



The Flora of The Karababa Mountain (Sivas-Şarkışla/Turkey)

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Abstract

This research covers the flora of Karababa Mountain (Sivas-Şarkışla). 1355 plant specimens were collected between 2007 - 2009 in 19 field trips. 659 species, 18 subspecies and 3 varieties belonging to 314 genera and 73 families were determined. 124 taxa are endemic to Turkey and the rate of endemism is 18.9 %. The distribution of the phytogeographical elements is as follows: Irano-Turanian 188 (27.6 %), Euro-Siberian 74 (10.9 %), Mediterranean 35 (5.2 %), pluriregional or phytogeographically unknown are 383 (56.3%). The 3 largest families are *Asteraceae* (91 taxa), *Brassicaceae* (62 taxa), and *Fabaceae* (51 taxa). The 3 largest genera are *Astragalus* (20 taxa), *Silene* (17 taxa) and *Centaurea* (12 taxa). The results of our research is compared with the neighboring areas in means of phytogeographic element rates and endemism. New thread categories are proposed for the two taxa that were DD before. Different and enlarged species characters were given. 59 species are new records for the square B6.

Key words: Flora, Karababa Mountain, Şarkışla, Sivas, Threat category

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Karababa Dağı (Sivas-Şarkışla)'nın florası

Özet

Bu çalışma Karababa Dağı'nın (Sivas- Şarkışla) florasını kapsamaktadır. İnceleme alanına 2007 – 2009 yılları arasında yapılan 19 gezide 1355 bitki örneği toplanmıştır. Bu örneklerin değerlendirilmesi sonucunda 73 familya ve 314 cinse ait 659 tür, 18 alttür ve 3 varyete olmak üzere, toplam 680 takson tespit edilmiştir. Bu taksonlardan 124 tanesi endemik olup toplam takson sayısına oranı % 18,9' dur. Florayı oluşturan bitkilerin fitocoğrafik bölgelere dağılımı şu şekildedir: İran-Turan elementi 188 (% 27,6), Avrupa – Sibiryaya elementi 74 (%10,9), Akdeniz elementi 35 (%5,2) takson. Geri kalan 382 takson ise çok bölgeli ya da fitocoğrafik bölgesi bilinmeyenlerdir. En çok taksona sahip 3 familya: *Asteraceae* (91) *Brassicaceae* (62), *Fabaceae* (51) takson iken, en çok taksona sahip ilk 3 cins ise şu şekilde sıralanır: *Astragalus* 20, *Silene* 17, *Centaurea* 12 takson. Bu çalışma sonucunda inceleme alanı ile yakın çevresinde yapılmış olan çalışmalar fitocoğrafik bölge elementleri ve endemizm yönünden karşılaştırılmıştır. DD kategorisindeki iki takson için yeni tehlike sınıfı önerilmiştir. Floradaki tür betiminden farklılık gösteren bazı taksonların farklı olan özellikleri belirtilmiştir. Çalışma sonucunda B6 karesi için 59 yeni kayıt bulunmuştur.

Anahtar kelimeler: Flora, Karababa Dağı, Sivas, Şarkışla, Tehlike Kategorisi

1. Introduction

Karababa Mountain, is located between Sivas and Yozgat city border. The main part of study area is situated in Şarkışla and Gemerek (Sivas), and the rest of the area is located Akdağmadeni (Yozgat) (Figure 1). According to the

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grid system all part of the research area is in the B6 square and geographically in central anatolia and Irano- Turanian phytogeographical region (Davis, 1965).

The research area was bordered Cehennemderesi valley in the north. We drawn border with GPS because of absence of geographic boundary in east, west and south part of the study area. The study area is between the 39° 27' 27" and 36° 02' 02" north parallels and between the 36° 02' 02" and 36° 03' 33" longitudes. The altitude of the Mountain is between 1550 m at the bottom of the plateau and 2350 m at the summit.

The geological structure of the study area can be examined 3 section as follows: Akdağmadeni group, Tokuş formation and Hardal basalt (Bilgiç and Terlemez, 1980; Yılmaz et al., 1997). Akdağmadeni group consist of Paleozoic-Mesozoic schist, gneisses and marble. This group constitutes a large portion of the study area. On the north-west part of the study area especially on the back of the Diğnendim Hill and Cehennemderesi valley was seen Eosen strukture so called Tokuş formation. Summit of the Karasivri Hill, one of the most significant height of the study area, covers Early-middle-miocen basalt so called Hardal basalt.

There are 5 large soils groups in the study area, namely brown forest, colluvial, organic, red-brown soils and naked rocks and rubbles.

Because of absence of meteorological station in Akdağmadeni we used meteorological data obtained from the only two station –Şarkışla (30 years) and Gemerek (33 years) -to determinate the climate in the region (MİGM, 2008).

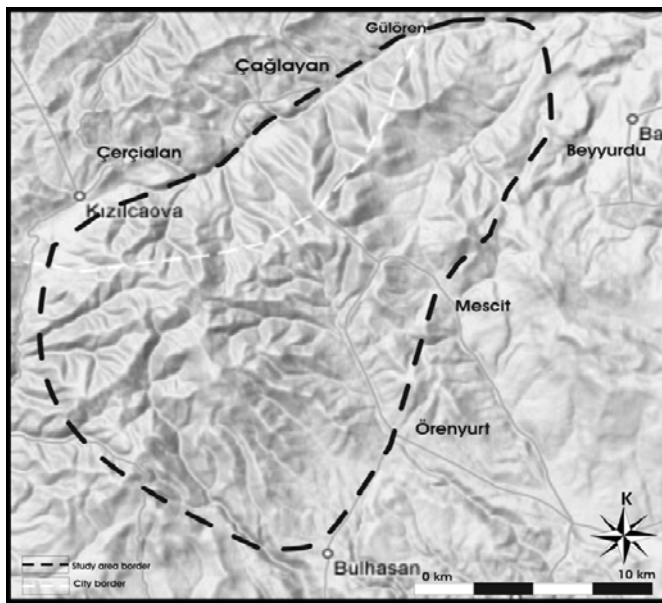


Figure 1. Geographical map of the study area

The average annual temperature is 9.4 °C in Şarkışla and 9.5 °C in Gemerek. In Şarkışla and Gemerek the average annual precipitation is 325.5 mm and 400.8 mm respectively. The distribution of precipitation according to season is SWAS (spring, winter, autumn, summer) and the precipitation regime is “East Mediterranean Rain Regime Type 1” in Şarkışla and Gemerek (Akman, 1990). The ombro-thermic climate diagrams (Figure 2) were drawn using Gausson’s method (Cireli et al., 1973). According to Emberger’s Mediterranean bioclimate layers classification, Şarkışla is “upper semi-arid and very cold” and Gemerek is “lower semi-arid and very cold”.

Typical species of semi-arid mediterranean bioclimate layers *Pinus sylvestris*, *Quercus macranthera* subsp. *sypirensis*, *Q. pubescens*, *Pyrus eleagnifolia*, *Crateagus tanacetifolia*, *Juniperus oxycedrus*, *J. excelsa*, *Onobrychis cornuta*, *Astragalus angustifolius* (Akman, 1990) are present in our research area. This situation confirms the relationship between climate and vegetation in our area. There are 3 vegetation types in the research area. Forest, steppe and rocky vegetations.

Forest vegetation: This vegetation type is seen east and north part of the study area between 1600-1800 m, especially in Diğnendim hill and its environments. *Pinus sylvestris* L. is the most dominant species in this forest. *Juniperus excelsa* M. Bieb. accompanies from 1800 to 2000 m. Others woody species that found in the forest, are *J.oxycedrus* L., *Quercus pubescens* Willd., *Sorbus umbellata* (Desf.) Fritsch, *S.torminalis* (L.) Crantz and *Populus tremula* L. The most dominant herbaceous species in the forest are *Anthriscus nemorosa* (Bieb.) Sprengel, *Asperugo procumbens* L., *Astragalus spruneri* Boiss., *Campanula rapunculoides* L., *Carex divulsa* Stokes., *Dactylorhiza romana* (Seb.) Soó, *Digitalis ferruginea* L., *Doronicum orientale* Hoffm., *Epilobium angustifolium* L., *Luzula forsteri* (Sm.) DC., *Poa nemoralis* L., *Silene compacta* Fischer, *S.italica* (L.) Pers., *Tanacetum poteriifolium* (Ledeb.) Grierson *Trifolium pratense* L. and *Turritis laxa* (Sibth. & Sm.) Hayek.

Steppe: This vegetation type is present at high slopes without forest vegetation. Some dominant species are *Astragalus angustifolius* Lam., *A. brachypterus* Fisch., *A. podpera* Širj., *Acantholimon acerosum* (Willd) Boiss., *Festuca heterophylla* Lam., *Bromus tomentellus* Boiss., *Ebenus laguroides* Boiss., *Elymus lazicus* (Boiss.) Melderis, *Globularia trichosantha* Fisch. & C.A.Mey, *Helichrysum plicatum* DC, *Phlomis linearis* Boiss. & Balansa, *Salvia cryptantha* Montbret & Aucher ex Benth. and *Teucrium polium* L.

Rocky vegetation: Chasmophytic vegetation is over 1800 m in the study area. This vegetation consist of mostly rare endemics. The most dominant species of this chasmophytic vegetations are *Aethionema caespitosum* (Boiss.) Boiss., *Acantholimon ulicinum* (Willd. ex Schultes) Boiss., *Anchonium elichrysofolium* (DC.) Boiss., *Alyssum bornmuelleri* Hausskn. ex Degen, *Campanula pulvinaris* Hausskn. & Bornm., *Centaurea drabifolia* Sm., *C. mucronifera* DC., *Dianthus engleri* Hausskn. & Bornm., *Draba bruniifolia* Steven and *Geranium cinereum* Cav., *Helianthemum canum* (L.) Baumg., *Helichrysum chionophilum* Boiss. & Balansa, *Tanacetum armenum* (DC.) Sch. Bip., and *T. haussknechtii* (Bornm.) Grierson.

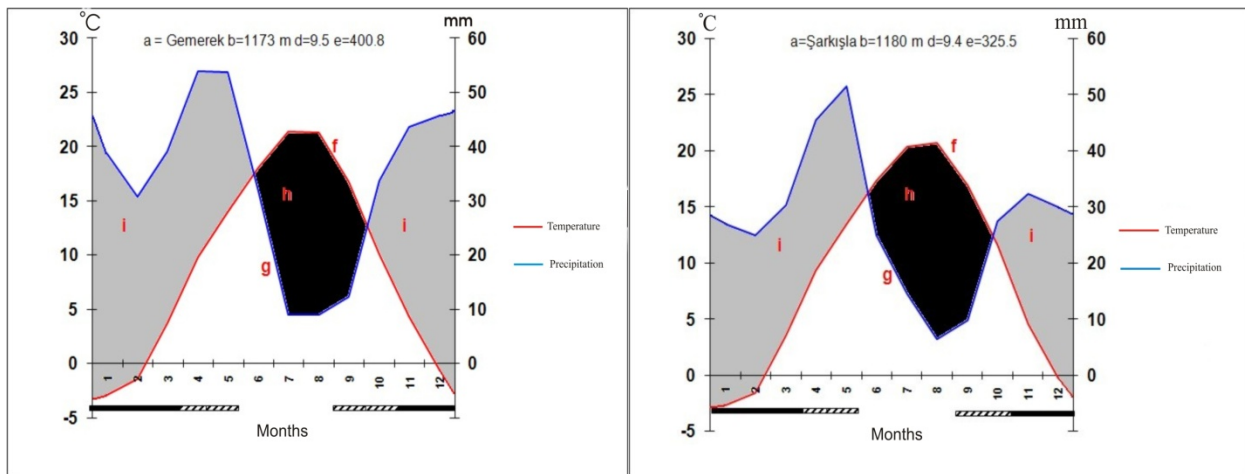


Figure 2. Ombro-thermic climate diagrams

a) meteorological station **b)** altitude **c)** observation (years) **d)** average annual temperature (°C) **e)** average annual precipitation (mm) **f)** temperature **g)** precipitation **h)** dry season **i)** precipitation season **k)** frost months **l)** probable frost months

2. Materials and methods

In 19 botanical trips 1355 plant specimens were collected from the area between 2007-2009. At least one sample for each taxon was prepared by herbarium techniques (Erik et al., 1996) and deposited at HUB. These specimens were identified basically by using Flora of Turkey and The East Aegean Islands (Davis, 1965-1985; 1988, Güner et al., 2000), other floras (Tutin et al., 1964-1980, Komorov, 1933-1964, Townsed et al., 1966-1968) and revisions (Yıldırım, 1988; Leblebici, 1990; Aytac, 1997; Dönmez and Yıldırım, 2000; Doğan and Akaydın, 2006; Yıldırım, 2008). All taxa in the floristic list were given according to Flora of Turkey and The East Aegean Island (Davis, 1965-1985; 1988, Güner et al., 2000), However, some synonyms and combinations (Özhatay vd., 2009, Al-Shehbaz et al., 2007) were given under the taxon name with (=) sign. Autor abbreviations follow Brummit & Powell (1992).

Floristic list is given as appendix. Only two locations were given for common species. Because all the plants were collected from “square B6”, this information was not repeated. In the floristic list the following details stated: family, species, station number, collector number, collection date. Phytogeographical regions of the taxa were given according to Davis (1965) and threat categories of the endemic and rare taxa were given according to Ekim et al. (2000), and revised according to IUCN risk categories (IUCN, 2001).

The new records for the B6 square was evaluated according to Donner and other papers (Ekim vd., 1986, Aytac & Duman, 1995, Dönmez, 2000, Yıldırım, 1996, 1997a, 1997b, 1999a, 1999b, 2000a, 2000b, 2001a, 2001b, 2002a, 2002b, 2003a, 2003b, 2004a, 2004b, 2005a, 2005b, 2006a, 2006b, 2007a, 2007b, 2008a, 2008b) and marked is an asteriks(*) in the floristic list. The findings were compared with the results of the neighbouring areas in terms of phytogeographic elements, number of taxa and endemism.

Abbreviations

Ir.-Tur.: Irano-Turanian; Medit.: Mediterranean; E. Medit.: East Mediterranean; E. Medit. (mt.): East Mediterranean (mountain); Euro-Sib.: Euro-Siberian; Eux.: Euxine; Hyr.-Eux.: Hyrcano Euxine; En.: Endemic; CR: Critically endangered; EN: Endangered; VU: Vulnerable; NT: Near threatened; LC: Least concern; DD: Data deficient; BÖ.:Barış Özüdoğru.

