Some contributions to the wall flora of North Cyprus

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1. Abstract
A survey of plants growing on walls in North Cyprus resulted in a preliminary checklist of some 200 vascular plant species. This corresponds to more than 15 percent of all species known for North Cyprus. In comparison to Europe the amounts of therophytes, phanerophytes and geophytes are considerably higher.

2. Introduction
The construction of walls was developed in different culture groups (Mediterranean area, China, India, Central and South America) presumably independent from each other. Only with walls a permanent banking of farmland and wine yards was possible. The building up of cities and fortifications was rendered possible in an unexpected way. The city wall of Jericho is often noted as one of the very first ones (ca. 7000 B. C.). Depending on the region, the material used, their age, surrounding and state of preservation walls offer numerous micro-habitats and living areas for many organisms. Therefore they are in the focus of nature conservation. On the other hand they themselves are strongly endangered because nowadays walls are only seldom built up from stone or bricks and lime mortar. Nowadays concrete is mostly in use. During reconstruction commonly cement mortar is used instead of lime mortar which prevents colonisation of the wall fissures. The number of conventional walls would have passed their maximum long ago. The aim of our project is to give an overview of the flora and vegetation of Europe, the Mediterranean area and adjacent areas (BRANDES 1992a, 1992b, 2013, 2020, BRANDES & BRANDES 1999).

After civil war conflicts and subsequent occupation of the north of Cyprus by the Turkish army in 1974, North Cyprus (Turkish Republic of North Cyprus) was established. It has an area of 3255 km². This is more than one third of the EU member Cyprus (9251 km²). During two excursions (2017 and 2019) to North Cyprus guided by Marina Cetislan places of botanical, historical and archaeological interest have been visited.

This publication offers a first overview of the wall flora of North Cyprus. The focus was on locations with historical walls such as Bellapais (Beylerbeyi), Besparkam (Pentadaktylos), Famagusta (Gazimagusa), Kyrénia (Girne), Karmi (Karaman), Kantara castle, Kayalar, Salamis, St. Hilarion and accessible vegetated walls in the landscape and villages. By documenting the wall flora we distinguished between four sections based on the flora’s growing place: vertical walls (mostly upright with low supply of humidity), wall tops (better supplied by humidity depending on their age and soil layer), wall bases (good supply of humidity and nutrient) and retaining walls (medium supply of humidity).

The determination of the plants is based on MEIKLE (1977-1985). Very helpful was also VINEY (1994 and 1996). The nomenclature was checked against the dynamic data base Flora of Cyprus (HAND R., G. N. HADJIKYRIAKOU & C. S. CHRISTODOULOU 2011 ff.)
3. Results

In a first approximation some 200 vascular plant species are listed. The real number is assumed to be much higher, because only selected walls have been investigated. But at least our first list shows that more than 15% of the flora of North Cyprus is growing in walls. Most of the ‘wall growing’ species are found in St. Hilarion and Kyrénia (Girne). The 198 species of wall flora of North Cyprus belong to 55 plant families.

The most common plant families growing on walls are
- Asteraceae (20 species),
- Poaceae (16 species),
- Brassicaceae (10 species),
- Caryophyllaceae (10 species),
- Fabaceae (10 species),
- Lamiaceae (10 species),
- Apiaceae (9 species),
- Rubiaceae (9 species),
- Geraniaceae (7 species),
- Asparagaceae (6 species),
- Crassulaceae (6 species).

The number of neophytes (15) is low compared to Europe:
- Acacia cyanophylla
- Ailanthus altissima
- Aptenia cordifolia
  (or the cultivar Aptenia ‘Red Apple’, see Smith et al. 2020)
- Carpobrotus edulis
- Erigeron bonariensis
- Iris germanica
- Lantana camara
- Lycium ferocissimum
- Matthiola incana
- Nicotiana glauca
- Osteospermum ecklonis
- Oxalis pes-caprae
- Senecio angulatus
- Senecio cinerea
- Vinca major

Most of the nonresident species are running wild only in a very local area near to the respective agricultural populations. With respect to herbaceous plants only Oxalis pes-caprae is wide spread. Ailanthus altissima, Nicotiana glauca (BRANDES 2001) as well as Senecio angulatus have to be seen as potentially dangerous due to their competitiveness. But it is easy to reduce the species by cutting.

