

The vascular flora of Akrokorinthos Castle and its surrounding area (NE Peloponnese, Greece)

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Received: November 22, 2006 ▷ Accepted: December 13, 2006

Abstract. An inventory of 418 vascular plant taxa (species and subspecies) growing in Akrokorinthos Castle and its surrounding area is presented in this paper. One hundred and eighty-four taxa are reported here for the first time. The local distribution of plants in the interior castle area, on walls and in the surrounding area is discussed. The wall flora is presented and compared with other Mediterranean wall floras. In the life-form spectrum, therophytes are overrepresented (56.4%). Nine chorological groups are distinguished, with the Mediterranean elements (63.4%) as dominant. The endemic element is relatively rich, including 24 taxa with a restricted distribution range confined to Greece or an even smaller area. The adventive flora is remarkably poor and it consists of only seven taxa.

Key words: castle flora, chorology, endemics, life forms, wall flora

Introduction

Archaeological sites are scattered all over Greece, usually on moderate and low altitudes. Botanical explorations in Greece have been mainly confined to the high mountains and the islands. As a result, data on the vascular flora of many important archaeological sites is completely lacking. Castles are usually situated on craggy rocks and together with their impressive fortification walls create a unique environment for plant life in many respects, e.g. low availability of room for settlement, hardness and alkalinity of the substratum, scarcity of soil and humus, high inclination, extreme temperatures and low humidity (Segal 1969). The study of the wall flora is of special importance for the maintenance and preservation of archaeological monuments. Moreover, castles and their surroundings are ideal places to study plant invasions and link them to historical and current hu-

man activities. This paper is the first result of a study now in progress focused on the vascular flora of the Peloponnesian castles.

Akrokorinthos Castle is situated close to the ancient city of Korinthos, on top of a high monolithic rock (575 m). It had always been the fortified acropolis of Korinthos and is the biggest and oldest castle of Peloponnese. Its imposing fortification walls (Fig. 1) are dated to the Middle Ages, with additions made by the Turks. The mediaeval fortification was built on top the ancient one, or represented a renovation of the latter (7th–6th century BC). The fortress was under the Franks until 1460, when it was conquered by the Turks, and was occasionally ruled by the Venetians. The area of Akrokorinthos was inhabited until the end of Turkish domination at the beginning of the 19th century. In the last decades Akrokorinthos Castle has been a touristic highlight, with many daily visitors.



Fig. 1. The western side of Akrokorinthos Castle.

The study area covers c. 7 km² (Fig. 2). The substrate is constituted of Middle to Late Jurassic limestones and Pleistocene marls that are mainly confined to flat and low slope areas. On the basis of Emberger's (1955) pluviothermic coefficient ($Q = 55.2$) the studied area belongs to the semi-arid Mediterranean bioclimatic zone, with mild winters, almost free of frost and snow. The climatic data was supplied by the meteorological station of Korinthos City. According to

the Bagnouls & Gausson (1957) xerothermic index ($X_m = 140.1$), the area is included in the intense thermo-Mediterranean character of the Mediterranean bioclimate. The dry period lasts six months (from mid-March to mid-September).

Material and methods

In the present study, floristic data for Akrokorinthos are based on collections and field observations made by the authors on their repeated botanical explorations of the area during the years 2000–2006. Floristic in-

formation given by Haussknecht (1893, 1894, 1895, 1896, 1897, 1898, 1900) and Halácsy (1900, 1901, 1904, 1908) has also been included in the plant list. Vouchers are deposited in Patras (UPA). In the vascular plant inventory, families, genera and species are arranged in alphabetic order. The collection sites for each taxon are also given, namely, the interior area of Akrokorinthos Castle, top, sides and base of the walls and surrounding area, including the vertical cliffs outside the walls. The nomen-

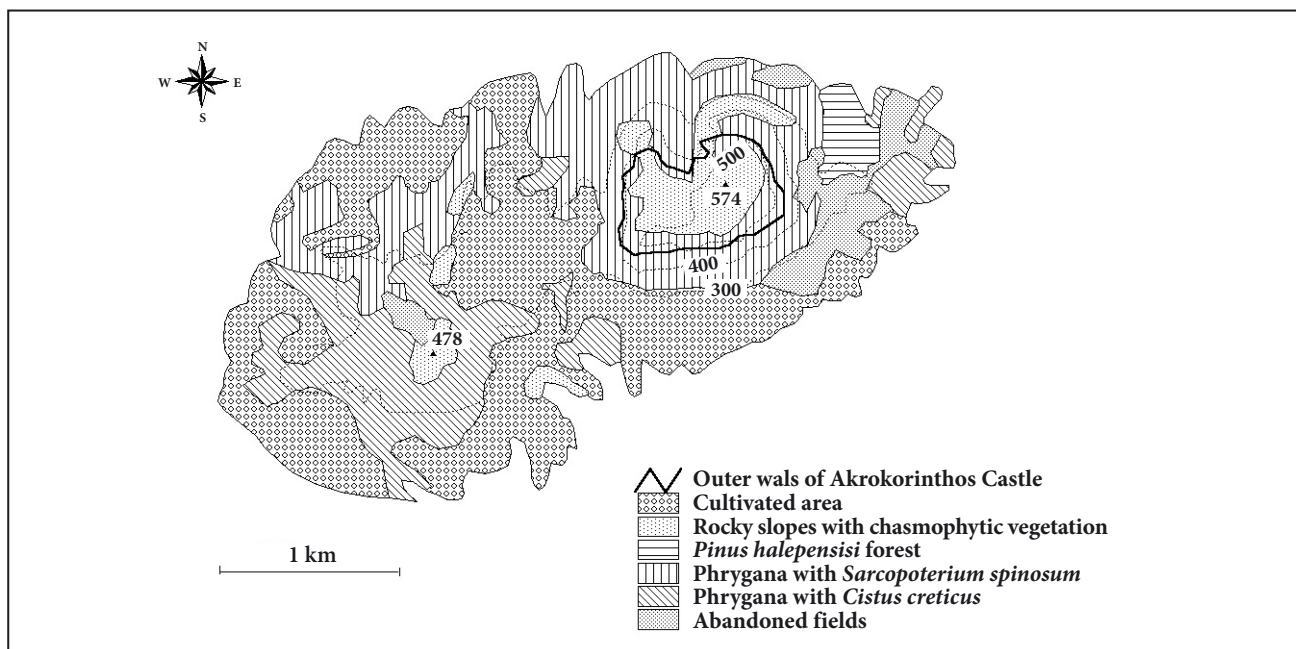


Fig. 2. Vegetation map of Akrokorinthos castle.

clature and distribution range of the taxa is mostly according to Strid & Tan (1997, 2002), Turland & al. (1993) and Davis (1965–1985). Chorological types and life-form categories are based on Pignatti (1982) and Raunkiaer (1934), respectively.

Results and discussion

Floristic composition and local distribution of the taxa

The plant list includes 418 infrageneric taxa (342 species and 76 subspecies), belonging to 251 genera and 65 families. The interior castle area is the species-richest area, containing 233 taxa. One hundred and twenty taxa were recorded on the walls and 226 taxa were found in the surrounding area. The great plant species richness of the castles is already known. The differences between castle floras and surrounding flora and vegetation were studied by botanists in the 19th and 20th centuries. Around castles, the number of species of wild flowering plants can be double that in similar areas in the vicinity (Lohmeyer 1984).

The whole area of Akrokorinthos belongs to the thermo-Mediterranean vegetation zone and phrygana communities with *Cistus creticus* subsp. *creticus* and *Sarcopoterium spinosum* dominate it. Small *Pinus halepensis* subsp. *halepensis* clumps are limited to the northeastern side of the study area, while cultivated fields, mainly of olive trees, are concentrated in the flat and low slope areas (Fig. 2). Steep rocky slopes shut in the castle and smaller rocky formations are also abundant in the interior castle area.

