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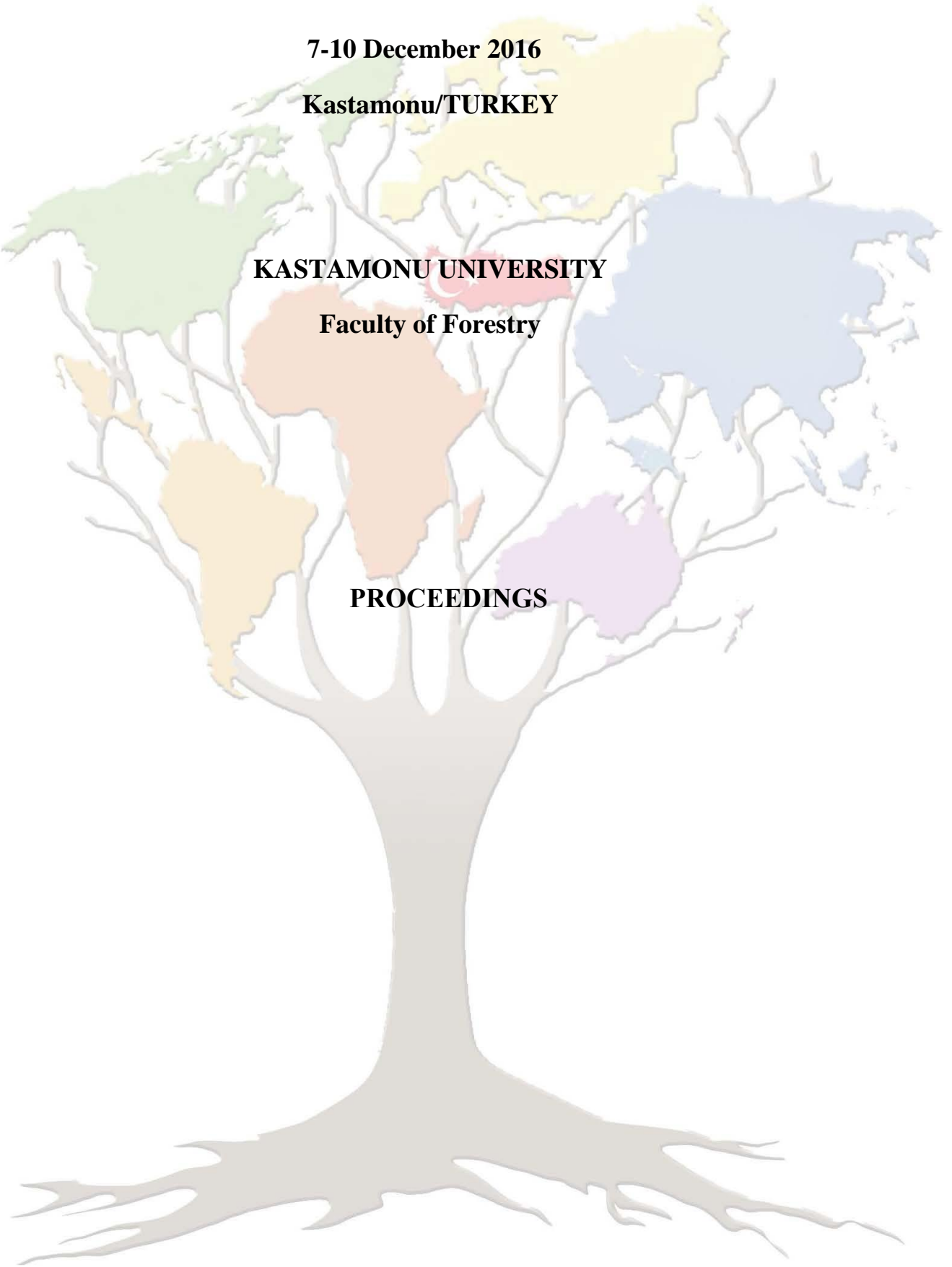
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**KASTAMONU UNIVERSITY**

**Faculty of Forestry**

**PROCEEDINGS**



## Flora of Argözü Valley (Kıbrısçık-Bolu)

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### Abstract

This study was carried out to determine flora of Argözü Valley (Kıbrısçık- Bolu) and contribute to plant diversity in Western Black Sea Region. Kıbrısçık is situated on the southern slope of Köroğlu Mountains which is located 35 km south east of Bolu. The study area is also located to the north east of Kıbrısçık and in the A3 grid square according to the categorization of P.H.Davis. 1074 plant samples were collected in 47 field trips to research area between 2012 and 2015. 63 families, 273 genus and 554 taxa were determined. 65 of the collected taxa are endemic and endemism ratio is 11,73 %. Endemic and rare plants were classified according to IUCN categories. The largest families are as follows: Poaceae 55 taxa (%9,93), Asteraceae 51 taxa (%9,21), Fabaceae 47 taxa (%8,48), Rosaceae 33 taxa (%5,96), Brassicaceae 29 taxa (%5,23), Lamiaceae 27 taxa (%4,87), Caryophyllaceae 27 taxa (%4,87), Liliaceae 20 taxa (%3,61), Boraginaceae 19 taxa (%3,43), Rubiaceae 16 taxa (%2,89), Plantaginaceae 16 taxa (%2,89), Apiaceae 13 taxa (%2,35), Campanulaceae 11 taxa (%1,99), Orchidaceae 10 taxa (%1,81). Phytogeographical regions of 334 taxa (%60,28) was identified in the research area. The distribution of taxa according to phytogeographic regions are as follows: 109 taxa (%19,68) Euro-Siberian, 78 taxa (%14,08) Mediterranean, 63 taxa (%11,37) Irano-Turanian, 80 taxa (%14,44) WS and 224 taxa (%40,43) are unknown. According to Raunkiaer's life form of the plants are 38 (%6,86) Phanerophytes, 59 (%10,63) Chamaephytes, 114 (%20,58) Cryptophytes, 209 (%37,73) Hemicryptophytes and 135 (%24,37) Therophytes.

**Keywords:** Flora, Raunkiaer, Argözü Valley, Kıbrısçık, Bolu

### Argözü Vadisi'nin (Kıbrısçık-Bolu) Florası

#### Özet

Bu çalışma Argözü Vadisi'nin (Kıbrısçık- Bolu) florasının belirlenerek Batı Karadeniz Bölgesi'nin bitki çeşitliliğinin ortaya çıkarılması amacıyla gerçekleştirilmiştir. Kıbrısçık, Bolu ilinin 35 km güney doğusunda yer alan Köroğlu Dağlarının güney yamacında bulunmaktadır. Araştırma alanını oluşturan Argözü vadisi ise Kıbrısçık ilçesinin kuzey doğusunda bulunmaktadır. P.H.Davis'in kareleme sistemine göre A3 karesi içerisinde yer almaktadır. 2012-2015 yılları arasında yapılan 47 arazi çalışması sonucunda 1074 bitki örneği toplanmış, vejetasyon tiplerini ve yapısını ortaya koymak amacıyla 303 örnek alanda inceleme yapılmıştır. Bitkilerin teşhis edilmesi sonucu 63 familya ve 273 cinse ait 554 takson belirlenmiştir. Belirlenen taksonların 65'i endemik olup, alanın endemizm oranı %11,73'dür. Endemik ve nadir bitkiler, uluslararası IUCN tehlike kategorilerine göre sınıflandırılmıştır. Araştırma alanında en fazla takson içeren familyalar: Poaceae 55 takson (%9,93), Asteraceae 51 takson (%9,21), Fabaceae 47 takson (%8,48), Rosaceae 33 takson (%5,96), Brassicaceae 29 takson (%5,23), Lamiaceae 27 takson (%4,87), Caryophyllaceae 27 takson (%4,87), Scrophulariaceae 22 takson (%3,97), Liliaceae 20 takson (%3,61), Boraginaceae 19 takson (%3,43), Rubiaceae 16 takson (%2,89), Apiaceae 13 takson (%2,35), Campanulaceae 11 takson (%1,99), Orchidaceae 10 takson (%1,81) şeklinde sıralanmaktadır. Araştırma alanında belirlenen 334 taksonun (%60,28) fitocoğrafik bölgeleri belirlenmiştir. Taksonların fitocoğrafik bölgelere göre dağılımları şöyledir: 109 takson (%19,68) Avrupa-Sibirya, 78 takson (%14,08) Akdeniz, 63 takson (%11,37) İran-Turan kökenli, 80 takson (%14,44) geniş yayılışlı ve 224 takson (%40,43) ise çok bölgelidir. Araştırma alanından toplanan taksonların Raunkiaer'in yaşam biçimlerine göre 38'i (%6,86) Fanerofit, 59'u (%10,63) Kamefit, 114'ü (%20,58) Kriptofit, 209'u (%37,73) Hemikriptofit ve 135'i (%24,37) Terofittir.

**Anahtar kelimeler:** Flora, Raunkiaer, Argözü Vadisi, Kıbrısçık, Bolu

## Introduction

The aim of this study by determining the flora of the Argözü Valley and contribute to the plant diversity of the western Black Sea region. Kıbrısçık is situated between latitude N 40° 18' 00" - 40° 31' 18" and longitude E 31° 40' 45" - 31° 56' 21". Argözü Valley is situated on the northeast of Kıbrısçık and the southern slopes of Koroğlu Mountains. The study area is in Euxine province of Euro-Siberian floristic area and in the A3 square according to Davis grid system (Figure 1). The altitude of the area is between 1200 and 2100 m.

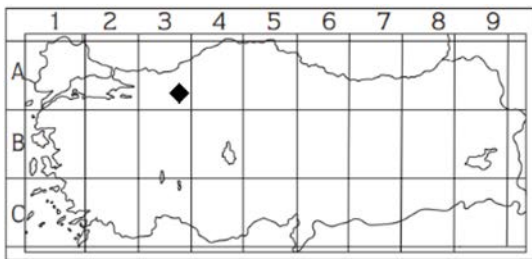


Figure 1. General view of the study area (Google Earth)

In the area annual precipitation varies from 700 mm to 1200 mm depending on altitudinal zones and mean annual temperature is 11°C. The climate of the region changes from less rainy Mediterranean to rainy Mediterranean type (according to Emberger's rainfall-heat formula;  $Q=73-123$ ), (Kılınç et al., 2006).

Due to volcanic activities of Koroğlu Mountains which began in the Quaternary, especially central and northern part of the district consist of volcanic with andesite

characteristic rocks and hard black basalts (URL 1, 2012) (Figure 2).

Also perlite and a natural clay mineral "sepiolite" formations and small manganese mineralizations were revealed in Kıbrısçık (URL 2, 2015, Irkeç and Ünlü 1993).

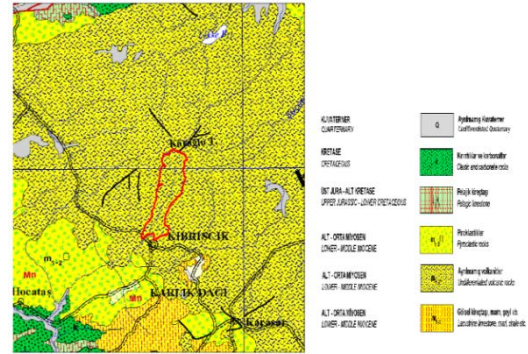


Figure 2. Geology map of Kıbrısçık (1/80.000, from Anon. 2002)

## Material and Methods

Non-flowering plants (ferns) and herbaceous and woody taxa of flowering plants were collected as a research material.

Anchor, harpoon, pruning shears, GPS, topographic survey map, notebook and digital camera were used while collecting these plants.

Approximately 1100 plant samples collected from the research area between 2012 and 2015. It has been taken care of specimens include all organs like leaf, flower, fruit and roots. The plant samples were dried and prepared according to herbarium techniques. Stereo microscopes, loop, needles, chisel and forceps were used for identification of plants. All plant samples were kept in DUOF (Düzce University Forestry Faculty Herbarium)

The list of ferns and gymnosperms were presented according to the sequence given in the Flora of Turkey (Davis, 1965-85). However the list of angiosperms were presented according to APG 3 system.

After the name of species in the floristic list, the geographical location, habitat of plant, altitude, collecting date, collector name and number, endemism, IUCN threat category, phytogeographical region and Raunkiaer's life form were given.

The threat categories of endemic and rare taxa were determined according to IUCN threat categories (Ekim et al., 2000).

New records for A3 square were arranged from other studies were carried out in the region (Akman and Ketenoğlu, 1978; Akman and Yurdakulol, 1981; Aksoy, 2001; Aksoy, 2006; Doğan, 2000; Dikmen, 2012; Güner, 2000; Güneş Özkan, 2009; İkinci, 2000; Kanoğlu, 2012; Tunçkol, 2012; Uçar, 1996).

Life forms of the plant species were classified according to Raunkiaer's method (Yaltırık and Efe, 1996, Kılınç et al., 2006).

### Abbreviations

The abbreviations used in the text and in the floristic list are as follows; \*: New taxa for A3 square, B.T.: Bilge Tunçkol, CH.: Chamaephyt, CR: Critically Endangered, DUOF: Duzce University Forestry Faculty Herbarium, EN: Endangered, E.: Endemic, Euro-Sib.: Euro-Siberian element, Eux.:

Euxine element, G.: Geophyt, H.: Hemicryptophyt, Hb: habitat, Hyd.: Hydrophyte, Hyr.-Eux.: Hyrcano-Euxine element, Ir.-Tur.: Irano-Turanian element, km: kilometer, LC: Least Concern, m: meter, M.A.: Mehmet Altıntaş, Med.: Mediterranean element, MeP.: Mesophanerophyt, MiP.: Microphanerophyt, N.A.: Necmi Aksoy, NaP.: Nanophanerophyt, N.G.: Neval Güneş, NT: near threatened, S.A.: Serdar Aslan, st: station, Syn.: synonymous, TH.: Therophyte, VU: Vulnerable, WS: widespread, Z.D.D.: Zeliha Deniz Dikmen.

### Results

Result of the identification of samples, 554 taxa belongs to 63 families and 273 genera were determined. Stations and habitats were abbreviated as St and Hb in the floristic list and were numbered in Table 1.

Table 1. Stations and habitats abbreviated as St and Hb in the floristic list

Stations		
1. Argözü river	11. Kökez Plateau	21. Bölücekkaya Plateau
2. Aşağı Çimencik location	12. Top of Koroğlu mountain	22. Dikili alti location
3. Path of Çimencik	13. Argözü Valley	23. Boundary of Serke- Kıbrısık
4. Göknarlık location	14. Çimencik location	24. Path of Karadoğan Plateau
5. Path of Bölücekkaya village-Kıbrısık	15. 2.5 km south of Karadoğan Plateau	25. 2 km north of Kıbrısık
6. 2.5 km north of Kıbrısık	16. Karadoğan Plateau	26. Between Alabarda-Kıbrısık
7. Path of Bölücekkaya Plateau	17. Kocaörük location	27. Road junction of Aşağıyayla location
8. Devrentarla location	18. Entrance of Argözü Valley	28. Path of Göknarlık location
9. Hasan Topçuoğlu Fountain	19. Atçayırı location	29. 5 km south of Karadoğan Plateau
10. Koroğlutepe, Dikili location	20. Mallaryazlığı location	30. 4 km north of Kıbrısık
Habitats		
1. riparian vegetation	11. <i>P. sylvestris</i> stand	21. Wet meadow
2. meadow	12. Open areas	22. Openings of stand
3. meadow-water edge	13. <i>P. spina-christii</i> - <i>J. excelsa</i> shrub	23. Subalpine
4. rocky areas	14. alpine steppe	24. Rock
5. steppe	15. rocky and stony areas	25. Wetland
6. <i>A. bornmuelleriana</i> - <i>P. sylvestris</i> stand	16. rocky meadow	26. wet places
7. <i>P. nigra</i> - <i>J. oxycedrus</i> stand	17. edge of <i>P. nigra</i> stand	27. openings of <i>P. sylvestris</i> stand
8. <i>Quercus pubescens</i> - <i>Juniperus oxycedrus</i> shrub	18. <i>Juniperus</i> shrub	28. <i>Quercus pubescens</i> - <i>P. nigra</i> stand
9. Puddle	19. Roadside, slope	29. <i>Quercus pubescens</i> - <i>Juniperus oxycedrus</i> - <i>P. nigra</i> stand
10. <i>P. nigra</i> stand	20. Water edge	30. <i>J. excelsa</i> , <i>F. angustifolia</i> , <i>Rosa canina</i> shrub

### 1. EQUISETACEAE

#### 1. *Equisetum palustre* L.

St 1, Hb 1, 1350 m, 10.06.2013, N.G. 3209 (DUOF 6352), G.

#### 2. *Equisetum sylvaticum* L.

St 2, Hb 2, 1483 m, 20.10.2012, N.G. 2950 (DUOF 6293), G.

#### 3. *Equisetum arvense* L.

St 3, Hb 3, 1486 m, 05.05.2012, N.G. 2361, N.A., B.T. (DUOF 6160), G.