Stations

- 1- Gemerek, Karababa Mountain, south-east slopes of Karasivri hill, *Juniperus excelsa* – *Populus tremula* clearings, K 39° 27' 859", D 36° 06' 918", 1725- 1900 m.
- 2- Gemerek, Karababa Mountain, south slopes of Karasivri hill, *Juniperus excelsa* – *Pinus sylvestris* clearings, rocks, K 39° 28' 004", D 36° 06' 629", 1900 – 2000 m.
- 3- Gemerek, Karababa Mountain, south slopes of Karasivri hill, alpine meadows, K 39° 28' 24.4", D 36° 05' 45.1", 1900 – 2000 m.
- 4- Gemerek, Karababa Mountain, north-east slopes of Karasivri hill, *Astragalus* – *Acantholimon* steppe, rocks, K 39° 28' 729", D 36° 05' 505", 1800 – 2000 m,
- 5- Gemerek, Karababa Mountain, around the Örenyurt plateau, *Juniperus excelsa* clearings, K 39° 28' 24.2", D 36° 07' 13.0", 1780 m.
- 6- Gemerek, Karababa Mountain, east slopes of Karasivri hill, *Astragalus* – *Festuca* steppe, K 39° 28' 23.4", D 36° 06' 30.7", 1900 – 2000 m.
- 7- Gemerek, Karababa Mountain, south-east slopes of Karasivri hill, calcerous rocks, K 39° 28' 23.9", D 36° 06' 05.1", 2000 – 2050 m.
- 8- Gemerek, Karababa Mountain, summit of Karasivri hill, basalt rocks, K 39° 28' 23.9", D 36° 05' 26.8", 2200 m.
- 9- Gemerek, Karababa Mountain, north-west slopes of Karasivri hill, alpine meadows, calcerous rocks, K 39° 28' 24.4", D 36° 05' 19.4", 2000 m.
- 10- Gemerek, Karababa Mountain, Ağsuyun river, dry river bad, K 39° 28' 59.8", D 36° 05' 41.9", 1800 m.
- 11- Gemerek, Karababa Mountain, Çepni plateau, wet meadows, K 39° 28' 25.3", D 36° 04' 06. 3", 2200 m.
- 12- Gemerek, Karababa Mountain, from Çepni plateau to Ağsuyun river, meadows, K 39° 28' 38", D 36° 04' 20. 3", 2075 m.
- 13- Gemerek, Karababa Mountain, Ağsuyun river, meadows, river edge, K 39° 28' 41.4", D 36° 04' 23. 8", 1800 - 2000 m.
- 14- Gemerek, Karababa Mountain, from Örenyurt plateau to Karlık hill, *Juniperus excelsa* clearings, K 39° 28' 42", D 36° 06' 46. 3", 1760-1950 m.
- 15- Gemerek, Karababa Mountain, North-east slopes Karlık hill, calcerous rocks, K 39° 28' 23", D 36° 05' 18.0", 2000 – 2200 m.
- 16- Akdağmadeni, south of Çerçialan village, *Pinus sylvestris* – *Juniperus excelsa* communities, rocks, K 39° 31' 633", D 36° 04' 739", 1800 – 2000 m.
- 17- Şarkışla, Karababa Mountain, Kazıkgeçmez hill, calcerous rocks, K 39° 30' 882", D 36° 06' 0.52", 2100 – 2200 m.
- 18- Şarkışla, Diğnendim hill, *P. sylvestris* forest, K 39° 33' 49", D 36° 09' 22", 1600 – 1900 m.
- 19- Şarkışla, Diğnendim hill, alpine meadows, rocks, K 39° 32' 49", D 36° 08' 21", 1900 – 2000 m.
- 20- Şarkışla, Cehennem river, dry river bad, under *P. sylvestris*, rocks, K 39° 33' 55", D 36° 08' 20", 1550 – 1600 m.
- 21- Akdağmadeni, from Çerçialan village to Karlık hill, *P. sylvestris* – *J. excelsa* communities, K 39° 31' 33", D 36° 04' 28", 1730 – 2000 m.
- 22- Akdağmadeni, between Karlık hill and Kazıkgeçmez hill, calcerous rocks, K 39° 29' 43", D 36° 04' 59", 2000 – 2200 m.
- 23- Akdağmadeni, South of Kızılcaova village, calcerous rocks, K 39° 30' 01", D 36° 01' 17", 1900 – 2000 m.
- 24- Gemerek, from Bulhasan village to Karaba Mountain, calcerous rocks, K 39° 25' 37", D 36° 01' 17", 1830 – 2100 m.
- 25- Şarkışla, between Kurudere-Beyyurdu village, slopes, 39° 31' 52" K, 36° 10' 12" D, 1600-1870 m.

3. Results and conclusions

Between 2007-2009, 1355 plant specimens were collected from the research area. As a result of the identification of the plant specimens 73 families, 314 genera and 680 taxa (659 species, 18 subspecies and 3 variety) were determined from the area. This number includes 12 species could not be collected by us but collected by other researchers. Two taxa were from the Pteridophyta division, and 678 belong to the Spermatophyta division. 4 taxa were Gymnosperms and 674 taxa are Angiosperms. Of the Angiosperms 578 taxa were Dicotyledonae, and 96 taxa were Monocotyledonae. The taxa could be listed according to phytogeographical regions as follows: Ir.-Tur. 188 (27.6%), Euro.-Sib. 74 (10.9%), Medit. 35 (5.2%) , multiregional and phytogeographically unknown 383 (56.3%) (Table 1). The number of the Irano-Turanian elements is higher than Euro-Sib and Medit elements because the study area is located in the Irano-Turanian region. *Pinus sylvestris* forest has significant amount of place in the research area. Because of the species which are grown under this forest are Euro-Siberian element, the ratio of Euro-Sib. element is generally higher than the researches which we compared (Table 2).

Table 1. Distribution of the phytogeographic elements, endemic and non-endemic species

| Phytogeographic regions | Endemics | | Non endemics | | Total | |
|--------------------------|----------|------|--------------|------|--------|------|
| | Number | % | Number | % | Number | % |
| Irano-Turanian | 79 | 11.6 | 109 | 16.0 | 188 | 27.6 |
| Euro-Siberian | 3 | 0.4 | 71 | 10.5 | 74 | 10.9 |
| Mediterranean | 6 | 0.9 | 29 | 4.3 | 35 | 5.2 |
| Multiregional or unknown | 40 | 5.9 | 343 | 50.4 | 383 | 56.3 |
| Total | 128 | 18.8 | 552 | 81.2 | 680 | |

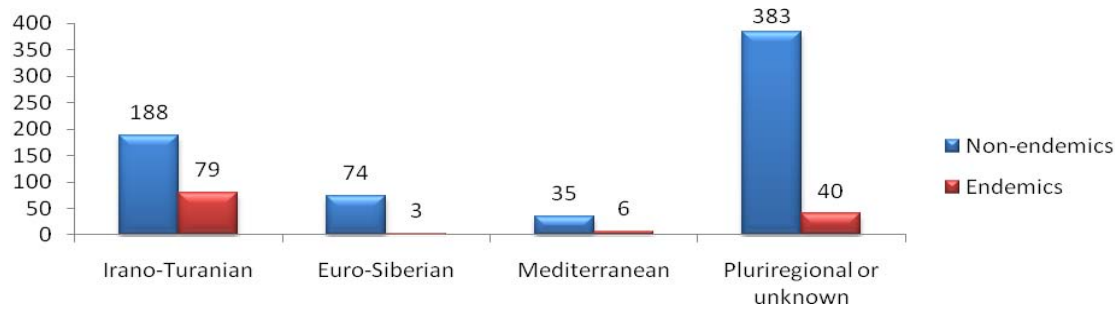


Figure 3: The number and ratio of the phytogeographical elements

128 (18.8 %) of the 680 taxa are endemic. The proportion of endemism in the area is low (18.8%), below the average of Turkey (34%) (Ekim, 2005; Behçet et al., 2009; Akçin et al., 2010; Yıldıztuğay and Küçüködük, 2010). Because of the research area is located Irano-Turanian phytogeographical region, the number of the Irano-Turanian endemics higher than other phytogeographical region endemics (Figure 3).

Table 2. Comparison of the phytogeographical elements (abbreviations are below the table)

| Studies | Irano-Turanian | | Euro-Siberian | | Mediterranean | | Pluriregional or unknown | | |
|---------|----------------|-----|---------------|-----|---------------|----|--------------------------|-----|------|
| | Number | % | Number | % | Number | % | Number | % | |
| Φ | 655 | 182 | 27.8 | 69 | 10.5 | 35 | 5.3 | 348 | 56.4 |
| 1 | 828 | 317 | 38 | 77 | 9.1 | 22 | 2.5 | 426 | 50.4 |
| 2 | 537 | 168 | 31.3 | 49 | 9.1 | 27 | 5.1 | 293 | 54.5 |
| 3 | 340 | 173 | 50.2 | 9 | 2.8 | 14 | 4.3 | 144 | 42.7 |
| 4 | 340 | 100 | 29.2 | 11 | 3.2 | 16 | 5.0 | 213 | 62.8 |
| 5 | 341 | 107 | 31.3 | 19 | 5.6 | 18 | 5.2 | 197 | 57.9 |
| 6 | 555 | 171 | 30.8 | 28 | 5 | 43 | 7.8 | 315 | 56.4 |
| 7 | 976 | 245 | 25.1 | 159 | 16.2 | 32 | 3.2 | 540 | 55.2 |
| 8 | 547 | 203 | 37.1 | 31 | 5.6 | 23 | 4.2 | 290 | 53.0 |
| 9 | 965 | 310 | 32.1 | 91 | 9.4 | 46 | 4.8 | 518 | 53.6 |
| 10 | 926 | 346 | 37.3 | 71 | 7.6 | 42 | 3.8 | 467 | 51.3 |
| 11 | 361 | 126 | 34.9 | 21 | 5.8 | 18 | 5.0 | 196 | 54.8 |

Φ Flora of the Karababa Mountain

1 İncebel Dağları'nın (Kayseri – Sivas) Florası (Ekim and Düzenli 1982)

2 Sıcak Çermik – Yıldızeli (Sivas) Arası Florası (Dağ, 2007)

3 Flora of gypsum areas in Sivas in the eastern part of Cappadocia in Central Anatolia, Turkey (Akpulat and Çelik, 2005)

4 Cemalköy, Gazibey ve Başyayla Köyleri (Alınyayla – Sivas) Florası (Öztürk, 2007)

5 Sivas – Sıcak Çermik Arası Florası (Akpulat and Çelik, 2002)

6 Hınzır Dağları (Kayseri) Bitkileri Üzerinde sistematik ve Fitokimyasal Araştırmalar (Çelik, 1985)

7 Çamlıbel Geçidi ve Yıldız Dağı (Sivas – Tokat) Florası (Civelek, 1992)

8 Taşlıdere (Sivas) Florası (Civelek, 1986)

9 Gövdeli Dağı (Kayseri – Sivas) Florası (Dönmez, 1999)

10 Tecer Dağları (Sivas) Florası (Çelik and Yıldız, 1991)

11 Sivas – Hafik Arası Florası (Dönmez, 1994)

The threat categories of the endemic and non –endemic taxa were evaluated according to IUCN risk categories (Ekim et all 2000, IUCN, 2001). The distribution of the threat categories as follows: 3 endemic taxa in EN, 8 endemic and 1 non-endemic taxa in VU, 10 endemic taxa in NT, 107 endemic and 1 non-endemic taxa in LC (Table 3). Two taxa (*Hieracium cappadocicum* Freyn and *Tanacetum corymbosum* (L)Sch. in DD categories reevaluated. *H. cappadocicum* is present in some neighboring areas (1, 3, 6, 8, 9, 10), because of its occupancy is less than 20000 km², severely fragmented and known to exist at no more than 10 locations, according to World Conservation Union (IUCN, 2001) it is proposed for Vulnerable (VU) status. From our herbarium visits it was recognised that *T. corymbosum* is collected from many parts of Turkey therefore it is proposed for LC.

According to taxa number the largest families in the area are *Asteraceae* (91), *Brassicaceae* (62), *Fabaceae* (51), *Poaceae* (46) and *Lamiaceae* (44). The comparison of the largest families with neighboring areas given in Table 4.

Table 3. The distribution of the threat category

| Threat Category | Endemics | Non endemics |
|-----------------|----------|--------------|
| EN | 3 | - |
| VU | 8 | 1 |
| NT | 10 | - |
| LC | 107 | 1 |

Three largest families in Flora of Turkey are *Asteraceae*, *Fabaceae* and *Lamiaceae* (Erik and Tarıkahya, 2004), but in areas number 4, 6 and 8 and our area Brassicaceae is the second family. All of these 4 researches are researches which are close to each other geographically and they have similar geologic, geomorphologic, microclimatic and edaphic features.

Table 4. Comparison of largest families in Karababa Mountain and neighbouring areas

| | Φ | Floristic studies | | | | | | | | | | |
|------------------|----|-------------------|----|----|----|----|----|-----|----|-----|-----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Asteraceae | 91 | 110 | 74 | 61 | 48 | 53 | 87 | 140 | 89 | 133 | 140 | 62 |
| Brassicaceae | 62 | 56 | 44 | 24 | 37 | 40 | 42 | 69 | 58 | 76 | 80 | 33 |
| Fabaceae | 51 | 89 | 59 | 39 | 34 | 41 | 36 | 82 | 47 | 90 | 91 | 39 |
| Poaceae | 46 | 44 | 26 | 10 | 14 | 9 | 23 | 53 | 12 | 54 | 31 | 12 |
| Lamiaceae | 44 | 65 | 43 | 38 | 32 | 30 | 40 | 51 | 42 | 78 | 89 | 34 |
| Caryophyllaceae | 42 | 55 | 23 | 21 | 17 | 20 | 37 | 56 | 25 | 67 | 60 | 18 |
| Scrophulariaceae | 28 | 36 | 21 | 13 | 13 | 8 | 19 | 40 | 18 | 34 | 37 | 17 |
| Apiaceae | 28 | 44 | 17 | 16 | 16 | 12 | 27 | 43 | 35 | 39 | 36 | 19 |
| Boraginaceae | 25 | 30 | 21 | 16 | 14 | 16 | 16 | 10 | 27 | 31 | 23 | 14 |
| Rosaceae | 25 | 34 | 16 | 5 | 8 | 5 | 26 | 45 | 24 | 37 | 40 | 6 |

Table 5. Comparison of the largest genera in Karababa Mountain and neighbouring areas

| | Φ | Floristic studies | | | | | | | | | | |
|------------|----|-------------------|----|----|----|----|----|----|----|----|----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Astragalus | 20 | 37 | 18 | 17 | 11 | 11 | 14 | 25 | 16 | 32 | 33 | 11 |
| Silene | 17 | 17 | 6 | 7 | 4 | 4 | 15 | 20 | 10 | 23 | 21 | 6 |
| Centaurea | 12 | 13 | 11 | 13 | 7 | 7 | 8 | 12 | 12 | 15 | 21 | 8 |
| Alyssum | 10 | 14 | 9 | 4 | 11 | 4 | 9 | 15 | 9 | 16 | 15 | 5 |
| Salvia | 10 | 17 | 10 | 13 | 8 | 9 | 10 | 13 | 12 | 14 | 23 | 6 |

59 species are new records for the square B6 (Donner, 1990). New square records are indicated with an asteriks (*) in the floristic list. Different and enlarged species characters were given at the table 5. and some of them discussed in detail under the taxon name in the floristic list.