The distribution of the different microhabitats of vascular plants in the surroundings of the walls is shown in fig. 1.

![Fig. 1 Distribution of Species versus Microhabitat](https://doi.org/10.24355/dbbs.084-202008071038-0)
Wall tops have 122 entries while retaining walls only show 56 entries. The low number of entries for retaining walls is noticeable, although many of them have no fissures being suitable for the establishing of plants. It is assumed that forthcoming studies of further retaining walls in the agricultural landscape will enlarge the number of plants.

The distribution of the Raunkiaer plant life-forms is shown in fig.2.

Fig.2: Distribution of Life Forms

As expected the amount of phanerophytes, therophytes und geophytes is high compared to walls in Central Europe whereas the amount of hemicryptophytes is lower. This can be seen clearly from Tab. 1. A distinct geographic respectively climatic trend is obvious.

Tab. 1: Distribution of life forms of plants growing on vertical walls

<table>
<thead>
<tr>
<th>Region</th>
<th>Life Forms</th>
<th></th>
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<th></th>
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<tr>
<td></td>
<td>Phanerophytes</td>
<td>Chamaephytes</td>
<td>Hemicryptophytes</td>
<td>Geophytes</td>
<td>Therophytes</td>
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<td>Europe: Atlantic regions</td>
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<td>12</td>
<td>69</td>
<td>1</td>
<td>14</td>
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<tr>
<td>Europe: Mediterranean regions</td>
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<td>17</td>
<td>41</td>
<td>1</td>
<td>35</td>
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<td>North Cyprus</td>
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<td>9</td>
<td>25</td>
<td>12</td>
<td>34</td>
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<tr>
<td>Israel</td>
<td>21</td>
<td>6</td>
<td>26</td>
<td>6</td>
<td>41</td>
</tr>
<tr>
<td>Varanasi (India)</td>
<td>10</td>
<td>2</td>
<td>--</td>
<td>5</td>
<td>83</td>
</tr>
</tbody>
</table>
4. Preliminary checklist of the wall flora of North Cyprus

**Acacia cyanophylla** Lindl. – [Fabaceae]

**Acanthoprasium integrifolium** (Benth.) Ryding (Syn. *Ballota integrifolia* Benth.) – [Lamiaceae]

**Acer obtusifolium** Sm. – [Sapindaceae]

**Adiantum capillus-veneris** L. – [Pteridaceae]

**Ailanthus altissima** (Mill.) Swingle – [Simaroubaceae]

**Ajuga chamaepitys** (L.) Schreb. subsp. *cypria* P. H. Davis – [Lamiaceae]
Indigenous [near-endemic, also in Anatolia (Turkey)]. St. Hilarion: vertical walls, retaining walls, wall tops.

**Allium neapolitanum** Cirillo – [Amaryllidaceae]

**Alyssum strigosum** Banks & Sol. – [Brassicaceae]

**Anagallis arvensis** L. – [Primulaceae]

**Anchusa humilis** (Desf.) I. M. Johnst. – [Boraginaceae]
Indigenous. Salamis: wall tops.

**Anchusa undulata** L. – [Boraginaceae]

**Anogramma leptophylla** (L.) Link – [Pteridaceae]

**Antirrhinum majus** L. – [Plantaginaceae]

**Aptenia cordifolia** (L. f.) N. E. Br. – [Aizoaceae]
Casual neophyte. Kyrénia (Girne): top of vertical walls.
Note: possibly the hybrid ‘Red Apple’, see SMITH et al. (2020).

**Arabis cypria** Holmboe – [Brassicaceae]

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**Arabis verna** (L.) R. Br. in W. T. Aiton – [Brassicaceae]  

**Arenaria leptoclados** (Rchb.) Guss. – [Caryophyllaceae]  
Indigenous. Bellapais (Beylerbeyi): wall tops.

**Arenaria pamphylica** subsp. *kyrenica* McNeill – [Caryophyllaceae]  

**Arisarum vulgare** Targ. Tozz. – [Araceae]  

**Aristolochia sempervirens** L. – [Aristolochiaceae]  

**Arum dioscoridis** Sm. – [Araceae]  

**Arundo donax** L. – [Poaceae]  

**Asparagus horridus** L. (Syn. *Asparagus stipularis* Forssk.) – [Asparagaceae]  
Indigenous. Famagusta (Gazimagusa): wall tops; Salamis: vertical walls, wall bases, wall tops:

**Asphodelus fistulosus** L. – [Xantorrhoeaceae]  
Indigenous. Famagusta (Gazimagusa): wall tops.

**Asphodelus ramosus** – [Xantorrhoeaceae]  

**Asplenium ceterach** L. – [Aspleniaceae]  
Note: mentioned for walls (VINEY 1996).

**Avena cf. ventricosa** – [Poaceae]  

**Bellevalia trifoliata** (Ten.) Kunth – [Asparagaceae]  

**Biscutella didyma** L. – [Brassicaceae]  

**Bituminaria bituminosa** (L.) C. H. Stirt. (Syn. *Asphaltium bituminosum* (L.) Fourr. – [Fabaceae]  
Note: The situation on Cyprus is currently under revision (HAND R., G. N. HADJIKYRIAKOU & C. S. CHRISTODOULOU (2011 ff.): Flora of Cyprus – a dynamic checklist).
Bosea cypria - [Amaranthaceae]
Note: mentioned for walls by MEIKLE (1977-1985) and VINEY (1994).

Brachypodium distachyon (L.) P. Beauv. (Syn. Trachynia distachya (L.) Link) – [Poaceae]

Brassica hilarionis Post – [Brassicaceae]

Bromus cf. madritensis L. – [Poaceae]
Indigenous. Salamis: wall tops.

Bromus rubens L. – [Poaceae]

Calendula arvensis L. – [Asteraceae]

Campanula erinus L. – [Campanulaceae]
Indigenous. Famagusta (Gazimagusa): vertical walls.
Note: mentioned for walls by MEIKLE (1977-1985) and VINEY (1994).

Capparis spinosa L. – [Capparidaceae]
Note: mentioned for walls (VINEY 1994).

Capsella bursa-pastoris – (L.) Medik. [Brassicaceae]

Cardamine hirsuta – [Brassicaceae]

Carpobrotus edulis (L.) N. E. Br. – [Aizoaceae]
Kultivated and slowly naturalizing. Kyrénia (Girne): wall tops.
Note: obviously running wild.

Catapodium marinum (L.) C. C. Hubb. – [Poaceae]

Catapodium rigidum (L.) C. E. Hubb. – [Poaceae]
Note: mentioned for walls by MEIKLE (1977-1985) and (VINEY 1996).

Centaurea aegialophila Wagenitz – [Asteraceae]

Cheilanthes acrostica (Balb.) Tod. – [Pteridaceae]
**Chenopodium murale** L. – [Chenopodiaceae]  

**Clematis cirrhosa** L. – [Ranunculaceae]  

**Convolvulus althaeoides** L. – [Convolvulaceae]  

**Cosentina vellea** (Aiton) Tod. (Syn. *Chelleanthes vellea* (Aiton) F. Muell.) – [Pteridaceae]  

**Crassula alata** (Viv.) Berger – [Crassulaceae]  
Indigenous. Salamis: vertical walls, wall tops.  
Note: mentioned for walls (VINEY 1994).

**Crepis fraasii** Sch. Bip. – [Asteraceae]  

**Cupressus sempervirens** L. – [Cupressaceae]  

**Cyclamen persicum** Mill. – [Primulaceae]  
Note: mentioned for walls (VINEY 1994).

**Cynara cardunculus** L. – [Asteraceae]  

**Dianthus cyprius** A. K. Jacks. & Turrill – [Caryophyllaceae]  

**Dioscorea communis** (L.) Ceddick & Wilkin (Syn. *Tamus communis* L.) – [Dioscoreaceae]  

**Dittrichia viscosa** subsp. *angustifolia* (Bég.) Greuter – [Asteraceae]  

**Draba verna** L. – [Brassicaceae]  

**Drimia aphylla** (Forssk.) J. C. Manning & Goldblatt (Syn. *Urginea maritima* (L.) Bak. s.l.) – [Asparagaceae]  

**Dryopteris pallida** subsp. *libanotica* (Rosenst.) E. Nardi – [Dryopteridaceae]  

**Ecballium elaterium** (L.) A. Rich – [Cucurbitaceae]  
**Echium angustifolium** Mill. subsp. *angustifolium* – [Boraginaceae]
Indigenous. Kyrénía (Girne): wall bases, wall tops.