### 2. PTERIDACEAE

#### 4. *Paraceterach marantae* (L.)

R.M.Tyron

St 4, Hb 4, 1779 m, 18.06.2013, N.G. 3278 (DUOF 6436), G.

### 3. ASPLENIACEAE

- 5. *Asplenium septentrionale* (L.) Hoffm**  
St 5, Hb 4, 1465 m, 05.05.2012, N.G. 2331, N.A., B.T. (DUOF 6291), G.
- 6. *Asplenium ceterach* L.**  
St 6, Hb 5, 1270m, 29.05.2011, Z.D.D. 1076 et al. (DUOF 2877), WS, G.
- 4. ATHYRIACEAE**
- 7. *Athyrium filix-femina* (L.) Roth**  
St 2, Hb 2, 1483 m, 20.10.2012, N.G. 2951 (DUOF 6159), G.
- 8. *Cystopteris fragilis* (L.) Bernh.**  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2418, S.A. (DUOF 6438), WS, G.
- 5. PINACEAE**
- 9. *Abies nordmanniana* (Stev) Spach. subsp. *bornmuelleriana* (Mattf.) Coode & Cullen**  
St 4, Hb 6, 1777 m, 05.08.2012, N.G. 2878, S.A., B.T. (DUOF 6230), E., Eux., MeP.
- 10. *Pinus sylvestris* L. var. *hamata***  
St 7, Hb 11, Hb 19, slope, 1622 m, 02.06.2012, N.G. 2498, S.A. (DUOF 6231), Euro-Sib., MeP.
- 11. *Pinus nigra* L. subsp. *pallasiana* (Lamb.) Holmboe**  
St 3, Hb 7, 1403 m, 21.04.2012, observation, MeP.
- c6. CUPRESSACEAE**
- 12. *Juniperus communis* L. var. *saxatilis* Pall.**  
St 4, Hb 6, 1777 m, 05.08.2012, N.G. 2879, S.A., B.T. (DUOF 6229), WS, NaP.
- 13. *Juniperus oxycedrus* L. subsp. *oxycedrus* var. *oxycedrus***  
St 8, Hb 8, 1234 m, 05.05.2012, N.G. 2355, N.A., B.T. (DUOF 6228), WS, MiP.
- 14. *Juniperus excelsa* M.Bieb. subsp. *excelsa***  
St 8, Hb 8, 1234 m, 05.05.2012, N.G. 2354, N.A., B.T. (DUOF 6227), WS, MeP.
- 7. ARACEAE**
- 15. *Arum rupicola* Boiss. var. *rupicola***  
St 8, Hb 4, 1236 m, 08.06.2012, N.G. 2593 et al. (DUOF 6258), Ir.-Tur., G.
- 16. *Lemna minor* L.**  
St 7, Hb 9, 1531 m, 02.06.2012, N.G. 2492, S.A. (DUOF 6428), Hyd.
- 8. COLCHICACEAE**
- 17. *Colchicum szovitsii* Fisch. & C.A.Mey. subsp. *szovitsii***  
St 9, Hb 7, Hb 12, 1450 m, 30.03.2013, N.G. 2958 (DUOF 6197), Ir.-Tur., G.
- 18. *Colchicum speciosum* Steven**  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2410, S.A. (DUOF 6209), Euro-Sib., G.
- 9. LILIACEAE**
- 19. *Fritillaria pinardii* Boiss.**  
St 3, Hb 11, Hb 12, 1616 m, 05.05.2012, N.G. 2344, N.A., B.T. (DUOF 6094), Ir.-Tur., G.
- 20. *Tulipa sylvestris* L. var. *sylvestris***  
St 5, Hb 4, 1465 m, 05.05.2012, N.G. 2329, N.A., B.T. (DUOF 6095), G.
- 21. *Gagea bithynica* Pasch.**  
St 8, Hb 13, 1248 m, 30.04.2013, N.G. 2975 (DUOF 6877), E., E.Med., G.
- 22. *Gagea fragifera* Steven**  
St 10, Hb 14, 2073 m, 02.06.2012, N.G. 2507, S.A. (DUOF 6096), G.
- 23. *Gagea foliosa* (C.Presl) Schult. & Schult.f.**  
St 11, Hb 16, 1979 m, 19.05.2013, N.G. 3088 (DUOF 6878), G.
- 24. *Gagea peduncularis* (C. Presl) Pascher\***  
St 8, Hb 15, 1307 m, 30.03.2013, N.G. 2963 (DUOF 6876), Med., G.
- 25. *Gagea granatellii* (Parl.) Parl.**  
St 12, Hb 14, 2075 m, 29.05.2011, Z.D.D. 1111 et al. (DUOF 2946), Med., G.
- 26. *Gagea villosa* (M.Bieb.) Sweet var. *villosa*\***  
St 5, Hb 4, 1465 m, 05.05.2012, N.G. 2322, N.A., B.T. (DUOF 6301), Med., G.
- 10. ORCHIDACEAE**
- 27. *Cephalanthera rubra* (L.) Rich.**  
St 13, Hb 11, Hb 4, 1614 m, 26.06.2012, N.G. 2716, S.A., B.T. (DUOF 6183), Euro-Sib., G.
- 28. *Epipactis helleborine* (L.) Crantz subsp. *helleborine***  
St 7, Hb 17, 1290 m, 22.07.2014, N.G. 3374, N.A., S.A., C. Bulut (DUOF 6075), G.
- 29. *Limodorum abortivum* (L.) Sw. var. *abortivum***  
St 1, Hb 10, 1462 m, 28.06.2012, N.G. 2654, S.A., B.T. (DUOF 6074), G.
- 30. *Himantoglossum affine* (Boiss.) Schltr.\***  
St 8, Hb 13, 1231m, 27.06.2012, N.G. 2598-a, S.A., B.T. (DUOF 6184), E.Med., G.
- 31. *Orchis coriophora* L. subsp. *coriophora***  
St 7, Hb 13, 1200 m, 09.06.2013, N.G. 3254 (DUOF 6070), Med., G.

**32. *Orchis purpurea*** Huds. subsp. *purpurea*

St 13, *Quercus pubescens-Juniperus oxycedrus-Hb 10*, Hb 12, 1381 m, 02.06.2012, N.G. 2529, S.A. (DUOF 6076), Euro-Sib., G.

**33. *Orchis mascula*** (L.) L. subsp. *pinetorum* (Boiss. & Kotschy) G. Camu

St 14, Hb 11, 1625 m, 02.06.2012, N.G. 2438, S.A. (DUOF 6073), E. Med., G.

**34. *Orchis mascula*** (L.) L. subsp. *longicalcarata* Akhalk., H. Baumann, R. Lorenz, Mosul. & Ruedi Peter

St 15, Hb 11, 1600 m, 29.05.2011, Z.D.D. 1120 et al. (DUOF 2918), WS, G.

**35. *Orchis pallens*** L.

St 7, Hb 11, 1455 m, 19.05.2013, N.G. 3074 (DUOF 6077), Euro-Sib., G.

**36. *Dactylorhiza iberica*** (M. Bieb. ex Willd.) Soó

St 2, Hb 17, 1483 m, 22.07.2014, N.G. 3370, N.A., S.A., C. Bulut (DUOF 6080; 6081), E. Med., G.

**11. IRIDACEAE**

**37. *Crocus ancyrensis*** (Herb.) Maw.

St 10, Hb 14, 2073 m, 02.06.2012, N.G. 2503, S.A. (DUOF 6343), E., Ir.-Tur., G.

**38. *Crocus biflorus*** Mill. subsp. *pulchricolor* (Herb.) Mathew

St 10, Hb 14, 2073 m, 02.06.2012, N.G. 2509, S.A. (DUOF 6300), E., Euro-Sib., G.

**39. *Gladiolus atroviolaceus*** Boiss.

St 13, Hb 4, 1471 m, 08.06.2012, N.G. 2559 et al. (DUOF 6342), Ir.-Tur., G.

**12. XANTHORRHOEACEAE** Dumort.

**40. *Eremurus spectabilis*** M. Bieb.

St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2414, S.A. (DUOF 6097), Ir.-Tur., G.

**41. *Asphodeline lutea*** (L.) Reichb.

St 3, Hb 2, 1450 m, 02.06.2012, N.G. 2433, S.A. (DUOF 6393), Med., G.

**13. AMARYLLIDACEAE**

**42. *Allium paniculatum*** L. subsp. *paniculatum*

St 16, Hb 14, Hb 4, 1942 m, 22.07.2012, N.G. 2859 (DUOF 6740), Med., G.

**43. *Allium hirtovaginatatum*** Kunth

St 17, Hb 4, 1370 m, 05.08.2012, N.G. 2902, S.A., B.T. (DUOF 6743), G.

**44. *Allium olympicum*** Boiss.

St 8, Hb 13, 1217 m, 30.06.2014, N.G. 3356 (DUOF 6506), E., Eux., G.

**45. *Allium huber-morathii*** Kollmann, Özhatay & Koyuncu

St 4, Hb 6, Hb 4, 1777 m, 05.08.2012, N.G. 2887, S.A., B.T. (DUOF 6742), E., Ir.-Tur., G.

**46. *Allium scorodoprasum*** L. subsp. *rotundum* (L.) Stearn

St 8, Hb 15, 1460 m, 11.06.2013, N.G. 3256, Med., G.

**47. *Allium guttatum*** Stev. subsp. *guttatum*

St 13, Hb 5- Hb 11, 1661 m, 22.07.2012, N.G. 2818, G.

**48. *Allium guttatum*** Stev. subsp. *sardoum* (Moris) Stearn

St 10, Hb 14, 2045 m, 22.07.2012, N.G. 2865 (DUOF 6739), Med., G.

**49. *Allium cyrilli*** Ten. subsp. *asumaniae* N. Özhatay & İ. Genç

St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3042 (DUOF 6748), E., G.

**50. *Allium efeae*** N. Özhatay & İ. Genç

St 14, Hb 19, humid areas, 1625 m, 02.06.2012, N.G. 2436 (DUOF 6750), E., G.

**51. *Galanthus elwesii*** Hook. f. var. *elwesii*

St 18, Hb 16, 1307 m, 30.03.2013, N.G. 2961 (DUOF 6744), E. Med., G.

**14. ASPARAGACEAE**

**52. *Scilla bifolia*** L.

St 2, Hb 19, 1497 m, 21.04.2012, N.G. 2308 (DUOF 6349), Med., G.

**53. *Prospero autumnale*** (L.) Speta

St 17, Hb 4, 1370 m, 05.08.2012, N.G. 2901, S.A., B.T. (DUOF 6179), G.

**54. *Ornithogalum pyrenaicum*** L.

St 8, Hb 4, 1236 m, 08.06.2012, N.G. 2591, N.A., S.A., B.T., G.

**55. *Ornithogalum oligophyllum*** E. D. Clarke

St 10, Hb 14, 2073 m, 02.06.2012, N.G. 2511, S.A. (DUOF 6880), G.

**56. *Ornithogalum neurostegium*** Boiss. & C. I. Blanche ex Boiss.\*

St 17, Hb 4, 1389 m, 02.06.2012, N.G. 2398, S.A. (DUOF 6879), G.

**57. *Ornithogalum sigmoideum*** Freyn & Sint.

St 12, Hb 14, 1970 m, 29.05.2011, Z.D.D. 1110 et al. (DUOF 2942), Euro-Sib., G.

**58. *Ornithogalum armeniacum*** Baker\*

St 8, Hb 13, 1248 m, 30.04.2013, N.G. 2970 (DUOF 6882), E. Med., G.

**59. *Muscari aucheri*** (Boiss.) Baker

St 2, Hb 1, 1481 m, 21.04.2012, N.G.  
2310 (DUOF 6093, 6178), E., G.

**60. *Muscari armeniacum*** Leichtlin ex  
Baker

St 5, Hb 4, 1465 m, 05.05.2012, N.G.  
2319, N.A., B.T., WS, G.

**15. JUNCACEAE**

**61. *Juncus inflexus*** L. subsp. *inflexus*

St 13, Hb 20, 1384 m, 20.10.2012, N.G.  
2941 (DUOF 6535), H.

**62. *Juncus conglomeratus*** L.

St 10, Hb 21, 1980 m, 18.07.2013, N.G.  
3306, Euro-Sib., H.

**63. *Juncus anatolicus*** Snogerup

St 16, Hb 11, 1823 m, 22.07.2012, N.G.  
2836 (DUOF 6536); E., E.Med., G.

**64. *Luzula forsteri***(Sm) DC. subsp.  
*caspiica* Novikov

St 16, Hb 11, 1852 m, 08.06.2013, N.G.  
3172 (DUOF 6532), Euro-Sib., H.

**65. *Luzula spicata*** (L.) DC.

St 16, Hb 11, 1923 m, 08.06.2013, N.G.  
3177, H.

**16. CYPERACEAE**

**66. *Eleocharis palustris*** (L.) Roem. &  
Schult.\*

St 19, Hb 9, 1204 m, 18.05.2013, N.G.  
3043 (DUOF 6875), G.

**34. *Blysmus*** Panz. ex Schult.

**67. *Blysmus compressus*** (L.) Panz. ex  
Link subsp. *compressus*

St 10, Hb 21, 1980 m, 18.07.2013, N.G.  
3319 (DUOF 6533), G.

**68. *Carex cuprina*** (Sándor ex Heuff.)  
Nendtv. ex A.Kern.

St 20, Hb 13, 1282 m, 02.06.2013, N.G.  
3125, Euro-Sib., H.

**69. *Carex muricata*** L. subsp. *muricata*

St 10, Hb 21, 1980 m, 18.07.2013, N.G.  
3311-b (DUOF 6874), G.

**70. *Carex*** cf. *colchica* J.Gay\*

St 21, Hb 2, 1500 m, 02.06.2012, N.G.  
2522, S.A. (DUOF 6873), Euro-Sib., G.

**71. *Carex stenophylla*** Wahlenb. subsp.  
*stenophylloides* (V.I.Krecz.) Egorova\*

St 8, Hb 8, 1234 m, 05.05.2012, N.G.  
2351, N.A., B.T. (DUOF 6871), Ir.-Tur., G.

**72. *Carex leporina*** L.

St 22, Hb 14, 1902 m, 26.06.2012, N.G.  
2747, S.A., B.T. (DUOF 6869), Euro-Sib., G.

**73. *Carex pallescens*** L.

St 16, Hb 4, opening of Hb 11 1942 m,  
22.07.2012, N.G. 2854 (DUOF 6872), Eux.,  
H.

**74. *Carex nigra*** (L.) Reichard subsp.  
*nigra*

St 10, Hb 21, 1980 m, 18.07.2013, N.G.  
3318 (DUOF 6868); Euro-Sib., G.

**17. POACEAE**

**75. *Brachypodium sylvaticum*** (Huds.)  
P.Beauv.

St 22, Hb 14, 2056 m, 05.08.2012, N.G.  
2907, S.A., B.T. (DUOF 6250), Euro-Sib., H.

**76. *Elymus pycnanthus*** (Godr.) Melderi

St 23, Hb 11, 1742 m, 05.08.2012, N.G.  
2921, S.A., B.T., Med., G.

**77. *Elymus elongatiformis*** (Drobow)  
Assadi\*

St 8, Hb 13, 1254 m, 02.06.2013, N.G.  
3107 (DUOF 6824), Ir.-Tur., G.

**78. *Elymus hispidus*** (Opiz)  
Melderissubsp. *hispidus*

St 8, Hb 13, 1215 m, 27.06.2012, N.G.  
2620, S.A., B.T. (DUOF 6212), G.

**79. *Elymus hispidus*** (Opiz) Melderis  
subsp. *barbulatus* (Schur) Melderis\*

St 8, Hb 13, 1217 m, 27.06.2012, N.G.  
2618, S.A., B.T. (DUOF 6823), G.

**80. *Aegilops triuncialis*** L. subsp.  
*triuncialis*

St 8, Hb 13, 1217 m, 27.06.2012, N.G.  
2619, S.A., B.T. (DUOF 6835), WS, TH.

**81. *Aegilops columnaris*** Zhukovsky

St 8, Hb 13, 1256 m, 02.06.2013, N.G.  
3098 (DUOF 6157), Ir.-Tur., TH.

**82. *Secale cereale*** L. var. *ancestrale*  
(Zhuk.) Kit Tan

St 10, Hb 14, 2045 m, 22.07.2012, N.G.  
2875 (DUOF 6828), E., H.

**83. *Hordeum geniculatum*** All.\*

St 17, Hb 8, 1317 m, 02.06.2012, 3N.G.  
2455, S.A. (DUOF 6125), Euro-Sib., TH.

**84. *Hordeum murinum*** L. subsp.  
*leporinum* (Link) Arcang.\*

St 17, Hb 8, 1317 m, 02.06.2012, N.G.  
2377, S.A. (DUOF 6213), TH.