Table 5. The enlarged character of species

| Taxon | Flora of Turkey | Added |
|---|--|--|
| <i>Aethionema caespitosum</i> | Leaves glabrous | Some leaves ciliate |
| <i>Alyssum bornmuelleri</i> | Styles less than ½ as long as fruits, raceme 10-15 fruited | Styles more than ½ as long as fruits, raceme 5-8 fruited |
| <i>Androsace armeniaca</i> var. <i>macrantha</i> | Hairs forked | Hairs not forked |
| <i>Asperula orientalis</i> | Leaves broad 1,5 – 5 mm | Leaves broad 0,7 -0,8mm |
| <i>Campanula pulvinaris</i> | Stem 1 (2-3) flowered | Stem 1-6 flowered |
| <i>Crocus ancyrensis</i> | Altitude 1000-1600 m | Altitude to 2100 m |
| <i>Helichrysum chionophyllum</i> | Capitula 8-12 mm | Capitula 5-9 mm |
| <i>Nepeta nuda</i> subsp. <i>albiflora</i> | Bracts less than calyx tube | Bracts as long as calyx tube |
| <i>Pedicularis cadmea</i> | Corolla 23-27 mm long | Corolla 12-17 mm long |
| <i>Pimpinella tragium</i> subsp. <i>polyclada</i> | Leaves segments 1-2 cm | Leaves segments 0.7-2.2 cm |
| <i>Salvia sclarea</i> | Corolla 20-30 mm long | Corolla 14-16 mm long |
| <i>Thesium cilicicum</i> | Flowers 4.5-5(-6) mm long | Flowers 2,7-3 mm long |
| <i>Thlaspi lilacinum</i> | Styles 2 mm in fruit | Stilus 2.5-3 mm in fruit |

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<http://maps.google.com>

APPENDIX**Floristic List****PTERIDOPHYTA****EQUICETACEAE**

Equisetum arvense L., (20) BÖ 1650, 19.04.2008.

ATHYRACEAE

Cystopteris fragilis (L.) Bernh. (8) BÖ 1135, 20.05.2007, (10) BÖ1162, 20.05.2007.

SPERMATOPHYTAs**GYMNOSPERMAE****PINACEAE**

Pinus sylvestris L. (1) BÖ 1184, 09.06.2007, Euro-Sib.

CUPRESSACEAE

- **Juniperus communis* L. subsp. *alpina* (Sm) Čelak (18) BÖ 1550, 20.08.2007.
- J. oxycedrus* L. subsp. *oxycedrus*, (1) BÖ 1291, 04.07.2007.
- J. excelsa* M.Bieb. (1) BÖ. 1008, 15.04.07.
- RANUNCULACEAE**
- Caltha polypetalata* Hochst. Ex Lorent (11) BÖ 1226, 09.06.2007
- Delphinium dasystachyum* Boiss. & Balansa, (1) BÖ1465, 27.07.2007, (5) BÖ 1479, 27.07.2007, (19) BÖ 2254, 12.08.2008. End. "LC". Ir-Tur.
- Consolida orientalis* (Gay.) Schröd., (20) BÖ1996-B. Tarkahya, D. Töre & Ö. Öztürk, 02.07.2008.
- Adonis flammea* Jacq., (20) BÖ 1736, 06.05.2008
- Ranunculus kotschyi* Boiss., (18) BÖ1680, 05.05.2008, (18) BÖ 1764-T. Açar, 02.06.2008.
- **R. grandiflorus* L., (19) BÖ 1706, 05.05.2008.
- R. constantinopolitanus* (DC.) d'Urv. (20) BÖ 1726, 06.05.2008, (20) BÖ 1873, 03.06.2008.
- R. damascenus* Boiss. & Gaill., (19) BÖ 1850 – T. Açar, 02.06.2008.
- R. argyreus* Boiss., (1) BÖ 1095, 20.05. 2007, (7) BÖ 1203, 09.06.2007.
- R. isthmicus* Boiss. subsp. *stepporum* P.H.Davis, (20) BÖ 1740, 06.05.2008.
- R. arvensis* L., (20) BÖ. 1738, 06.05.2008.
- R. kochii* Ledeb, (1) BÖ1014, 15. 04. 2007, (19) BÖ 1638, 18.04.2008, Ir-Tur.
- Ceratocephalus falcatus* (L.) Pers., (19) BÖ 1631, 18.04.2008.
- Thalictrum isopyroides* C. A. Mey. (19) BÖ1714, 05.05.2008.
- T. flavum* L., (20) BÖ. 2230, 16.07.2008.
- PAEONIAEAE**
- Paeonia mascula* (L.) Miller subsp. *arietina* (Anders.) Cullen & Heywood, (3) BÖ 1216, 09.06.2007.
- BERBERIDACEAE**
- Berberis crataegina* DC., (1) BÖ 1183, 09.06.2007, Ir – Tur.
- PAPAVERACEAE**
- Glaucium corniculatum* (L.) J.H. Rudolph subsp. *refractum* (Nábélek) Cullen, (24) BÖ2137 – B. Tarkahya, D. Töre & Ö. Öztürk, 03.07.2008, Ir – Tur.
- Papaver triniifolium* Boiss., (10) BÖ 1245, 09.06.2007, End. "LC". Ir – Tur.
- **P. polychaetum* Schott & Kotschy, (16) BÖ 2388, 28.06.2009, End. "LC".
- P. macrostomum* Boiss. & A.Huet ex Boiss., (20) BÖ 1916, 03. 06. 2008, Ir – Tur.
- P. rhoeas* L., (20) BÖ 1912-T. Açar, 03.06.2008.
- P. lacerum* Popov, (20) BÖ 2006, 02.07.2008, (20) BÖ 1917 – T. Açar, 03.06.2008.
- P. commutatum* L., (10) BÖ 1249, 09.06.2007.
- P. dubium* L., (10) BÖ 1433, 27.07.2007.
- P. argemone* L. (18) BÖ 1669, 05.05.2008.
- Corydalis solida* (L.) Swartz. subsp. *solida*, (18) BÖ1620, 18.04.2008, (20) BÖ1658, 20.04.2008.
- C. rutifolia* (Sibth. & Sm.) DC. subsp. *erdélii* (Zucc.) Cullen & P.H.Davis, (1) BÖ 1015, 15.04.2007, (18) BÖ 1627, 18.04.2008.
- Fumaria asepalata* Boiss, (20) BÖ 1734, 06.05.2008, BÖ 1750, 07.05.2008, Ir – Tur.
- BRASSICACEAE**
- Brassica elongata* Ehrh., (20) BÖ 2335, 27.06.2009.
- Sinapis arvensis* L., (20) BÖ 2272, 28.09.2008.
- Raphanus sativus* L., (20) BÖ 2285, 29.09.2008.
- C. planisliqua* Fisch. & C. A. Mey., Sivas: Şarkışla, Kavak-Cehennemdere arası, Kalker kayalık, 1450 m, 23.07.1979, Ekim 4060, Ir-Tur.
- Conringia perfoliata* (C.A. Mey.) N.Busch, (20) BÖ1895-T. Açar, 03.06.2008.
- Cardaria draba* (L.) Desv. subsp. *draba*, (5) BÖ 1167, 09.06.2007.
- =*Lepidium draba* L.
- Isatis cappadocica* Desv. subsp. *cappadocica*, (19) BÖ 1703, 05.05.2008, Ir – Tur.
- **I. cappadocica* Desv. subsp. *gudrunensis* (Boiss.) Yıldırım, (6) BÖ 1111, 20.05.2007, (10) BÖ 1252, 09.06.2007, (19) BÖ 1825, 02. 06. 2008, Ir – Tur.
- **I. cappadocica* Desv. subsp. *macrocarpa* (Jaub. & Spach) P.H.Davis, (10) BÖ 1252, 09.06.2007, Ir-Tur.
- I.glauca* Aucher ex Boiss. subsp. *glauca*, (20) BÖ 2289, 01.10.2008, Ir-Tur.
- Iberis taurica* DC., (20) BÖ 1747, 06.05.2008, (20) BÖ 1884-T. Açar, 03.06.08.
- Aethionema arabicum* (L.) Andr. ex DC., (1) BÖ 1098, 20.05.2007, (10) BÖ 1243, 09.06.2007, (20) BÖ 1759, 07.05.2008, (20) BÖ 1742, 06.05.2008.
- Ae. cordatum* (Desf.) Boiss., (19) BÖ 1849-T. Açar, 02.06.2008, Ir – Tur.
- Ae. speciosum* Boiss. & A.Huet, (4) BÖ 1147, 20.05.2007, (22) BÖ 1938, 04.06.2008, Ir – Tur.
- Ae. oppositifolium* (Pers.) Hedge, (4) BÖ 1025, 15.04.2007.
- Ae. iberideum* (Boiss.) Boiss. (4) BÖ 1024, 15.04.1007, (4) BÖ 1146, 20.05.2007, (6) BÖ 1103, 20.05.2007, (19) BÖ 1641, 18.04.2008, (21) BÖ 1945 – T. Açar, 04.06.2008.
- Ae. caespitosum* (Boiss.) Boiss. (9) BÖ 1138, 20.05.2007, (19) BÖ 1643, 18.04.2008, End. "NT".
- Ae. armenum* Boiss., (20) BÖ 1717, 02.07.2008, (23) BÖ 2103, 02.07.2008, Ir – Tur.
- Ae. grandiflorum* Boiss. & Hohen., (10) BÖ 1158, 20.05.2007, Ir – Tur.
- Thlaspi arvense* L. (20) BÖ 1891-T. Açar, 03.06.2008.
- T. perfoliatum* L.
- = *Microthlaspi perfoliatum* (L.) F. K. Mey., (1) BÖ 1019, 15.04.2007, (18) BÖ 1613, 18.04.2008, (20) BÖ 1744, 06.05.2008, (18) BÖ 1674, 05.05.2008.
- T. violascens** Boiss.
- = *Noccaea violascens* (Schott & Kotschy) F. K. Mey., (18) BÖ 1673, 05.05.2008, End. "LC".
- T. lilacinum* Boiss. & A.Huet. (18) BÖ 1683, 05.05.2008, End. "LC".
- Although the length of the plant is given 8-20 cm in flora of Turkey, in our specimens it can reach up to 30 cm.
- "apical sinus absent" expression which is given in species description is only relevant to the mature fruit. apical sinus can be seen in immature fruits, therefore identification must be done with mature fruit.
- Capsella bursa – pastoris* (L.) Medik, (19) BÖ 1701, 05.05.2008, BÖ 1745, 06.05.2008.
- Bunias orientalis* L., (20) BÖ 2411, 28.06.2009.
- Fibigia clypeata* (L.) Medik., (18) BÖ 2187, 16.07.2008, (18) BÖ 1546, 20.08.2007.
- F. eriocarpa* (DC.) Boiss., (18) BÖ 1771-T. Açar, 02.06.2008.
- Alyssum linifolium* Steph. ex Willd. var. *linifolium*, (20) BÖ 1733, 06.05.2008.
- A. desertorum* Stapf. var. *desertorum*, (20) BÖ 1743, 06.05.2008, (20) BÖ 1654, 19.04.2008.
- A. minus* (L.) Rothm var. *micranthum* (C. A. Mey.) T. R. Dudley = *Alyssum simplex* Rudolphi, (19) BÖ 1851, 02.06.2008, (20) BÖ 1875, 03.06.2008.
- A. trichocarpum* T.R.Dudley & Hub – Mor., (22) BÖ 1937 – T. Açar, 04.06.2008, End. "VU".
- A. pseudo - mouradicum* Hausskn. & Bornm. ex J.Baumgartner, (24) BÖ 2143, 03. 07. 2008, End. "LC".
- A. bornmuelleri* Hausskn. ex Degen, (7) BÖ 1122, 20.05.2007, (4) BÖ 1152, 20.05.2007, (9) BÖ 1224, 09.06.2007, (19) BÖ 1709, 05.05.2008, End. "VU".
- A. pateri* Nyár. subsp. *pateri*, (20) BÖ 2052, 02. 07. 2008, End. "LC". Ir – Tur.
- A. condensatum* Boiss. & Hausskn. subsp. *flexibile* (Nyár.) T.R.Dudley, (20) BÖ 1604, 27.09.2007.
- A. filiforme* Nyár., (23) BÖ 2099, 02. 07. 2008, End. "LC". Ir – Tur.
- A. murale* Wallst. & Kit. subsp. *murale* var. *murale*, (1) BÖ 1455, 27.07.2007.
- Draba bruniifolia* Steven subsp. *bruniifolia* (7) BÖ 1116, 20.05.2007, (19) BÖ 1642, 18.04.2008
- D. bruniifolia* Steven subsp. *olympica* (Sibth. ex DC.) Code & Cullen, (4) BÖ 1026, 15.04.2007
- D.nemorosa* L. (19) BÖ 2304, 16.05.2009.
- Erophila verna* (L.) Chevall subsp. *verna*
- = *Draba verna* L., (19) BÖ 1633, 18.04.2008, (20) BÖ 1667, 20.04.2008
- Arabis caucasica* Willd. subsp. *caucasica*
- (5) BÖ1027, 15.04.07, (6) BÖ 1112, 20.05.2007, (18) BÖ 1622, 18.04.2008.
- **A. sagittata* (Bertol.) DC., (20) BÖ 1852, 03.06.2008.
- A. nova* Vill. (18) BÖ 1696, 05.05.2008.