The natural vegetation cover in the interior castle area has been strongly affected by intense human activities that have lasted for centuries. As a result, 74 taxa were found only in the interior and not in the surrounding area, or on the walls. The most widespread taxa in that area are: *Anagyris foetida*, *Phlomis fruticosa*, *Euphorbia characias*, *Ballota acetabulosa*, *Sarcopoterium spinosum*, and *Knautia integrifolia*. Moreover, a significant number of urbanophilous taxa were recorded in the interior castle area and on the walls, viz. *Amaranthus hybridus*, *Capsella bursa-pastoris*, *Chenopodium album*, *Ch. ambrosioides*, *Galium aparine*, *Glebionis coronaria*, *Hordeum leporinum*, *Lactuca serriola*, *Sisymbrium officinale*, *Senecio vulgaris*, *Urtica pilulifera*, *Tribulus terrestris*, etc., reflect-

ing the long time changes in inhabitable habitats and the effects of tourist development.

The walls represent a specific environment, which is partly similar to rocks and rock fissures (Woodell 1979). Occurrence of the wall species varies considerably with respect to their position on the walls. Usually wall species occur in three wall positions: 1. horizontal top – the flat end of the wall, 2. vertical surface – the vertical wall surface with joints (fissures) and 3. the base – 30 to 50 cm from the wall base towards the top. These three zones represent a characteristic feature of the wall flora and vegetation.

In Akrokorinthos, the horizontal top of the walls has a usually dense plant cover supported by disintegration of the building material. This is the species-richest wall zone and it is characterized by the presence of many annual species. The widest-spread taxa of the horizontal top are: *Arenaria leptocladus*, *Bromus fasciculatus*, *B. madritensis* subsp. *madritensis*, *Cynosurus echinatus*, *Hordeum leporinum*, *Micromeria juliana*, *Misopates orontium*, *Phagnalon graecum*, *Origanum onites*, *Trifolium scabrum*, etc. The vertical surface of the walls is a harsh environment for most plant species and, as a result, a poor, mainly chasmophytic flora similar to that of the adjacent rocky slopes inhabits them. Some characteristic plants of this zone are: *Capparis spinosa* subsp. *spinosa*, *Ephedra foeminea*, *Erysimum corinthium*, *Inula verbascifolia* subsp. *methanea*, *Micromeria juliana*, *Onosma frutescens*, and *Silene spinescens*. The species composition of the basal zone consists of some plants growing on vertical surface and mainly species of nearby vegetation. The favourable environmental conditions of this zone (more moisture and nutrients) make possible the establishment of a relatively rich flora that include, among others, the following taxa: *Eruca vesicaria*, *Euphorbia characias*, *Hyoscyamus albus*, *Malva sylvestris*, *Parietaria judaica*, *P. lusitanica*, *Piptatherum miliaceum*, *Umbilicus horizontalis*, *Urtica pilulifera*, etc.

A comparison between the Akrokorinthos wall flora and other Mediterranean wall floras (Weinstein & Karschon 1977; Karschon & Weinstein 1985; Hruška 1987; Lisci & Pacini 1993; Krigas & al. 1999) reveals some interesting aspects regarding the floristic composition of walls. There are several wall-dwelling plants that seem to be common inhabitants of the Mediterranean walls, such as *Avena barbata*, *Bromus madritensis*, *Calendula arvensis*, *Capparis spinosa*, *Ephedra foeminea*, *Glebionis coronaria*, *Hordeum lep-*

orinum, *Hyoscyamus albus*, *Lactuca viminea*, *Senecio vulgaris*, *Veronica cymbalaria*, *Urtica pilulifera*, etc. On the contrary, vertical surfaces of the Akrokorinthos walls are dominated by a number of Greek endemic species that have not been recorded elsewhere: *Brassica cretica* subsp. *cretica*, *Campanula andrewsii* subsp. *andrewsii*, *Centaurea raphanina* subsp. *mixta*, *Erysimum corinthium*, *Inula verbascifolia* subsp. *methanea*, and *Silene spinescens*. All these chasmophytes are also common to the adjacent rocky slopes of Akrokorinthos.

The wall-dwelling plants of Akrokorinthos Castle could be classified into two groups: 1) 'rock plants' that are well adapted to wall habitats because of their similar ecological conditions to rocky habitats (e.g. *Capparis spinosa*, *Ephedra foeminea*), and 2) common species with a wide ecological amplitude, which colonize the walls due to a mass-effect from the surroundings (e.g. *Knautia integrifolia*, *Papaver rhoeas*, *Phlomis fruticosa*). The latter could be characterized as 'accidental species'. They usually reach only low covers on walls and indicate a strong limitation to wall environment and competitive exclusion in a small-scale habitat (Duchoslav 2002).

The surrounding area of Akrokorinthos Castle is characterized by phrygana communities and the chasmophytic flora of the rocky slopes that shut in the Castle. The whole area is strongly affected by intense human impact, mainly agricultural activities that obviously have downgraded the natural vegetation cover. As a result, 69 taxa reported by Haussknecht (1893, 1894, 1895, 1896, 1897, 1898, 1900) and Halácsy (1900, 1901, 1904, 1908) from the area were not found by us. Among them, *Stachys virgata* described by Bory de Saint-Vincent and Chaubard in 1832 (Bory & al. 1832) from Argolis and Akrokorinthos. This species has not been recollected for over a century and it must be regarded as extinct, at least from the Akrokorinthos area.

The vertical limestone cliffs of Akrokorinthos support a rich chasmophytic flora, which is partly similar to the wall chasmophytic flora of the Castle. Some typical chasmophytes of the cliffs, however, were not able to colonize the walls, e.g. *Centranthus ruber* subsp. *sibthorpii*, *Galium melanatherum*, *Leontodon graecus*, *Ptilostemon chamaepeuce*, and *Stachys swainsonii* subsp. *argolica*.

Life forms and chorological spectra

Life-form spectra of the Akrokorinthos correspond to the xerothermic climatic conditions of the area. Therophytes are the prevailing life form in the interior castle area, the walls and the surrounding area, as well as in the Akrokorinthos area as a whole (Table 1). Their percentage is higher in the interior area and on the walls than in the surrounding area, reflecting the more xeric microclimatic conditions of the limestone rocks and walls. Other noteworthy characteristics of the area include the good representation of hemicryptophytes and chamaephytes, both in the interior area and on the walls, and the poor participation rates of phanerophytes (Table 1). The latter are especially poorly represented on the walls, and of all six species of trees and shrubs only *Ephedra foeminea* has a widespread occurrence, while *Pistacia terebinthus* subsp. *terebinthus* and *Rhamnus lycioides* subsp. *graecus* are only locally common.

Table 1. Life-form spectra of the flora of Akrokorinthos Castle and its surrounding area.

Life-forms (%)	Interior	Walls	Surrounding area	Total area
Therophytes	61.8	59.2	49.5	56.4
Hemicryptophytes	21.0	19.2	17.3	19.4
Chamaephytes	8.1	11.7	14.6	9.6
Geophytes	3.9	5.0	10.6	9.8
Phanerophytes	5.2	5.0	8.0	4.8

On the basis of distribution data on the taxa found in the study area, the taxa can be divided into nine chorological groups (Table 2). The Mediterranean element is represented in the flora of Akrokorinthos by 265 taxa (63.4%). Together with the Mediterranean-Turanian element, they constitute over 70% of the total flora, with only a small percentage to be shared by the other widely distributed taxa (Cosmopolitans, Eurasiatics, etc.).

Table 2. Chorological spectra of the flora of Akrokorinthos Castle and its surrounding area.