**85. *Hordeum bulbosum*** L.

St 8, Hb 13, 1220 m, 02.06.2013, N.G.  
3113 (DUOF 6145), G.

**86. *Taeniatherum caput-medusae*** (L.)  
Nevski subsp. *asper* (Simonk.) Melderis\*

St 7, Hb 13, 1232 m, 11.06.2013, N.G.  
3226 (DUOF 6829), TH.



- 87. *Taeniatherum caput-medusae* (L.) Nevski subsp. *crinitum* (Schreb.) Melderis\***  
St 21, Hb 2, 1500 m, 02.06.2012, N.G. 2519, S.A. (DUOF 6117), Ir.-Tur., TH.
- 88. *Bromus racemosus* L.**  
St 8, Hb 13, 1231 m, 08.06.2012, N.G. 2549-a et al. (DUOF 6845), Euro-Sib., TH.
- 89. *Bromus japonicus* Thunb. subsp. *japonicus***  
St 7, Hb 13, 1232 m, 11.06.2013, N.G. 3224, TH.
- 90. *Bromus squarrosus* L.\***  
St 8, Hb 13, 1227 m, 27.06.2012, N.G. 2603, S.A., B.T. (DUOF 6844), TH.
- 91. *Bromus scoparius* L.**  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2365, S.A. (DUOF 6843), TH.
- 92. *Bromus tectorum* L.**  
St 21, Hb 2, 1500 m, 02.06.2012, N.G. 2526, S.A. (DUOF 6842), TH.
- 93. *Bromus sterilis* L.**  
St 8, Hb 13, 1231 m, 08.06.2012, N.G. 2541-a et al. (DUOF 6841), TH.
- 94. *Bromus tomentellus* Boiss.\***  
St 13, Hb 4, 1471 m, 08.06.2012, N.G. 2565 et al. (DUOF 6839), Ir.-Tur., H.
- 95. *Helictotrichon pubescens* (Huds.) Schult. & Schult.f. subsp. *pubescens***  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2792, S.A., B.T. (DUOF 6310), Euro-Sib., H.
- 96. *Arrhenatherum elatius* (L.) P.Beauv. ex J.Presl & C.Presl subsp. *elatius***  
St 4, Hb 6, 1777 m, 05.08.2012, N.G. 2890, S.A., B.T. (DUOF 6833), Euro-Sib., H.
- 97. *Arrhenatherum palaestinum* Boiss.\***  
St 8, Hb 13, 1220 m, 02.06.2013, N.G. 3112 (DUOF 6173), E.Med., H.
- 98. *Ventenata dubia* (Leers) Coss. & Durieu**  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2367, S.A. (DUOF 6326), Med., TH.
- 99. *Koeleria nitidula* Velen.**  
St 20, Hb 13, 1270 m, 03.06.2013, N.G. 3130, H.
- 100. *Koeleria pyramidata* (Lam) P. Beauv.**  
St 8, Hb 13, 1231 m, 08.06.2012, N.G. 2542-b (DUOF 6161), N.A., S.A., B.T., WS, H.
- 101. *Deschampsia caespitosa* (L.) P.Beauv.**  
St 16, Hb 14, Hb 4, Hb 27 1942 m, 22.07.2012, N.G. 2856 (DUOF 6827), H.
- 102. *Apera intermedia* Hack.\***  
St 13, Hb 15, Hb 22, 1330 m, 26.06.2012, N.G. 2725 (DUOF 6126), S.A., B.T., Ir.-Tur., TH.
- 103. *Agrostis stolonifera* L.**  
St 10, Hb 21, 1980 m, 18.07.2013, N.G. 3307 (DUOF 6210), Euro-Sib., H.
- 104. *Milium vernale* M.Bieb. subsp. *vernale***  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3044 (DUOF 6219), Med., TH.
- 105. *Anthoxanthum odoratum* L. subsp. *alpinum* (A.Löve & D.Löve) B.MG.Jones & Melderis**  
St 8, Hb 13, 1231 m, 08.06.2012, N.G. 2544 et al. (DUOF 6834), Euro-Sib., H.
- 106. *Alopecurus arundinaceus* Poir.**  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3064 (DUOF 6831), Euro-Sib., G.
- 107. *Alopecurus gerardii* (All.) Vill. var. *gerardii*\***  
St 16, Hb 11, 1823 m, 22.07.2012, N.G. 2837 (DUOF 6124), Med., H.
- 108. *Phleum bertolonii* DC.**  
St 4, Hb 23, 1885 m, 20.06.2013, N.G. 3285-a (DUOF 6890), H.
- 109. *Phleum montanum* K.Koch subsp. *montanum***  
St 8, Hb 13, 1250 m, 02.06.2013, N.G. 3096 (DUOF 6889), H.
- 110. *Phleum exaratum* Griseb. subsp. *exaratum***  
St 8, Hb 13, 1253 m, 27.06.2012, N.G. 2636, S.A., B.T. (DUOF 6888), TH.
- 111. *Festuca cyllenica* Boiss. & Heldr. subsp. *uluana* Markgr.-Dann.**  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2777, S.A., B.T. (DUOF 6215), E., Eux., H.
- 112. *Festuca valesiaca* Schleich. ex Gaudin**  
St 8, Hb 13, 1229 m, 02.06.2013, N.G. 3101 (DUOF 6891), H.
- 113. *Festuca airoides* Lam**  
St 10, Hb 14, 2060 m, 18.07.2013, N.G. 3297-a (DUOF 6127), Euro-Sib., H.
- 114. *Phleum exaratum* (L.) Gray\***  
St 20, Hb 13, 1282 m, 02.06.2013, N.G. 3122 (DUOF 6838), Euro-Sib., TH.
- 115. *Vulpia muralis* (Kunth) Nees\***  
St 4, Hb 6, 1731 m, 17.06.2013, N.G. 3277 (DUOF 6837), Med., TH.
- 116. *Vulpia myuros* (L.) C.C.Gmel.**

- St 21, Hb 2, 1500 m, 02.06.2012, N.G. 2515, S.A. (DUOF 6836), Med., TH.
- 117. *Micropyrum tenellum* (L.) Link\***  
St 7, Hb 24, 1374 m, 13.06.2013, N.G. 3259 (DUOF 6211), Med., TH.
- 118. *Poa nemoralis* L.**  
St 16, Hb 11, 1740 m, 09.06.2013, N.G. 3188 (DUOF 6825), H.
- 119. *Poa alpina* L. subsp. *fallax* F. Herm**  
St 8, Hb 15, 1435 m, 11.06.2014, N.G. 3229, H.
- 120. *Poa bulbosa* L.**  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2369, S.A. (DUOF 6826), H.
- 121. *Eremopoa altaica* (Trin.) Roshev.\***  
St 16, Hb 2, 1812 m, 09.06.2013, N.G. 3203 (DUOF 6175), Ir.-Tur., TH.
- 122. *Dactylis glomerata* L. subsp. *hispanica* (Roth) Nyman**  
St 8, Hb 13, 1220 m, 02.06.2013, N.G. 3114 (DUOF 6123), H.
- 123. *Cynosurus cristatus* L.**  
St 10, Hb 21, 1975 m, 18.07.2013, N.G. 3323 (DUOF 6311), H.
- 124. *Briza media* L.**  
St 1, Hb 13, 1426 m, 28.06.2012, N.G. 2675, S.A., B.T. (DUOF 6121), G.
- 125. *Briza humilis* M.Bieb.**  
St 20, Hb 13, 1280 m, 03.06.2013, N.G. 3126-a, TH.
- 126. *Melica ciliata* L. subsp. *ciliata***  
St 24, Hb 24, 1665 m, 14.06.2013, N.G. 3268 (DUOF 6153), WS, H.
- 127. *Stipa holosericea* Trin.\***  
St 8, Hb 13, 1254 m, 02.06.2013, N.G. 3106 (DUOF 6317), Ir.-Tur., H.
- 128. *Bothriochloa ischaemum* (L.) Keng**  
St 8, Hb 13, 1227 m, 27.06.2012, N.G. 2601, S.A., B.T. (DUOF 6122), H.
- 129. *Oryzopsis coerulescens* (Desf.) Hack.\***  
St 2, Hb 17, 1483 m, 22.07.2014, N.G. 3369, N.A., S.A., C. Bulut (DUOF 6830), H.
- 18. PAPAVERACEAE**
- 130. *Papaver pilosum* Sibth. & Sm. subsp. *pilosum***  
St 16, Hb 4, Hb 27, 1942 m, 22.07.2012, N.G. 2853 (DUOF 6735), E., H.
- 131. *Papaver fugax* Poir. var. *platydiscus* Cullen\***  
St 8, Hb 13, 1217 m, 30.06.2014, N.G. 3353 (DUOF 6732), E., Ir.-Tur., H.
- 132. *Papaver argemone* L. subsp. *argemone*\***  
St 8, Hb 19, Hb 4, 1246 m, 09.05.2014, N.G. 3345 (DUOF 6736), TH.
- 133. *Corydalis wendelboi* Lidén subsp. *congesta* Liden & Zetterl.**  
St 3, Hb 20, 1486 m, 05.05.2012, N.G. 2336, N.A., B.T. (DUOF 6082), E., G.
- 134. *Fumaria officinalis* L. subsp. *officinalis***  
St 8, Hb 13, 1248 m, 30.04.2013, N.G. 2974 (DUOF 6731), TH.
- 135. *Fumaria vaillantii* Loisel.\***  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2417, S.A. (DUOF 6180), TH.
- 19. BERBERIDACEAE**
- 136. *Berberis crataegina* DC.**  
St 17, Hb 4, 1370 m, 05.08.2012, N.G. 2905, S.A., B.T. (DUOF 6246), Ir.-Tur., NaP.
- 20. RANUNCULACEAE**
- 137. *Nigella arvensis* L. var. *glauca* Boiss.**  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2687, S.A., B.T. (DUOF 6092), WS, TH.
- 138. *Caltha palustris* L.\***  
St 16, Hb 25, 1861 m, 18.05.2013, N.G. 3019 (DUOF 6886), H.
- 139. *Anemone blanda* Schott & Kotschy**  
St 22, Hb 14, 1982 m, 02.06.2012, N.G. 2500, S.A. (DUOF 6169), CH.
- 140. *Ranunculus brutius* Ten.**  
St 24, Hb 11, 1572 m, 07.06.2013, N.G. 3166 (DUOF 6315), Euro-Sib., G.
- 141. *Ranunculus dissectus* M.Bieb. subsp. *sibthorpii* P.H.Davis**  
St 10, Hb 14, 2073 m, 02.06.2012, N.G. 2510, S.A. (DUOF 6115), G.
- 142. *Ranunculus repens* L.**  
St 1, Hb 1, 1302 m, 11.06.2013, N.G. 3218 (DUOF 6389), WS, H.
- 143. *Ranunculus constantinopolitanus* (DC.) d'Urv.**  
St 16, Hb 2, 1827 m, 09.06.2013, N.G. 3194 (DUOF 6388), WS, H.
- 144. *Ranunculus reuterianus* Boiss.\***  
St 17, Hb 4, 1389 m, 02.06.2012, N.G. 2400, S.A. (DUOF 6235), E., G.
- 145. *Ranunculus rumelicus* Griseb.**  
St 25, Hb 5, 1231 m, 29.05.2011, Z.D.D. 1054 et al. (DUOF 2906), E.Med., G.
- 146. *Ranunculus illyricus* L. subsp. *illyricus***

- St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2371, S.A. (DUOF 6170), WS, G.
- 147. *Ranunculus lateriflorus* DC.**  
St 20, Hb 9, 1206 m, 18.05.2013, N.G. 3032 (DUOF 6885), Hyd.
- 148. *Ranunculus peltatus* Schrank subsp. *fucooides* (Freyn) Muñoz Garm**  
St 20, Hb 9, 1206 m, 18.05.2013, N.G. 3033 (DUOF 6884), Med., Hyd.
- 149. *Ceratocephala falcata* (L.) Pers.\***  
St 8, Hb 15, 1307 m, 30.03.2013, N.G. 2966 (DUOF 6883), WS, TH.
- 21. SAXIFRAGACEAE**
- 150. *Saxifraga exarata* Vill. var. *exarata***  
St 7, Hb 11, Hb 4, 1455 m, 19.05.2013, N.G. 3072 (DUOF 6503), Euro-Sib.
- 151. *Saxifraga tridactylites* L.**  
St 6, Hb 5, 1270 m, 29.05.2011, Z.D.D. 1074 et al. (DUOF 2888), Med., TH.
- 152. *Saxifraga rotundifolia* L. subsp. *rotundifolia***  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2408, S.A. (DUOF 6502), Euro-Sib., H.
- 153. *Saxifraga cymbalaria* L.**  
St 3, Hb 26, 1450 m, 02.06.2012, N.G. 2406, S.A. (DUOF 6295), TH.
- 22. CRASSULACEAE**
- 154. *Phedimus obtusifolius* (C.A.Mey.)'t Hart**  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2701, S.A., B.T. (DUOF 6866), H.
- 155. *Umbilicus luteus* (Huds.) Webb & Berthel.\***  
St 16, Hb 14, Hb 4, Hb 27, 1942 m, 22.07.2012, N.G. 2876, S.A. (DUOF 6299), G.
- 156. *Sedum amplexicaule* DC. subsp. *tenuifolium* (Sm.) Greuter & Burdet\***  
St 8, Hb 15, 1474 m, 11.06.2013, N.G. 3231 (DUOF 6332), Med., H.
- 157. *Sedum album* L.**  
St 8, Hb 15, 1289 m, 13.06.2013, N.G. 3247 (DUOF 6865), H.
- 158. *Sedum confertiflorum* Boiss.\***  
St 16, Hb 2, 1790 m, 09.06.2013, N.G. 3250 (DUOF 6864), E.Med., TH.
- 159. *Sedum litoreum* Guss. var. *litoreum*\***  
St 24, Hb 4, 1668 m, 14.06.2013, N.G. 3332 (DUOF 6867), Med., TH.
- 160. *Sedum caespitosum* (Cav.) DC.**  
St 13, Hb 4, 1370 m, 29.05.2011, observation, TH.
- 161. *Sedum pallidum* M.Bieb.\***  
St 7, Hb 24, 1381 m, 13.06.2013, N.G. 3258-a (DUOF 6372), Eux., TH.
- 162. *Sempervivum armenum* Boiss. & A.Huet var. *armenum***  
St 23, Hb 11, 1742 m, 05.08.2012, N.G. 2916, S.A., B.T. (DUOF 6248), E., Eux., H.
- 23. VITACEAE**
- 163. *Vitis vinifera* L.**  
St 7, Hb 13, 1219 m, 11.06.2013, N.G. 3227-a (DUOF 6430), NaP.
- 24. FABACEAE (LEGUMINOSAE)**
- 164. *Genista tinctoria* L.**  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2783, S.A., B.T. (DUOF 6316), Euro-Sib., CH.
- 165. *Colutea cilicica* Boiss. & Balansa**  
St 20, Hb 13, 1270 m, 03.06.2013, N.G. 3131 (DUOF 6756), WS, MiP.
- 166. *Astragalus coodei* D.F.Chamb. & V.A.Matthews**  
St 17, Hb 4, 1389 m, 02.06.2012, N.G. 2387, S.A. (DUOF 6152), Ir.-Tur., CH.
- 167. *Astragalus glycyphylloides* DC.**  
St 18, Hb 28, 1491 m, 06.06.2013, N.G. 3153, Euro-Sib., CH.
- 168. *Astragalus microcephalus* Willd.**  
St 8, Hb 13, 1253 m, 27.06.2012, N.G. 2642, S.A., B.T. (DUOF 6334), CH.
- 169. *Astragalus plumosus* Willd.**  
St 23, Hb 11, 1742 m, 05.08.2012, N.G. 2915, S.A., B.T. (DUOF 6327), Ir.-Tur., CH.
- 170. *Astragalus brachypterus* Fisch.**  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2776, S.A., B.T., CH.
- 171. *Astragalus oleifolius* DC.**  
St 16, Hb 14, Hb 4, 1942 m, 22.07.2012, N.G. 2843 (DUOF 5518), Ir.-Tur., CH.
- 172. *Astragalus amoenus* Fenzl**  
St 10, Hb 14, 2058 m, 18.07.2013, N.G. 3302, E., Ir.-Tur., CH.
- 173. *Cicer anatolicum* Alef.\***  
St 13, Hb 28, 1491 m, 06.06.2013, N.G. 3151, Ir.-Tur., CH.
- 174. *Vicia cracca* L. subsp. *cracca***  
St 13, Hb 17, 1422 m, 26.06.2012, N.G. 2741, S.A., B.T. (DUOF 6281), Euro-Sib., CH.
- 175. *Vicia pubescens* Link**  
St 25, Hb 5, 1231 m, 29.05.2011, Z.D.D. 1002 et al. (DUOF 2914), Med., TH.
- 176. *Vicia ervilia* (L.) Willd.**