- Turritis glabra* L. (20) BÖ 1862–T. Açar, 03.06.2008.
T. laxa (Sibth. & Sm.) Hayek (18) BÖ 1682, 05.05.2008.
Nasturtium officinale R. Br., (20) BÖ 1856, 02.06.2008.
Barbarea trichopoda Hausskn. ex Bornm., (18) BÖ 1690, 05.05.2008, End. “NT”.
B. plantaginea DC., (20) BÖ 1858–T. Açar, 02.06.2008.
Drabopsis verna C. Koch (25) BÖ 2315, 17.05.2009, Ir – Tur.
 **Chorisporea tenella* (Pall.) DC., (3) BÖ 1134, 20.05.2007.
Hesperis bicuspidata (Willd.) Poir., (1) BÖ 1086, 20.05.2007, (17) BÖ 1414, 09.07.2007.
Malcolmia africana (L.) R. Br. = *Strigosella africana* (L.) Botsch, (20) BÖ 1735, 06.05.2008.
Anchonium elichrysofolium (DC.) Boiss. subsp. *canescens* (Hausskn. ex Bornm.) Cullen & Code, (7) BÖ 1119, 20.05.2007, (22) BÖ 1948, 04.06.2008, (19) BÖ 2210, 16. 07. 2008, End. “LC”. Ir – Tur.
Erysimum cuspidatum (M.Bieb.) DC. (20) BÖ 1892, 03.06.2008.
E. sintenianum Bornm., (19) BÖ 1704, 05.05.2008. End. “LC”. Ir – Tur.
E. thyrsoides Boiss subsp. *thyrsoides*, (6) BÖ 1107, 20.05.2007, (20) BÖ 1665, 20. 04. 2008, (10), BÖ 1439, 27. 07. 2007, End. “LC”.
 **E. diffusum* Ehrh., (20) BÖ 1597, 27.09.2007, (20) BÖ 2022, 02.07.2008.
E. crassipes Fisch & Mey., (20) BÖ 2259, 12. 08. 2008, (20) BÖ 1859, 03.06.2008.
Descuriana sophia (L.) Webb ex Prantl, (3) BÖ 1133, 20.05.2007,
Camelina rumelica Velen., (20) BÖ 1746, 06.05.2008.
C.hispida Boiss. var. *hispida*, (20) BÖ 1987- B. Tarıkahya, D. Töre & Ö. Öztürk, 02.07.2008
- RESEDACEAE**
Reseda lutea L. var. *lutea*, (10) BÖ 1444, 27.07.2007.
- CISTACEAE**
Cistus laurifolius L., (18) BÖ 2070 – B. Tarıkahya, D. Töre & Ö. Öztürk, 02.07.2008, Med.
Helianthemum nummularium (L.) Miller subsp. *nummularium*, (1) BÖ 1094, 20.05.2007,
H. canum (L.) Baumg., (14) BÖ1264, 10.06.2007, (17) BÖ 1409, 09.07.2007.
 The specimens BÖ 2369 and 2395 are not classified in any group according to the artificial group key which was given under the species description in Flora of Turkey. In the key groups are differing according to hair state which are stellate or simple. In our specimens 4-hairs which grow from the same tubercule nor simple neither stellate but lean to the same direction.
- VIOLACEAE**
Viola odorata L., (18) BÖ 1616, 18.04.2008.
V. siehana Becker, (25) BÖ 2312, 17.05.2009.
V. occulta Lehm., (18) BÖ 1628, 18.04.2008, (20) BÖ 1749, 06.05.2008.
 **V. parvula* G.Tineo, (1) BÖ.1017, 15.04.2007, (18) BÖ 1629, 09.02.2009.
- POLYGALACEAE**
Polygala supina Schreb., (20) BÖ 2334, 27.06.2009.
P. pruinosa Boiss. subsp. *pruinosa*, (20) BÖ 1896, 03.06.2008.
P. anatolica Boiss. & Heldr., (14) BÖ 1261, 10.06.2007, (18) BÖ 1793, 02.06.2008.
- CARYOPHYLLACEAE**
Arenaria serpyllifolia L., (19) BÖ 1806, 02.06.2008, (20) BÖ 1886, 03.06.2008.
A.cucubaloides Smith, (12) BÖ 1228, 09. 06. 2007, Ir – Tur.
A. ledebouriana Fenzl. var. *ledebouriana*, (20) BÖ 2041, 02.07.2008, (23) BÖ 2113, 02.07.2008, End.“LC”.
A. drypidea Boiss., (2) BÖ 1306, 04. 07. 2007, End. “LC”. Ir – Tur.
Minuartia hirsuta (M.Bieb.) Hand.–Mazz. subsp. *falcata* (Griseb.) Mattf., (18) BÖ 1772, 02.06.2008
 **M. recurva* (All.) Schilz & Thell. subsp. *oreina* (Mattf.) McNeill, (12) BÖ 1227, 09.06.2007.
M. juniperina (L.) Maire & Petitm., (13) BÖ 1230, 09.06.2007.
M. umbellulifera (Boiss.) McNeill subsp. *umbellulifera* var. *umbellulifera*, (23) BÖ 2127, 02.07.2008, (7) BÖ 1333, 04.07.2007, (17) BÖ 1407, 09.07.2007, End. “LC”.
M. hamata (Hausskn.) Mattf., (20) BÖ 1885, 03.06.2008.
M. anatolica (Boiss.) Woron. var. *arachnoidea* McNeill, (20) BÖ 2039, 02.07.2008, End. “LC”. Ir–Tur.
- M. erythrosepala* (Boiss.) Hand.–Mazz. var. *cappadocica* (Boiss.) McNeill, (7) BÖ 1208, 09.06.2007, (14) BÖ 1265, 10.06.2007, End. “LC”. Ir – Tur.
Stellaria holostea L., (16) BÖ 2092, 02.07.2008, (18) BÖ 1684, 05.05.2008.
Cerastium chlorifolium Fisch. & C.A.Mey., (20) BÖ 1727, 06.05.2008, (19) BÖ 1833, 02.06.2008.
C. dichotomum L. subsp. *dichotomum*, (6) BÖ 1113, 07.11.2007.
Holosteum umbellatum L. var. *umbellatum*, (20) BÖ 1651, 19.04.2008.
 **Dianthus strictus* Banks. & Sol. var. *strictus*, (10) BÖ 1420, 27.07.2007.
D. zederbaueri Vierh. (7) BÖ 1207, 06. 2007, (9) BÖ 1351, 04. 07. 2007, (16) BÖ 1398, 09. 07. 2007, End. “LC”. Ir – Tur.
D. crinitus Sm. var. *crinitus*, (1) BÖ 1293, 04.07.2007, (19) BÖ 2211, 16.07.2008.
D. engleri Hausskn. & Bornm., (7) BÖ 1344, 04.07.2007, (9) BÖ 1352, 04.07.2007, (23) BÖ 2105, 02.07.2008, End. “NT”. Ir – Tur.
D. zonatus Fenzl. var. *hypochlorus* (Boiss. & Heldr.) Reeve, (10) BÖ 1438, 27.07.2007.
D. calocephalus Boiss., (1) BÖ 1168, 09.06.2007, (20) BÖ 2014, 02.07.2008
Petrorhagia alpina (Habl.) P.W.Ball & Heywood subsp. *olympica* (Boiss.) P.W.Ball & Heywood, (20) BÖ 2051, 02.07.2008, (23) BÖ 2132, 02.07.2008.
Saponaria glutinosa M.Bieb., (18) BÖ 2188, 16.07. 2008.
S. prostrata Willd. subsp. *prostrata* (20) BÖ 2226, 16.07.2008, End. “LC”. Ir – Tur.
Vaccaria pyramidata Medik. var. *grandiflora* (Fisch. ex DC) Cullen, (20) BÖ 2028, 02.07.2008.
Silene italica (L.) Pers., (18) BÖ 2061, 02.07.2008.
S. marschallii C. A. Mey., (19) BÖ 1838, 02. 06. 2008, (21) BÖ 1925, 04.06.2008, Ir–Tur.
S. armena Boiss. var. *armena*, (20) BÖ 1596, 27. 09. 2007, (20) BÖ 2001, 02.07.2008, End. “LC”.
S. spergulifolia (Desf.) M.Bieb., (23) BÖ 2061, 02.07.2008, (21) BÖ 1928, 04.06.2008, Ir–Tur.
S. supina M.Bieb. subsp. *pruinosa* (Boiss.) Chowdhuri, (20) BÖ 2035, 02.07.2008.
S. montbretiana Boiss., (18) BÖ 1783, 02.06.2008, (20) BÖ 1853, 03. 06. 2008, Ir – Tur.
S. arguta Fenzl., (19) BÖ 1804, 02.06.2008, Ir – Tur.
S. dianthoides Pers., (7) BÖ 1204, 09.06.2007, (19) BÖ 1805, 02.06.2008, Ir – Tur.
S. odontopetalia Fenzl. (20) BÖ 1591, 27.09.2007.
S. vulgaris (Moench) Garcke var. *vulgaris*, (18) BÖ 2180, 16.07.2008.
S. caryophylloides (Poir.) Oth subsp. *caryophylloides*, (24) BÖ 2148, 03.07.2007, Ir–Tur.
S. caryophylloides (Poir.) Oth subsp. *mashmenaea* (Boiss.) Coode & Cullen, (23) BÖ 2117, 02. 07. 2008, End. “LC”.
S. nuncupanda Coode & Cullen, (4) BÖ 1505, 30.07.2007, End. “LC”.
S. compacta Fischer, (1) BÖ 1450, 27.07.2007, (18) BÖ 1552, 25. 09. 2007.
S. alba (Miller) E.H.L.Krause subsp. *divaricata* (Reichb.) Walters =*S. pratensis* (Rafn) Gren. & Godr. subsp. *divaricata* (Reichnb.) McNeill & H. C. Prent., (13) BÖ 1236, 09.06.2007.
S. alba (Miller) E.H.L.Krause subsp. *ericalycina* (Boiss.) Walters =*S. pratensis* (Rafn) Gren. & Godr. subsp. *ericalycina* (Boiss.) McNeill & H. C. Prent., (20) BÖ 1592, 27.09.2007 , (19) BÖ 1844, 02.06.2008, (18) BÖ 1784, 02.06.2008.
S. conica L., (20) BÖ 1876, 03.06.2008, (20) BÖ 2000, 02.07.2008.
- ILLECEBRACEAE**
Herniaria glabra L., (20) BÖ 1599, 27. 09. 2007, (20) BÖ 2015, 02.07.2008
H. incana Lam., (20) BÖ 1900, 03.06.2008, (23) BÖ 2115, 02.07.2008.
Paronchia kurdica Boiss. subsp. *kurdica* var. *kurdica*, (16) BÖ 2383, 28.06.2009.
P. argyroloba Stapf, (16) BÖ 1391, 09.07.2007, End. “NT”.
P. galatica Chaudhri, (6) BÖ 1198, 09.06.2007, End. “LC”.
Scleranthus uncinatus Schur., (19) BÖ 2291, 03.10.2008.

POLYGONACEAE

- Polygonum bistorta* L. subsp. *bistorta* (13) BÖ 1234, 09.06.2007, Euro-Sib.
P. cognatum Meisn., (19) BÖ. 1846, 02.06.2008.
P. aviculare L. (20) BÖ. 2286, 01.10. 2008.
Rumex acetosella L., (2) BÖ 1303, 04.07.2007, (20) BÖ 1854, 03.06. 2008.
R. scutatus L., (4) BÖ, 1373, 04.07.2007, (10) BÖ 1510, 30.07.2007.
 **R. tuberosus* L. subsp. *tuberosus*, (19) BÖ 1579, 25.09.2007.
R. tuberosus L. subsp. *horizontalis* (C.Koch) Rech.f., (10) BÖ 1375, 04.07.2007.
R. angustifolius Campd. subsp. *angustifolius*, (4) BÖ 1151, 20. 05. 2007, Ir – Tur.

R. crispus L., (10) BÖ 1424, 27.07.2007.

CHENOPODIACEAE

- Beta lamatogona* Fisch. & C.A.Mey., (19) BÖ 2251, 12.08.2008, Ir – Tur.
Chenopodium botrys L., (10) BÖ 1436, 27.07.2007.
C. foliosum (Moench) Aschers., (16) BÖ 1531, 20.08.2007, (20) BÖ 1903, 03.06.2008.
C. album L. subsp. *album* var. *album*, (20) BÖ 1607, 27.09.2007.

AMARANTHACEAE

Amaranthus retroflexus L., (20) BÖ 2288, 01.10.2008.

TAMARICACEAE

Myricaria germanica (L.) Desv., (20) BÖ.1902, 03.06.2008.

HYPERICACEAE

- Hypericum elongatum* Ledeb. subsp. *elongatum*, (18) BÖ 1770, 02.06.2008, (19) BÖ 1807, 02.06.2008, (23) BÖ 2133, 02.07.2008, Ir – Tur.
H. elongatum Ledeb. subsp. *microcalycinum*, (Boiss. & Heldr.) Robson (20) BÖ 1994, 02.07.2008, Ir – Tur.
H. thymbrifolium Boiss. & Noé, (16) BÖ 1386, 09.07.2007, End. “LC”. Ir – Tur.
H. scabrum L., (6) BÖ 1202, 09.06.2007, (21) BÖ 1918, 04.06.2008, Ir – Tur.
H. origanifolium Willd., (19) BÖ 2212, 16.07.2008.
H. perforatum L., (20) BÖ 1602, 27.09.2007, (18) BÖ 2165, 16.07.2008.

MALVACEAE

Malva neglecta Wallr., (10) BÖ 1447, 27.07.2007, (19) BÖ 1581, 25.09.2007.

Alcea biennis Winterl, (20) BÖ 2290, 29.09.2008.

LINACEAE

Linum tenuifolium L., (20) BÖ 2229, 06.08.2008, (18) BÖ 2080, 02.07.2008.
L. obtusatum (Boiss.) Stapf, (4) BÖ 1154, 20.05.2007, (18) BÖ 1693, 05.05.2008, (22) BÖ 1946, 04.06.2008, End. “LC”. Ir–Tur.

GERANIACEAE

- Geranium tuberosum* L. subsp. *tuberosum*, (1) BÖ 1093, 20.05.2007.
G. pyrenaicum Burm F. (14) BÖ 1262, 10.06.2007, (16) BÖ 1394, 09.07.2007,
G. cinereum Cav. subsp. *subacaulescens* (L’Hér. ex DC.) Hayek var. *subacutum* (Boiss.) P.H.Davis & Roberts, (6) BÖ 1104, 20.05.2007, (18) BÖ 1711, 05.05.2008, End. “LC”. Ir–Tur.
Erodium absinthoides Willd. subsp. *absinthoides* (7) BÖ 1118, 20. 05. 2007, (24) BÖ 2149 – B. Tankahya, D. Töre & Ö. Öztürk, 03.07.2008, End. “LC”. Ir–Tur.
E. cicutarium (L.) L’ Hér subsp. *cutarium*, (20) BÖ 1663, 20.04.2008.

RUTACEAE

Haplophyllum telephioides Boiss., (1) BÖ 1082, 20.05.2007, End. “LC”. Ir–Tur.

ACERACEAE

Acer hyrcanum Fisch. & C.A.Mey. subsp. *hyrcanum* (16) BÖ 2376, 28.06.2009, Euro – Sib. (Det: H. Altınözülü)

CELASTRACEAE

Euonymus verrucosus Scop., (18) BÖ 1553, 25.09.2007, (21) BÖ 1920, 03.06.2008.

FABACEAE

- Genista albida* Willd., (1) BÖ 1182, 09.06.2007, (22) BÖ 1864, 04.06.2008.
Astragalus haussknechtii Bunge, (22) BÖ 1932, 04.06.2008, End. “NT”. Ir–Tur.