Chorological element (%)	Interior	Walls	Surrounding area	Total area
Endemic	5.2	6.7	7.5	6.0
(Sub-) Balkan	0.9	1.7	2.2	2.4
Mediterranean	64.8	55.0	66.8	63.4
Mediterranean-Turanian	7.7	12.5	7.1	7.4
European/European-Caucasic	2.6	0.0	2.2	2.9
Eurasiatic/Palaeotemperate	8.2	10.8	4.4	7.2
Palaeotropical/Palaeosubtropical	1.7	0.0	0.9	1.2
(Sub-) Cosmopolitan/Circumboreal	7.7	10.0	8.0	7.9
Adventives	1.3	3.3	0.9	1.6

The endemic element is relatively rich. It includes 24 taxa with a restricted distribution range confined to Greece or even a smaller area. Three taxa (*Campanula andrewsii* subsp. *andrewsii*, *Stachys swainsonii* subsp. *argolica*, *Stachys virgata*) are considered to be Peloponnesian endemics. Another three taxa (*Alkanna methanaea*, *Erysimum corinthium* and *Inula verbascifolia* subsp. *methanaea*) have a limited distribution range to Peloponnese and Sterea Ellas, while four more species barely reach Evvia to the east (*Anthemis peregrina* subsp. *heracleotica*, *Biarum spruneri*, *Silene spinescens*, *Cerastium brachypetalum* subsp. *atheniense*). The latter taxon was considered endemic to Attica and the islands of Evvia and Salamina (Strid 1997). This is the first record of this taxon from Peloponnese. The distribution range of *Brassica cretica* subsp. *cretica* is also worth mentioning. This taxon is widespread and locally common on the Crete Island and is replaced by *B. cretica* subsp. *laconica* M. A. Gust. & Snogerup in SE Peloponnese, and by *B. cretica* subsp. *aegaea* (Heldr. & Halácsy) Snogerup on mainland Greece and the Aegean Islands (Snogerup & Snogerup 2002). The local occurrence of *B. cretica* subsp. *cretica* in two localities in the Korinthos area close to old settlements is unusual. *B. cretica* s.l. has certainly been used for human consumption since prehistoric times and therefore may be introduced partially in the range (Snogerup & Snogerup 2002). Although disjunct distribution ranges are not uncommon in the Greek flora, the presence of *B. cretica* subsp. *cretica* in Akrokorinthos area by reason of human activities seems more possible. The remaining 13 Greek endemic taxa of Akrokorinthos (*Anchusa spruneri*, *Anchusella variegata*, *Avenula agropyroides*, *Bellevalia hyacinthoides*, *Centaurea raphanina* subsp. *mixta*, *Chondrilla ramosissima*, *Erysimum graecum*, *Galium melanatherum*, *Helianthemum hymmetium*, *Leontodon graecus*, *Malcolmia graeca* subsp. *hydraea*, *Sedum laconicum* subsp. *laconicum*, *Silene vulgaris* subsp. *megalosperma*) are more widespread and distributed in more than two phytogeographical regions of Greece. Furthermore, four endemic taxa (*Fritillaria graeca* Boiss. & Spruner subsp. *graeca*, *F. graeca* subsp. *guicciardii* (Heldr. & Sart. ex Boiss.) Zaharof, *Nigella arvensis* L. subsp. *aristata* (Sm.) Nyman and *Silene corinthiaca* Boiss. & Heldr.) known from the surrounding area of Akrokorinthos (Tan w/ Iatrou 2001) were not collected by us in the study area.

The adventive flora of Akrokorinthos consists of only seven taxa, which represent 1.6% of the total flora (Table 2). Five taxa (*Amaranthus hybridus*, *Chenopodium ambrosioides*, *Lunaria annua* subsp. *pachyrhiza*, *Oxalis pes-caprae*, *Xanthium spinosum*) are considered neophytes (introduced after 1500 AD) and were brought in the study area as weeds of cultivation, ornamentals or by human activities (traffic, trade, etc.). Two taxa are considered archaeophytes (*Lathyrus sativus*, *Sinapis alba* subsp. *alba*), introduced in the distant past by agriculture. *Brassica cretica* subsp. *cretica* may also belong to this category.

Plant list

Abbreviations and symbols used:

a = interior area of Akrokorinthos Castle

b = top, sides and base of walls

c = surrounding area,
including the vertical cliffs outside the walls

I = G. Iatrou

P = N. Pettas

T = P. Trigias

obs. = observation only, no herbarium specimens

* = new record for Akrokorinthos area

PTERIDOPHYTA

Aspleniaceae

Ceterach officinarum Willd. subsp. *officinarum* – I 8293: a; T 4301: b; P 7642, P 8111, I 8127: c.

Polypodiaceae

Polypodium cambricum L. – P 7643: c.

Selaginellaceae

Selaginella denticulata (L.) Spring – Haussknecht (1900: 72).

Sinopteridaceae

Anogramma leptophylla (L.) Link – Halácsy (1904: 465), sub nom. *Gymnogramme leptophylla* Desv.

Cheilanthes pteridioides (Reichard) C. Chr. – Halácsy (1904: 467), sub nom. *Ch. fragrans* L.

GYMNOSPERMAE

Cupressaceae

Cupressus sempervirens L. – P 7654: c.

Juniperus phoenicea L. subsp. *phoenicea* – P 8608: c.

Ephedraceae

**Ephedra foeminea* Forssk. – P & I 7732: a; P & I 8033: b; P & I 8079: c.

Pinaceae

Pinus halepensis Mill. subsp. *halepensis* – P 7651: c.

ANGIOSPERMAE**DICOTYLEDONES****Amaranthaceae**

**Amaranthus hybridus* L. – T 4240: b.

Anacardiaceae

Pistacia lentiscus L. – P 7466, P 8058: c.

**P. terebinthus* L. subsp. *terebinthus* – P & I 7805, P & I 8007: a; P & I 7680, P 8029, T 4253: b; P 7281, P 7515, P 7602, P & I 7650: c.

Araliaceae

**Hedera helix* L. – P 7653: c.

Boraginaceae

Alkanna methanaea Hausskn. – Haussknecht (1896: 48)

A. orientalis (L.) Boiss. – P & I 7722, P & I 7838, I 8320, I 8392: a; P 7930, P 8036, T 4247: b; I 8143, I 8144: c.

Anchusa hybrida Ten. – P & I 7395, P & I 7414: c.

**A. spruneri* Boiss. – P 7953, P 8023: a.

Anchusella variegata (L.) Bigazzi, Nardi & Selvi – I 8319, T & I 4330: a; I 8147: c.

**Asperugo procumbens* L. – P & I 7379: a.

Cerintho retorta Sm. – I 8490: a; I 8141: c.

Cynoglossum creticum Mill. – Haussknecht (1896: 53), sub nom. *C. pictum* Aiton

**Echium angustifolium* Mill. subsp. *angustifolium* – I 8321: a; P 7400: c.

**E. plantagineum* L. – P 7364, P & I 7788, P 8023, I 8322: a.

**Heliotropium dolosum* De Not. – T 4246: b.

Lithospermum arvense L. – I 8488: a; T & I 4322: b.

**Myosotis incrassata* Guss. – I 8241, I 8245, I 8249, I 8255: a.

Neotostema apulum (L.) I.M. Johnst. – Halácsy (1902: 350), sub nom. *Lithospermum apulum* L.

Onosma frutescens Lam. – P & I 7699, P & I 7748: a; P 7820, P & I 7904: b; P 7259, P 7616: c.

Campanulaceae

Campanula andrewsii A. DC. subsp. *andrewsii* – P & I 7746, P & I 7837: a; P 7828, P 7819, T 4272: b; P & I 7239, P & I 7482, P & I 7614, P & I 7617, P & I 7609: c.