- St 17, Hb 4, 1389 m, 02.06.2012, N.G. 2394, S.A. (DUOF 6217), TH.
- 177. *Vicia hirsuta* (L.) Gray**  
St 20, Hb 13, 1272 m, 02.06.2013, N.G. 3118, TH.
- 178. *Vicia sativa* L. subsp. *nigra* (L.) Ehrh. var. *nigra***  
St 20, Hb 13, 1272 m, 02.06.2013, N.G. 3139, TH.
- 179. *Lens nigricans* (M.Bieb.) Godr.\***  
St 8, Hb 4, 1236 m, 08.06.2012, N.G. 2596 et al. (DUOF 6290), Med., TH.
- 180. *Lathyrus brachypterus* Čelak.**  
St 26, Hb 15, Hb 22, 1338 m, 08.06.2012, N.G. 2576 et al. (DUOF 6285), E., Ir.-Tur., H.
- 181. *Lathyrus digitatus* (M.Bieb.) Fiori**  
St 8, Hb 8, 1234 m, 05.05.2012, N.G. 2358, N.A., B.T. (DUOF 6279), E.Med., H.
- 182. *Lathyrus pratensis* L.**  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2425, S.A. (DUOF 6286), Euro-Sib., H.
- 183. *Lathyrus czeczottianus* Bässler**  
St 1, Hb 10, 1448 m, 28.06.2012, N.G. 2657, S.A., B.T. (DUOF 6325), E., Euro-Sib., H.
- 184. *Lathyrus saxatilis* (Vent.) Vis.\***  
St 13, Hb 29, Hb 4, 1382 m, 30.04.2013, N.G. 3003 (DUOF 6308), Med., TH.
- 185. *Lathyrus sphaericus* Retz.**  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2477, S.A. (DUOF 6282), Med., TH.
- 186. *Lathyrus cicera* L.**  
St 8, Hb 13, 1220 m, 02.06.2013, N.G. 3110, Med., TH.
- 187. *Lathyrus nissolia* L.**  
St 13, Hb 4, 1471 m, 08.06.2012, N.G. 2558 et al. (DUOF 6283), N.G. 3165-b, WS, TH.
- 188. *Ononis spinosa* L. subsp. *leiosperma* (Boiss.) Sirj.**  
St 13, Hb 20, 1384 m, 20.10.2012, N.G. 2944 (DUOF 6278), WS, CH.
- 189. *Trifolium repens* L. var. *repens***  
St 1, Hb 1, 1260 m, 11.06.2013, N.G. 3223 (DUOF 6354), H.
- 190. *Trifolium hybridum* L. var. *anatolicum* (Boiss.) Boiss.**  
St 10, Hb 14, 2045 m, 22.07.2012, N.G. 2864 (DUOF 6356), H.
- 191. *Trifolium nigrescens* Viv. subsp. *nigrescens*\***  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3052 (DUOF 6304), TH.
- 192. *Trifolium campestre* Schreb. subsp. *campestre* var. *campestre***  
St 20, Hb 30, 1282 m, 18.05.2013, N.G. 3037, Med., TH.
- 193. *Trifolium medium* L. var. *medium***  
St 1, Hb 10, 1462 m, 08.06.2012, N.G. 2556, N.A., S.A., B.T., H.
- 194. *Trifolium caudatum* Boiss.**  
St 22, Hb 14, 1902 m, 20.06.2013, N.G. 3288, E., H.
- 195. *Trifolium elongatum* Willd.**  
St 13, Hb 28, 1574 m, 06.06.2013, N.G. 3156, E., H.
- 196. *Trifolium striatum* L.**  
St 8, Hb 13, 1250 m, 02.06.2013, N.G. 3092-b (DUOF 6309), TH.
- 197. *Trifolium arvense* L. var. *arvense***  
St 8, Hb 13, 1241 m, 27.06.2012, N.G. 2631, S.A., B.T., WS, TH.
- 198. *Melilotus bicolor* Boiss. & Balansa**  
St 8, Hb 15, 1460 m, 11.06.2013, N.G. 3235, E., Ir.-Tur., TH.
- 199. *Medicago lupulina* L.**  
St 7, Hb 17, 1290 m, 22.07.2014, N.G. 3379 ve diğ., H.
- 200. *Medicago sativa* L. subsp. *sativa***  
St 7, Hb 17, 1290 m, 21.07.2014, N.G. 3386 (DUOF 6755), H.
- 201. *Medicago* x *varia* Martyn (*M. sativa* x *M. falcata*)**  
St 13, Hb 2, stony areas, Hb 18, 1313 m, 26.06.2012, N.G. 2755, S.A., B.T. (DUOF 6320), H.
- 202. *Medicago minima* (L.) Bartal. var. *minima***  
St 20, Hb 13, 1272 m, 02.06.2013, N.G. 3117, Med., TH.
- 203. *Medicago rigidula* (L.) All. var. *rigidula*\***  
St 8, Hb 13, 1241 m, 27.06.2012, N.G. 2649, S.A., B.T. (DUOF 6288), WS, TH.
- 204. *Dorycnium graecum* (L.) Ser.**  
St 1, Hb 1, 1350 m, 10.06.2013, N.G. 3208-c (DUOF 6329), Eux., CH.
- 205. *Lotus corniculatus* L. var. *corniculatus***  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2703, S.A., B.T. (DUOF 6357), H.
- 206. *Lotus corniculatus* L. var. *alpinus* Ser.**

- St 14, Hb 19, slope, 1410 m, 02.06.2012, N.G. 2441, S.A. (DUOF 6318), H.
- 207. *Lotus aegaeus*** (Griseb.) Boiss.  
St 8, Hb 13, 1241 m, 27.06.2012, N.G. 2633, S.A., B.T. (DUOF 6323), Ir.-Tur., CH.
- 208. *Anthyllis vulneraria*** L. subsp. *praepropera* (Kerner) Bornm.\*  
St 1, Hb 10, 1385 m, 28.06.2012, N.G. 2664, S.A., B.T. (DUOF 6321), Med., H.
- 209. *Securigera varia*** (L.) Lassen  
St 4, Hb 6, Hb 4, 1777 m, 05.08.2012, N.G. 2894, S.A., B.T. (DUOF 6376), WS, CH.
- 210. *Onobrychis oxyodonta*** Boiss. var. *oxyodonta*  
St 8, Hb 13, 1241 m, 27.06.2012, N.G. 2645, S.A., B.T. (DUOF 6757), WS, CH.
- 25. POLYGALACEAE**
- 211. *Polygala anatolica*** Boiss. & Heldr.  
St 24, Hb 6, 1614 m, 07.06.2013, N.G. 3164 (DUOF 6397), WS, CH.
- 26. ROSACEAE**
- 212. *Prunus spinosa*** L.  
St 8, Hb 2, Hb 4, 1471 m, 20.10.2012, N.G. 2955 (DUOF 6857), Euro-Sib., NaP.
- 213. *Prunus divaricata*** Ledeb. subsp. *divaricata*  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2385, S.A. (DUOF 6392), MeP.
- 214. *Prunus cocomilia*** Ten.  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2384, S.A. (DUOF 6856), MiP.
- 215. *Cerasus mahaleb*** (L.) Mill. var. *mahaleb*  
St 8, Hb 13, 1241 m, 27.06.2012, N.G. 2643, S.A., B.T. (DUOF 6759), MiP.
- 216. *Filipendula vulgaris*** Moench  
St 13, Hb 10, Hb 19 slope, 1397 m, 18.07.2013, N.G. 3326 (DUOF 6158), Euro-Sib., H.
- 217. *Rubus idaeus*** L. subsp. *idaeus*  
St 4, Hb 6, 1777 m, 05.08.2012, N.G. 2881, S.A., B.T., S.A., B.T., Euro-Sib., NaP.
- 218. *Rubus canescens*** DC. var. *canescens*  
St 18, Hb 2, Hb 15, Hb 18, 1313 m, 26.06.2012, N.G. 2761, S.A., B.T.; Euro-Sib., NaP.
- 219. *Potentilla argentea*** L.  
St 7, Hb 24, 1477 m, 12.06.2013, N.G. 3257 (DUOF 6381), H.
- 220. *Potentilla calabra*** Ten.  
St 24, Hb 4, 1665 m, 14.06.2013, N.G. 2917, Med., H.
- 221. *Potentilla recta*** L.  
St 24, Hb 24, 1665 m, 14.06.2013, N.G. 3267 (DUOF 6328), H.
- 222. *Potentilla micrantha*** Ramond ex DC.  
St 16, Hb 25, 1861 m, 18.05.2013, N.G. 3022, G.
- 223. *Fragaria vesca*** L.  
St 7, Hb 4, slope, 1531 m, 02.06.2012, N.G. 2491, S.A. (DUOF 6760); H.
- 224. *Sibbaldia parviflora*** Willd. var. *parviflora*  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2779, S.A., B.T. (DUOF 6363), CH.
- 225. *Geum coccineum*** Sibth. & Sm.\*  
St 7, Hb 10, 1396 m, 09.05.2014, N.G. 3352, Euro-Sib., H.
- 226. *Geum urbanum*** L.  
St 16, Hb 11, 1776 m, 08.06.2013, N.G. 3181 (DUOF 6358), Euro-Sib., H.
- 227. *Agrimonia eupatoria*** L. subsp. *eupatoria*  
St 20, Hb 13, 1257 m, 03.06.2013, N.G., observation, H.
- 228. *Sanguisorba officinalis*** L.\*  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2376, S.A. (DUOF 6859), H.
- 229. *Sanguisorba minor*** Scop. subsp. *balearica* (Bourg. ex Nyman) Muñoz Garm & C.Navarro  
St 20, Hb 30, 1282 m, 18.05.2013, N.G. 3041 (DUOF 6858), WS, H.
- 230. *Alchemilla valdehirsuta*** Buser  
St 16, Hb 14, Hb 4, Hb 27, 1942 m, 22.07.2012, N.G. 2850, G.
- 231. *Alchemilla compactilis*** Juz.  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2787, S.A., B.T. (DUOF 6361), G.
- 232. *Alchemilla pseudocartalinica*** Juz.  
St 16, Hb 2, 1823 m, 09.06.2013, N.G. 3195 (DUOF 6373), G.
- 233. *Alchemilla mollis*** (Buser) Rothm  
St 10, Hb 21, 1980 m, 18.07.2013, N.G. 3309 (DUOF 6374), G.
- 234. *Rosa marginata*** Wallr.  
St 13, Hb 10, Hb 19, 1475 m, 23.09.2012, N.G. 2923, M.A. (DUOF 6861), Euro-Sib., NaP.
- 235. *Rosa pulverulenta*** M.Bieb.  
St 4, Hb 4, 1715 m, 18.06.2013, N.G. 3338 (DUOF 6347), NaP.

- 236. *Rosa iberica*** Stev.  
St 4, Hb 4, 1781 m, 17.06.2013, N.G. 3274 (DUOF 6378), NaP.
- 237. *Rosa canina*** L.  
St 4, Hb 4, 1715 m, 18.06.2013, N.G. 3280 (DUOF 6375), MiP.
- 238. *Cotaneaster nummularius*** Fisch. & C.A.Mey.  
St 8, Hb 4, 1236 m, 08.06.2012, N.G. 2580, N.A., S.A., B.T., WS, MiP.
- 239. *Crataegus tanacetifolia*** (Poir.) Pers.  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2420, S.A., E., MeP.
- 240. *Crataegus orientalis*** Pallas ex M.Bieb. var. *orientalis*  
St 13, Hb 10, Hb 19, 1475 m, 23.09.2012, N.G. 2924, M.A., WS, MiP.
- 241. *Crataegus monogyna*** Jacq. subsp. *monogyna*  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3051, MeP.
- 242. *Sorbus umbellata*** Fritsch  
St 4, Hb 6, 1777 m, 05.08.2012, N.G. 2880, S.A., B.T. (DUOF 6855), MeP.
- 243. *Malus sylvestris*** (L.) Mill. subsp. *orientalis* (Uglitzk.) Browicz var. *orientalis*  
St 14, Hb 19, 1431 m, 05.05.2012, N.G. 2313, N.A., B.T. (DUOF 6758), WS, MeP.
- 244. *Pyrus elaeagnifolia*** Pall. subsp. *elaegnifolia*  
St 3, Hb 2, 1450 m, 02.06.2012, N.G. 2429, S.A. (DUOF 6762), MiP.
- 245. *Pyrus elaeagnifolia*** Pall. subsp. *kotschyana* (Boiss.) Browicz  
St 8, Hb 2, Hb 4, 1471 m, 20.10.2012, N.G. 2954 (DUOF 6761), MiP.
- 27. RHAMNACEAE**
- 246. *Paliurus spina-christi*** P. Mill.  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2683, S.A., B.T. (DUOF 6084), MiP.
- 247. *Rhamnus thymifolia*** Bornm.  
St 8, Hb 13, 1241 m, 27.06.2012, N.G. 2634, S.A., B.T. (DUOF 6239), E., NaP.
- 28. URTICACEAE**
- 248. *Urtica dioica*** L. subsp. *dioica*  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2450, S.A. (DUOF 6245), Euro-Sib., H.
- 249. *Parietaria lusitanica*** L.\*  
St 8, Hb 13, 1215 m, 27.06.2012, N.G. 2626, S.A., B.T. (DUOF 6189), Med., TH.
- 29. FAGACEAE**
- 250. *Quercus pubescens*** Willd. subsp. *pubescens*  
St 1, Hb 10, 1385 m, 28.06.2012, N.G. 2673, S.A., B.T. (DUOF 6746), MeP.
- 30. EUPHORBIACEAE**
- 251. *Euphorbia condylocarpa*** M.Bieb.  
St 5, Hb 4, 1465 m, 05.05.2012, N.G. 2317, N.A., B.T. (DUOF 6495), G.
- 252. *Euphorbia stricta*** L.  
St 4, Hb 6, Hb 4, 1777 m, 05.08.2012, N.G. 2426, S.A., B.T. (DUOF 6437), Euro-Sib., TH.
- 253. *Euphorbia taurinensis*** All.  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2705, S.A., B.T. (DUOF 6445), TH.
- 254. *Euphorbia falcata*** L. subsp. *falcata* var. *galilaea*  
St 8, Hb 13, 1215 m, 27.06.2012, N.G. 2627, S.A., B.T. (DUOF 6496), WS, TH.
- 255. *Euphorbia anacampseros*** Boiss. var. *anacampseros*  
St 8, Hb 4, Hb 2, 1248 m, 30.04.2013, N.G. 2983 (DUOF 6369), E., H.
- 256. *Euphorbia myrsinites*** L. subsp. *myrsinites*  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2802, S.A., B.T. (DUOF 6386), H.
- 31. SALICACEAE**
- 257. *Salix alba*** L. subsp. *alba*  
St 7, Hb 11, Hb 19, slope, 1622 m, 02.06.2012, N.G. 2497, S.A. (DUOF 6296), WS, MeP.
- 258. *Salix caprea*** L.  
St 7, Hb 11, Hb 19, slope, 1622 m, 02.06.2012, N.G. 2496, S.A. (DUOF 6298); Euro-Sib., MeP.
- 259. *Salix amplexicaulis*** Bory & Chaub.  
St 7, Hb 17, 1290 m, 22.07.2014, N.G. 3380 et al. (DUOF 6457), Med., MiP.
- 260. *Populus tremula*** L. subsp. *tremula*  
St 13, Hb 4, 1471 m, 08.06.2012, N.G. 2561 et al. (DUOF 6297), Euro-Sib., MeP.
- 261. *Populus nigra*** L. subsp. *nigra*  
St 5, Hb 19, 1115 m, 05.05.2012, N.G. 2316 (DUOF 6236), N.A., B.T., Euro-Sib., MeP.
- 32. VIOLACEAE**
- 262. *Viola odorata*** L.  
St 3, Hb 3, 1486 m, 05.05.2012, N.G. 2339, N.A., B.T. (DUOF 6270), H.
- 263. *Viola sieheana*** W. Becker  
St 16, Hb 11, 1852 m, 08.06.2013, N.G. 3175 (DUOF 6360), H.
- 264. *Viola kitaibeliana*** Roem & Schult.

St 8, Hb 13, 1231 m, 08.06.2012, N.G.  
2546-b et al. (DUOF 6271), TH.

**265. *Viola gracilis* Sibth. & Sm**

St 10, Hb 14, 2073 m, 02.06.2012, N.G.  
2512, S.A. (DUOF 6269), H.

**33. HYPERICACEAE  
(GUTTIFERAE)**

**266. *Hypericum scabrum* L.\***

St 17, Hb 8, 1317 m, 02.06.2012, N.G.  
2458, S.A. (DUOF 6225), Ir.-Tur., CH.

**267. *Hypericum venustum* Fenzl**

St 10, Hb 21, 1980 m, 18.07.2013, N.G.  
3315, CH.

**268. *Hypericum linarioides* Bosse subsp.  
*linarioides***

St 10, Hb 14, 2072 m, 26.06.2012, N.G.  
2793, S.A., B.T. (DUOF 6448), CH.