- A. densifolius* Lam. subsp. *densifolius*, (18) BÖ 2174, 16.07.2008, End. Ir–Tur.
A. listoniae Boiss., (18) BÖ 2160, 16.07.2008, (20) BÖ 2265, 16.08.2008, End. “VU”. Ir–Tur.
A. nanus DC., (23) BÖ 2104– B. Tankahya, D. Töre & Ö. Öztürk, 02.07.2008.
A. tauricolus Boiss., (6) BÖ 1110, 20.05.2007, (13) BÖ 1233, 09.06.2008, End. “LC”. Ir–Tur.
A. fraxinifolius DC., (1) BÖ 1491, 30.07.2007, Ir–Tur.
A. melanophrurius Boiss., (18) BÖ 1801, 02.06.2008, End. “NT”. Ir–Tur.
A. pinetorum Boiss., (20) BÖ 2021, 02.07.2008, End. “LC”. Ir – Tur.
 **A. barba-jovis* DC. var. *candicans* Širj., (1) BÖ 1480, 27.07.2007, End. Ir–Tur.
A. compactus Lam. (18) BÖ 2423-T.Ağar & G. Zarre, 17.07.2009, End. “LC”. Ir–Tur.
A. podperae Širj., (24) BÖ 2151, 03.07.2008, End. Ir–Tur.
A. brachypterus Fisch., (2) BÖ 1308, 04.07.2007, End. “LC”. Ir – Tur.
A. lagurus Willd., (1) BÖ 1481, 27.07.2007, Ir–Tur.
A. lineatus Lam. var. *lineatus*, (18) BÖ 1785, 02.06.2008,
A. ornithopodioides Lam., (20) BÖ 1894–T. Ağar, 03.06.2008, Ir–Tur.
 **A. alyssoides* Lam. (9) BÖ 1223, 09.06.2007, (15) BÖ 1274, 10.06.2007, Ir–Tur.
A. hirsutus Vahl, (4) BÖ 1153, 20.05.2007, (19) BÖ 1823, 02.06.2008, End. “LC”.
A. fragrans Willd., (20) BÖ 1879, 03.06.2008, Ir – Tur.
A. spruneri Boiss., (4) BÖ 1148, 20.05.2007, (18) BÖ 1672, 05.05.2008.
A. angustifolius Lam. subsp. *angustifolius* var. *angustifolius*, (7) BÖ 1206, 09.06.2007, (15) BÖ 1268, 10.06.2007, (23) BÖ 2124, 02.07.2008.
Vicia cracca L. subsp. *stenophylla* Velen, (1) BÖ 1179, 09.06.2007.
V. truncatula Fisch. ex M.Bieb., (18) BÖ 1796, 02.06.2008, Euro–Sib.
Lathyrus brachypterus Čel. var. *brachypterus*, (16) BÖ 2374, 28.06.2009, End. “LC”. Ir–Tur.
L. pratensis L., (18) BÖ 2167, 16.07.2008, Euro–Sib.
L. czeczottianus Bässler, (18) BÖ 1790, 02.06.2008, End. “LC”.
L. roseus Steven (18) BÖ 2079, 02.07.2008, Hyr.–Eux.
Ononis spinosa L. subsp. *leiosperma* (Boiss.) Širj., (10) BÖ 1384, 04.07.2007.
Trifolium repens L. var. *repens*, (19) BÖ 1572, 25.09.2007.
T. pratense L. var. *pratense*, (16) BÖ 1530, 20.08.2007, (18) BÖ 2170, 16.07.2008.
T. ochroleucum Huds., (16) BÖ 1387, 09.07.2007, (20) BÖ 2016, 02.07.2008.
T. pannonicum Jacq. subsp. *elongatum* (Willd.) Zohary, (18) BÖ 1789, 03.06.2008, End. “LC”.
T. arvense L. var. *arvense*, (1) BÖ 1296, 04.07.2007.
Melilotus officinalis (L.) Desr., (18) BÖ 1551, 25.09.2007.
Trigonella velutina Boiss., (20) BÖ 1790, 03.06.2008, Ir–Tur.
T. fischeriana Ser., (18) BÖ 1778, 02.06.2008, Ir–Tur.
T. monantha C. A. Mey. subsp. *noeana* (Boiss.) Hub. – Mor. = *Medicago monantha* Blatt subsp. *noeana* (Boiss.) Greuter & Burdet, (20) BÖ 1867, 03. 06. 2008, Ir–Tur.
Medicago x varia Martyn, (10) BÖ 1442, 27.07.2007.
M. minima (L.) Bartram var. *minima*, (20) BÖ 1868, 03.06.2008.
Dorycnium graecum (L.) Ser., (18) BÖ 2168, 16.07.2008, Eux.
Lotus corniculatus L. var. *corniculatus*, (16) BÖ 1520, 20.08.2007.
Anthyllis vulneraria L. subsp. *boissieri* (Sagorski) Bornm., (20) BÖ 2040, 02.07.2008.
 **A. vulneraria* L. subsp. *pulchella* (Vis.) Bornm., (23) BÖ 2119, 02.07.2008.
Coronilla orientalis Miller var. *orientalis*, (1) BÖ 1170, 09.06.2007, (10) BÖ 1244, 09.06.2007, (20) BÖ 1915, 03.06.2008.
C. varia L. subsp. *varia*, (10) BÖ 1379, 04.07.2007.
Hedysarum varium Willd., (10) BÖ 1380, 04.07.2007, Ir – Tur.
Onobrychis cornuta (L.) Desv., (6) BÖ 1106, 20.05.2007, (12) BÖ 1229, 09.06.2007, Ir–Tur.
O. montana DC. subsp. *cadmea* (Boiss.) P.W.Ball., (13) BÖ 1235, 09.06.2007.
O. oxyodonta Boiss., (20) BÖ 2054, 02.07.2008, (24) BÖ 2145, 03.07.2008.

- O. hypargyrea* Boiss., (20) BÖ 2013, 02.07.2008.
Ebenus laguroides Boiss. var. *laguroides*, (13) BÖ 1232, 09.06.2007, (17) BÖ 1415, 09.07.2007, End. "LC". Ir-Tur.
- ROSACEAE**
Prunus divaricata Ledeb. var. *divaricata*, (10) BÖ 1255, 09.06.2007.
 **P. cocomilia* Ten. (10) BÖ 1155, 20.05.2007. (Det: A.A. Dönmez)
Filipendula vulgaris Moench, (18) BÖ 2175, 16.07.2008, Euro-Sib.
Rubus canescens DC. var. *glabratus* (Godron) Davis & Meikle, (1) BÖ 1468, 27.07.2007.
Potentilla meyeri Boiss., (7) BÖ 1343, 04.07.2007, Ir-Tur.
P. recta L., (1) BÖ 1448, 27.07.2007, (19) BÖ 1582, 25.09.2007.
P. reptans L., (20) BÖ 2292, 29.10.2008.
P. speciosa Willd. var. *speciosa*, (17) BÖ 1413, 09.07.2007, (16) BÖ 1533, 20.08.2007.
Fragaria vesca L., (20) BÖ 2275, 29.09.2008.
 **Geum urbanum* L., (16) BÖ 2089, 02.07.2008, Euro-Sib.
Orthurus heterocarpus (Boiss.) Juz., (21) BÖ 1930, 04.06.2008.
Agrimonia eupatoria L., (18) BÖ 2163, 16.07.2008.
Sanguisorba minor Scop. Subsp. *muricata* (Spach) Briq., (1) BÖ 1476, 27.07.2007.
Alchemilla mollis (Buser) Rothm., (10) BÖ 1378, 04.07.2007.
Rosa hemisphaerica J. Herrm., (10) BÖ 1435, 27.07.2007, Ir-Tur.
R. pulverulenta M. Bieb., (17) BÖ 1541, 20.08.2007.
R. canina L., (2) BÖ 1315, 04.07.2007.
R. heckeliana Tratt. subsp. *orientalis* (Dupont) Meikle, (16) BÖ 1513, 20.08.2007, Ir-Tur.
Cotoneaster nummularia Fisch. & C.A.Mey., (10) BÖ 1254, 09.06.2007, (18) BÖ 1544, 20.08.2007.
Crataegus tanacetifolia (Lam.) Pers., (18) BÖ 1549, 20.08.2007, End. "LC".
C. meyeri Pojark., Sivas: Sarkisla, Kavak-Cehenemdere arası, kalker kayalık, 1450 m, 23.07.1979, Ekim 4580, Ir-Tur.
Sorbus umbellata (Desf.) Fritsch var. *umbellata*, (1) BÖ 1459, 27.07.2007, (18) BÖ 2276, 25.09.2007.
S. umbellata (Desf.) Fritsch var. *cretica* (Lindl.) Schneider, (18) BÖ 1554, 29.09.2008.
 **S. terminalis* (L.) Crantz var. *pinnatifida* Boiss. (18) BÖ 2280, 29.09.2008.
Pyrus eleagnifolia Pallas subsp. *eleagnifolia*, (18) BÖ 1548, 20.08.2007.
- LYTHRACEAE**
Lythrum salicaria L., (20) BÖ 2231, 16.07.2008, Euro-Sib.
- ONAGRACEAE**
Epilobium angustifolium L., (1) BÖ 1451, 27.07.2007, (18) BÖ 2185, 16.07.2008.
E. hirsutum L., (20) BÖ 2270, 19.08.2008.
E. montanum L., (18) BÖ 2249, 12.08.2008, Euro-Sib.
- CUCURBITACEAE**
Bryonia aspera Steven ex. Ledeb., (16) BÖ 1523, 20.08.2007.
- CRASSULACEAE**
Sedum acre L., (4) BÖ 1369, 04.07.2007, (20) BÖ 2032, 02.07.2008.
S. album L., (2) BÖ 1305, 04.07.2007, (4) BÖ 1370, 04.07.2007, (18) BÖ 2178, 16.07.2008.
S. subulatum (C. A. Mey.) Boiss., (7) BÖ 1332, 04.07.2007.
S. sempervivoides Bieb., (4) BÖ 1368, 04.07.2007, (19) BÖ 2196, 16.07.2008.
S. pallidum Bieb., (1) BÖ 1292, 04.07.2007, (20) BÖ 2037, 02.07.2008.
- SAXIFRAGACEAE**
Saxifraga kotschyi Boiss., (19) BÖ 1636, 18.04.2008.
- PARNASSIACEAE**
Parnassia palustris L., (18) BÖ 2248, 12.08.2008.
- GROSSULARIACEAE**
Ribes orientale Desf., (10) BÖ 1156, 20.05.2007, (21) BÖ 1924, 04.06.2008.
- APIACEAE**
Astrantia maxima Pallas subsp. *haradjanii* (I.Grint.) Rech. f. (18) BÖ 2162, 16.07.2008, End.
Eryngium campestre L. var. *virens* Link, (20) BÖ 2274, 28.09.2008.
E. polycephalum Hausskn. ex Wolff, (1) BÖ 1483, 27.07.2007, (19) BÖ 2284, 29.09.2008, End. "LC". Ir-Tur.
Chaerophyllum macrospermum (Sprengel) Fisch. & C.A.Mey., (1) BÖ 1453, 27.07.2007, (19) BÖ 1578, 25.09.2007, Ir-Tur.
Grammosciadium dauroides DC. (18) BÖ 1768, 02.06.2008, Ir-Tur.
Anthriscus nemorosa (Bieb.) Sprengel, (18) BÖ 1694, 05.05.2008.
Scandix stellata Banks & Sol., (10) BÖ 1165, 20.05.2007.
- S. pecten - veneris* L., (18) BÖ 1797, 02.06.2008.
Bunium microcarpum (Boiss.) Freyn subsp. *microcarpum* (16) BÖ 1392, 09.07.2007, (23) BÖ 2098, 02.07.2008, E. Medit.
Carum carvi L., (20) BÖ 1880, 03.06.2008.
Pimpinella tragium Vill. subsp. *polyclada* (Boiss. & Heldr.) Tutin, (1) BÖ 1295, 04.07.2007, (16) BÖ 1519, 20.08.2007. (18) BÖ 2157, 19.11.2008.
 **P. peucedanifolia* Fisch. ex Ledeb., (16) BÖ 1534, 20.08.2007, Ir-Tur.
Sium sisarum L. var. *lancifolium* (Bieb.) Thell., (20) BÖ 2268, 19.08.2008.
Prangos meliocarpoides Boiss. var. *meliocarpoides*, (1) BÖ 1084, 20.05.2007, (4) BÖ 1367, 04.07.2007, End. "LC". Ir-Tur.
P. uechtrizii Boiss. & Hausskn., (2) BÖ 1316, 04.07.2007, End. "LC". Ir-Tur.
Bupleurum rotundifolium L. (20) BÖ 2027, 02.07.2008.
B. croceum Fenzl (20) BÖ 2029, 02.07.2008, Ir-Tur.
B. gerardii All., Sivas: Sarkisla, Karababa Dağı, Karlık tepe, kayalık, 2200 m, 22.07.1979, Ekim 5242.
Falcaria vulgaris Bernh., (10) BÖ 1429, 27.07.2007, (20) BÖ 2220, 16.07.2008.
Xanthogalum purpurascens Avé-Lall., Sivas: Sarkisla, Çerçalan köyü güneyi, Cehenemdere, 1700 m, 23.07.1979, Ekim 4389.
Ferulago platycarpa Boiss. & Balansa, (1) BÖ 1466, 27.07.2007, (19) BÖ 2258, 12.08.2008, End. "LC". Ir-Tur.
Peucedanum palimbioides Boiss.
 = *Dichoropetalum palimbioides* (Boiss.) Pimenov & Kljuykov, (17) BÖ 1537, 20.08.2007, End. "LC". Ir-Tur.
Pastinaca sativa L. subsp. *urens* (Req. ex. Godron) Çelak., (20) BÖ 2227, 16.07.2008
Malabaila pastinacifolia Boiss. & Balansa, (18) BÖ 2189, 16.07.2008, End. Ir-Tur.
Heracleum platytenium Boiss., (20) BÖ 2264, 16.08.2008, End. "LC". Eux.
Laser trilobum (L.) Borkh., (18) BÖ 2358, 27.06.2009.
Torilis leptophylla (L.) Rechb. (20) BÖ 2012, 02.07.2008
Caucalis platycarpus L. (18) BÖ 2156, 16.07.2008, (20) BÖ 1887, 03.06.2008.
- CAPRIFOLIACEAE**
S. ebulus L., Sivas: Sarkisla, Örenyurt-Karlık tepe arası, Çırcır dere, 1750 m, 22.07.1979, Ekim 4505, Euro-Sib.
Viburnum lantana L., (16) BÖ 1514, 20.08.2007, (21) BÖ 1923, 04.06.2008, Euro-Sib.
Lonicera caucasica Pallas subsp. *orientalis* (Lam.) D.F.Chamb. & Long., (18) BÖ 1545, 20.08.2007, (18) BÖ 2250, 12.08.2008, End. "LC".
- VALERIANACEAE**
Valerianella locusta (L.) Laterr., (20) BÖ 1656, 07.05.2008, Euro-Sib.
V. carinata Loisel. (20) BÖ 1656, 19.04.2008.
- MORINACEAE**
Morina persica L. var. *persica*, (10) BÖ 1381, 04.07.2007, Ir-Tur.
- DIPSACACEAE**
Dipsacus laciniatus L., (20) BÖ 2228, 04.08.2008.
Cephalaria procera Fisch. & Avé-Lall., (1) BÖ 1474, 27.07.2007, Ir-Tur.
Scabiosa columbaria L. subsp. *ochroleuca* (L.) Çelak var. *ochroleuca* (L.) Coulter, (16) BÖ 1518, 20.08.2007, (19) BÖ 1576, 25.09.2007.
S. argentea L., (1) BÖ 1290, 04.07.2007.
S. rotata Bieb. (20) BÖ 1898, 03.06.2008, Ir-Tur.
Ptercephalus pinardii Boiss., (4) BÖ 1503, 30.07.2007, End. "LC". E. Med.
- ASTERACEAE**
Inula oculus cristi L. (20) BÖ 2005, 02.07.2008, Euro-Sib.
I. montbretiana DC., (10) BÖ 1443, 27.07.2007, (20) BÖ 2069, 02.07.2008, Ir-Tur.
I. heterolepis Boiss., Sivas: Sarkisla, Kavak - Cehenemdere arası, kalker kayalık, 1450 m, 23.07.1979, Ekim 5246, E.Medit.
Helichrysum chionophilum Boiss. & Balansa, (9) BÖ 1347, 04.07.2007, (23) BÖ 2123, 02.07.2008, End. "LC".
H. plicatum DC. subsp. *plicatum*, (4) BÖ 1502, 30.07.2007, (23) BÖ 2126, 02.07.2008.
H. armenium DC. subsp. *araxinum* (Kirp.) Takht., (16) BÖ 1393, 09.07.2007, (4) BÖ 1361, 04.07.2008, Ir-Tur.
Logfia arvensis (L.) Holub (24) BÖ 2146, 03.07.2008.