**Emex spinosa** (L.) Campd. – [Polygonaceae]
Note: mentioned for walls (VINEY 1994).

**Erigeron bonariensis** L. (Syn. *Conyza bonariensis* (L.) Cronquist) – [Asteraceae]
Neophyte. Bellapais (Beylerbeyi): vertical walls, wall bases; Besparkmak: wall bases; Salamis: wall bases.

**Erodium ciconium** (L.) Hér. – [Geraniaceae]

**Erodium cicutarium** (L.) Hér. subsp. *cicutarium* – [Geraniaceae]

**Erodium malacoides** (L.) Willd. – [Geraniaceae]
Indigenous. Kyrénía (Girne): wall tops.

**Erodium moschatum** (L.) Hér. – [Geraniaceae]
Indigenous. Barnabas: wall bases; Famagusta (Gazimagusa): wall tops; Kyrénía (Girne): wall bases, wall tops.

**Euphorbia peplus** L. – [Euphorbiaceae]

**Euphorbia terracina** L. – [Euphorbiaceae]
Indigenous. Salamis: wall bases, wall tops.

**Ferula communis** L. subsp. *communis* – [Apiaceae]
Indigenous. Kyrénía (Girne): wall bases; Salamis: wall bases; St. Hilarion: vertical walls, wall bases.

**Ficus carica** L. – [Moraceae]

**Fumaria capreolata** L. – [Papaveraceae]

**Fumaria gaillardotii** Boiss. - [Papaveraceae]

**Fumaria judaica** Boiss. subsp. *judaica* – [Papaveraceae]

**Gagea peduncularis** (J. Presl & C. Presl) Pascher – [Liliaceae]
Note: Perhaps also the endemic *Gagea julia* Pascher, which was found in mixed populations with *Gagea peduncularis* in St. Hilarion (MEIKLE 1985).
**Galium aparine** L. – [Rubiaceae]

**Galium canum** Req. – [Rubiaceae]

**Galium murale** (L.) All. – [Rubiaceae]

**Galium setaceum** Lam. – [Rubiaceae]

**Geranium lucidum** L. – [Geraniaceae]

**Geranium molle** L. – [Geraniaceae]

**Geranium rotundifolium** L. – [Geraniaceae]
Indigenous. Salamis: vertical walls, wall tops.

**Glebionis coronaria** (L.) Spach – [Asteraceae]
Indigenous. Kyrénia (Girne): wall tops; Salamis: wall tops.

**Hedera** spec. – [Araliaceae]
Indigenous (?). Bellapais (Beylerbeyi): vertical walls.

**Helianthemum stipulatum** (Forssk.) C. Chr. – [Cistaceae]
Indigenous. Salamis: wall bases, wall tops.

**Helichrysum stoechas** L. Moench subsp. **barrelieri** (Ten.) Nyman (Syn. Helichrysum conglobatum (Viv.) Steud.) – [Asteraceae]

**Hippocrepis multisiliquosa** L. – [Fabaceae]

**Hordeum leporinum** Link – [Poaceae]
Indigenous. Barnabas: wall bases; Famagusta (Gazimagusa): wall tops; Kyrénia (Girne): wall bases, wall tops; Kantara castle: wall bases.

**Hyoscyamus albus** L. – [Solanaceae]

**Hyoscyamus aureus** L. – [Solanaceae]
**Hyparrhenia hirta** (L.) Stapf – [Poaceae]

**Hypericum lanuginosum** Lam. – [Hypericaceae]

**Iris germanica** L. – [Iridaceae]

**Klasea cerinthifolia** (Sm.) Greuter & Wagenitz – [Asteraceae]

**Lamarckia aurea** (L.) Moench – [Poaceae]
Indigenous. Famagusta (Gazimagusa): wall tops; Kyrénia (Girne): wall tops.

**Lamium amplexicaule** L. – [Lamiaceae]

**Lamium garganicum** L. subsp. *garganicum* – [Lamiaceae]

**Lamium moschatum** Mill. subsp. *micranthum* (Boiss.) Mennema – [Lamiaceae]

**Lantana camara** L. – [Verbenaceae]
Kultivated and running wild (casual). Bellapais (Beylerbeyi): wall tops.

**Lathyrus annuus** L. – [Fabaceae]
Indigenous. Bellapais (Beylerbeyi): wall bases, wall tops; Salamis: wall bases.

**Lečokia cretica** (Lam.) DC. – [Apiaceae]

**Leontodon tuberosus** L. – [Asteraceae]

**Lotus longisiliquosus** R. Roem. (Syn. *Lotus collinus* (Boiss.) Heldr.) – [Fabaceae]
Indigenous. Salamis: wall bases, wall tops.