**269. *Hypericum montbretii* Spach.**

St 3, Hb 4, 1450 m, 02.06.2012, N.G.  
2412, S.A. (DUOF 6232), CH.

**270. *Hypericum orientale* L.**

St 17, Hb 4, 1389 m, 02.06.2012, N.G.  
2397, S.A. (DUOF 6233), CH.

**271. *Hypericum perforatum* L.**

St 20, Hb 8, 1309 m, 04.06.2013, N.G.  
3134-a, CH.

**34. GERANIACEAE**

**272. *Geranium lucidum* L.**

St 20, Hb 13, 1282 m, 02.06.2013, N.G.  
3124; TH.

**273. *Geranium purpureum* Vill.**

St 27, Hb 1, 1500 m, 02.06.2012, N.G.  
2487, S.A. (DUOF 6266), TH.

**274. *Geranium dissectum* L.**

St 6, Hb 5, 1270 m, 29.05.2011, Z.D.D.  
1070 et al. (DUOF 2927), WS, TH.

**275. *Geranium macrostylum* Boiss.**

St 27, Hb 1, 1500 m, 02.06.2012, N.G.  
2469, S.A. (DUOF 6265), E.Med., G.

**276. *Geranium asphodeloides* Burmf.  
subsp. *asphodeloides***

St 10, Hb 21, 1980 m, 18.07.2013, N.G.  
3310 (DUOF 6370), Euro-Sib., G.

**277. *Geranium pyrenaicum* Burmf.**

St 17, Hb 8, 1317 m, 02.06.2012, N.G.,  
2462, S.A. (DUOF 6294), H.

**278. *Erodium cicutarium* (L.) L Hér.  
subsp. *cutarium***

St 19, Hb 2, 1204 m, 18.05.2013, N.G.  
3059, TH.

**279. *Erodium acaule* (L.) Becherer &  
Thell.\***

St 8, Hb 15, 1477 m, 12.06.2013, N.G.  
3233, Med., H.

**280. *Pelargonium endlicherianum* Fenzl**

St 8, Hb 13, 1217 m, 26.06.2012, N.G.  
2692, S.A., B.T. (DUOF 6554), Ir.-Tur., G.

**35. ONAGRACEAE**

**281. *Epilobium angustifolium* L.**

St 24, Hb 6, 1614 m, 07.06.2013, N.G.  
3162, WS, H.

**282. *Epilobium hirsutum* L.**

St 8, Hb 13, 1217 m, 26.06.2012, N.G.  
2686, S.A., B.T. (DUOF 6456), WS, H.

**283. *Epilobium tetragonum* L. subsp.  
*tetragonum***

St 4, Hb 4, Hb 6, 1777 m, 05.08.2012,  
N.G. 2893, S.A., B.T. (DUOF 6196), TH.

**284. *Epilobium tetragonum* L. subsp.  
*lamyü* (F.W.Schultz) Nyman\***

St 16, Hb 11, 1823 m, 22.07.2012, N.G.  
2841-a (DUOF 6454), Euro-Sib., H.

**285. *Epilobium minutiflorum* Hausskn.\***

St 16, Hb 11, 1823 m, 22.07.2012, N.G.  
2841-b, Ir.-Tur., TH.

**286. *Epilobium ponticum* Hausskn.\***

St 22, Hb 14, 1902 m, 26.06.2012, N.G.  
2746, S.A., B.T. (DUOF 6345), G.

**36. MALVACEAE**

**287. *Malva alcea* L.\***

St 28, Hb 4, 1730 m, 09.06.2013, N.G.  
3251 (DUOF 6505), H.

**288. *Malva neglecta* Wallr.**

St 16, Hb 2, 1812 m, 09.06.2013, N.G.  
3198-a (DUOF 6154), S.A., B.T., TH.

**289. *Alcea apterocarpa* (Fenzl) Boiss.**

St 8, Hb 13, 1217 m, 30.06.2014, N.G.  
3355, Ir.-Tur., H.

**37. THYMELAEACEAE**

**290. *Daphne oleoides* Schreb. subsp.  
*oleoides***

St 10, Hb 14, 2072 m, 26.06.2012, N.G.  
2799, S.A., B.T. (DUOF 6244), CH.

**291. *Thymelaea passerina* (L.) Casson &  
Germ**

St 8, Hb 13, 1253 m, 27.06.2012, N.G.,  
S.A., B.T., observation, TH.

**38. CISTACEAE**

**292. *Cistus laurifolius* L.**

St 5, Hb 4, 1465 m, 05.05.2012, N.G.  
2328, N.A., B.T. (DUOF 6083), Med., CH.

**293. *Helianthemum nummularium* (L.)  
Mill. subsp. *nummularium***

St 13, Hb 28, 1409 m, 05.06.2013, N.G.  
3144 (DUOF 6450), CH.

- 294. *Helianthemum ledifolium* (L.) Mill.\***  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2468, S.A. (DUOF 6151), Med., TH.
- 39. RESEDACEAE**
- 295. *Reseda lutea* L. var. *lutea***  
St 25, Hb 5, 1231 m, 29.05.2011, Z.D.D. 1021 et al. (DUOF 2890), WS, H.
- 40. BRASSICACEAE (CRUCIFERAE)**
- 296. *Lepidium perfoliatum* L.**  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3048 (DUOF 6553), WS, H.
- 297. *Lepidium draba* L.\***  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3054 (DUOF 6540), WS, H.
- 298. *Isatis cappadocica* Desv. subsp. *alyssifolia* (Boiss.) P.H.Davis**  
St 11, Hb 16, 1979 m, 19.05.2013, N.G. 3090 (DUOF 6543), E., Ir.-Tur., H.
- 299. *Thlaspi perfoliatum* L.**  
St 8, Hb 8, 1234 m, 05.05.2012, N.G. 2345 (DUOF 6089), N.A., B.T., WS, TH.
- 300. *Noccaea phrygia* (Borm) F.K.Mey.\***  
St 10, Hb 14, 2073 m, 02.06.2012, N.G. 2501, S.A. (DUOF 6140), E., H.
- 301. *Capsella bursa-pastoris* (L.) Medik.**  
St 8, Hb 13, 1293 m, 09.05.2014, N.G. 3347 (DUOF 6552), WS, H.
- 302. *Capsella rubella* Reut.\***  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2364-a, S.A. (DUOF 6263), Med., H.
- 303. *Bornmuellera cappadocica* (Willd.) Cullen & T.R.Dudley\***  
St 24, Hb 6, 1614 m, 07.06.2013, N.G. 3160 (DUOF 6558); E., Ir.-Tur., CH.
- 304. *Alyssum desertorum* Stapf.**  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2479 (DUOF 6243), WS, TH.
- 305. *Alyssum minutum* Schlecht. ex DC.\***  
St 17, Hb 4, 1389 m, 02.06.2012, N.G. 2393, S.A. (DUOF 6163), TH.
- 306. *Alyssum umbellatum* Desv.**  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3050 (DUOF 6545), N.G. 3058, TH.
- 307. *Alyssum sibiricum* Willd.**  
St 14, Hb 19, 1410 m, 02.06.2012, N.G. 2447, S.A. (DUOF 6241), WS, CH.
- 308. *Alyssum condensatum* Boiss. & Hausskn. subsp. *condensatum***  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2790, S.A., B.T. (DUOF 6546), CH.
- 309. *Alyssum murale* Waldst. & Kit. subsp. *murale* var. *murale***  
St 8, Hb 13, 1253 m, 27.06.2012, N.G. 2637, S.A., B.T. (DUOF 6090), WS, CH.
- 310. *Draba muralis* L.**  
St 16, Hb 2, 1819 m, 09.06.2013, N.G. 3204 (DUOF 6550), TH.
- 311. *Draba verna* L.\***  
St 8, Hb 13, 1248 m, 30.04.2013, N.G. 2978 (DUOF 6541), WS, TH.
- 312. *Arabis alpina* L. subsp. *alpina***  
St 5, Hb 19, 1115 m, 05.05.2012, N.G. 2314, N.A., B.T. (DUOF 6091), WS, H.
- 313. *Turritis laxa* (Sibth. & Sm.) Hayek\***  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2405, S.A. (DUOF 6165), TH.
- 314. *Nasturtium officinale* R. Br., Aiton**  
St 5, Hb 25, 1465 m, 05.05.2012, N.G. 2323, N.A., B.T. (DUOF 6166), WS, G.
- 315. *Barbarea trichopoda* Hausskn. ex Bormm.**  
St 5, Hb 4, 1465 m, 05.05.2012, N.G. 2333, N.A., B.T. (DUOF 6264), E., Med., H.
- 316. *Barbarea plantaginea* DC.\***  
St 4, Hb 6, Hb 4, 1777 m, 05.08.2012, N.G. 2899, S.A., B.T. (DUOF 6341), WS, H.
- 317. *Barbarea brachycarpa* Boiss. subsp. *brachycarpa* var. *brachycarpa***  
St 11, Hb 16, 1979 m, 19.05.2013, N.G. 3079 (DUOF 6551), Ir.-Tur., H.
- 318. *Cardamine tenera* S.G.Gmel. ex C.A.Mey.\***  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2789-b, S.A., B.T. (DUOF 6538), Hirkanoeux., H.
- 319. *Cardamine hirsuta* L.**  
St 6, Hb 26, 1270 m, 29.05.2011, Z.D.D. 1068 et al. (DUOF 2895), WS, TH.
- 320. *Hesperis bicuspidata* (Willd.) Poir.**  
St 7, Hb 11, 1865 m, 02.06.2012, N.G. 2499, S.A. (DUOF 6088), E., Ir.-Tur., H.
- 321. *Erysimum leucanthemum* (Stephan ex Willd.) B.Fedtsch.\***  
St 14, Hb 19, slope, 1410 m, 02.06.2012, N.G. 2442, S.A. (DUOF 6262), H.
- 322. *Erysimum* cf. *kartalHb 24ense* Yild.**  
St 16, Hb 14, Hb 4, Hb 27, 1942 m, 22.07.2012, N.G. 2855 (DUOF 6429), E., Eux., H.
- 323. *Sisymbrium officinale* (L.) Scop.**  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3057 (DUOF 6547), WS, TH.
- 324. *Sisymbrium altissimum* L.\***



- St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3055 (DUOF 6549), WS, TH.
- 325. *Descurainia sophia*** (L.) Webb ex Prantl subsp. *sophia*  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3056 (DUOF 6539), WS, TH.
- 41. SANTALACEAE**
- 326. *Thesium billardieri*** Boiss.  
St 13, Hb 4, 1471 m, 08.06.2012, N.G. 2569 et al. (DUOF 6202), Ir.-Tur., H.
- 42. LORANTHACEAE**
- 327. *Viscum album*** L. subsp. *album*  
St 21, Hb 10, *P. nigra* üzeri, 1276 m, 30.03.2013, N.G. 2957 (DUOF 6453), MeP.
- 43. PLUMBAGINACEAE**
- 328. *Plumbago europaea*** L.\*  
St 13, Hb 8, 1424 m, 23.09.2012, N.G. 2927, M.A. (DUOF 6444), Euro-Sib., H.
- 44. POLYGONACEAE**
- 329. *Polygonum setosum*** Jacq. subsp. *setosum*\*  
St 13, Hb 4, 1566 m, 19.06.2013, N.G. 3333 (DUOF 6331), Ir.-Tur., CH.
- 330. *Polygonum cognatum*** Meissn.\*  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2449, S.A. (DUOF 6273), CH.
- 331. *Polygonum aviculare*** L.  
St 22, Hb 14, 2056 m, 05.08.2012, N.G. 2911, S.A., B.T. (DUOF 6272), WS, TH.
- 332. *Polygonum convolvulus*** L.  
St 7, Hb 17, 1290 m, 21.07.2014, N.G. 3387 (DUOF 6458), H.
- 333. *Rumex acetosella*** L.  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3061 (DUOF 6138), WS, H.
- 334. *Rumex tuberosus*** L. subsp. *tuberosus*  
St 4, Hb 6, 1777 m, 05.08.2012, N.G. 2891, S.A., B.T., G.
- 335. *Rumex alpinus*** L.  
St 7, Hb 20, 1622 m, 02.06.2012, N.G. 2494-a, b, S.A. (DUOF 6221, 6222), G.
- 45. CARYOPHYLLACEAE**
- 336. *Eremogone ledebouriana*** (Fenzl) Ikonn.  
St 8, Hb 13, 1241 m, 27.06.2012, N.G. 2653, S.A., B.T. (DUOF 6499), E., CH.
- 337. *Minuartia hirsuta*** (M Bieb.) Hand.-Mazz. subsp. *falcata* (Gris.) Mattf.  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2781, S.A., B.T., H.
- 338. *Minuartia juniperina*** (L.) Maire & Petitm.\*
- St 8, Hb 15, 1322 m, 13.06.2013, N.G. 3262 (DUOF 6482), CH.
- 339. *Cerastium dubium*** (Bastard) O.Schwarz\*  
St 8, Hb 13, 1248 m, 30.04.2013, N.G. 2980 (DUOF 6466), TH.
- 340. *Cerastium purpurascens*** Adams  
St 10, Hb 14, 2073 m, 02.06.2012, N.G. 2506, S.A. (DUOF 6470), H.
- 341. *Cerastium dichotomum*** L. subsp. *dichotomum*\*  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2404, S.A. (DUOF 6483), TH.
- 342. *Cerastium glomeratum*** Thuill.  
St 8, Hb 19, 1248 m, 30.04.2013, N.G. 2988 (DUOF 6478), WS, TH.
- 343. *Moenchia mantica*** (L.) Bartl. subsp. *mantica*  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2480, S.A. (DUOF 6479), TH.
- 344. *Spergularia rubra*** (L.) J. & C. Presl  
St 22, Hb 14, 2056 m, 05.08.2012, N.G. 2912, S.A., B.T. (DUOF 6486), WS, H.
- 345. *Herniaria incana*** Lam  
St 13, Hb 15, Hb 22, 1330 m, 26.06.2012, N.G. 2718, S.A., B.T. (DUOF 6529), CH.
- 346. *Telephium imperati*** L. subsp. *orientale* (Boiss.) Nyman  
St 20, Hb 8, 1303 m, 04.06.2013, N.G. 3141 (DUOF 6462), H.
- 347. *Dianthus leucophaeus*** Sm.  
St 22, Hb 14, 1902 m, 26.06.2012, N.G. 2743, S.A., B.T. (DUOF 6485); E., H.
- 348. *Dianthus crinitus*** Sm. var. *crinitus*  
St 24, Hb 4, 1642 m, 14.06.2013, N.G. 3331 (DUOF 6463), H.
- 349. *Dianthus carmelitarum*** Reut. ex Boiss.\*  
St 8, Hb 13, 1217 m, 30.06.2014, N.G. 3360 (DUOF 6461), E., Euro-Sib., H.
- 350. *Dianthus lydus*** Boiss.  
St 8, Hb 13, 1241 m, 27.06.2012, N.G. 2629, S.A., B.T. (DUOF 6475), E., H.
- 351. *Dianthus capitatus*** J.St.-Hil.\*  
St 20, Hb 13, 1282 m, 02.06.2013, N.G. 3121 (DUOF 6468), Euro-Sib., H.
- 352. *Petrorhagia alpina*** (Hablitz) P.W.Ball & Heywood subsp. *alpina*  
St 4, Hb 23, 1885 m, 20.06.2013, N.G. 3287 (DUOF 6465), TH.
- 353. *Petrorhagia alpina*** (Hablitz) P.W.Ball & Heywood subsp. *olympica* (Boiss.) P.W.Ball & Heywood\*