- Erigeron acer* L. subsp. *acer*, (16) BÖ 1515, 20.08.2007.
 **Doronicon orientale* Hoffm., (1) BÖ 1083, 20.05.2007, (18) BÖ 1689, 05.05.2008.
Senecio cilicius Boiss.,
 = *Jacobaea cilicia* (Boiss.) B. Nord., (19) BÖ 1574, 25.09.2007, End. "LC". Ir-Tur.
S. pseudo-orientalis Schischkin, (7) BÖ 1334, 04.07.2007, (19) BÖ 2218, 16.07.2008, Ir-Tur.
S. vernalis Waldst. & Kit.
 = *S. leucanthemifolius* Poir. subsp. *vernalis* (Waldst. & Kit) Greuter, (20) BÖ 1609, 27.09.2007.
Tussilago farfara L., (18) BÖ 1614, 18.04.2008, Euro-Sib.
Anthemis cretica L. subsp. *anatolica* (Boiss.) Grierson, (23) BÖ 2100, 02.07.2008.
A. tinctoria L. var. *pallida* DC., (20) BÖ 2340, 27.06.2009.
A. melanoloma Trautv. subsp. *melanoloma*, (18) BÖ 1777, 02.06.2008, End. "LC".
Achillea gonioccephala Boiss. & Bal., (16) BÖ 1390, 09.07.2007, (4) BÖ 1358, 04.07.2007, End. "LC". Ir-Tur.
A. setacea Waldst. & Kit., (16) BÖ 1517, 20.08.2007, Euro-Sib.
A. kotschy Boiss. subsp. *kotschy*, (19) BÖ 1583, 25.09.2007.
A. biebersteinii Afan., (10) BÖ 1257, 09.06.2007, (19) BÖ 1570, 25.09.2007, Ir-Tur.
 **Tanacetum corymbosum* (L.) Sch. subsp. *corymbosum*, (7) BÖ 1342, 04.07.2007.
T. poterifolium (Ledeb.) Grierson, (18) BÖ 2164, 16.07.2008, Eux.
T. armenum (DC.) Sch. Bip., (1) BÖ 1101, 20.05.2007, (22) BÖ 1935, 04.06.2008.
T. nitens (Boiss. & Noë) Grierson, (7) BÖ 1331, 04.07.2007, End. "LC". Ir-Tur.
T. haussknechtii (Bornm.) Grierson, (6) BÖ 1193, 09.06.2007, (19) BÖ 1831, 02.06.2008, End. "VU". Ir-Tur.
Tripleurospermum oreadas (Boiss.) Rech. f. var. *oreadas*, (19) BÖ 1821, 02.06.2008.
T. sevanense (Manden) Pobed, (20) BÖ 2045, 02.07.2008.
Artemisia absinthium L. (18) BÖ 2278, 29.09.2008.
Arctium minus (Hill) Bernh. subsp. *pubens* (Bab.) Arènes, (10) BÖ 1422, 27.07.2007, Euro-Sib.
Onopordum turcicum Danin, (10) BÖ 1431, 27.07.2007, Ir-Tur.
Cirsium lappaceum (Bieb.) Fisch. subsp. *anatolicum* Petrak
 = *C. leucocephalum* Spreng. subsp. *leucocephalum*, (16) BÖ 1525, 20.08.2007, Ir-Tur.
C. hypoleucum DC., (16) BÖ 1527, 20.08.2007, Eux.
C. elodes Bieb., (10) BÖ 1427, 27.07.2007, Ir-Tur.
Carduus nutans L. sensu lato (18) BÖ 2177, 16.07.2008, (10) BÖ 1382, 04.07.2007.
Jurinea pontica Hausskn. & Freyn ex Hausskn., (20) BÖ 2239, 11.08.2008, End. "LC". Ir-Tur.
Centaurea aggregata Fisch. & C.A.Mey. ex DC. subsp. *aggregata*, (1) BÖ 1299, 04.07.2007.
C. virgata Lam., (2) BÖ 1304, 04.07.2007.
C. drabifolia Sm. subsp. *cappadocica* (DC.) Wagenitz, (7) BÖ 1330, 04.07.2007, End. "LC".
C. drabifolia Sm. subsp. *detonsa* (Bornm.) Wagenitz, (9) BÖ 1349, 04.07.2007, End. "LC".
C. polypodifolia Boiss. var. *polypodifolia*, Sivas: Şarkışla, Örenyurt-Karlık tepe arası, Çırçır dere, 1750 m, 22.07.1979, Ekim 3990, Ir-Tur.
C. solstitialis L. subsp. *solstitialis*, (20) BÖ 2024, 02.07.2008.
C. urvillei DC. subsp. *stepposa* Wagenitz, (2) BÖ 1317, 04.07.2007, Ir-Tur.
C. carduiformis DC. subsp. *carduiformis* var. *carduiformis*, (24) BÖ 2138, 03.07.2008, Ir-Tur.
C. mucronifera DC., (15) BÖ 1271, 10. 06. 2007, (17) BÖ 1412, 09.07.2007, End. "LC". Ir-Tur.
C. pichleri Boiss. subsp. *pichleri*, (1) BÖ 1090, 20.05.2007, (19) BÖ 1832, 02.06.2008.
C. triumfettii All., (20) BÖ 1832, 06.2008, (18) BÖ 1681, 05.05.2008.
C. depressa Bieb., (20) BÖ 2030, 02.07.2008.
Crupina crupinastrum (Moris) Vis., (20) BÖ 2331, 27.06.2009.
Carlina oligocephala Boiss. & Kotschy subsp. *oligocephala*, (10) BÖ 1440, 27.07.2007.
Xeranthemum annuum L., (1) BÖ 1460, 27.07.2007.
Chardinia orientalis (L.) Kuntze., (20) BÖ 2008, 02. 07. 2008, (19) BÖ 2201, 16.07.2008.
Echinops ritro L., (1) BÖ 1475, 27.07.2007, (19) BÖ 2256, 12.08.2008.
Cichorium intybus L., (10) BÖ 1426, 27.07.2007.
Scorzonera cana (C. A. Mey.) Hoffm. var. *jacquiniana* (W. Koch) Chamberlain, (18) BÖ 1781, 02.06.2008.
S. cana (C. A. Mey.) Hoffm. var. *radicosa* (Boiss.) Chamberlain
 = *Podospermum radicatum* (Boiss.) Gemeinholzer & Greuter, (15) BÖ 1270, 10.06.2007.
S. suberosa C. Koch subsp. *suberosa*, (1) BÖ 1091, 20.05.2007, Ir-Tur.
S. mollis Bieb. subsp. *szowitzii* (DC.) Chamberlain, (1) BÖ 1091, 20.05.2007, Ir-Tur.
S. eriophora DC., (1) BÖ 1181, 09.06.2007, (18) BÖ 1780, 02.06.2008, End. "LC".
S. sericea DC., (17) BÖ 1406, 09.07.2007, End. "LC".
S. tomentosa L., (4) BÖ 1360, 04.07.2007, (4) BÖ 1497, 30.07.2007, End. "LC". Ir-Tur.
Tragopogon longirostris Bisch. ex Sch. Bip. var. *longirostris*
 = *T. porrifolius* L. subsp. *longilostris* (Sch. Bip.) Greuter, (4) BÖ 1500, 30.07.2007.
T. dubius Scop., (20) BÖ 1877, 03.06.2008.
T. bubhtalmoides (DC.) Boiss. var. *bubhtalmoides*, (19) BÖ 1575, 25.09.2007, Ir-Tur.
Leontodon hispidus L. var. *hispidus*, (16) BÖ 1522, 20.08.2007, (20) BÖ 2273, 28.09.2008.
L. asperrimus (Willd.) Ball (19) BÖ 2213, 16.07.2008, Ir-Tur.
L. crispus Vill. subsp. *asper* (Waldst. & Kit.) Rohl. var. *asper*, (16) BÖ 1389, 09.07.2007,
Picris strigosa M.Bieb., (10) BÖ 1441, 27.07.2007, Iran-Tur.
Hieracium medianiforme (Litw. & Zahn) Juxip, (18) BÖ 2351, 26.06.2009, Eux.
H. pannosum Boiss., (16) BÖ 1388, 09.07.2007, (4) BÖ 1495, 30.07.2007, E. Med.
 **H. paphlagonicum* Freyn. & Sint.
 = *H. chalcidicum* Boiss. & Heldr. subsp. *paphlagonicum* (Freyn & Sint.) Greuter, (19) BÖ 1590, 25.09.2007, End. "LC".
H. cappadocicum Freyn.
 = *H. chalcidicum* Boiss. & Heldr. subsp. *cappadocicum* (Freyn) Greuter, (18) BÖ 1568, 27.07.2007, End. "VU".
Pilosella hoppeana (Shult.) F. W. Schultz & Sch. Bip. subsp. *troica* (Zahn) P.D.Sell & C.West, (1) BÖ 1456, 27.07.2007, (19) BÖ 1589, 25.09.2007.
P. piloselloides (Vill.) Soják subsp. *piloselloides*, (1) BÖ 1289, 04.07.2007.
P. cymosa (L.) F. W. Schultz & Sch.Bip. (18) BÖ 2063, 02.07.2008, Euro-Sib.
P. x fallax (Willd.) Arv. – Touv., (19) BÖ 2216, 16.07.2008
P x macrotricha (Boiss.) F. W. Schultz & Sch.Bip., (10) BÖ 1372, 04.07.2007.
Cicerbita mulgedioides (Sch. Bip. ex Vis. & Panć.) Beauverd, (7) BÖ 1337, 04.07.2007.
 **Cephalorrhynchus tuberosus* (Steven) Schchian (18) BÖ 2155, 16.07.2008
Lactuca serriola L., (20) BÖ 1605, 27.09.2007.
Scariola viminea (L.) F. W. Schmidt, (1) BÖ 1449, 27.07.2007.
S. orientalis (Boiss.) Soják, (10) BÖ 1445, 27.07.2007.
Lapsana communis L. subsp. *alpina* (Boiss. & Balansa) P.D.Sell, (16) BÖ 1516, 20.08.2007, Eux.
L. communis L. subsp. *adenophora* (Boiss.) Rech. f., (16) BÖ 1399, 09.07.2007.
L. communis L. subsp. *intermedia* (M.Bieb.) Hayek, (19) BÖ 1573, 25.09.2007.
Taraxacum microcephaloides Soest, (3) BÖ 1129, 20.05.2007.
T. serotinum (Waldst. & Kit.) Poir., (18) BÖ 1560, 25.09.2007.
T. syriacum Boiss., (1) BÖ 1477, 27.07.2007, (1) BÖ 1492, 30.07.2007, Ir-Tur.
Chondrilla juncea L. var. *juncea*, (20) BÖ 2262, 16.08.2008.
 **Crepis dioritica* Schott & Key. ex Boiss., (17) BÖ 2401, 28.06.2009, End. "LC". Ir-Tur.
 Although it is given that scapes has 1-2(-3) capitula in Flora of Turkey, in our collections it can have 4 capitula in some specimens. Distribution of the species is given as A7-8, B9, C5 according to the grid system (Davis, 1965). This record of the species fill the gap between the C5 and A7 grids and it can be an example for the North-south plant migration which has occurred in Pleistocene.