C. drabifolia Sm. – P & I 7328, P & I 7369, P & I 7849: a; T & I 4230: b; P & I 7318, P 7319, P 7495, P 7712: c.

C. erinus L. – Haussknecht (1895: 162).

C. spatulata Sm. subsp. *spatulata* – P & I 7543: c.

**C. spatulata* Sm. subsp. *spruneriana* (Hampe) Hayek – P & I 7783: a.

Legousia falcata (Ten.) Janch. – Halácsy (1902: 275), sub nom. *Specularia falcata* Ten.

L. hybrida (L.) Delarbre – Halácsy (1902: 275), sub nom. *Specularia hybrida* L.

Capparaceae

**Capparis spinosa* L. subsp. *spinosa* – P & I 8039: a; P 7931, P 8035: b.

Caryophyllaceae

**Arenaria leptoclados* (Rchb.) Guss. – I 8279: a; T & I 4324, T 4298: b.

**Cerastium brachypetalum* Pers. subsp. *atheniense* (Lonsing) P.D. Sell & Whitehead – T 4296: b.

C. comatum Desv. – I 8247, I 8444: a.

C. glomeratum Thuill. – I 8252, I 8441: a; I 4447: b.

Herniaria cinerea DC. – Haussknecht (1894: 105).

**H. hirsuta* L. – I 8447: a, T & I 4325: b.

Minuartia hybrida (Vill.) Siskin – I 8442: b.

M. mediterranea (Link) K. Maly – T & I 4323: b.

Paronychia capitata (L.) Lam. – Haussknecht (1894: 104), sub nom. *P. nivea* DC.

P. macrosepala Boiss. – Haussknecht (1894: 104).

Petrorhagia armerioides (Ser.) P. W. Ball & Heywood – T 4249: b.

**P. dubia* (Rofin.) G. Lopez & Romo – I 8280, I 8281, I 8395: a; T 4299: b; P 7277: c.

Silene behen L. – Haussknecht (1894: 50).

**S. gallica* L. – T 4283: b.

S. reinholdii Heldr. – I 8453: a; I 8151, I 8152, P 7582: c.

S. spinescens Sm. – P & I 7985, P & I 8026, P 7833: a; P 7816, P 7932, T 4256: b; P 7635, P 7871, P & I 8080: c.

S. vulgaris (Moench) Garcke subsp. *macrocarpa* Turrill – T & I 4340: a; P 7490: c.

S. vulgaris (Moench) Garcke subsp. *megalosperma* (Sart. ex Heldr.) Hayek – P 7574, P & I 7579, P & I 7637: c.

Stellaria pallida (Dumort.) Pire – I 8439: a.

Chenopodiaceae

**Chenopodium album* L. – T 4242: a; T 4231: b.

**C. ambrosioides* L. – T 4244: b.

Cistaceae

Cistus creticus L. subsp. *creticus* – P 7273, P 7386, P 7446, P 7597, P 7600, P & I 8051, P & I 8057: c.

**C. parviflorus* Lam. – P & I 7479: c.

C. salviifolius L. – P 7269, P 7270, P & I 7588, P & I 8094: c.

**Fumana arabica* (L.) Spach – P 7577, P 7601, P & I 8052: c.

**F. thymifolia* (L.) Spach ex Webb – P & I 7434, P & I 7590: c.

Helianthemum hymmetium Boiss. & Heldr. – Haussknecht (1894: 43).

**H. salicifolium* (L.) Mill. – I 8470, T & I 4334: a; P 7437: c.

Tuberaria guttata (L.) Fourr. – Haussknecht (1894: 43), sub nom. *Helianthemum guttatum* (L.) Mill.

Compositae

Anthemis arvensis L. – P & I 7234: c.

**A. chia* L. – T 4285: b; P & I 7322: c.

**A. peregrina* L. subsp. *heracleotica* (Boiss. & Heldr.) Georgiou – P 7139: c.

**Atractylis cancellata* L. subsp. *cancellata* – I 8535, P 7394: a.

**Bellis perennis* L. – P & I 8599: c.

**Calendula arvensis* L. – I 8156, I 8545: a; P 7687: b; P 7225, P 7396: c.

**Carduus nutans* L. subsp. *nutans* – I 4372: a.

**C. pycnocephalus* L. – I 8160, I 8411, P 6941, P 7670, P & I 7760, P & I 8022: a; T 4278: b.

Carlina graeca Heldr. & Sart. – T 4262: b; P 7530: c.

Carthamus dentatus (Forssk.) Vahl subsp. *ruber* (Link) Hanelt – I 4436: a.

Centaurea calcitrapa L. – Haussknecht (1894: 123).

**Centaurea raphanina* Sm. subsp. *mixta* (DC.) Runem. – I 8552: a; P & I 7822: b; P 7611, P 7612: c.

**Chondrilla ramosissima* Sm. – P & I 7403: c.

**Crepis commutata* (Spreng.) Greuter – P & I 7950, P & I 7790, P 7704: a; T 4294: b; P 7221, P 7435, P 7534, P 7322: c.

C. dioscoridis L. – P 7341, P 7664, P 7853: a; P 7316, P 7573: c.

C. rubra L. – P 7892: a.

**Crupina crupinastrum* (Moris) Vis. – I 4417: a; T 4302: b; P 7489, P 7440, P 7567: c.

**Dittrichia viscosa* (L.) Greuter – I 8260: a.

Echinops sphaerocephalus L. subsp. *albidus* (Boiss & Spruner) Kozuharov – P & I 7996: a.

Filago pygmaea L. – Halácsy (1902: 38), sub nom. *Evax pygmaea* L.