**Lotus peregrinus** L. – [Fabaceae]

**Lycium ferocissimum** Miers – [Solanaceae]
Neophyte. Barnabas: wall tops; Salamis: vertical walls, wall tops.

**Malcolmia chia** (L.) DC. – [Brassicaceae]

**Malcolmia flexuosa** (Sm.) Sm. – [Brassicaceae]
**Malva multiflora** (Cav.) Soldano & al. (Syn. *Lavatera cretica* L.) – [Malvaceae]

**Mandragora officinarum** L. – [Solanaceae]

**Matthiola incana** (l.) L. Br. – [Brassicaceae]

**Medicago littoralis** Loisel. var. *littoralis* – [Fabaceae]

**Medicago truncatula** Gaertn. – [Fabaceae]

**Melica minuta** L. – [Poaceae]

**Mercurialis annua** L. – [Euphorbiaceae]
Indigenous. Barnabas: wall tops; Bellapais (Beylerbeyi): wall tops; Besparmak (Pentadaktylos): wall tops; Kyrénia (Girne): wall tops; Kantara castle: retaining walls; Salamis: wall tops, wall bases; St. Hilarion: vertical walls, wall bases.

**Mesembryanthemum crystallinum** L. – [Aizoaceae]
Indigenous (?). Kyrénia (Girne): wall bases.

**Micromeria myrtifolia** Boiss. & Hohen. – [Lamiaceae]
Indigenous. Famagusta (Gazimagusa): wall tops; Kantara castle: wall tops.

**Micromeria nervosa** (Desf.) Benth. – [Lamiaceae]
Indigenous. Famagusta (Gazimagusa): wall tops; Kantara castle: wall tops; St. Hilarion: vertical walls, wall bases.

**Minuartia hybrida** (Vill.) Schischk. – [Caryophyllaceae]

**Misopates orontium** (L.) Raf. – [Plantaginaceae]
Indigenous. Kyrénia (Girne): wall bases; Salamis: wall bases, wall tops.

**Moraea sisyrinchium** (L.) Ker Gawl. – [Iridaceae]

**Muscari inconstrictum** Rech. F. – [Asparagaceae]

**Nerium oleander** L. – [Apocynaceae]

**Nicotiana glauca** Graham – [Solanaceae]
Neophyte. Famagusta (Gazimagusa): wall tops; Salamis: vertical walls, wall tops.
Onosma caespitosa Kotschy – [Boraginaceae]

Origanum syriacum L. – [Lamiaceae]

Ornithogalum pedicellare Boiss. & Kotschy – [Asparagaceae]
Indigenous. Kyrénia (Girne): wall tops, wall bases.

Osteospermum ecklonis (DC.) Norl. – [Asteraceae]

Oxalis pes-caprae L. – [Oxalidaceae]
Neophyte (invasive). Bellapais (Beylerbeyi): retaining walls; Besparmak (Pentadaktylos): wall tops; Famagusta (Gazimagusa): wall tops; Kyrénia (Girne): vertical walls, wall tops; Karmi (Karaman): vertical walls;
St. Hilarion: wall bases.

Pallenis spinosa L. (Cass.) – [Asteraceae]

Papaver gracile Boiss. – [Papaveraceae]

Papaver hybridum L. – [Papaveraceae]

Parietaria cretica L. – [Urticaceae]

Parietaria judaica L. – [Urticaceae]
Indigenous. Bellapais (Beylerbeyi): vertical walls; Famagusta (Gazimagusa): wall tops; Kyrénia (Girne): retaining walls, vertical walls, wall bases; Karmi (Karaman): wall bases; Salamis: vertical walls, wall bases.

Parietaria lusitanica L. – [Urticaceae]
Indigenous. Barnabas: vertical walls, wall bases; Bellapais (Beylerbeyi): vertical walls; Famagusta (Gazimagusa): vertical walls, wall tops; Kyrénia (Girne): vertical walls, wall bases; Karmi (Karaman): vertical walls, wall bases; Salamis: vertical walls; St. Hilarion: vertical walls.