- C. armena* DC., (6) BÖ 1191, 09.06.2007, (15) BÖ 1273, 10.06.2007, End. "LC". Ir-Tur.
- C. sancta* (L.) Babç., (18) BÖ 1567, 25.09.2007, (20) BÖ 1739, 06.05.2008.
- CAMPANULACEAE**
- Campanula rapunculoides* L. subsp. *rapunculoides*, (16) BÖ 1529, 20.08.2007, Euro-Sib.
- C. rapunculoides* L. subsp. *cordifolia* (C. Koch) Dambold, (1) BÖ 1452, 27.07.2007, (18) BÖ 2172, 16.07.2008.
- C. glomerata* L. subsp. *hispida* (Witasek) Hayek, (4) BÖ 1359, 04.07.2007, (18) BÖ 2176, 16.07.2008, (20) BÖ 2050, 02.07.2008, Euro-Sib.
- C. involucrata* Aucher ex A. DC., (20) BÖ 2049, 02.07.2008, Ir-Tur.
- C. strigillosa* Boiss., (17) BÖ 1404, 09.07.2007, End. "LC". Ir-Tur.
- C. pulvinaris* Hausskn. & Bornm., (17) BÖ 1405, 09.07.2007, (4) BÖ 1507, 30.07.2007, End. "EN". Ir-Tur.
- C. stricta* L. var. *stricta*, (7) BÖ 1335, 04.07.2007, (17) BÖ 1418, 09.07.2007, Ir-Tur.
- Asyneuma amplexicaule* (Willd.) Hand-Maz. subsp. *amplexicaule* var. *angustifolium* (Boiss.) Bornm., (4) BÖ 1364, 04.07.2007, (7) BÖ 1345, 04.07.2007, Ir-Tur.
- A. lobelioides* (Willd.) Hand-Mazz. (1) BÖ 1178, 09.06.2007, (16) BÖ 2095, 02.07.2008, Ir-Tur.
- A. rigidum* (Willd.) Grossh. subsp. *rigidum*, (1) BÖ 1472, 27.07.2007, Ir-Tur.
- A. virgatum* (Labill.) Bornm. subsp. *virgatum*, (4) BÖ 1363, 04.07.2007, End.
- Legousia speculum - veneris* (L.) Chaix, (14) BÖ 1267, 10.06.2007.
- L. pentagonia* (L.) Thellung, (18) BÖ 2367, 27.06.2009, E. Med.
- ERICACEAE**
- **Monotropa hypopithys* L., (18) BÖ 2182, 16.08.2008, (18) BÖ 2246, 12.08.2008.
- PRIMULACEAE**
- Primula vulgaris* Huds. subsp. *vulgaris*, (18) BÖ 1621, 18.04.2008, Euro-Sib.
- Androsace maxima* L. (18) BÖ 1610, 18.04.2008, (20) BÖ 1655, 19.04.2008.
- A. armeniaca* Duby. var. *macrantha* (Boiss. & Huet) Martelli (19) BÖ 1817, 02.06.2008, End. "LC". Ir-Tur.
- A. villosa* L., (7) BÖ 1124, 20.05.2007, (19) BÖ 1713, 05.05.2008, Euro-Sib.
- Lysimachia verticillaris* Spreng., (18) BÖ 2171, 16.07.2008, Hyr-Eux.
- Anagallis foemina* Mill., (20) BÖ 2480, 16.08.2009, Medit.
- ASCLEPIADACEAE**
- Vincetoxicum fuscatum* (Hornem) Rechb. fil. subsp. *fuscatum*, (4) BÖ 1371, 04.07.2007.
- GENTIANACEAE**
- Centaureum erythrae* Rafn subsp. *erythrae*, (20) BÖ 2241, 11.08.2008, Euro-Sib.
- Gentiana septemfida* Pallas., (18) BÖ 2243, 12.08.2008, Hyr-Eux.
- CONVOLVULACEAE**
- Convolvulus lineatus* L., (7) BÖ 1327, 04.07.2007, (19) BÖ 2197, 16.07.2008.
- C. assyricus* Griseb., (1) BÖ 1089, 20. 05. 2007, (19) BÖ 1822, 02.06.2008, End. "LC". Ir-Tur.
- C. arvensis* L., (20) BÖ 1989, 02.07.2008.
- CUSCUTACEAE**
- Cuscuta planiflora* Ten, (16) BÖ 1395, 09.07.2007.
- **C. brevistyla* A. Braun, (17) BÖ 1539, 20.08.2007.
- BORAGINACEAE**
- Lappula barbata* (M.Bieb.) Gürke., (21) BÖ 1919, 04.06.2008, Ir-Tur.
- Rochelia disperma* (L. f.) C. Koch var. *disperma* (20) BÖ 2009, 02.07.2008.
- Asperugo procumbens* L., (20) BÖ 1732, 06.05.2008, Euro-Sib.
- Myosotis alpestris* F.W.Schmidt. subsp. *alpestris*, (7) BÖ 1117, 20.05.2007.
- M. lithospermifolia* (Willd.) Hornem., (1) BÖ 1088, 20.05.2007, (19) BÖ 1702, 05.05.2008.
- Paracaryum lithospermifolium* (Lam.) Grande subsp. *cariense* (Boiss.) R. Mill var.
- cariense*, (19) BÖ 1814, 02.06.2008, E. Medit. (Det A.D.Koca)
- **Rindera lanata* (Lam.) Bunge var. *canescens* (A.DC.) Kusn., (10) BÖ 1157, 20.05.2007, Ir-Tur.
- Solenanthus stamineus* (Desf.) Wettst. (8) BÖ. 1137, 20.05.2007, (8) BÖ 1221, 09.06.2007.
- Cynoglossum montanum* L., (10) BÖ 1253, 09.06.2007, (19) BÖ 1571, 25.09.2007, (10) BÖ 1163, 20.05.2007, (19) BÖ 1824, 02.06.2008, Euro-Sib.
- Arnebia densiflora* (Nordm.) Ledeb., (10) BÖ 1246, 09.06.2007, Ir-Tur.
- Buglossoides arvensis* (L.) I.M.Johnst., (3) BÖ 1211, 09.06.2007, (19) BÖ 1715, 05.05.2008.
- Echium italicum* L., (10) BÖ 1428, 27.07.2007, Medit.?
- Onosma nanum* DC., (4) BÖ 1149, 20.05.2007, (6) BÖ 1196, 09.06.2007, End. "LC". E. Medit.
- O. isauricum* Boiss. & Heldr., (10) BÖ 1511, 30.07.2007, End. "LC". Ir-Tur.
- O. bracteosum* Hausskn. & Bornm. (13) BÖ 1237, 09.06.2007, End. "LC". Ir-Tur.
- **O. briquetii* Czecczott. (1) BÖ 1281, 04.07.2007, End. "LC". Ir-Tur.
- O. tauricum* Pallas ex Willd. var. *tauricum* (20) BÖ 2056, 02.07.2008.
- O. aucheranum* DC., (17) BÖ 1538, 20.08.2007, (19) BÖ 1845, 02.06.2008, E. Medit.
- **O. roussaei* DC., (4) BÖ 1150, 20.05.2007, Ir-Tur.
- O. armenum* DC., (23) BÖ 2129, 02.07.2008, End. "LC".
- Cerinthe minor* L. subsp. *auriculata* (Ten) Domac., (20) BÖ 1889, 03.06.2008.
- Symphythum bornmuelleri* Bucknall, (16) BÖ 2094, 02. 07. 2008, End. "LC". Eux.
- Anchusa leptophylla* Roem. & Schult. subsp. *incana* (Ledeb.) D.F.Chamb., (10) BÖ 1383, 04.07.2007, (20) BÖ 1603, 27.09.2007, End. "LC". Ir-Tur.
- Cynoglottis chetkiana* Vural & Kit Tan subsp. *paphlagonica* (Hausskn. ex Bornm) Vural & Kit Tan, (18) BÖ 2062, 02.07.2008, (21) BÖ 1921, 04.06.2008, End. "LC".
- Nonea stenoseleis* Boiss. & Balansa, (4) BÖ 1144, 20.05.2007, (9) BÖ 1222, 09.06.2007, End. "LC". Ir-Tur.
- SOLANACEAE**
- D. stromonium* L., Sivas: Sarkisla, Kavak-Cehennemdere arası, kalker kayalık, 1450 m, 23.07.1979, Ekim 4516, Euro-Sib.
- Hyoscyamus niger* L., (20) BÖ 2266, 16.08.2008.
- SCROPHULARIACEAE**
- Verbascum oreophilum* C. Koch var. *oreophilum*, (18) BÖ 2068, 02.07.2008, End. "LC". Ir-Tur.
- V. phoeniceum* L., (18) BÖ 1766, 02.06.2008.
- V. flavidum* (Boiss.) Freyn & Bornm., (18) BÖ 2082, 02.07.2008, Euro-Sib.
- V. speciosum* Schrad., (7) BÖ 1338, 04.07.2007.
- V. cherianthifolium* Boiss. var. *cherianthifolium*, (7) BÖ 1319, 04.07.2007.
- **V. vulcanicum* Boiss. & Heldr. var. *vulcanicum*, (9) BÖ 1346, 04.07.2007, End. "LC". Ir-Tur.
- S. kotschyana* Benth., Sivas: Sarkisla, Karababa dağı, Demirkaya tepesi, step, 2000-2200 m, 21.07.1979, Ekim 5204, Euro-Sib.
- Scrophularia scopoliü* [Hoppe ex] Pers. var. *scopoliü*, (8) BÖ 1220, 09.06.2007.
- S. umbrosa* Dumort, (20) BÖ 2293, 29.10.2008, Euro-Sib.
- Chaenorhinum litorale* (Bernh.) Fritsch subsp. *pterosporum* (Fisch. & C.A.Mey) P.H.Davis, (20) BÖ 1598, 27.09.2007, (20) BÖ 2038, 02. 07. 2008, End. "LC". E. Medit.
- Linaria corifolia* Desf., (20) BÖ 1600, 27.09.2007, (23) BÖ 2102, 02.07.2008, End. "LC". Ir-Tur.
- L. kurdica* Boiss. & Hohen. subsp. *kurdica*, (19) BÖ 1580, 25.09.2007, Ir-Tur.
- L. kurdica* Boiss. & Hohen. subsp. *aucheri* (Boiss.) P.H.Davis, (17) BÖ 1536, 20.08.2007, Ir-Tur.
- **Digitalis ferruginea* L. subsp. *schischkiniü* (Ivanina) Werner, (16) BÖ 1528, 20. 08. 2007, (19) BÖ 2252, 12.08.2008, Eux.
- Veronica triphyllus* L., (20) BÖ 1657, 20.04.2008.
- V. hederifolia* L. (20) BÖ 1653, 19.04.2008.
- V. anagallis - aquatica* L. (20) BÖ 2242, 11.08.2008
- V. caespitosa* Boiss. var. *caespitosa*, (7) BÖ 1123, 20.05.2007, (19) BÖ 1718, 05.05.2008, End. "LC". E. Medit.
- V. thymoides* P. H. Davis subsp. *hasandaghensis* M. A. Fischer, (19) BÖ 1723, 05.05.2008 End. "LC". Ir-Tur.

- V. macrostachya* Vahl. subsp. *macrostachya*, (14) BÖ 1266, 10.06.2007, E. Medit.
- V. multifida* L., (1) BÖ 1096, 20.05.2007, (20) BÖ 1756, 07.05.2008, End. "LC". Ir-Tur.
- E. petiolaris* Wettst., Sivas: Sarkisla, Karababa dağı, Karlık tepe, kayaliklar, 2200-2350 m, 22.07.1979, Ekim 5205, Eux.
- Odontites aucheri* Boiss., (4) BÖ 1496, 30.07.2007, Ir-Tur.
- O. glutinosa* (Bieb.) Benth., (19) BÖ 2253, 12.08.2008.
- Pedicularis cadmea* Boiss. (7) BÖ 1121, 20. 05. 2007, (19) BÖ 1721, 05.05.2008, End. "LC". E. Medit.
- P. comosa* L. var. *sibtorphii* (Boiss.) Boiss., (15) BÖ 1272, 10.06.2007.
- **Rhinanthus angustifolius* C. C. Gmel. subsp. *grandiflorus* (Wallr.) D.A.Webb., (18) BÖ 2173, 16.08.2008.
- Bungea trifida* (Vahl) C. A. Meyer, (20) BÖ 1901, 03.06.2008, Ir-Tur.
- OROBANCHACEAE**
- Orobanche nana* Noë ex Beck. (24) BÖ 2147, 03.07.2008.
- O. oxyloba* (Reut.) Beck, (1) BÖ 1484, 27.07.2007, (19) BÖ 2223, 16.07.2007.
- O. coelestis* (Reut.) Beck., (20) BÖ 2007, 02.07.2008, (19) BÖ 2224, 16.07.2007.
- O. arenaria* Borkh., (18) BÖ 2183, 16.07.2007, (18) BÖ 2076, 02.07.2008.
- Orobanche alba* Stephan, (18) BÖ 2362, 27.06.2009. (Det: G. Zarre)
- Orobanche minör* Sm., (16) BÖ 2373, 28.06.2009. (Det: G. Zarre)
- **Orobanche armena* Tzvelev, (16) BÖ 2372, 28.06.2009, End. "EN". Ir-Tur. (Det: G. Zarre)
- O. anatolica* Boiss. & Reut., (7) BÖ 1340, 04.07.2007, (Det: A. A. Dönmez)
- ACANTHACEAE**
- Acanthus hirsutus* Boiss., (18) BÖ 1802, 02.06.2008, End. "LC".
- GLOBULARIACEAE**
- Globularia trichosantha* Fisch. & C.A.Mey., (3) BÖ 1128, 20.05.2007.
- LAMIACEAE**
- Ajuga chamaepitys* (L.) Schreb. subsp. *chia* (Schreb.) Arcang. var. *ciliata* Briq., (14) BÖ 1263, 10.06.2007, (20) BÖ 1728, 06.05.2008.
- Teucrium orientale* L. var. *orientale* (20) BÖ 2225, 16.07.2008, Ir-Tur.
- T. chamaedrys* L. subsp. *chamaedrys*, (1) BÖ 1285, 04.07.2007, (16) BÖ 1385, 09.07.2007, (4) BÖ 1504, 30.07.2007, Euro-Sib.
- T. polium* L., (2) BÖ 1311, 04.07.2007.
- Scutellaria salviifolia* Benth., (18) BÖ 1786, 02.06.2008, (18) BÖ 2065, 02.07.2008, End. "LC".
- S. orientalis* L. subsp. *pinnatifida* J.R.Edm., (6) BÖ 1187, 09.06.2007.
- Phlomis pungens* Willd. var. *pungens*, (20) BÖ 2234, 11.08.2008.
- P. linearis* Boiss. & Balansa, (2) BÖ 1318, 04.07.2007, End. "LC". Ir-Tur.
- Lamium amplexicaule* L., (18) BÖ 1611, 18. 04. 2008, Euro-Sib.
- L. macrodon* Boiss & Huet, (7) BÖ 1115, 20. 05. 2007, Ir-Tur.
- L. album* L., (3) BÖ 1215, 09.06.2007, (20) BÖ 1757, 07.05.2008, Euro-Sib.
- Wiedemannia orientalis* Fisch. & C.A.Mey. (10) BÖ 1256, 09.06.2007, End. "LC". Ir-Tur.
- Marrubium cephalanthum* Boiss. & Noë, Sivas: Sarkisla, Karababa dağı, Demirkaya tepesi, step, 2000-2200 m, 21.07.1979, Ekim 4232, End. "LC".
- M. astracanicum* Jacq. subsp. *astracanicum*, (7) BÖ 1325, 04.07.2007, (24) BÖ 2144, 03.07.2008.
- Sideritis montana* L. subsp. *montana* (20) BÖ 1904, 03.06.2008 Medit.
- S. montana* L. subsp. *remota* (d'Urv.) P.W. Ball ex Heywood, (14) BÖ 1260, 10.06.2007, (19) BÖ 2207, 16.07.2008, E. Medit.
- Stachys balansae* Boiss. & Kotschy subsp. *balansae*, (9) BÖ 1350, 04.07.2007.
- **S. byzantina* C. Koch (18) BÖ 2075, 02. 07. 2008, Euro-Sib.
- S. lavandulifolia* Vahl. var. *lavandulifolia* (6) BÖ 1199, 09.06.2007, Ir-Tur.
- S. annua* (L.) L. subsp. *annua* var. *annua*, (20) BÖ 1997, 02.07.2008.
- Nepeta nuda* L. subsp. *albiflora* (Boiss.) Gams, (3) BÖ 1210, 09.06.2007.
- Lallementia iberica* (Bieb.) Fisch. & Mey., (20) BÖ 1888, 03.06.2008, Ir-Tur.
- Prunella vulgaris* L., (18) BÖ 2193, 16.07.2008, Euro-Sib.
- P. laciniata* (L.) L., (16) BÖ 2087, 02.07.2008, (18) BÖ 2191, 16.07.2008, Euro-Sib.
- Clinopodium vulgare* L. subsp. *arundanum* (Boiss.) Nyman (18) BÖ 2186, 16.07.2008
- Acinos rotundifolius* Pers., (20) BÖ 2003, 02.07.2008
- Thymus leuchotrichus* Hálacsy var. *leuchotrichus*, (6) BÖ 1190, 09.06.2007.
- T. cappadocicus* Boiss. var. *globifer* Jalas, (17) BÖ 1410 09.07.2007, End. "VU". Ir-Tur.
- T. sipyleus* Boiss. subsp. *sipyleus* var. *sipyleus*, (1) BÖ 1307, 04.07.2007, End. "LC".
- T. sipyleus* Boiss. subsp. *rosulans* (Borbás) Jalas, (2) BÖ 1286, 04.07.2007.
- Mentha spicata* L. subsp. *spicata*, (10) BÖ 1425, 27.07.2007.
- Ziziphora clinipodioides* Lam., (17) BÖ 1403, 09.07.2007, (1) BÖ 1469, 27.07.2007.
- Z. persica* Bunge, (20) BÖ 2002, 02.07.2008, Ir-Tur.
- Z. tenuior* L. (10) BÖ 1247, 09.06.2007, Ir-Tur.
- Salvia multicaulis* Vahl, (3) BÖ 1218, 09.06.2007, (19) BÖ 1699, 05.05.2008, Ir-Tur.
- S. cryptantha* Montbret & Aucher ex Benth.
- =*S. absconditiflora* Greuter & Burdet, (19) BÖ 1847, 02.06.2008, End. "LC". Ir-Tur.
- S. hypargeia* Fisch. & C.A.Mey (20) BÖ 1899, 03.06.2008, (20) BÖ 2058, 02.07.2008, (18) BÖ 2074, 02.07.2008, End. "LC". Ir-Tur.
- S. ekimiana* F.Celep & M.Doğan, (3) BÖ 1209, 09.06.2007, (19) BÖ 1813, 02.06.2008, End. "EN". Ir-Tur. (Det: F.Celep)
- This specimen was 3. record after holotype and paratype (Pers. com. F. Celep)
- S. sclerea* L., (20) BÖ 1593, 27.09.2007, (20) BÖ 1988, 02.07.2008.
- S. aethiopsis* L. (10) BÖ 1159, 20.05.2007, (20) BÖ 2026, 02.07.2008.
- S. microstegia* Boiss. & Balansa, (4) BÖ 1362, 04.07.2007, (16) BÖ 1400, 09. 07. 2007, Ir-Tur.
- S. candidissima* Vahl. subsp. *candidissima*, (20) BÖ 2057, 02. 07. 2008, Ir-Tur.
- S. virgata* Jacq., (20) BÖ 1594, 27.09.2007, (20) BÖ 2023, 02.07.2008, Ir-Tur.
- S. verticillata* L. subsp. *amasiaca* (Freyn & Bornm.) Bornm., (10) BÖ 1377, 04.07.2007, Ir-Tur.
- PLUMBAGINACEAE**
- Acantholimon wiedemannii* Bunge, (1) BÖ 1485, 27.07.2007, End. "VU". Ir-Tur.
- **A. ulicinum* (Willd. ex Schultes) Boiss. var. *ulicinum*, (4) BÖ 1506, 30.07.2007, E. Medit.
- A. puberulum* Boiss. & Balansa subsp. *puberulum*, (2) BÖ 1300, 04.07.2007, Ir-Tur.
- A. acerosum* (Willd) Boiss subsp. *longibracteolorum* Doğan & Akaydin, (16) BÖ 1396, 09.07.2007, End. "LC". Ir-Tur.
- A. armenum* Boiss. & A.Huet. var. *balansae* Boiss. & Huet., (1) BÖ 1470, 27.07.2007, Ir-Tur.
- A. kotschyi* (Jaub. & Spach) Boiss., (17) BÖ 1540, 20.08.2007, End. "LC". Ir-Tur.
- A. venustum* Boiss. var. *venustum*, (1) BÖ 1278, 04.07.2007, Ir-Tur.
- PLANTAGINACEAE**
- Plantago major* L. subsp. *intermedia* (Gilib.) Lange, (10) BÖ 1419, 27.07.2007.
- P. atrata* Hoppe, (9) BÖ 1140, 20.05.2007.
- P. lanceolata* L., (10) BÖ 1437, 27.07.2007.
- THYMELAEACEAE**
- Daphne oleoides* Schreber subsp. *oleoides* (1) BÖ 1173, 09.06.2007.
- SANTALACEAE**
- Thesium cilicicum* Bornm., (22) BÖ 1944, 04.06.2008, End. "NT". E. Medit.
- T. arvense* Horv., (18) BÖ 2179, 16.07.2008, Euro-Sib.
- T. procumbens* C. A. Mey., (19) BÖ 2307, 16.05.2009.
- LORANTHACEAE**
- Viscum album* L., subsp. *album*, (16) BÖ 1512, 20.08.2007.
- EUPHORBIAEAE**
- Euphorbia stricta* L., (20) BÖ 2235, 11.08.2008, Euro-Sib.
- E. herniarifolia* Willd. var. *herniarifolia* (19) BÖ 1708, 05.05.2008.