F. pyramidata L. – Halácsy (1902: 35), sub nom. *F. spathulata* Presl.

**Glebionis coronaria* (L.) Cass. ex Spach – P & I 7981: a.

- **G. segetum* (L.) Fourr. – I 4445: a.
Geropogon hybridus (L.) Sch.Bip. – Haussknecht (1985: 55), sub nom. *G. glabrum* L.
 **Hedynois cretica* (L.) Dum.Cours. – P 7387, P 7422: c.
Helichrysum conglobatum Steud. – I 4435: a; P 7416, P 7433, P 7580, P & I 7648: c.
Hyoseris scabra L. – I 8340, P 7046: a.
Hypochaeris achyrophorus L. – P 7360, P & I 7920, P 7941: a; P 7222, P 7456: c.
 **H. cretensis* (L.) Bory & Chaub. – P & I 7782, P & I 7978: a.
 **H. radicata* L. – P & I 7709: a.
Inula verbascifolia (Willd.) Hausskn. subsp. *methanea* (Hausskn.) Tutin – P & I 7750, P & I 7801: a; P & I 7928, P & I 8031, T 4276: b, T obs.: c.
Jurinea mollis (L.) Rchb. – Haussknecht (1895: 42).
 **Lactuca serriola* L. – T 4252: b.
 **L. viminea* (L.) J. & C. Presl – T 4304: b.
Leontodon graecus Boiss. & Heldr. – P 7697: a; P & I 7631: c.
L. tuberosus L. – P 7275: c.
 **Matricaria chamomilla* L. – I 4402: a; P 7394: c.
 **Notobasis syriaca* (L.) Cass. – P & I 8004: a; P 7234, P 7402: c.
Pallenis spinosa (L.) Cass. – I 4439, P 8041: a; P & I 7401, P 7467: c.
Phagnalon graecum Boiss. & Heldr. – I 8543, P 7937: a; P & I 7817, P & I 7927, P & I 8028, T 4254: b; P 7243, P 7581, P 7621, P 7656: c.
 **Picris rhagadioloides* (L.) Desf. – P 7436: c.
Ptilostemon chamaepeuce (L.) Less. – P & I 7877: c.
Reichardia picroides (L.) Roth – I 8336, I 8539: a; T 4313: b; P 7430, P 7554, P 7572, P & I 8068: c.
 **Rhagadiolus stellatus* (L.) Gaertn. – I 4411, I 8412, P 7333, P 7896: a; P 7224, P 7555, P 7632: c.
Scorzonera laciniata L. – I 8547, T & I 4332: a; I 8376: c.
 **Senecio squalidus* L. – P 6983, P 7038: c.
S. vernalis Waldst. & Kit. – P 7221: c.
S. vulgaris L. – P & I 8610: a; P & I 8609: b.
 **Silybum marianum* (L.) Gaertn. – P 7936: a; P 7218: c.
 **Sonchus asper* (L.) Hill subsp. *glaucescens* (Jord.) Ball – P 7068: a; T 4236: b.
S. tenerrimus L. – Haussknecht (49, 1895)
 **Taraxacum hellenicum* Dahlst. – I 8378: a.
 **Tragopogon porrifolius* L. subsp. *porrifolius* – I 4365, I 8536, I 8549: a.
T. sinuatus Ave-Lall. – P & I 7968: a; P 7254, P 7470, P 7562, P & I 7866: c.
 **Urospermum picroides* (L.) Scop. ex F.W. Schmidt – I 4428, P 7130, P & I 7855, P & I 7893: a; P 7223, P 7312: c.
 **Xanthium spinosum* L. – T 4265: b.
- Convolvulaceae**
 **Convolvulus cantabrica* L. – P & I 7887: a; P 7399, P & I 7607: c.
C. elegantissimus Mill. – P 7401, P 7444, P 7583: c.
 **C. siculus* L. subsp. *siculus* – I 8489: a.
 **Cuscuta approximata* Bab. – I 8465: a.
 **C. epithymum* (L.) L. subsp. *kotschyi* (Des. Moul.) Arcang. – I 8464: a; I 8216: c.
- Crassulaceae**
Sedum acre L. – P & I 7743, P & I 7905: a; P 7605, P & I 7876: c.
S. amplexicaule DC. subsp. *tenuifolium* (Sm.) Greuter – P 7906: a.
 **S. hispanicum* L. – I 8446: a.
S. laconicum Boiss. & Heldr. subsp. *laconicum* – P 6959: a.
S. sediforme (Jacq.) Pau – I 8126, P 7252, P & I 8109: c.
 **Umbilicus chloranthus* Boiss. – I 8371, P & I 7847, P & I 7884: a.
U. horizontalis (Guss.) DC. – T 4282: b; I 8125: c.

Cruciferae

- Alyssum sibiricum* Willd., Haussknecht (1893: 113), sub nom. *A. tortuosum* Willd.
A. strigosum Banks & Sol. – I 8174: a; I 8399: b; T & I 4346, P 7025: c.
Arabis verna (L.) R. Br. – I 8164, I 8327, P 7372: a; T & I 4320, T 4307: b.
Aurinia saxatilis (L.) Desv. subsp. *orientalis* (Ard.) T.R. Dudley – I 8182, P & I 7857, P & I 7737, P 7832: a; T 4287: b; P 7504, P 7512, P 7258, P 7257: c.
Biscutella didyma L. – P 6971, P 7121: a; P 7265: c.
Brassica cretica Lam. subsp. *cretica* – I 8162, I 8181, P & I 7753, P & I 7822, P & I 7925: b; P 6954: c.
B. geniculata (Desf.) Snogerup & B. Snogerup – P & I 7969, P & I 7977: a; P 7231: c.
Bunias erucago L. – P 7620: c.
Camelina microcarpa Andr. ex DC. – Haussknecht (1893: 114), sub nom. *C. sylvestris* Wallr.
Capsella bursa-pastoris (L.) Medik. – I 4398, P 7376, P & I 7772: a; I 8163, P & I 7682: b.
 **Cardamine hirsuta* L. – P 7375: a; T & I 4353: c.
Clypeola jonthlaspi L. subsp. *jonthlaspi* – I 8516: a; I 8518: b; P 7254: c.
 **Erophila praecox* (Steven) DC. – I 8515, I 8521, P 7374: a; I 8175: b.
 **Eruca vesicaria* (L.) Cav. – I 4286, P & I 7780, P & I 7940, T 4306: b; P & I 7982: a; P 7230, P 7398: c.
Erysimum corinthium (Boiss.) Wettst. – I 8179, I 8514, P & I 7836, P & I 7865, P & I 7970: a, P & I 7818, P & I 7929: b, P 7634, P & I 8071: c.
E. graecum Boiss. & Heldr. – I 4355, I 8398: a, T 4305: b, P 7405, P 7488, P 7546: c.
Lunaria annua L. subsp. *pachyrhiza* (Borbás) Hayek – P & I 8014: a.
Malcolmia graeca Boiss. & Spruner subsp. *hydraea* (Heldr. & Halácsy) Stork – I 4346: a, P & I 7636: c.
Matthiola fruticulosa (L.) Maire subsp. *fruticulosa* – T & I 4349, P 7473: c.
Sinapis alba L. subsp. *alba* – P & I 8001: a, T 4263, T 4264: b, P 7409: c.
 **Sisymbrium officinale* (L.) Scop. – P 7488: c.
Thlaspi perfoliatum L. subsp. *perfoliatum* – I 4392, P 7183: a.

Cucurbitaceae

- **Ecballium elaterium* (L.) A. Rich. – T 4241: b.

Dipsacaceae

- Knautia integrifolia* (L.) Bertol. – I 8290, I 8493, P & I 7700, P & I 7791, P & I 7886: a, P & I 7826, T 4273: b, P & I 7873, I 8132: c.
Tremastelma palaestinum (L.) Janch. – P & I 7429: c.

Euphorbiaceae

- Euphorbia aleppica* L. – Halácsy (1904: 113).
E. characias L. – I 8302, P 7370, P 7668, P & I 7730: a, P & I 7992, T 4258: b, I 8219, P 7603, P & I 8086: c.
E. helioscopia L. – I 8301, I 8474: a, T & I 4316: b, I 8401: c.
E. peplus L. – T & I 4352: c.
E. taurinensis All. – Haussknecht (1898: 64), sub nom. *E. graeca* Boiss. & Spruner
Mercurialis annua L. – P & I 7752: b, I 8213, I 8214: c.

Fagaceae

- Quercus coccifera* L. – P & I 7902: a, P 7276, P 7463, P & I 7868, P & I 8055: c.

Geraniaceae

- **Erodium chium* (L.) Willd. subsp. *chium* – I 8380, I 8383, I 8384: a.