- St 10, Hb 21, 1983 m, 18.07.2013, N.G. 3322, TH.
- 354. *Velezia pseudorigida*** Hub.-Mor.\*  
St 8, Hb 15, 1368 m, 12.06.2013, N.G. 3240-a (DUOF 6136), E., E.Med., TH.
- 355. *Saponaria chlorifolia*** Kunze\*  
St 1, Hb 1, 1350 m, 10.06.2013, N.G. 3208-a (DUOF 6186), E., E.Med., TH.
- 356. *Silene italica*** (L.) Pers. subsp. *italica*  
St 13, Hb 1, 1340 m, 10.06.2013, N.G. 3339 (DUOF 6487), Med., H.
- 357. *Silene olympica*** Boiss. var. *olympica*  
St 4, Hb 23, 1885 m, 20.06.2013, N.G. 3285-b (DUOF 6346), E., Ir.-Tur., CH.
- 358. *Silene supina*** M.Bieb. subsp. *pruinosa* (Boiss.) Chowdhuri\*  
St 7, Hb 17, 1290 m, 22.07.2014, N.G. 3377 et al. (DUOF 6473), CH.
- 359. *Silene vulgaris*** (Moench) Garcke var. *vulgaris*  
St 13, Hb 11, 1728 m, 26.06.2012, N.G. 2775, S.A., B.T. (DUOF 6477), CH.
- 360. *Silene rhynchocarpa*** Boiss.\*  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2409, S.A. (DUOF 6480), E.Med., CH.
- 360. *Silene compacta*** Fisch. ex Hornem  
St 1, Hb 19, 1420 m, 28.06.2012, N.G. 2658, S.A., B.T. (DUOF 6476), WS, H.
- 361. *Scleranthus annuus*** L. subsp. *annuus*  
St 10, Hb 14, 2073 m, 02.06.2012, N.G. 2508, S.A. (DUOF 6257), WS, TH.
- 46. AMARANTHACEAE**  
**(CHENOPODIACEAE)**
- 362. *Chenopodium botrys*** L.  
St 17, Hb 4, 1370 m, 05.08.2012, N.G. 2900, S.A., B.T. (DUOF 6256), Med., TH.
- 363. *Chenopodium foliosum*** Asch.  
St 16, Hb 2, 1812 m, 09.06.2013, N.G. 3198-b (DUOF 6722), H.
- 364. *Chenopodium album*** L. subsp. *album* var. *album*  
St 7, Hb 17, 1290 m, 21.07.2014, N.G. 3389 (DUOF 6721), TH.
- 47. PORTULACACEAE**
- 365. *Montia arvensis*** Wallr.  
St 6, Hb 5, 1270 m, 29.05.2011, Z.D.D. 1086 et al. (DUOF 2932), TH.
- 48. PRIMULACEAE**
- 366. *Primula acaulis*** (L.) L. subsp. *acaulis*  
St 3, Hb 3, 1486 m, 05.05.2012, N.G. 2341, N.A., B.T. (DUOF 6446), Euro-Sib., H.
- 367. *Androsace maxima*** L.  
St 8, Hb 13, 1248 m, 30.04.2013, N.G. 2977 (DUOF 6439), TH.
- 368. *Lysimachia vulgaris*** L.  
St 2, Hb 2, 1483 m, 20.10.2012, N.G. 2947 (DUOF 6148), WS, H.
- 369. *Lysimachia atropurpurea*** L.  
St 7, Hb 13, 1232 m, 10.06.2013, N.G. 3207 (DUOF 6440), TH.
- 370. *Anagallis arvensis*** L. var. *arvensis*  
St 8, Hb 13, 1215 m, 27.06.2012, N.G. 2624, S.A., B.T., TH.
- 371. *Anagallis femina*** Mill.  
St 8, Hb 13, 1217 m, 30.06.2014, N.G. 3358 (DUOF 6443), Med., TH.
- 49. ERICACEAE**
- 372. *Pyrola minor*** L.  
St 4, Hb 6, 1760 m, 18.06.2013, N.G. 3244 (DUOF 6427), B.T., Euro-Sib., G.
- 373. *Orthilia secunda*** (L.) House  
St 4, Hb 6, 1731 m, 17.06.2013, N.G. 3243 (DUOF 6460), G.
- 49. RUBIACEAE**
- 374. *Sherardia arvensis*** L.  
St 6, Hb 5, 1270 m, 29.05.2011, Z.D.D. 1072 et al. (DUOF 2920) Med., TH.
- 50. RUBIACEAE**
- 375. *Crucianella bithynica*** Boiss.  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2704, S.A., B.T. (DUOF 6130), E.Med., TH.
- 376. *Crucianella angustifolia*** L.\*  
St 13, Hb 28, 1390 m, 14.06.2013, N.G. 3129 (DUOF 6501), Med., TH.
- 377. *Asperula involucrata*** Wahlenb.  
St 14, Hb 19, slope, 1410 m, 02.06.2012, N.G. 2440, S.A. (DUOF 6128), Eux., CH.
- 378. *Galium rotundifolium*** L.  
St 4, Hb 6, 1731 m, 17.06.2013, N.G. 3275 (DUOF 6523), Euro-Sib., G.
- 379. *Galium rivale*** (Sibth. & Sm) Griseb.  
St 4, Hb 6, Hb 4, 1777 m, 05.08.2012, N.G. 2889, S.A., B.T. (DUOF 6524); Euro-Sib., H.
- 380. *Galium palustre*** L.  
St 10, Hb 21, 1980 m, 18.07.2013, N.G. 3314 (DUOF 6529), Euro-Sib., G.
- 381. *Galium verum*** L. subsp. *verum*  
St 8, Hb 13, 1231m, 27.06.2012, N.G. 2615, S.A., B.T. (DUOF 6527), Euro-Sib., H.

- 382. *Galium verum* L. subsp. *glabrescens*** Ehrend.  
St 13, Hb 15, Hb 22, 1330 m, 26.06.2012, N.G. 2731, S.A., B.T. (DUOF 6528), Ir.-Tur., H.
- 383. *Galium incanum* Sm**  
St 24, Hb 19, Hb 4, 1572 m, 07.06.2013, N.G. 3167-a, H.
- 384. *Galium spurium* L. subsp. *spurium***  
St 8, Hb 13, 1231m, 27.06.2012, N.G. 2598-b, S.A., B.T. (DUOF 6525), TH.
- 385. *Galium aparine* L.**  
St 2, Hb 21, 1486 m, 08.06.2012, N.G. 2550-b et al. (DUOF 6522), TH.
- 386. *Galium floribundum* Sm. subsp. *floribundum*\***  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2688, S.A., B.T. (DUOF 6526), & N.G., TH.
- 387. *Cruciata laevipes* Opiz**  
St 13, Hb 4, 1471 m, 08.06.2012, N.G. 2573 et al. (DUOF 6131), Euro-Sib., G.
- 388. *Cruciata taurica* (Pall. ex Willd.) Ehrend.**  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2373, S.A., Ir.-Tur., H.
- 389. *Cruciata pedemontana* (Bellardi) Ehrend.\***  
St 17, Hb 4, 1389 m, 02.06.2012, N.G. 2389, S.A. (DUOF 6132), TH.
- 51. GENTIANACEAE**
- 390. *Centaurium erythraea* Rafn. subsp. *erythraea*\***  
St 7, Hb 13, 1200 m, 09.06.2013, N.G. 3253-a (DUOF 6150), Euro-Sib., H.
- 52. APOCYNACEAE**
- 391. *Vinca herbacea* Waldst. & Kit.**  
St 8, Hb 8, 1234 m, 05.05.2012, N.G. 2357, N.A., B.T. (DUOF 6240), G.
- 392. *Vincetoxicum canescens* (Willd.) Decne. subsp. *canescens***  
St 8, Hb 4, 1236 m, 08.06.2012, N.G. 2592 et al. (DUOF 6220), Ir.-Tur., CH.
- 393. *Vincetoxicum tmoleum* Boiss.\***  
St 20, Hb 13, 1282 m, 02.06.2013, N.G. 3119-b (DUOF 6289), Ir.-Tur., CH.
- 53. BORAGINACEAE**
- 394. *Asperugo procumbens* L.**  
St 16, Hb 2, 1812 m, 09.06.2013, N.G. 3199 (DUOF 6337), Euro-Sib., TH.
- 395. *Myosotis stricta* Roem & Schult.**  
St 25, Hb 5, 1231 m, 29.05.2011, Z.D.D. 1009 et al. (DUOF 2936), Euro-Sib., TH.
- 396. *Myosotis minutiflora* Boiss & Reut.\***  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2478 (DUOF 6718), S.A., Med., TH.
- 397. *Myosotis arvensis* (L.) Hill. subsp. *arvensis***  
St 10, Hb 21, 1980 m, 18.07.2013, N.G. 3312 (DUOF 6135), Euro-Sib., H.
- 398. *Myosotis sylvatica* Ehrh. ex Hoffm subsp. *cyanea* (Hayek) Vestegr.**  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3062 (DUOF 6719), H.
- 399. *Myosotis sylvatica* Ehrh. ex Hoffm subsp. *rivularis* Vestegr.**  
St 22, Hb 14, 1920 m, 20.06.2013, N.G. 3289 (DUOF 3289), H.
- 400. *Myosotis lithospermifolia* (Willd.) Hornem**  
St 14, Hb 19, slope, 1410 m, 02.06.2012, N.G. 2443, S.A.; H.
- 401. *Paracaryum calycinum* Boiss & Balansa**  
St 7, Hb 11, 1455 m, 19.05.2013, N.G. 3075 (DUOF 6714), E., Ir.-Tur., H.
- 402. *Paracaryum ancyritanum* Boiss.**  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2689, S.A., B.T. (DUOF 6715), E., Ir.-Tur., H.
- 403. *Cynoglossum officinale* L.**  
St 3, Hb 2, 1450 m, 02.06.2012, N.G. 2434, S.A., Euro-Sib., H.
- 404. *Cynoglossum creticum* Mill.**  
St 29, Hb 10, Hb 19, 1459 m, 29.05.2011, Z.D.D. 1136 et al., WS.
- 405. *Cynoglossum montanum* L.**  
St 7, Hb 4, 1531 m, 02.06.2012, N.G. 2490, S.A. (DUOF 6133), Euro-Sib., H.
- 406. *Buglossoides arvensis* (L.) I. M Johnst.**  
St 16, Hb 2, 1812 m, 09.06.2013, N.G. 3200 (DUOF 6340), WS, TH.
- 407. *Echium orientale* L.**  
St 2, Hb 21, 1486 m, 08.06.2012, N.G. 2550-a et al. (DUOF 6079), E., Eux., H.
- 408. *Echium italicum* L.**  
St 13, Hb 8, 1424 m, 23.09.2012, N.G. 2926, M.A., Med., H.
- 409. *Onosma isaurica* Boiss & Heldr.**  
St 20, Hb 30, 1282 m, 18.05.2013, N.G. 3035 (DUOF 6713), E., Ir.-Tur., H.
- 410. *Onosma taurica* Willd. var. *taurica***  
St 13, Hb 28, 1491 m, 06.06.2013, N.G. 3148 (DUOF 6339), H.

- 411. *Onosma bornmuelleri*** Hausskn. & Bornm.  
St 3, Hb 2, 1450 m, 02.06.2012, N.G. 2430, S.A. (DUOF 6717), E., Ir.-Tur., H.
- 412. *Alkanna tinctoria*** (L.) Tausch. subsp. *glandulosa* Hub.-Mor.\*  
St 20, Hb 13, 1280 m, 03.06.2013, N.G. 3127 (DUOF 6338), E., E.Med., H.
- 54. CONVULVACEAE**
- 413. *Convolvulus arvensis*** L.  
St 7, Hb 10, 1289 m, 18.06.2013, N.G. 3246, WS, G.
- 55. OLEACEAE**
- 414. *Jasminum fruticans*** L.  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3046 (DUOF 6371), Med., NaP.
- 415. *Fraxinus angustifolia*** Vahl. subsp. *angustifolia*  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2684, S.A., B.T., S.A., B.T., MeP.
- 56. PLANTAGINACEAE**
- 416. *Plantago lanceolata*** L.  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2463, S.A. (DUOF 6168), H.
- 417. *Globularia trichosanta*** Fisch. & C.A.Mey. subsp. *trichosanta*  
St 5, Hb 4, 1465 m, 05.05.2012, N.G. 2327, N.A., B.T. (DUOF 6382), Ir.-Tur., CH.
- 418. *Chaenorhinum minus*** (L.) Lange subsp. *minus*  
St 8, Hb 13, 1217 m, 30.06.2014, N.G. 3357 (DUOF 6188), TH.
- 419. *Linaria genistifolia*** (L.) Mill. subsp. *linifolia* (Boiss.) P.H.Davis\*  
St 20, Hb 8, 1303 m, 04.06.2013, N.G. 3138 (DUOF 6852), H.
- 420. *Linaria corifolia*** Desf.  
St 8, Hb 13, 1217 m, 30.06.2014, N.G. 3359 (DUOF 6730), E., Ir.-Tur., H.
- 421. *Digitalis lamarckii*** Ivan  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2702, S.A., B.T., E., Ir.-Tur., H.
- 422. *Veronica gentianoides*** Vahl. subsp. *gentianoides*  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2795, S.A., B.T. (DUOF 6738) Hyr.-Eux., H.
- 423. *Veronica serpyllifolia*** L.  
St 16, Hb 2, 1827 m, 09.06.2013, N.G. 3192 (DUOF 6368), H.
- 424. *Veronica bozakmanii*** MA.Fischer  
St 16, Hb 2, 1812 m, 09.06.2013, N.G. 3197 (DUOF 6366), Ir.-Tur., TH.
- 425. *Veronica verna*** L.  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2471, S.A. (DUOF 6727), Euro-Sib., TH.
- 426. *Veronica triphyllos*** L.\*  
St 8, Hb 15, 1307 m, 30.03.2013, N.G. 2965 (DUOF 6723), WS, TH.
- 427. *Veronica beccabunga*** L.  
St 16, Hb 2, 1812 m, 09.06.2013, N.G. 3202-b (DUOF 6330), WS, G.
- 428. *Veronica chamaedrys*** L.  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2486, S.A. (DUOF 6728), Euro-Sib., G.
- 429. *Veronica pectinata*** L. var. *pectinata*  
St 20, Hb 13, 1282 m, 02.06.2013, N.G. 3120 (DUOF 6398), H.
- 430. *Veronica multifida*** L.  
St 17, Hb 4, 1389 m, 02.06.2012, N.G. 2395, S.A. (DUOF 6726); E., Ir.-Tur., H.
- 431. *Veronica officinalis*** L.  
St 7, Hb 11, 1595 m, 22.07.2014, N.G. 3372 et al. (DUOF 6724), Euro-Sib., H.
- 57. SCROPHULARIACEAE**
- 432. *Verbascum flavidum*** (Boiss.) Freyn & Bornm.  
St 7, Hb 18, 1292 m, 09.05.2014, N.G. 3350 (DUOF 6847), Euro-Sib., H.
- 433. *Verbascum armenum*** Boiss. & Kotschy ex Boiss. var. *occidentale* Hub.-Mor.  
St 10, Hb 14, 2045 m, 22.07.2012, N.G. 2872 (DUOF 6846), E., Ir.-Tur., H.
- 434. *Verbascum abieticola*** Bornm.  
St 14, Hb 19, slope, 1410 m, 02.06.2012, N.G. 2448, S.A. (DUOF 6849, 6850, 6851), E., Eux., H.
- 435. *Scrophularia scopoli*** [Hoppe ex] Pers. var. *scopoli*  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3068 (DUOF 6155), WS, H.
- 436. *Scrophularia pinardii*** Boiss.\*  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2421, S.A. (DUOF 6251), E.Med., H.
- 437. *Scrophularia canina*** L. subsp. *bicolor* (Sm.) Greuter  
St 13, Hb 28, 1409 m, 05.06.2013, N.G. 3143 (DUOF 6400, 6853), E.Med., CH.
- 58. LAMIACEAE (LABIATAE)**
- 438. *Teucrium chamaedrys*** L. subsp. *chamaedrys*  
St 13, Hb 16, Hb 18, 1313 m, 26.06.2012, N.G. 2751, S.A., B.T. (DUOF 6609), Euro-Sib., CH.
- 439. *Teucrium polium*** L. subsp. *polium* L.

