaceae

- Portulaca oleracea* aggr. - T - Co; AS, C.

Posidoniaceae

- Posidonia oceanica* (L.) Delile - A - Me; GR, AS, C.

Primulaceae

- Anagallis arvensis* L. - T - Co; GR, AS.
Asterolinon linum-stellatum (L.) Duby - T - Me; GR, AS.
Cyclamen graecum Link - G - EM; AS.

Rafflesiaceae

- Cytinus ruber* (Fourr.) Willd. - G - Me; GR, AS.

Ranunculaceae

- Adonis microcarpa* DC. - T - MS; AS.
Anemone coronaria L. - G - Me; AS.
Anemone hortensis subsp. *heldreichii* (Boiss.) Rech. f. - G - Endemic; AS.
Clematis cirrhosa L. - P - Me; CF, as *Clematis orientalis* L., GR, AS.
Delphinium peregrinum L. - T - MS; AS.
Ficaria ficarioides (Bory & Chaub.) Halácsy - G - Me; AS.
Nigella carpatha Strid - C - Endemic; AS, Cattaneo's.
Nigella fumariifolia Kotschy - T - EM; Fae, CF, GR; AS.
Ranunculus asiaticus L. - H - MS; GR, AS.
Ranunculus bullatus L. - H - Me; AS.
Ranunculus creticus L. - H - EM; AS.
Ranunculus paludosus Poir. - H - ME; AS.

Resedaceae

- Reseda alba* L. - T - ME; Fae, CF, GR, AS, Cattaneo's.
Reseda lutea L. - T - Pt; GR, AS.

Rhamnaceae

- Rhamnus lycioides* subsp. *oleoides* (L.) Jahand. & Maire - P - Me; GR, as *Rhamnus oleoides* L., AS, C.

Rosaceae

- Sanguisorba verrucosa* (G. Don) Ces. - H - Me; Fae, CF, GR, as *Sanguisorba minor* subsp. *verrucosa* (G. Don) Cout., AS.
Sarcopoterium spinosum (L.) Spach - C - EM; Fae, CF, as *Poterium spinosum*, Runemark 1969, GR, AS, C.

Rubiaceae

- Crucianella latifolia* L. - T - ME; Fae, CF, GR, AS, Cattaneo's.
Galium aparine L. - T - EA; GR, AS.
Galium murale (L.) All. - T - Me; GR, AS.
Galium setaceum Lam. - T - Me; AS.
Galium tricornutum Dandy - T - EA; Fae, CF, both as "Galium tricorne", GR, AS.
Galium verrucosum Huds. - T - Me; GR, AS.
Galium verticillatum Danthoine - T - ME; AS.
Rubia tenuifolia d'Urv. - P - EM; AS.
Sherardia arvensis L. - T - EA; Fae, CF, GR, AS.
Theligonum cynocrambe L. - T - Me; Fae, CF, GR, AS.
Valantia hispida L. - T - Me; Fae, CF, GR, AS.
Valantia muralis L. - T - Me; GR, AS.

Rutaceae

- Ruta chalepensis* L. subsp. *fumariifolia* (Boiss. & Heldr.) Nyman - C - Endemic; CF, as *Ruta chalepensis* L., GR, AS, C.

Santalaceae

- Thesium bergeri* Zucc. - H - EM; GR, AS, Cattaneo's.
Thesium humile Vahl - T - Me; GR, AS.

Scrophulariaceae

- Scrophularia lucida* L. - H - Me; Fae, CF, GR, as *Scrophularia lucida* subsp. *filicifolia* (Mill.) Rech. f., AS, C.
(*Scrophularia peregrina* L.; Fae, CF)
Verbascum sinuatum L. - H - MS; GR, AS, C.

Solanaceae

- Datura innoxia* Mill. - T - Am.; AS.
Hyoscyamus albus L. - T - Me; Fae, CF, as "Hyoscyamus aureus", GR, AS, C.

Lycium schweinfurthii Dammer - P - Me; GR, as *Lycium intricatum* Boiss., AS.

Mandragora officinarum L. - H - Me; GR, as *Mandragora autumnalis* Bertol., AS.

Solanum nigrum L. subsp. *nigrum* - P - Co; CF, as *Solanum nigrum* var. *induratum* Boiss., GR, AS.

Tamaricaceae

Tamarix smyrnensis Bunge - P - EA; AS.

Urticaceae

Parietaria cretica L. - T - EM; GR, AS, C.

Parietaria lusitanica L. - T - ME; Fae, CF, GR, AS, C.

Urtica membranacea Poir. - T - MS; GR, AS.

Urtica pilulifera L. - T - MS; GR, AS, C.

Valerianaceae

Centranthus calcitrapae (L.) Dufr. - T - Me; GR, AS, C.

Valerianella coronata (L.) DC. - T - EA; Fae, CF, GR, AS.

Valerianella discoidea (L.) Loisel. - T - Me; GR, AS.

Valerianella echinata (L.) DC. - T - Me; Fae, CF, GR, AS.

Valerianella muricata (Roem. & Schult.) W.H. Baxter - T - MS; AS.

Valerianella vesicaria (L.) Moench - T - MS; CF, GR, AS.

Verbenaceae

Vitex agnus-castus L. - P - MS; AS, C.

Veronicaceae

Kickxia elatine (L.) Dumort. - T - EA; AS.

Linaria pelisseriana (L.) Mill. - T - MS; Fae, CF, AS.

Misopates orontium (L.) Raf. - T - ME; CF, as *Antirrhinum orontium* L., GR, AS.

Veronica cymbalaria Bodard - T - Me; GR, AS.

Zygophyllaceae

Tetraena alba (L. f.) Beier & Thulin - C - Me; AS, C.