- E. cicutarium* (L.) L' Hér. subsp. *cicutarium* – T 4248: b, P 7226, P 7262: c.
- **E. gruinum* (L.) L' Hér. – I 8458: a, P 7305: c.
- **E. malacoides* (L.) L' Hér. – I 8381: a, I 8203, I 8402: c.
- Geranium lucidum* L. – I 8299, I 8460: a, I 8199, I 8200, I 8201: c.
- G. molle* L. subsp. *molle* – I 8459, T & I 4338, P 7345: a, P 7268: c.
- G. purpureum* Vill. – P & I 7736: a, I 8198: c.
- **G. rotundifolium* L. – I 8202: c.
- Globulariaceae**
- **Globularia alpum* L. – T & I obs.: c.
- Guttiferae**
- Hypericum triquetrifolium* Turra – P & I 7986, P & I 8025: a, T 4259: b.
- Labiatae**
- Ajuga orientalis* L. – Halácsy (1902: 466).
- Ballota acetabulosa* (L.) Benth. – I 8375, P & I 7797, P & I 7983: a, T 4277: b, I 8124, P 7235, P 7308, P & I 7869: c.
- Coridothymus capitatus* (L.) Rchb. – I 8452: a, P 7406, P 7462, P 7566, P 7593, P 7654: c.
- **Lamium amplexicaule* L. subsp. *amplexicaule* – I 8414: c.
- L. moschatum* Mill. – I 8350, P & I 7351, P & I 7676: a, T 4243: b.
- Micromeria juliana* (L.) Benth. – P 8027, P 7956, T 4266: b, P 8039: c.
- Origanum onites* L. – P & I 7995: a, T 4257: b, P 7311, P 7514, P 7598, P & I 7714, P 7226, P & I 8605: c.
- Phlomis fruticosa* L. – P 7338, P 7673, P 7589, P & I 7984: a, T 4251: b, P 7461, P 7589, P & I 7870, P & I 8077: c.
- Salvia fruticosa* Mill. – I 8509, I 8511, I 8512: a, I 8221, P & I 7608, P & I 8606: c.
- **S. verbenaca* L. – T & I 4335: a.
- S. viridis* L. – T & I 4348: c.
- Sideritis curvidens* Stapf – T & I 4347, P 7114: c.
- S. montana* L. subsp. *remota* (D' Urv.) P. W. Ball – Halácsy (1902: 501).
- Stachys swainsonii* Benth. subsp. *argolica* (Boiss.) Phitos & Damboldt – I 8123, I 8220, P 7484, P & I 7615: c.
- S. virgata* Bory & Chaub. – Halácsy (1902: 525).
- **Teucrium capitatum* L. – P & I 7408: c.
- Leguminosae**
- Anagyris foetida* L. – P & I 7728, P & I 7991: a, T 4284: b, P 7503: c.
- **Anthyllis hermanniae* L. – P 7282, P 7591, P & I 8092: c.
- Astragalus graecus* Boiss. & Spruner – Haussknecht (1894: 81).
- **A. hamosus* L. – P & I 7677: b.
- **A. pelecinus* (L.) Barneby – I 8587: a.
- A. sinaicus* Boiss. – Haussknecht (1894: 82), sub nom. *A. pseudo-stella* Del.
- **A. suberosus* Banks & Sol. subsp. *haarbachii* (Spruner) Matthews – T & I 4342: c.
- **Bituminaria bituminosa* (L.) Stirt. – P & I 7721, P & I 7741: a, P 7242, P 7487, P 7542: c.
- Calicotome villosa* (Poir.) Link – I 8570: a, P 7271, P 7459, P 7652: c.
- Genista acanthoclada* DC. subsp. *acanthoclada* – P 7445, P 7458, P & I 7655: c.
- Hippocrepis emerus* (L.) Lassen subsp. *emeroides* (Boiss. & Spruner) Lassen – I 8590: a.
- Hymenocarpus circinnatus* (L.) Savi – I 8369: a, P 7389, P 7413: c.
- Lathyrus aphaca* L. – I 8571: a.
- L. cicera* L. – I 8567: a, I 8184: c.
- L. hirsutus* L. – Haussknecht (1894: 86).
- L. sativus* L. – T & I 4331: a.
- **Lens nigricans* (M. Bieb.) Gord. – I 8185: c.
- **Lotus edulis* L. – I 8559: a, I 8183, T & I 4344: c.
- **L. ornithopodioides* L. – I 8563: a, I 8186: c.
- **L. peregrinus* L. – P 7099: a.
- **Medicago arabica* (L.) Huds. – P & I 7767: a.
- **M. coronata* (L.) Bartal. – I 8353, P 7835: a, T & I 4315: b, I 8189: c.
- **M. disciformis* DC. – P 7528: c.
- **M. minima* (L.) L. – I 8558: a, P 7442: c.
- **M. monspeliaca* (L.) Trautv. – I 8361, I 8578: a.
- M. orbicularis* (L.) Bartal. – I 8354, P 7356, P & I 7770: a, P & I 7678: b.
- M. polymorpha* L. – P 7545: c.
- **M. rigidula* (L.) All. – I 8574: a, I 8403: c.
- M. rugosa* Desr. – Haussknecht (1894: 69).
- M. scutellata* (L.) Miller – Haussknecht (1894: 69).
- M. truncatula* Gaertn. – P 7391, P 7407: c.
- Melilotus italicus* (L.) Lam. – I 8568: a, T & I 4317: b, I 8188, I 8195: c.
- Onobrychis aequidentata* (Sm.) d'Urv. – I 8258, P & I 7908: a, P 7439: c.
- **Ononis ornithopodioides* L. – I 8562: a, I 8187: c.
- **O. pubescens* L. – P 7501: c.
- O. reclinata* L. – Haussknecht (1894: 68).
- **Pisum sativum* L. subsp. *elatius* (M. Bieb.) Asch. & Graebn. – I 8408: c.
- **Scorpiurus muricatus* L. – P 7500: c.
- **Securigera securidata* (L.) Degen & Dörfel. – P 7499: c.
- **Spartium junceum* L. – P 7533: c.
- **Trifolium angustifolium* L. – P 8006: a.
- T. boissieri* Guss. – I 8554, P & I 7705, P & I 7910: a, P 7535, P & I 7878: c.
- **T. campestre* Schreb. – I 8358: a, T 4289: b.
- T. nigrescens* Viv. subsp. *nigrescens* – I 8363, P 7287, P & I 7768: a, P 7679: b.
- **T. scabrum* L. – I 8355, P & I 7698: a, T 4274, P & I 7686: b, P 7229: c.
- **T. tomentosum* L. – I 8359, P 7285, P & I 7769, P & I 7911: a, I 8190: c.
- **Trigonella monspeliaca* L. – I 8361, I 8578: a.
- **Tripodion tetraphyllum* (L.) Fourr. – I 8456: a, T & I 4345: c.
- Vicia hybrida* L. – I 8364, P 7381: a, I 8192, T & I 4350: c.
- V. lutea* L. – Haussknecht (1894: 88).
- V. pannonica* Crantz – Haussknecht (1894: 88), sub nom. *V. striata* M.Bieb.
- V. parviflora* Cav. – Haussknecht (1894: 89), sub nom. *Ervum gracile* DC.
- V. peregrina* L. – Haussknecht (1894: 89).
- **V. sativa* L. subsp. *macrocarpa* (Moris) Arcang. – I 4429: a.
- **V. sativa* L. subsp. *nigra* (L.) Ehrh. – I 8588: a.
- V. sibthorpii* Boiss. – Haussknecht (1894: 87).
- V. tenuissima* (Bieb.) Schinz & Thell. – Halácsy (1901: 494), sub nom. *V. gracilis* Lois.
- V. villosa* Roth subsp. *microphylla* (d'Urv.) P.W. Ball – I 8585, P & I 7706, P & I 7943: a, P 7296, P 7448, P 7523: c.
- Malvaceae**
- Althaea hirsuta* L. – Haussknecht (1894: 61).
- **Lavatera cretica* L. – P & I 7671: a.
- Malva cretica* Cav. subsp. *cretica* – P 7309: c.
- **M. parviflora* L. – P 7561: c.
- **M. sylvestris* L. – I 8295: a, P & I 7758, T 4237: b, I 8134, I 7758: c.
- Oleaceae**
- Olea europaea* L. – P 7342: a, P 7498, P & I 7592: c.
- Orobanchaceae**
- Orobanche alba* Willd. – Haussknecht (1897: 64).
- O. crenata* Forssk. – Haussknecht (1897: 64).
- Oxalidaceae**
- **Oxalis corniculata* L. – P obs.: a.
- **Oxalis pes-caprae* L. – T & I 4343: c.