- St 8, Hb 13, 1231 m, 08.06.2012, N.G. ve diğ., observation, CH.
- 440. *Scutellaria orientalis*** L. subsp. *pinnatifida* J.R.Edm.  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2473, S.A. (DUOF 6237), WS, CH.
- 441. *Scutellaria albida*** L. subsp. *albida*  
St 20, Hb 8, 1309 m, 04.06.2013, N.G. 3133 (DUOF 6395), E.Med., H.
- 442. *Phlomis armeniaca*** Willd.  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2693, S.A., B.T. (DUOF 6608), E., Ir.-Tur., CH.
- 443. *Lamium garganicum*** L. subsp. *garganicum*  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2413, S.A. (DUOF 6618), Eux., H.
- 444. *Lamium amplexicaule*** L. var. *amplexicaule*  
St 8, Hb 13, 1248 m, 30.04.2013, N.G. 2973 (DUOF 6620), Euro-Sib., TH.
- 445. *Lamium purpureum*** L. var. *aznavourii* Gand. ex Aznav.\*  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2801, S.A., B.T., E., Eux., TH.
- 446. *Lamium maculatum*** L.  
St 11, Hb 16, 1979 m, 19.05.2013, N.G. 3085 (DUOF 6617), Eux., H.
- 447. *Lamium album*** L. subsp. *crinitum* (Montbret & Aucher ex Benth.) Mennema  
St 11, Hb 16, 1979 m, 19.05.2013, N.G. 3081 (DUOF 6619), Euro-Sib., H.
- 448. *Marrubium vulgare*** L.\*  
St 13, Hb 20, 1384 m, 20.10.2012, N.G. 2942 (DUOF 6274), Med., CH.
- 449. *Marrubium astracanicum*** Jacq. subsp. *astracanicum*  
St 1, Hb 10, 1420 m, 28.06.2012, N.G. 2660, S.A., B.T. (DUOF 6621), CH.
- 450. *Sideritis galatica*** Bornm.\*  
St 7, Hb 17, 1290 m, 21.07.2014, N.G. 3366 (DUOF 6610), E., Ir.-Tur., H.
- 451. *Stachys byzantina*** K.Koch  
St 8, Hb 13, 1241 m, 27.06.2012, N.G. 2647, S.A., B.T. (DUOF 6623), Euro-Sib., H.
- 452. *Stachys iberica*** Bieb. subsp. *stenostachya* (Boiss.) Rech.f.\*  
St 20, Hb 13, 1280 m, 03.06.2013, N.G. 3128 (DUOF 6399), Ir.-Tur., CH.
- 453. *Stachys annua*** (L.) L. subsp. *annua* var. *lycaonica* Bhattacharjee  
St 14, Hb 19, slope, 1410 m, 02.06.2012, N.G. 2445, S.A. (DUOF 6622), Ir.-Tur., H.
- 454. *Nepeta nuda*** L. subsp. *nuda*  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2380, S.A. (DUOF 6613), Euro-Sib., H.
- 455. *Prunella laciniata*** (L.) L.  
St 8, Hb 4, 1236 m, 08.06.2012, N.G. 2588 et al. (DUOF 6614), Euro-Sib., H.
- 456. *Prunella vulgaris*** L.  
St 8, Hb 13, 1253 m, 27.06.2012, observation, Euro-Sib., H.
- 457. *Clinopodium grandiflorum*** (L.) Kuntze  
St 7, Hb 11, 1595 m, 22.07.2014, N.G. 3373, N.A., S.A., C. Bulut (DUOF 6612), Euro-Sib., CH.
- 458. *Clinopodium vulgare*** L. subsp. *arundanum* (Boiss.) Nyman  
St 13, Hb 4, Hb 18, 1313 m, 26.06.2012, N.G. 2764, S.A. (DUOF 6611), H.
- 459. *Clinopodium graveolens*** (M.Bieb.) Kuntze subsp. *rotundifolium* (Pers.) Govaerts.  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2472, S.A. (DUOF 6607), WS, TH.
- 460. *Thymus praecox*** Opiz subsp. *jankae* (Celak.) Jalas var. *jankae*  
St 10, Hb 14, 2072 m, 26.06.2012, N.G. 2797, CH.
- 461. *Thymus longicaulis*** C.Presl subsp. *longicaulis*  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3049 (DUOF 6616), Euro-Sib., CH.
- 462. *Mentha longifolia*** (L.) L. subsp. *longifolia*  
St 10, Hb 21, 1980 m, 18.07.2013, N.G. 3316, Eux., H.
- 463. *Ziziphora tenuior*** L.\*  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2690, S.A., B.T. (DUOF 6606), Ir.-Tur., TH.
- 464. *Salvia tomentosa*** Mill.  
St 13, Hb 18, Hb 4, Hb 2, 1313 m, 26.06.2012, N.G. 2760, S.A., B.T. (DUOF 6624), Med., CH.
- 465. *Salvia sclarea*** L.  
St 7, Hb 10, 1289 m, 18.06.2013, N.G. 3245 (DUOF 6625), H.
- 59. OROBANCHACEAE**
- 466. *Orobanche mutelii*** F.W.Schultz  
St 7, Hb 13, 1219 m, 11.06.2013, N.G. 3227-b, G.
- 467. *Pedicularis comosa*** L. var. *sibthorpii* (Boiss.) Boiss.  
St 2, Hb 21, 1486 m, 08.06.2012, N.G. 2551, N.A., S.A., B.T., H.

**468. *Euphrasia pectinata*** Ten.  
St 8, Hb 13, 1241 m, 27.06.2012, N.G.  
2648, S.A., B.T., Euro-Sib., TH.

**469. *Parentucellia latifolia*** (L.) Caruel.  
subsp. *latifolia*

St 19, Hb 2, 1204 m, 18.05.2013, N.G.  
3045, Med., TH.

#### **60. CAMPANULACEAE**

**470. *Campanula lyrata*** Lam. subsp.  
*lyrata*

St 1, Hb 13, 1426 m, 28.06.2012, N.G.  
2676, S.A., B.T. (DUOF 6087), WS, H.

**471. *Campanula glomerata*** L. subsp.  
*hispida* (Witasek) Hayek

St 13, Hb 5, Hb 11, 1661 m, 22.07.2012,  
N.G. 2832 (DUOF 6490), Euro-Sib., H.

**472. *Campanula ajugifolia*** Schult.

St 16, Hb 14, Hb 4, Hb 27, 1942 m,  
22.07.2012, N.G. 2851 (DUOF 6489), E., Ir-  
Tur., H.

**473. *Campanula cymbalaria*** Sibth. & Sm  
St 16, Hb 11, 1735 m, 07.06.2013, N.G.  
3169 (DUOF 6359), E.Med., H.

**474. *Campanula olympica*** Boiss.

St 8, Hb 13, 1256 m, 02.06.2013, N.G.  
3099 (DUOF 6402), Eux., H.

**475. *Campanula rapunculus*** L. var.  
*rapunculus*

St 7, Hb 13, 1219 m, 11.06.2013, N.G.  
3228 (DUOF 6353), S.A. & T. Birtürk, Euro-  
Sib., H.

**476. *Asyneuma limonifolium*** (L.) Janch.  
subsp. *pestalozzae* (Boiss.) Damboldt\*

St 4, Hb 4, 1562 m, 18.06.2013, N.G.  
3282, E., H.

**477. *Asyneuma rigidum*** (Willd.) Grossh.  
subsp. *sibthorpiatum* (Roemer & Schultes)  
Damboldt\*

St 10, Hb 14, 2128 m, 18.07.2013, N.G.  
3304 (DUOF 6387), E., E.Med., H.

**478. *Legousia speculum-veneris*** (L.)  
Durande ex Vill.

St 7, Hb 13, 1200 m, 09.06.2013, N.G.  
3253-b (DUOF 6149), Med., TH.

**479. *Legousia pentagonia*** (L.) Thell.\*

St 7, Hb 13, 1180 m, 11.06.2013, N.G.  
3335 (DUOF 6492), E.Med., TH.

**480. *Jasione supina*** Sieber ex Spreng.  
subsp. *akmanii* Damboldt<sup>1</sup>

St 22, Hb 14, 1902 m, 26.06.2012, N.G.  
2745, S.A., B.T. (DUOF 6172), Eux., E., H.

#### **61. ASTERACEAE (COMPOSITAE)**

**481. *Inula oculus-christii*** L.

St 4, Hb 6, Hb 4, 1777 m, 05.08.2012,  
N.G. 2886, S.A., B.T., Euro-Sib., G.

**482. *Inula montbretiana*** DC.\*

St 13, Hb 15, Hb 22, 1330 m, 26.06.2012,  
N.G. 2728, S.A., B.T. (DUOF 6403), Ir-  
Tur., G.

**483. *Helichrysum plicatum*** DC. subsp.  
*plicatum*

St 4, Hb 6, Hb 4, 1777 m, 05.08.2012,  
N.G. 2877, S.A., B.T. (DUOF 6385), WS,  
CH.

**484. *Filago arvensis*** L.\*

St 8, Hb 13, 1217 m, 26.06.2012, N.G.  
2706, S.A., B.T. (DUOF 6383), TH.

**485. *Erigeron acris*** L. subsp. *acris*

St 16, Hb 14, Hb 4, *P. sylvestris*  
açıklıkları, 1942 m, 22.07.2012, N.G. 2844  
(DUOF 6603), Euro-Sib., H.

**486. *Doronicum orientale*** Hoffm.

St 19, Hb 2, 1204 m, 18.05.2013, N.G.  
3066 (DUOF 6593), G.

**487. *Doronicum bithynicum*** J.R.Edm.  
subsp. *bithynicum*

St 10, Hb 14, 2072 m, 26.06.2012, N.G.  
2807, S.A., B.T. (DUOF 6379), E., Eux., G.

**488. *Senecio olympicus*** Boiss.\*

St 10, Hb 14, 2072 m, 26.06.2012, N.G.  
2808, S.A., B.T. (DUOF 6595), E., Eux., H.

**489. *Senecio vernalis*** Waldst. & Kit.

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<sup>1</sup> According to flora of Turkey Vol. 6, the two subspecies belong to *Jasione supina* are divided in the following way:

involucral bracts dentate.... subsp. *pontica*

involucral bracts entire.....subsp. *akmanii*

On the same sample collected from the study area, both dentate and entire bracts were available. This feature is not enough to separate these two subspecies. Therefore, these two subspecies should be combined by extended definition. Due to *Jasione supina* subsp. *akmanii* recorded from Koroğlu mountain in flora of Turkey, this taxon was given as **subsp. akmanii** in this study.

- St 10, Hb 14, Hb 4, stony slopes, Hb 19, 1995 m, 23.09.2012, N.G. 2933, M.A. (DUOF 6594), WS, TH.
- 490. *Tussilago farfara* L.**  
St 7, Hb 17, 1290 m, 21.07.2014, N.G. observation, Euro-Sib., G.
- 491. *Petasites hybridus* (L.) P.Gaertn.**  
St 1, Hb 1,1348 m, 10.06.2013, N.G. observation, Euro-Sib., H.
- 492. *Achillea teretifolia* Willd.\***  
St 8, Hb 15, 1325 m, 13.06.2013, N.G. 3263, E., Ir.-Tur., H.
- 493. *Achillea setacea* Waldst. & Kit.**  
St 13, Hb 2, Hb 4, Hb 18, 1313 m, 26.06.2012, N.G. 2758, S.A., B.T. (DUOF 6585), Euro-Sib., H.
- 494. *Tanacetum parthenium* (L.) Sch.Bip.**  
St 7, Hb 17, 1290 m, 21.07.2014, N.G. 3385 (DUOF 6588), H.
- 495. *Tanacetum armenum* (DC.) Sch. Bip.**  
St 11, Hb 16, 1979 m, 19.05.2013, N.G. 3082 (DUOF 6587), CH.
- 496. *Tripleurospermum rosellum* (Boiss. & Orph.) Hayek var. *album* E.Hossain**  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2452, S.A. (DUOF 6314), E., H.
- 497. *Tripleurospermum oreades* (Boiss.) Rech.f. var. *oreades***  
St 6, Hb 5, 1270 m, 29.05.2011, Z.D.D. 1077 et al. (DUOF 2962), WS, H.
- 498. *Cirsium sintenisii* Freyn**  
St 10, Hb 14, 2045 m, 22.07.2012, N.G. 2873 (DUOF 6580), E., H.
- 499. *Cirsium vulgare* (Savi) Ten.**  
St 13, Hb 20, 1384 m, 20.10.2012, N.G. 2943 (DUOF 6579), H.
- 500. *Cirsium hypoleucum* DC.**  
St 24, Hb 11, 1590 m, 07.06.2013, N.G. 3165-a, Eux., H.
- 501. *Cirsium arvense* (L.) Scop.**  
St 7, Hb 17, 1290 m, 21.07.2014, N.G. 3384 et al. (DUOF 6493), H.
- 502. *Picnomon acarna* (L.) Cass.**  
St 8, Hb 13, 1231 m, 08.06.2012, N.G. et al., observation, Med., H.
- 503. *Carduus nutans* L. subsp. *nutans***  
St 17, Hb 4, 1370 m, 05.08.2012, N.G. 2903, S.A., B.T., H.
- 504. *Carduus pycnocephalus* L. subsp. *albidus* (M.Bieb.) Kazmi**  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3060 (DUOF 6581), WS, TH.
- 505. *Centaurea* cf. *olympica* (DC.) K.Koch.**  
St 24, Hb 4, 1642 m, 14.06.2013, N.G. 3330, E., H.
- 506. *Centaurea solstitialis* L. subsp. *solstitialis***  
St 17, Hb 4, 1370 m, 05.08.2012, N.G. 2904, S.A., B.T. (DUOF 6578), WS, TH.
- 507. *Centaurea urvillei* DC. subsp. *Hb Sposa* Wagenitz**  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2708, S.A., B.T. (DUOF 6576), Ir.-Tur., H.
- 508. *Cyanus pichleri* (Boiss.) Holub subsp. *pichleri*\***  
St 13, Hb 28, 1574 m, 06.06.2013, N.G. 3157 (DUOF 6143), H.
- 509. *Cyanus triumfetti* All.**  
St 17, Hb 8, 1317 m, 02.06.2012, N.G. 2366, S.A. (DUOF 6577), WS, H.
- 510. *Crupina vulgaris* Cass.**  
St 13, Hb 28, 1491 m, 06.06.2013, N.G. 3150 (DUOF 6147), TH.
- 511. *Crupina crupinastrum* (Moris) Vis.**  
St 8, Hb 4, 1236 m, 08.06.2012, N.G. 2597 et al. (DUOF 6598), WS, TH.
- 512. *Carlina biebersteinii* Bernh. ex Hornem subsp. *brevibracteata* (Andrae) K.Werner**  
St 7, Hb 17, 1290 m, 22.07.2014, N.G. 3378 (DUOF 6599), H.
- 513. *Xeranthemum annuum* L.**  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 3363 (DUOF 6584), S.A., B.T., TH.
- 514. *Cichorium intybus* L.**  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2682, S.A., B.T. (DUOF 6604), WS, H.
- 515. *Scorzonera mollis* M.Bieb. subsp. *mollis*\***  
St 11, Hb 16, 1979 m, 19.05.2013, N.G. 3078 (DUOF 6377), Med., G.
- 516. *Scorzonera mollis* M.Bieb. subsp. *szowitzii* (DC.) D.F.Chamb.**  
St 30, Hb 5, 1341 m, 29.05.2011, Z.D.D. 1094 et al. (DUOF 2969), Ir.-Tur., H.
- 517. *Tragopogon pterodes* Petrović**  
St 4, Hb 6, Hb 4, 1777 m, 05.08.2012, N.G. 2896, S.A., B.T., H.
- 518. *Tragopogon dubius* Scop.**  
St 8, Hb 13, 1231 m, 08.06.2012, N.G. 2543 et al. (DUOF 6583), H.

- 519. *Leontodon asperrimus*** (Willd.) Endl.\*  
St 20, Hb 8, 1309 m, 04.06.2013, N.G. 3134-b, Ir.-Tur., H.
- 520. *Picris pauciflora*** Willd.\*  
St 8, Hb 13, 1253 m, 27.06.2012, N.G. 2638, S.A., B.T. (DUOF 6600), Med., TH.
- 521. *Hieracium oblongum*** Jord.  
St 24, Hb 6, 1614 m, 07.06.2013, N.G. 3163; Euro-Sib., H.
- 522. *Hieracium pannosum*** Boiss.  
St 7, Hb 11, 1648 m, 22.07.2014, N.G. 3367 et al. (DUOF 6589), Med., H.
- 523. *Hieracium bornmuelleri*** Freyn\*  
St 16, Hb 14, Hb 4, Hb 27, 1942 m, 22.07.2012, N.G. 2852 (DUOF 6591), E., H.
- 524. *Pilosella hoppeana*** (Schult.) F.W.Schultz & Sch.Bip. subsp. *testimonialis* (Naegli ex Peter) P.D.Sell & C.West  
St 10, Hb 14, 2060 m, 18.07.2013, N.G. 3299 (DUOF 6384), Euro-Sib., G.
- 525. *Pilosella piloselloides*** (Vill.) Soják subsp. *piloselloides*  
St 8, Hb 4, 1236 m, 08.06.2012, N.G. 2594 et al., H.
- 526. *Lactuca viminea*** (L.) J.Presl & C.Presl  
St 17, Hb 19, 1353 m, 22.07.2012, N.G. 2812 (DUOF 6592), Med., H.
- 527. *Lapsana communis*** L. subsp. *intermedia* (M.Bieb.) Hayek var. *intermedia*  
St 4, Hb 4, 1779 m, 18.06.2013, N.G. 3279 (DUOF 6597), H.
- 528. *Taraxacum macrolepium*** Schischk.\*  
St 1, Hb 1, 1302 m, 11.06.2013, N.G. 3219, H.
- 529. *Crepis pulchra*** L. subsp. *pulchra*  
St 8, Hb 13, 1231 m, 08.06.2012, N.G. 2549-b, TH.
- 530. *Crepis commutata*** (Spreng.) Greuter  
St 8, Hb 13, 1253 m, 27.06.2012, N.G. 3232 (DUOF 6223), WS, TH.
- 531. *Crepis sancta*** (L.) Bornm.  
St 14, Hb 19, slope, 1410 m, 02.06.2012, N.G. 2439, S.A., WS, TH.
- 62. CAPRIFOLIACEAE**
- 532. *Lonicera etrusca*** Santi var. *etrusca*  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2696, S.A., B.T. (DUOF 6422), Med., MiP.
- 533. *Valeriana alliarifolia*** Adams  
St 24, Hb 19, Hb 4, 1572 m, 07.06.2013, N.G. 3167-b (DUOF 6142), WS, G.
- 534. *Valeriana phu*** L.\*  
St 17, Hb 4, 1389 m, 02.06.2012, N.G. 2401, S.A. (DUOF 6260); G.
- 535. *Valeriana leucophaea*** DC.\*  
St 13, Hb 7 1394 m, 05.05.2012, N.G. 2334, N.A., B.T. (DUOF 6261), Hyr.-Eux., G.
- 536. *Valeriana tuberosa*** L.  
St 15, Hb 27, Hb 4, 1600 m, 29.05.2011, Z.D.D. 1133 et al. (DUOF 2915), WS, G.
- 537. *Valerianella costata*** (Stev.) Betcke  
St 25, Hb 5, 1231 m, 29.05.2011, Z.D.D. 1026 et al. (DUOF 2889), & Z.D.D., Med., TH.
- 538. *Valerianella carinata*** Loisel.  
St 3, Hb 4, 1450 m, 02.06.2012, N.G. 2424, S.A. (DUOF 6434), TH.
- 539. *Valerianella turgida*** (Steven) Betcke  
St 8, Hb 4, 1236 m, 08.06.2012, N.G. 2584 et al. (DUOF 6174), TH.
- 540. *Pterocephalus plumosus*** (L.) Coulter  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2700, S.A., B.T. (DUOF 6425), TH.
- 541. *Cephalaria gigantea*** (Ledeb.) Bobrov  
St 2, Hb 17, 1483 m, 22.07.2014, N.G. 3368 et al. (DUOF 6426), Eux., H.
- 63. APIACEAE (UMBELLIFERAE)**
- 542. *Eryngium campestre*** L. var. *virens* Link  
St 8, Hb 13, 1248 m, 28.06.2012, N.G. 2662, S.A., B.T. (DUOF 6515), WS, CH.
- 543. *Anthriscus nemorosa*** (M.Bieb.) Spreng.  
St 19, Hb 2, 1204 m, 18.05.2013, N.G. 3067 (DUOF 6517), WS, H.
- 544. *Bunium microcarpum*** (Boiss.) Freyn & Bornm. ex Freyn subsp. *bourgaei* (Boiss.) Hedge & Lamond  
St 13, Hb 4, 1471 m, 08.06.2012, N.G. 2568 et al. (DUOF 6510), Ir.-Tur., G.
- 545. *Prangos ferulacea*** (L.) Lindl.\*  
St 7, Hb 10, 1400 m, 22.07.2014, N.G. 3382 (DUOF 6513, 6514), H.
- 546. *Torilis leptophylla*** (L.) Rchb.f.  
St 8, Hb 13, 1217 m, 26.06.2012, N.G. 2698, S.A., B.T. (DUOF 6519), WS, TH.
- 547. *Malabaila secacul*** (Mill.) Boiss.  
St 8, Hb 4, 1236 m, 08.06.2012, N.G. 2589 et al. (DUOF 6509), G.
- 548. *Daucus guttatus*** Sibth. & Sm