- E. denticulata* Lam., (4) BÖ 1142, 20.05.2007, (19) BÖ 1700, 05.05.2008, Ir-Tur.
- E. cheiradenia* Boiss. & Hohen., (10) BÖ 1432, 27.07.2007, (1) BÖ 1287, 04.07.2007, Ir-Tur.
- URTICACEAE**
- Urtica dioica* L., (13) BÖ1231, 09.06.2007, Euro-Sib.
- FAGACEAE**
- Quercus macranthera* Fisch. et C.A.Mey. ex Hohen. subsp. *sypirensis* (C. Koch) Menitsky, (1) BÖ 1461, 27.07.2007, (18) BÖ 2083, 02.07.2008, End. "LC".
- O. pubescens* Willd., (18) BÖ 1565, 25.09.2007, (18) BÖ 1670, 20.04.2008.
- SALICACEAE**
- Salix alba* L., (10) BÖ 1421, 27.07.2007, (20) BÖ 1725, 06.05.2008, Euro-Sib.
- **S. caprea* L., (18) BÖ 1623, 18.04.2008, (18) BÖ 1624, 18.04.2008, Euro-Sib.
- **Populus tremula* L., (18) BÖ 1557, 25.09.2007, Euro-Sib.
- RUBIACEAE**
- Asperula laxiflora* Boiss. (19) BÖ 2214, 16.07.2008, Eux.
- **A. nitida* Sm. subsp. *subcapitellata* Ehrend., (7) BÖ 1205, 09.06.2007, (9) BÖ 1353, 04.07.2007, (19) BÖ 1820, 02.06.2008, End. "NT". Ir-Tur.
- **A. lilaciflora* Boiss. subsp. *phrygia* (Bornm.) Schönbr.-Tem., (20) BÖ 2232, 11.08.2008, End. "LC".
- A. stricta* Boiss. subsp. *latibracteata* (Boiss.) Ehrend., (1) BÖ 1473, 27.07.2007, End. "LC". Ir-Tur.
- A. orientalis* Boiss. & Hohen., (6) BÖ 1109, 20.05.2007, Ir-Tur.
- A. arvensis* L. (20) BÖ 1724, 06.05.2008, Medit.
- **Galium rotundifolium* L., (23) BÖ 2130, 02.07.2008, Euro-Sib.
- G. verum* L. subsp. *verum*, (2) BÖ 1310, 04.07.2007, Euro-Sib.
- G. paschale* Forssk., (18) BÖ 2195, 16.07.2008, BÖ 2071, 02.07.2008, E.Medit.
- G. incanum* Sm. subsp. *elatius* (Boiss.) Ehrend., (1) BÖ 1175, 09.06.2007.
- G. spurium* L. subsp. *spurium* (18) BÖ 1787, 02.06.2008, Euro-Sib.
- Callipeltis cucullaria* (L.) Steven, Sivas: Sarkısla, Kavak-Cehennemdere arası, kalker kayalık, 1450 m, 23.07.1979, Ekim 4082, Ir-Tur.
- Cruciata taurica* (Pall. ex Willd.) Ehrend., (1) BÖ 1087, 20.05.2007, (3) BÖ 1217, 09.06.2007, Ir-Tur.
- ARACEAE**
- Arum detrunctum* C.A. Mey. ex Schott subsp. *detrunctum*, (5) BÖ 1166, 09.06.2007.
- LILIACEAE**
- Eremurus spectabilis* M.Bieb., (8) BÖ 1219, 09.06.2007, Ir-Tur.
- Asphodeline globifera* J. Gay ex Baker, (23) BÖ 2108, 02.07.2008, E. Medit.
- Allium isauricum* Hub.-Mor. & Wendelbo, (13) BÖ 1242, 09.06.2007, (19) BÖ 1815, 02.06.2008, End. "VU". Ir-Tur.
- A. callidictyon* C.A. Mey. ex Kunth, (7) BÖ 1486, 27.07.2007, Ir-Tur.
- A. paniculatum* L. subsp. *paniculatum*, (7) BÖ 1488, 27.07.2007, Medit.
- A. armenum* Boiss. & Kotschy, (7) BÖ 1487, 27.07.2007, End. "LC". Ir-Tur.
- A. scorodoprasum* L. subsp. *rotundum* (L.) Stearn, (4) BÖ 1499, 30.07.2007, Medit.
- Ornithogalum sphaerocarpum* A.Kern., (7) BÖ 1339, 04.07.2007, (20) BÖ 2033, 02.07.2008.
- O. oligophyllum* E.D.Clark, (9) BÖ 1139, 20.05.2007, (19) BÖ 1637, 18.04.2008.
- O. orthophyllum* Ten, (1) BÖ 1097, 20.05.2007.
- Muscari tenuiflorum* Tausch, (10) BÖ 1250, 09.06.2007, (24) BÖ 2136, 03.07.2008.
- M. armeniacum* Leichtlin ex Baker, (3) BÖ 1125, 20.05.2007.
- M.neglectum* Guss. (1) BÖ 1012, 15.04.2007, (4) BÖ 1023, 15.04.2007,
- **M. azureum* Fenzl (1) BÖ.1010, 15.04.2007, (19) BÖ 1639, 18.04.2008, End. "LC".
- Bellevalia sarmatica* (Pallas ex Georgi) Woronow, (20) BÖ 1906, 03.06.2008.
- Hyacinthella acutiloba* K. M.Perss. & Wendelbo, (20) BÖ 1646, 19.04.2008, End. "LC". Ir-Tur.
- Fritillaria aurea* Schott, (4) BÖ 1143, 20.05.2007, End. "LC". Ir-Tur.
- F. pinardii* Boiss. (5) BÖ 1028, 15.04.2007, (18) BÖ 1619, 18.04.2008, Ir-Tur.
- Tulipa armena* Boiss. var. *lycica* (Baker) Marais, (6) BÖ 1108, 20.05.2007, (19) BÖ 1698, 05.05.2008, End. "LC".
- Gagea peduncularis* (J. & C. Presl) Pascher, (20) BÖ 1660, 20.04.2008, Medit.
- G. granatelli* (Parl.) Parl., (18) BÖ 1625, 18.04.2008, Medit.
- G. villosa* (M.Bieb.) Duby. var. *villosa* (19) BÖ 1634, 18.04.2008, Medit.
- **G. villosa* (M.Bieb.) Duby. var. *hermonis* Dafni & Heyn, (1) BÖ.1011, 15.04.2007, Ir-Tur.
- Colchicum triphyllum* Kuntze, BÖ 1020, (2) 15.04.2007, Medit.
- AMARYLLIDACEAE**
- Sternbergia colchiciflora* Waldst & Kit., (19) BÖ 2282, 29.09.2008.
- IRIDACEAE**
- Iris kerneriana* Asch. & Sint. ex. Baker, (18) BÖ 1792, 02.06.2008, End. "LC". Euro-Sib.
- I. schachtii* Markgraf, (1) BÖ 1100, 20.05.2007, End. "LC". Ir-Tur.
- I. caucasica* Hoffm. subsp. *turcica* B.Mathew, (1) BÖ 1099, 20.05.2007, Ir-Tur.
- Crocus ancyrensis* (Herbert) Maw, (3) BÖ 1022, 15.04.2007 (1) BÖ 1013 (19) BÖ 1640, 18.04.2008, End. "LC". Ir-Tur.
- C. kotschyanus* C. Koch subsp. *cappadocicus* Mathew, (19) BÖ 1569, 25.09.2007, End. "LC". Ir-Tur.
- Gladiolus kotschyanus* Boiss., (16) BÖ 2093, 02.07.2008, Ir-Tur.
- ORCHIDACEAE**
- Cephalanthera rubra* (L.) L.C.M. Richard, (20) BÖ 2324, 27.06.2009.
- C. damasionum* (Miller) Druce, (16) BÖ 2084, 02.07.2008, Euro-Sib.
- Epipactis condensata* Boiss. ex D.P.Young, (18) BÖ 2184, 16.07.2008, E.Medit.
- **Limodorum abortivum* (L.) Swartz, (18) BÖ 2159, 16.07.2008.
- **Orchis tridentata* Scop., (20) BÖ 1863, 03.06.2008, E.Medit.
- O. mascula* (L.) L., subsp. *pinetorum* (Boiss. & Kotschy) G. Camus, (20) BÖ 1914, 03.06.2008, E.Medit.
- Dactylorhiza iberica* (M.Bieb. ex Willd.) Soó, (18) BÖ 2192, 16.07.2008, E.Medit.
- **D. romana* (Seb.) Soó, subsp. *romana*, (18) BÖ 1691, 05.05.2008, E. Medit.
- D. romana* (Seb.) Soó, subsp. *georgica* (Klinge) Soó ex Renz & Taub., (18) BÖ 1692, 05.05.2008, Eux.
- JUNCACEAE**
- Juncus inflexus* L., (10) BÖ 1423, 27.07.2007, (20) BÖ 2237, 11.08.2008.
- J. articulatus* L., (20) BÖ 2238, 11.08.2008, Euro-Sib.
- Luzula forsteri* (Sm.) DC., (18) BÖ 1686, 05.05.2008, Euro-Sib.
- CYPERACEAE**
- Scirpoides holoschoenus* (L.) Sojak, (10) BÖ 1376, 04.07.2007, (10) BÖ 1430, 27.07.2007.
- Carex divulsa* Stokes. subsp. *leersii* (Kneucker) W. Koch, (16) BÖ.2085, 02.07.2008, Euro-Sib.
- C. stenophylla* Wahlenb. subsp. *stenophylloides* (W. I.Krecz.) Egorova, (20) BÖ 1666, 20.04.2008, Ir-Tur.
- C. acutiformis* Ehrh., (20) BÖ 1730, 06.05.2008, Euro-Sib.
- Carex flacca* Schreber subsp. *serratula* (Biv.) Greuter, (20) BÖ 2479, 16.08.2009.
- **C. halleriana* Asso, (20) BÖ 1648, 06.05.2008, Medit.
- POACEAE**
- Brachypodium sylvaticum* (Hudson) P. Beauv., (18) BÖ 2355, 27.06.2009, Euro-Sib.
- Elymus lazicus* (Boiss.) Melderis subsp. *divaricatus* (Boiss. & Balansa) Melderis
- = *Elytrigia lazica* (Boiss.) Valdés & H.Scholz subsp. *divaricata* (Boiss. & Balansa) Valdés & H.Scholz, (20) BÖ 1911, 03.06.2008, (21) BÖ 1931, 04.06.2008, End. "LC". Ir-Tur.
- **E. repens* (L.) Gould subsp. *elongatiformis* (Drobov) Melderis, (20) BÖ 2261, 16.08.2008, Ir-Tur. (Det: E. Cabi)
- E. hispidus* (Opiz) Melderis subsp. *hispidus*, (19) BÖ 2202, 16.07.2008. (Det: E. Cabi)
- E. hispidus* (Opiz) Melderis subsp. *barbulatus* (Schur) Melderis (19) BÖ 2203, 16.07.2008. (Det: E. Cabi)
- Aegilops umbellulata* Zhuk. subsp. *umbellulata* (20) BÖ 1950, 04.06.2008.
- Ae. triuncialis* L. subsp. *triuncialis* (20) BÖ 2055, 02.07.2008.

- Secale cereale* L. var. *cereale* (20) BÖ 1855, 03.06.2008. (Det: E. Cabi)
- Hordeum bulbosum* L., (19) BÖ 1585, 25. 09. 2007, (Det: E. Cabi)
- Taeniatherum caput - medusae* (L.) Nevski subsp. *crinitum* (Schreber) Melderis (20) BÖ 1871, 03.06.2008, Ir–Tur.
- Bromus japonicus* Thunb. subsp. *anatolicus* (Boiss. & Heldr.) Péntzes, (1) BÖ 1185, 09.06.2007, (20) BÖ 1857, 03.06.2008.
- **B. scoparius* L., (20) BÖ 1869–T. Ağar, 03.06.2008.
- B. tectorum* L., (6) BÖ 1194, 09.06.2007, (7) BÖ 1341, 04.07.2007.
- **B. cappadocicus* Boiss. & Balansa subsp. *sclerophyllus* (Boiss.) P.M.Smith
- = *Bromopsis cappadocica* (Boiss. & Balansa) Holub subsp. *sclerophylla* (Boiss.) H. Scholz & Valdés. (4) BÖ 1145, 20.05.2007, End. “LC”. Ir-Tur. (Det: M. Doğan).
- B. tomentellus* Boiss.
- = *Bromopsis tomentella* (Boiss.) Holub, (6) BÖ 1192, 09.06.2007, (13) BÖ 1241, 09.06.2007, (15) BÖ 1276, 10.06.2007, 02.06.2008, Ir–Tur.
- B. riparius* Rehm., (19) BÖ 1809–T. Ağar, 02.06.2008.
- **Avena sterilis* L. subsp. *ludoviciana* (Durieu) M.Gillet et Magne, (20) BÖ 2287, 01.10.2008. (Det: E. Cabi)
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- Agrostis capillaris* L. var. *capillaris*, (18) BÖ 2475, 16.08.2009, Euro–Sib.
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- A. lanatus* Sm., (7) BÖ 1120, 20.05.2007, (19) BÖ 1635, 18.04.2008, End. “LC”. Ir-Tur.
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- P. angustifolia* L., (20) BÖ 1601, 27.09.2007 (Det: M.Doğan) .
- P. nemoralis* L., (18) BÖ 1774, 02.06.2008.
- P. bulbosa* L., (6) BÖ 1102, 20. 05. 2007, (10) BÖ 1160, 20.05.2007.
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- **Sesleria phleoides* Steven ex Roem. & Schult., (22) BÖ 1940, 04.06.2008.
- Melica persica* Kunth. subsp. *jacquemontii* (Decne. ex Jaquem) P.H.Davis, (9) BÖ 1348, 04.07.2007.
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