Paronychia argentea Lam. – [Caryophyllaceae]

Phagnalon rupestre (L.) DC. subsp. rupestre – [Asteraceae]
Indigenous. Bellapais (Beylerbeyi): vertical walls, wall tops; Famagusta (Gazimagusa): wall tops; Kyrénia (Girne): retaining walls, vertical walls, wall tops; Salamis: vertical walls, wall tops; St. Hilarion: vertical walls, wall bases.

Piptatherum miliiaceum (L.) Coss. – [Poaceae]
Indigenous. Bellapais (Beylerbeyi): retaining walls, wall tops; Famagusta (Gazimagusa): wall tops; Kyrénia (Girne): retaining walls, wall bases, wall tops; Karmi (Karaman): walls; Kayalar: retaining walls; Salamis: wall bases.
**Pistacia lentiscus** L. – [Anacardiaceae]

**Pistacia terebinthus** L. – [Anacardiaceae]

**Plantago africana** L. – [Plantaginaceae]
Indigenous. Besparmak (Pentadaktylos): wall tops; Famagusta (Gazimagusa): wall tops.

**Plantago lagopus** L. – [Plantaginaceae]

**Poa annua** L. – [Poaceae]

**Poa compressa** L. – [Poaceae]
Indigenous (?). St. Hilarion: vertical walls.

**Polycarpon tetraphyllum** (L.) L. – [Caryophyllaceae]

**Polygonum aviculare** s.l. – [Polygonaceae]
Indigenous. Salamis: vertical walls, wall tops.

**Poterium verrucosum** G. Don – [Rosaceae]

**Prasium majus** L. – [Lamiaceae]

**Ptilostemon chamaepeuce** (L.) Less. subsp. **cyprius** (Greuter) Chrték & B. Slavik – [Asteraceae]

**Ranunculus millefoliatus** subsp. **leptaleus** (DC.) Meikle – [Ranunculaceae]

**Reichardia picroides** (L.) Roth – [Asteraceae]

**Reseda aff. minoica** Martín-Bravo & Jim. Mejias – [Resedaceae]

**Rhamnus lycioides** L. subsp. **graecca** (Boiss. & Reut.) Tutin – [Rhamnaceae]

**Rostraria cristata** (L.) Tzvelev – [Poaceae]
Indigenous. Salamis: wall tops.

**Rosularia globulariifolia** (Fenzl) A. Berger – [Crassulaceae]
Indigenous. Note: Mentioned as *Rosularia cypria* for walls by VINEY (1994).
Rosularia pallidiflora (Holmboe) Meikle – [Crassulaceae]
Indigenous (endemic). Note: Mentioned for walls by VINEY (1994).
Observation: Rosularia spec. was found at Kantara castle (retaining walls) and at St. Hilarion (vertical walls).

Rubia laurae (Holmboe) Airy Shaw – [Rubiaceae]

Rubia tenuifolia d’Urv. – [Rubiaceae]

Salvia verbenaca L. – [Lamiaceae]

Saxifraga hederacea L. – [Saxifragaceae]

Saxifraga tridactylites L. – [Saxifragaceae]

Scaligeria napiformis (Spreng.) Grande (Syn. S.cretica (Mill.) Boiss.) – [Apiaceae]

Scandix pecten-veneris L. – [Apiaceae]

Scilla ciliicica Meikle (Syn. S. morisi Meikle ?) – [Asparagaceae]

Scrophularia peregrina L. – [Scrophulariaceae]

Sedum lampusae (Kotschy) Boiss. – [Crassulaceae]

Sedum litoreum Guss. – [Crassulaceae]

Selaginella denticulata (L.) Link – [Selaginellaceae]

Senecio angulatus L. f. – [Asteraceae]
Cultivated and sometimes running wild (neophyte). Karmi (Karaman): climbing over trees and walls.

Cultivated and sometimes running wild (neophyte). – Karmi (Karaman): climbing on wall tops.

Senecio vulgaris L. – [Asteraceae]
Indigenous. Besparmak (Pentadaktylos): wall tops; Famagusta (Gazimagusa): wall tops; Kyrénia (Girne): wall bases; Karmi (Karaman): wall bases; Salamis: vertical walls; St. Hilarion: vertical walls, wall bases.
Silene fruticosa L. – [Caryophyllaceae]

Silene vulgaris (Moench) Garcke – [Caryophyllaceae]
Observation: at least on further Silene species (indet.) was found at vertical walls in Karmi (Karaman).