St 8, Hb 13, 1231m, 27.06.2012, N.G. 2611, S.A., B.T. (DUOF 6508), TH.

**549. *Bupleurum gerardii* All.**

St 8, Hb 13, 1253 m, 27.06.2012, N.G. 2640, S.A., B.T. (DUOF 6507); WS, TH.

**550. *Heracleum platytaenium* Boiss.**

St 13, Hb 11, 1728 m, 26.06.2012, N.G. 2771, S.A., B.T. (DUOF 6520), Eux., H.

**551. *Pimpinella cappadocica* Boiss. & Balansa var. *cappadocica*\***

St 23, Hb 11, 1742 m, 05.08.2012, N.G. 2920-a, S.A., B.T., E., Ir.-Tur., H.

**552. *Pimpinella* cf. *tragiium* Vill. subsp. *polyclada* (Boiss. & Heldr.) Tutin\***

St 23, Hb 11, 1742 m, 05.08.2012, N.G. 2920-b, S.A., B.T. (DUOF 6348), H.

**553. *Caucalis platycarpus* L.**

St 8, Hb 13, 1253 m, 27.06.2012, N.G. 2635, S.A., B.T. (DUOF 6511), Med., TH.

**554. *Physocaulis nodosus* (L.) Tausch**

St 17, Hb 8, 03.06.2013, N.G. 3336 (DUOF 6512), TH.

**Discussion and Conclusion**

In this study 63 families, 273 genus and 554 taxa were determined. 65 of the collected taxa are endemic and endemism ratio is 11,73 %. Endemic and rare plants were classified according to IUCN categories. 96 taxa are new record for A3 square. The

largest families are as follows: Poaceae 55 taxa (%9,93), Asteraceae 51 taxa (%9,21), Fabaceae 47 taxa (%8,48), Rosaceae 33 taxa (%5,96), Brassicaceae 29 taxa (%5,23), Lamiaceae 27 taxa (%4,87), Caryophyllaceae 27 taxa (%4,87), Liliaceae 20 taxa (%3,61), Boraginaceae 19 taxa (%3,43), Rubiaceae 16 taxa (%2,89), Plantaginaceae 16 taxa (%2,89), Apiaceae 13 taxa (%2,35), Campanulaceae 11 taxa (%1,99), Orchidaceae 10 taxa (%1,81) (Table 2).

Phytogeographical regions of 334 taxa (%60,28) were identified in the research area. The distribution of taxa according to phytogeographic regions are as follows: 109 taxa (%19,68) Euro-Siberian, 78 taxa (%14,08) Mediterranean, 63 taxa (%11,37) Irano-Turanian, 80 taxa (%14,44) WS and 224 taxa (%40,43) are unknown or multiregional (Table 3).

According to Raunkiaer's life form of the plants are 38 (%6,86) Phanerophytes, 59 (%10,63) Chamaephytes, 114 (%20,58) Cryptophytes, 209 (%37,73) Hemicryptophytes and 135 (%24,37) Therophytes (Table 4).

Table 2. The largest families in the study area

Family	Number of taxa	Ratio total taxa number (%)
Poaceae	55	9.93
Asteraceae	51	9.21
Fabaceae	47	8.48
Rosaceae	33	5.96
Brassicaceae	29	5.23
Lamiaceae	27	4.87
Caryophyllaceae	27	4.87
Liliaceae	20	3.61
Boraginaceae	19	3.43
Rubiaceae	16	2.89
Plantaginaceae	16	2.89
Apiaceae	13	2.35
Campanulaceae	11	1.99
Orchidaceae	10	1.81
Others	180	32.49

Table 3. Distribution of species in research area according to phytogeographic regions.

Phytogeographic Region	Number of taxa	Ratio total taxa number (%)
Euro-Siberian	109	19.68
Mediterranean	78	14.08
Irano-Turanian	63	11.37
WS	80	14.44
Multi-regional	224	40.43

Table 4. Distribution of species according to Raunkiaer's life forms

Life Forms	Number of taxa	Ratio to total taxa according to Life Forms (%)
Phanerophytes	38	6.86
Chamaephytes	58	10.65
Hemicryptophytes	207	37.36
Cryptophytes (Geophytes+Hydrophytes)	114 (111+3)	20.58
Therophytes	134	24.19

A comparison of the largest families in this study and to previous studies carried out in nearby regions is given in Table 5. The distribution rates of these taxa according to family, are similar to other studies. Asteraceae (Compositae) and Fabaceae (Leguminosae) families include most taxa in all studies. The study area is different from flora of Elmacık, Semen (Bolu) Mountain, Taşlıyayla and Kızık (Bolu-Seben), Karakiriş

Mountain, Nallıhan Bird Sanctuary, Sündiken Mountain and Doğandede Hill (Bey pazarı), with more taxa belongs to Poaceae family. And different from some nearby regions studies like Abant, Taşlıyayla and Kızık (Bolu-Seben), Karakiriş Mountain, Nallıhan Bird Sanctuary, Sündiken Mountain, Köroğlu Mountain and Doğandede Hill (Bey pazarı), with less taxa belongs to Lamiaceae family.

Table 5. Comparison of the families containing the most species in studies conducted in nearby regions

Family	1	2	3	4	5	6	7	8	9	10	11	12
Poaceae	6.66	6.00	8.20	9.50	5.58	6.80	6.79	5.20	9.93	8.90	5.29	10.86
Asteraceae	13.33	7.40	10.40	9.80	9.77	14.01	13.88	10.10	9.21	6.20	8.40	12.77
Fabaceae	6.98	9.50	7.10	8.90	10.64	11.80	10.76	12.60	8.48	6.30	13.24	13.42
Rosaceae	4.28	7.40	5.30	5.80	4.53	5.20	1.69	4.90	5.96	5.70	0.83	0.31
Brassicaceae	3.02	5.60	4.60	4.00	5.41	3.90	6.23	5.70	5.23	3.10	5.96	6.70
Lamiaceae	6.35	6.70	6.70	5.40	7.32	7.50	7.36	7.00	4.87	10.10	11.58	9.58
Caryophyllaceae	3.34	4.90	3.40	3.80	4.18	1.75	3.39	3.50	4.87	5.70	5.29	5.43
Liliaceae	5.07	2.30	3.10	2.00	4.53	3.00	4.24	-	3.61	4.40	5.62	2.89
Boraginaceae	1.91	3.20	2.70	3.10	2.97	3.10	3.11	1.70	3.43	4.40	4.96	5.11
Rubiaceae	1.43	3.20	1.90	-	1.22	1.95	2.26	-	2.89	2.50	0.83	3.83
Plantaginaceae	-	-	-	-	-	-	-	-	2.88	-	-	-
Apiaceae	3.17	2.80	3.00	3.80	2.09	3.00	2.83	4.70	2.35	1.90	2.64	4.79
Campanulaceae	1.75	1.40	1.00	1.30	2.27	1.95	0.28	-	1.99	2.50	0.50	0.64
Orchidaceae	1.90	-	3.00	3.10	1.74	1.56	-	-	1.81	-	0.33	-
Scrophulariaceae	2.55	5.60	4.70	3.10	3.49	2.50	3.11	4.00	1.08	4.40	1.83	2.24
Others	36.76	34.00	34.90	36.40	34.26	30.74	34.28	39.70	31.41	33.90	32.70	21.43

1 Elmacık Dağı (Aksoy 2006)

2 Semen (Bolu) Dağı (Akman & Yurdakul 1981)

3 Abant (Uçar 1996)

4 Gölcük (İkinci 2000)

5 Taşlıyayla (Tunçkol 2012)

6 Karakiriş Dağı (Aksoy 2001)

7 Nallıhan Kuş Cenneti (Doğan 2000)

8 Sündiken Dağı (Ekim 1977)

9 Argözü Vadisi (Kıbrıscık)

10 Köroğlu (Akman & Ketenoğlu 1978)

11 Doğandede tepe (Güner 2000)

12 Ayaş Güdül Beypazan Polatı (Türker 1990)

A comparison of the endemism rate in this study and other studies carried out in nearby regions is given in Table 6. It is

observed that endemism rate of the study area is higher than some nearby areas.

Table 6. Comparison of the endemism rate with the studies nearby regions

	1	2	3	4	5	6	7	8	9	10	11	12
Total taxa number	631	286	672	438	573	511	354	547	554	157	302	311
Endemic taxa number	59	12	55	15	79	69	65	44	65	13	64	70
Endemism rate (%)	9.35	4.10	8.10	3.40	13.79	13.40	18.55	8.00	11.73	8.20	21.19	22.5
1 Elmacık Dağı (Aksoy 2006)	2 Semen (Bolu) Dağı (Akman & Yurdakulol 1981)			5 Taşlıyayla (Tunçkol 2012)			6 Karakiriş Dağı (Aksoy 2001)			9 Argözü Vadisi (Kıbrıscık)		
3 Abant (Uçar 1996)	4 Gölcük (İkinci 2000)			7 Nallıhan Kuş Cenneti (Doğan 2000)			8 Sündiken Dağı (Ekim 1977)			10 Köroğlu (Akman & Ketenoğlu 1978)		
										11 Doğandede tepe (Güner 2000)		
										12 Ayaş Gündül Beypazarı Polatı (Türker 1990)		

Considering the rate of endemism, it can be said that Argözü Valley and Köroğlu Mountains are an important plant area. However Köroğlu mountains have been declared culture, tourism, conservation and development area in 2015. Thus, the local people's socio-economic development will be supported by providing for the development of nature tourism. Forestry and ecotourism activities will have a negative impact on forest, subalpine and alpine vegetation units, and endemic and rare plants.

Most of the plant communities in the region are important in terms of endemic species they contain. So investments should be done after the local vegetation, habitat and biotope studies completed.

On the other hand, transhumance and grazing activities are potential threats for these habitats and species. Especially the Scots pine, shrub, rock and high mountain habitats with high endemism rate must be protected.

## References

- Akman Y., Yurdakulol E., 1981. Semen (Bolu) Dağı Florasının İncelenmesi. Communications, De la Faculté Des Sciences de L'université d'Ankara. Série C, Tome 24, 3 1-43.
- Akman, Y., Ketenoğlu, O., 1978. Contribution á l'étude de la flore du mont de Köroğlu. Communications, De la Faculté des sciences de L'université d'Ankara. Série C, Tome: 23, 1-24.
- Aksoy, N., 2001. Karakiriş Dağı (Seben-Nallıhan) Florası. Yüksek Lisans Tezi, İstanbul Üniversitesi Fen Bilimleri Enstitüsü, İstanbul.
- Aksoy, N., 2006. Elmacık Dağı (Düzce) vejetasyonu. Doktora Tezi. İstanbul Üniversitesi Fen Bilimleri Enstitüsü, İstanbul.

Anonymous, 2002. 1/500.000 ölçekli Türkiye Jeoloji Haritaları, Zonguldak Haritası, MTA Genel Müdürlüğü, Ankara.

Davis, P. H. (ed.), 1965-1985. Flora of Turkey and the East Aegean Islands. Vols.: 1-9, Edinburg University Press.

Doğan, E., 2000. Nallıhan Kuş Cenneti florası. Yüksek Lisans Tezi, Gazi Üniversitesi Fen Bilimleri Enstitüsü, Ankara.

Ekim, T., 1977. Sündiken Dağları (Eskişehir) Vejetasyonun Sosyolojik ve Ekolojik Yönünden Araştırılması. Doçentlik Tezi.

Ekim, T., 2000. Koyuncu, M, Vural, M, Duman, H., Ayaç, Z. & Adıgüzel, N., Türkiye Bitkileri Kırmızı Kitabı. TTKD & YYÜ No: 18, Ankara.

Güner, M. B., 2000. Doğandede Tepe ve Çevresi Florası (Beypazarı-Ankara). Yüksek Lisans Tezi, G.Ü. Fen Bilimleri Enstitüsü, Ankara.

Güneş Özkan, N., 2009. Hasanlar Baraj Gölü (Düzce) ve Çevresinin Florası, Yüksek Lisans Tezi, Düzce Üniversitesi.

Irkeç, T., Ünlü, T., 1993. Volkanik kuşaklarda hidrotermal sepiyolit oluşumuna bir örnek: Kıbrıscık (Bolu) sepiyoliti. MTA dergisi, 115, 99-118.

İkinci, N., 2000. The flora of Gölcük area (Bolu), MSc Thesis, A.İ.B.U. Department of Biology, March 2000, Bolu.

Kanoğlu, S. S., 2011. Sülüklügöl (Bolu-Mudurnu, Göynük / Adapazarı-Akyazı) Çevresinin Florası, Yüksek Lisans Tezi, Düzce Üniversitesi.

Kılınç, M, Kutbay, H. G., Yalçın, E., Bilgin, A., 2006. Bitki Ekolojisi ve Bitki Sosyolojisi Uygulamaları, Palme Yayıncılık, Ankara.

Tunçkol, B., 2012. Taşlıyayla ve Kızılk (Bolu-Seben) Çevresinin Florası, Yüksek Lisans Tezi, İstanbul Üniversitesi Fen Bilimleri Enstitüsü, İstanbul.

Türker, H., 1990. Ayaş, Güdül, Beypazarı ve Polatlı Arasında Kalan Bölgenin Florası, Yüksek Lisans Tezi, G.Ü. Fen Bilimleri Enstitüsü, Ankara.

Uçar, A., 1996. Flora of Abant, The Abant İzzet Baysal Univesity, Master of Sience in The Department of Biology, Bolu.

URL 1, 2015. [www.mta.gov.tr/v2.0/turkiye\\_maden/maden\\_potansiyel\\_2010/Bolu\\_Madenler.pdf](http://www.mta.gov.tr/v2.0/turkiye_maden/maden_potansiyel_2010/Bolu_Madenler.pdf)

URL 2, 2012. [www.kibriscik.gov.tr/genel-bilgiler](http://www.kibriscik.gov.tr/genel-bilgiler)

Yaltrık, F., Efe, A., 1996. Otsu Bitkiler Sistematiği, İstanbul Üniversitesi Yayın No: 3940 Orman Fakültesi Yayın No: 10, İstanbul.