Papaveraceae

- Fumaria densiflora* DC. – Haussknecht (1893: 102).
 **F. flabellata* Gaspar. – P & I 7756: a.
F. macrocarpa Parl. subsp. *macrocarpa* – I 8370: a.
 **F. officinalis* L. subsp. *officinalis* – P 7382: a, I 4396: c.
 **F. pettteri* Rchb. subsp. *pettteri* – I 8208: c.
Hypecoum imberbe Sm. – P 7392: c.
Papaver apulum Ten. – P 6976: a, I 4427: b, P & I 8086: c.
P. rhoeas L. – P 6988, P 7291, P & I 7754: a, P 7288, P 7955, T 4234, T 4239: b.

Plantaginaceae

- Plantago albicans* L. – P 7431: c.
 **P. afra* L. – I 8413: c.
P. arenaria Waldst. & Kit. – Haussknecht (1898:55), sub nom. *P. psyllium* L.
 **P. lagopus* L. – I 8316: a, T 4293: b, I 8397, P & I 8089: c.
 **P. lanceolata* L. – I 8318: a.

Polygonaceae

- **Polygonum aviculare* L. subsp. *neglectum* (Besser) Arcang. – T 4232: b.
 **Rumex pulcher* L. subsp. *woodsii* (De Not.) Arcang. – P s.n.: a.
 **R. tuberosus* L. subsp. *creticus* (Boiss.) Rech. f. – P & I 7708: a.

Portulacaceae

- **Portulaca oleracea* L. subsp. *oleracea* – P obs.: c.

Primulaceae

- Anagallis arvensis* L. – I 8426, I 8557: a, I 8138: c.
Asterolinon linum-stellatum (L.) Duby – P & I 7771: a, T 4291: b, P 6989: c.
Cyclamen graecum Link subsp. *graecum* – I 8137, P 6956: c.

Ranunculaceae

- Anemone pavonina* Lam. – I 8136: c.
Nigella damascena L. – P & I 7899, P & I 8005: a.
 **Ranunculus chius* DC. – I 8313: a.
 **R. muricatus* L. – P & I 7757: a.
R. paludosus Poir. – I 8310, I 8311: a.
R. sprunerianus Boiss. – I 8475: a, T & I 4337: b, I 8135: c.

Resedaceae

- Reseda alba* L. – P 7329, P & I 7762: a, P 7076, T 4233: b.
R. lutea L. subsp. *lutea* – P 7563: c.

Rhamnaceae

- **Rhamnus lycioides* L. subsp. *graecus* (Boiss. & Reut.) Tutin – P & I 7720: a, T 4288: b, P 7594, P & I 7604: c.

Rosaceae

- **Prunus webbii* (Spach) Vierh. – P & I 7804: a, P & I 7821, P & I 7926, T 4268: b.
Pyrus spinosa Forssk. – I 8432, P & I 7997: a, P 7464, P 7651, P & I 8078: c.
Sanguisorba minor Scop. subsp. *verrucosa* (Decne) Holmboe – Halácsy (1901: 537).
Sarcopoterium spinosum (L.) Spach – I 8287, P & I 7903: a, I 8217, P 7384, P 7506, P 7569, P & I 8069: c.

Rubiaceae

- Galium aparine* L. – I 8309, P & I 7766: a, P & I 7703: b, I 8210: c.
G. incurvum Sm. – Haussknecht (1894: 119).
G. melanatherum Boiss. – P & I 7842, P & I 7733: a, P & I 7619: c.
G. murale (L.) All. – Haussknecht (1894: 120).
Rubia peregrina L. – I 8212, I 8404: c.
Sherardia arvensis L. – P & I 7848, P & I 7889: a, I 8405, P 7420: c.
Valantia hispida L. – I 8472: a, T & I 4329, T 4250: b, I 8211: c.

Rutaceae

- Ruta graveolens* L. – Haussknecht (1894: 67), sub nom. *R. divaricata* Ten.

Santalaceae

- **Osyris alba* L. – P & I 8061, P & I 8084: c.

Saxifragaceae

- Saxifraga hederacea* L. – Haussknecht (1894: 106).
S. tridactylites L. – I 8424: a.

Scrophulariaceae

- Linaria micrantha* (Cav.) Hoffmanns. & Link – Halácsy (1902: 413).
 **L. simplex* (Willd.) DC. – T & I 4314: b.
L. triphylla (L.) Mill. – Halácsy (1902: 410).
 **Misopates orontium* (L.) Rafin. – I 8457: a, T 4280: b.
 **Parentucellia latifolia* (L.) Caruel subsp. *latifolia* – I 8245: a.
Verbascum sinuatum L. – P & I 7807, P & I 7988: a, T 4245: b, P & I 7825, P & I 7934: c.
Veronica cymbalaria Bodard – I 8422: a, T & I 4319: b.
V. polita Fr. – Halácsy (1902: 435).

Solanaceae

- **Hyoscyamus albus* L. – I 8425: a, T 4279: b.

Thymelaeaceae

- Thymelaea tartonraira* (L.) All. subsp. *argentea* (Sm.) Holmboe – P 7280, P 7457, P & I 8059, P & I 8096: c.

Umbelliferae

- Anthriscus tenerrima* Boiss. & Spruner – I 8500, P 7330, P & I 8008: a, I 8326: b, P 7232: c.
Bupleurum trichopodium Boiss. & Spruner – Haussknecht (1894: 116).
Conium maculatum L. – P & I 7719, P & I 8002, P & I 8011: a.
 **Daucus guttatus* Sm. subsp. *guttatus* – P & I 7784, P & I 7885, P & I 7944, P & I 7972, P & I 8018: a, P 7438: c.
 **Eryngium campestre* L. – I 8339: a, T 4238: b.
Ferulago nodosa (L.) Boiss. – Halácsy (1901: 644).
 **Lagoecia cuminoides* L. – I 8435, P 7662, P & I 7890: a, P 7541, P 7606: c.
Malabaila aurea (Sm.) Boiss. – P & I 7949: a, P 7304, P 7483, P 7584: c.
 **Orlaya daucooides* (L.) Greuter – P 7390: c.
 **Peucedanum vittijugum* Boiss. subsp. *vittijugum* – P & I 7933: b.
 **Pimpinella peregrina* L. – P & I 8012: a, P & I 8030: b, P 7518, P 7560: c.
Scaligeria napiformis (Spreng.) Grande – P & I 7883: a, T 4281: b, P 7244, P 7551, P 7622: c.
Scandix australis L. subsp. *grandiflora* (L.) Thell. – P 7034, P & I 7704: a.
 **S. pecten-veneris* L. – I 4359: a, I 8403: b.
 **Smyrniolum olusatrum* L. – I 8129, I 8130: a.
Tordylium apulum L. – I 4377, I 8128, P 7347, P 7365: a, I 8323, I 8501: b, P 7294, P 7410, P 7432, P 7415, P 7552: c.
 **Torilis leptophylla* (L.) Rchb. f. – I 8502: a, I 8499: b.
 **T. nodosa* (L.) Gaertn. – P & I 7710, P & I 7963, P & I 8020: a.
T. tenella (Delile) Rchb. f. – P 7314, P 7417: c.

Urticaceae

- **Parietaria cretica* L. – I 8436, P & I 7845: a.
 **P. judaica* L. – P & I 7669, P & I 7761, P & I 7967: a, P & I 7827: b.
 **P. lusitanica* L. – I 8440: a.
 **Urtica pilulifera* L. – I 8469: a, P & I 7759: b, I 8215, P 7517: c.

Valerianaceae

- Centranthus calcitrapa* (L.) Dufur. – Haussknecht (1894: 123).