Sinapis alba L. – [Brassicaceae]

Sisymbrium irio L. – [Brassicaceae]

Smyrnium olsatum L. – [Apiaceae]

Sonchus oleraceus L. – [Apiaceae]

Sonchus tenerrimus L. - [Apiaceae]
Indigenous. Salamis: wall tops.

Spergularia diandra (Guss.) Sart. & Heldr. – [Caryophyllaceae]

Stellaria cupaniana Jord. & Fourr, - [Caryophyllaceae]

Stipa capensis Thunb. – [Poaceae]
Indigenous. Famagusta (Gazimagusa): wall tops.

Theligonum cynocrambe L. – [Rubiaceae]

Tordylium trachycarpum (Boiss.) Jury & Al-Eisawi (Syn.: Ainsworthia trachycarpa Boiss) – [Apiaceae]

Tragopogon porrifolius subsp. longirostris (Sch. Bip.) Greuter (Syn. Tragopogon sinuatus Avé-Lall.) – [Asteraceae]

Typha domingensis Pers. – [Typhaceae]
Indigenous. Kyrenia (Girne): wall bases (!).

Umbilicus rupestris (Salsib.) Dandy – [Crassulaceae]

Urospermum picroides (L.) F. W. Schmidt – [Asteraceae]
Indigenous. Famagusta (Gazimagusa): wall tops; Salamis: wall tops.
**Urtica membranacea** Poir. – [Urticaceae]
Indigenous. Famagusta (Gazimagusa): wall bases; Salamis: wall bases.

**Urtica pilulifera** L. – [Urticaceae]
Indigenous. Famagusta (Gazimagusa): wall tops.

**Valantia hispida** L. – [Rubiaceae]
Indigenous. Salamis: vertical walls, wall tops.

**Valantia muralis** L. – [Rubiaceae]
Indigenous. Famagusta (Gazimagusa): wall tops; Kayalar: vertical walls.

**Valeriana italica** Lam. – [Valerianaceae]

**Verbascum levanticum** I. K. Ferguson – [Scrophulariaceae]

**Verbascum sinuatum** L. – [Scrophulariaceae]

**Veronica cymbalaria** Bodard – [Plantaginaceae]

**Vicia cypria** Kotschy – [Fabaceae]

**Vicia hybrida** L. – [Fabaceae]

**Vinca major** L. – [Apocynaceae]
Neophyte. Karmi (Karaman): wall tops.

**Zosima absinthifolia** (Vent.) Link – [Apiaceae]

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Thanks

I would like to thank Marina Cetislan for her very competent guiding during the excursions and for her never ending readiness for discussion and giving information.
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Antirrhinum majus: Bellapais (Beylerbeyi). 2017-03-11.


Arisarum vulgare: Karmi (Karaman). 2017-03-10.


*Clematis cirrhosa*: Karmi (Karaman). 2017-03-10.

*Cyclamen persicum*:
Karmi (Karaman). 2017-03-10.

*Dioscorea communis*:
Bellapais (Beylerbeyi). 2017-03-11.

*Dryopteris pallida subsp. libanotica*:
St. Hilarion. 2019-03-12.

*Ferula communis*: Salamis. 2017-03-12.

*Gagea cf. peduncularis*:
St. Hilarion. 2017-03-1.

Helianthemum stipulatum: Salamis. 2017-03-12.

Hyoscyamus aureus: Famagusta (Gazimagusa). 2017-03-12.


**Phagnalon rupestre subsp rupestre**: Salamis. 2017-03-12.

**Ptilostemon chamaepeuce**: Retaining walls above Karmi (Karaman). 2017-03-10.

**Ranunculus millefoliatus**: Retaining wall in the Pentadactylos area. 2017-03-11.

**Senecio angulatus**: Karmi (Karaman). 2017-0310.


Thelygonum cynocrambe: Bellapais (Beylerbeyi). 2017-03-11.


Veronica cymbalaria: St. Hilarion. 2019-03-12

Vinca major: Karmi (Karaman). 2017-03-10.

Kyrénia (Girne), vegetation (mainly *Hyoscyamus aureus*) in fissures of the fort. 2019-03-13.