C. ruber (L.) DC. subsp. *sibthorpii* (Heldr. & Sart. ex Boiss.) Hayek – P & I 7749:a, I 8135, I 8136, P 7613, P & I 7618, P 7246: c.

Valerianella discoidea (L.) Loisel. – P 7361: a.

V. echinata (L.) DC. – I 8304, I 8307, I 8466: a, I 8203: c.

V. hirsutissima Link – Haussknecht (1894: 123).

**V. vesicaria* (L.) Moench – P 7415: c.

Zygophyllaceae

**Tribulus terrestris* L. – T 4229: b, P & I 8073: c.

MONOCOTYLEDONES

Alliaceae

**Allium ampeloprasum* L. s.l. – T 4300: b.

**A. chamaemoly* L. – P & I 8608: a.

**A. chamaespathum* Boiss. – P & I 8049, P & I 8082: c.

A. hirtovaginatatum Kunth – Halácsy (1904: 253), sub nom. *A. cupani* Raf. Subsp. *hirtovaginatatum* Kunth

A. neapolitanum Cirillo – P & I 7716, P & I 7740, P & I 7914: a, P 7249, P 7326, P & I 7638: c.

A. roseum L. – Halácsy (1904: 261).

**A. subhirsutum* L. – P 7297, P 7385, P 7558, P 7620: c.

Amaryllidaceae

**Sternbergia sicula* Tineo ex Guss. – P & I 8108: c.

**Arisarum vulgare* Targ. Tozz. subsp. *vulgare* – P & I 8081: c.

Araceae

Biarum spruneri Boiss. – Halácsy (1904: 293).

Asparagaceae

**Asparagus aphyllus* L. subsp. *orientalis* (Baker) P.H. Davis – P & I 7702, P & I & I 7729, P & I 8021: a, T 4275: b, P 7240, P 7657, P & I 8056: c.

Asphodelaceae

Asphodeline lutea (L.) Rchb. – T obs.: b, P & I 8612: c.

Asphodelus ramosus L. subsp. *ramosus* – P & I 7808, P & I 7948: a, P 7237, P 7279, P 7522: c.

Gramineae

**Aegilops geniculata* Roth – I 4454: a.

**A. triuncialis* L. – T 4310: a, P 7455: c.

**Aira caryophylla* L. – I 8526, I 8530: a.

A. elegantissima Schur – Haussknecht (1900: 43), sub nom. *A. capillaris* Host

A. tenorii Guss. – Haussknecht (1900: 43), sub nom. *Avena corymbosa* Nym.

Avena barbata Pott ex Link subsp. *barbata* – I 4357, I 8119, I 8529: a, P 7070, T 4303: b, P 7229: c.

**A. sterilis* L. – P 7343: a, P 7300: c.

**Avenula agropyroides* (Boiss.) Holub – P 7587: c.

Brachypodium retusum (Pers.) P. Beauv. – P & I 7861, P & I 7952: a.

**Briza maxima* L. – P 7336, P & I 7693, P & I 7917: a.

**Bromus fasciculatus* C. Presl – I 8528: a, T 4260: b.

**B. intermedius* Guss. – P 7371: a, P 7301: c.

B. madritensis L. subsp. *madritensis* – I 8262, I 8269, P 7352, P & I 7666, P & I 7776: a, I 4390, T 4311: b, P 7565: c.

**B. rigidus* Roth – I 4450, I 8270: a, I 8120: b, P 6970: c.

B. rubens L. – T 4295: b, P 7049, P 7122: c.

**B. scoparius* L. – I 4386: a.

**B. squarrosus* L. – P 7453: c.

**B. sterilis* L. – I 4459: a.

**Catapodium rigidum* (L.) C.E. Hubb. ex Dony – I 4457: a, T 4292: b.

**Cynosurus echinatus* L. – I 4458, P 7661, P & I 7918, P 7961: a, I 8124: b, P 7325, P 7548: c.

**C. effusus* Link – I 4271, P 7335, P 7690: a, I 8266, I 8278: b, I 8524: c.

Dactylis glomerata L. subsp. *hispanica* (Roth) Nyman – P 7692, P & I 7858: a, T 4297: b, P 7451, P 7476, P 7646: c.

**Dasypyrum villosum* (L.) P. Candargy – I 4345, P & I 7813, P & I 7959: a, P 7685, T 4270: b, P 7418, P 7421, P 7478, P 7526: c.

**Hordeum bulbosum* L. – P & I 7812, P 8016: a, P 7527, P 7659: c.

**H. geniculatum* All. – I 4368: a.

**H. leporinum* Link – I 4381, I 8121, P 7366: a, T 4309: b, P 7260: c.

Hyparrhenia hirta (L.) Stapf – P 7472, P 7509: c.

**Lagurus ovatus* L. subsp. *ovatus* – I 8277, P 7340, P 7691, P & I 7923: a, T 4255, T 4261: b, P 7261: c.

Lolium perenne L. – Haussknecht (1900: 71).

L. rigidum Gaudin – I 4440: a, I 8264: c.

**Melica ciliata* L. – P 7751: a.

**Phleum subulatum* (Savi) Asch. & Graebn. subsp. *subulatum* – P & I 7681: b.

Piptatherum coeruleum (Desf.) P. Beauv. – I 8063, I 8407: a, P 7251: c.

P. miliaceum (L.) Coss. – I 8532, P 7666, P 7810, P 8015: a, T 4308: b.

Poa bulbosa L. subsp. *bulbosa* – I 4267, I 4290, I 8527: a, P 7000: b, P 7302: c.

**Rostraria cristata* (L.) Tzvelev – I 4351, I 4382: a, P 7683: b, P & I 7777, P & I 7862: c.

**Sorghum halepense* (L.) Pers. – P 7475: c.

**Stipa capensis* Thunb. – T 4312: a, P 7250: c.

**Trachynia distachya* (L.) Link – P 7449: c.

**Vulpia ciliata* Dumort. subsp. *ciliata* – I 4350: a.

Hyacinthaceae

**Bellevalia hyacinthoides* (Bertol.) K. Perss. & Wendelbo – P 8601: c.

Charybdis maritima (L.) Speta – T 4269: b, P 7486, P 8045: c.

Muscari commutatum Guss. – T & I 4326: b, P 7165: c.

M. comosum (L.) Mill. – P & I 7717, P & I 7913: a, P 7248, P 7623: c.

Ornithogalum collinum Guss. – P 7157: a.

**O. divergens* Boreau – T & I 4333: a.

**Prospero autumnale* (L.) Salisb. – P & I 8106: c.

Iridaceae

**Crocus cancellatus* Herb. subsp. *mazziaricus* Matthew – P & I 8102: c.

**Hermodactylus tuberosus* (L.) Mill. – T & I 4336: a.

Liliaceae

**Gagea fibrosa* (Desf.) Schult. & Schult. f. – T & I 4354: c.

G. reticulata (Pall.) Schult. & Schult. f. – Halácsy (1904: 227).

Orchidaceae

Anacamptis pyramidalis (L.) Rich. – Halácsy (1904: 162).

**Barlia robertiana* (Loisel.) Greuter – T & I 4358: c.

Ophrys iricolor Desf. – T & I 4355: c.

O. lutea Cav. – Halácsy (1904: 180).

O. mammosa Desf. – T & I 4356: c.

**O. tenthredinifera* Willd. – T & I 4357: c.

Orchis laxiflora Lam. – Haussknecht (1900: 24).

O. palustris Jacq. – Halácsy (1904: 173), sub nom. *O. laxiflora* Lam. subsp. *palustris* Jacq.

Serapias parviflora Parl. – Halácsy (1904: 159), sub nom. *S. occultata* Gay

Ruscaceae

Ruscus aculeatus L. – P & I 8060: c.

Smilacaceae

**Smilax aspera* L. – P & I 7731: a.

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