

Flora of Kirmir Valley (Güdül, Ankara)

Burcu TARIKAHYA ELÇİ, Sadık ERİK

Hacettepe University, Faculty of Science, Department of Biology, 06532, Beytepe, Ankara - TURKEY

Received: 22.12.2004

Accepted: 08.09.2005

Abstract: This paper describes a floristic study on Kirmir valley, between GÜDÜL and YEŞİLÖZ district, in Ankara province. The study was carried out during 2000-2003 and 1040 vascular plant specimens were collected. Four hundred and forty-eight wild taxa belonging to 266 genera and 74 families were determined. Furthermore, as for cultivated plants, 45 taxa were determined. The total number of wild and cultivated plant species is 493. Thirty-two of the wild taxa are endemic to Turkey and the rate of endemism is 7.1%. The 3 largest families are *Asteraceae* (43 taxa), *Brassicaceae* (40 taxa), and *Fabaceae* (37 taxa). The largest 3 genera are *Alyssum* L. with 10 taxa, *Veronica* L. with 7 taxa and *Salvia* L., *Astragalus* L. and *Vicia* L. with 6 taxa. The phytogeographical distribution of the wild species is as follows: Irano-Turanian elements 73 (16.3%), Mediterranean elements 46 (10.3%) and Euro-Siberian elements 43 (9.6%). Forty-seven species are new records for the A4 square. Similarities between the taxa and ratio of phytogeographical elements of Kirmir valley and those of 10 other studies performed near our study area were compared using clustering analysis.

Key Words: Flora, Kirmir valley, GÜDÜL, YEŞİLÖZ, Ankara, Turkey

Kirmir Çayı Vadisinin (Güdül, Ankara) Florası

Özet: Bu çalışmada, GÜDÜL ve YEŞİLÖZ ilçeleri arasındaki Kirmir çayı vadisinin florası araştırılmıştır. Araştırma alanından 2001-2003 yıllarında 1040 bitki örneği toplanmış, 74 familya ve 266 cinse ait 448 doğal takson saptanmıştır. Bunların dışında kültür bitkisi olarak 45 takson tespit edilmiştir. Doğal ve kültür bitkilerinin toplam takson sayısı 493'dür. Alandaki endemik bitki sayısı 32 olup oranı %7,1'dir. En büyük üç familya *Asteraceae* (43 takson), *Brassicaceae* (40 takson) ve *Fabaceae* (37 takson)'dir. En büyük cinsler ise sırasıyla *Alyssum* L. (10 taxon), *Veronica* L. (7 taxon) ve *Salvia* L., *Astragalus* L., *Vicia* L. (6 takson)'dir. Taksonların fitocoğrafik bölgelere dağılımı ve oranları da şöyledir: İnan-Turan elementleri 73 (% 16,3); Akdeniz elementleri 46 (% 10,3) ve Avrupa-Sibirya elementleri 43 (% 9,6). 47 tür A4 karesi için yeni kayıttır. Kirmir çayı vadisi ve yakın alanlarda bulunan diğer 10 çalışma arasındaki takson benzerlikleri ve fitocoğrafik element oranları küme analizi ile kıyaslanmıştır.

Anahtar Sözcükler: Flora, Kirmir çayı vadisi, GÜDÜL, YEŞİLÖZ, Ankara, Türkiye.

Introduction

Kirmir valley, which was chosen as the research area, is located in GÜDÜL district, 90 km north-west of Ankara. This area is geographically in Central Anatolia and in the Irano-Turanian phytogeographical region. According to the grid-square system adopted for the Flora of Turkey (Davis, 1965-1985) the study area is in the A4 square. The borders of the research area are GÜDÜL dam at the south-west end and YEŞİLÖZ district at the north-east end of the valley. Therefore the research area is approximately 15 km long (Figure 1). The valley is bordered by banks on the north and south sides. The research area lies between the latitudes 32° 12' 37" and 32° 16' 00", and the longitudes 40° 13' 07" and 40° 15'

31". The altitude of the area is between 680 m at the bottom of the valley and 800 m at the ridges.

The valley has a volcanic structure formed by agglomerate, andesitic, and basaltic rocks from the Galatean Volcanic province (Tankut A, Satır M, Güleç N& toprak V, 1995. Galatya Volkanitlerinin Petrojenezi, TÜBİTAK, rapor no:YBAG 0059, Ankara, *pers.com.*).

Because of the absence of a meteorological station in GÜDÜL we used meteorological data obtained from the neighbouring districts Beypazarı and Kızılcahamam to determine the climate in the region. In Beypazarı and Kızılcahamam the average annual temperature is 13 °C and 9.9 °C respectively. The average annual precipitation is 398.1 mm in Beypazarı and 577.4 mm in

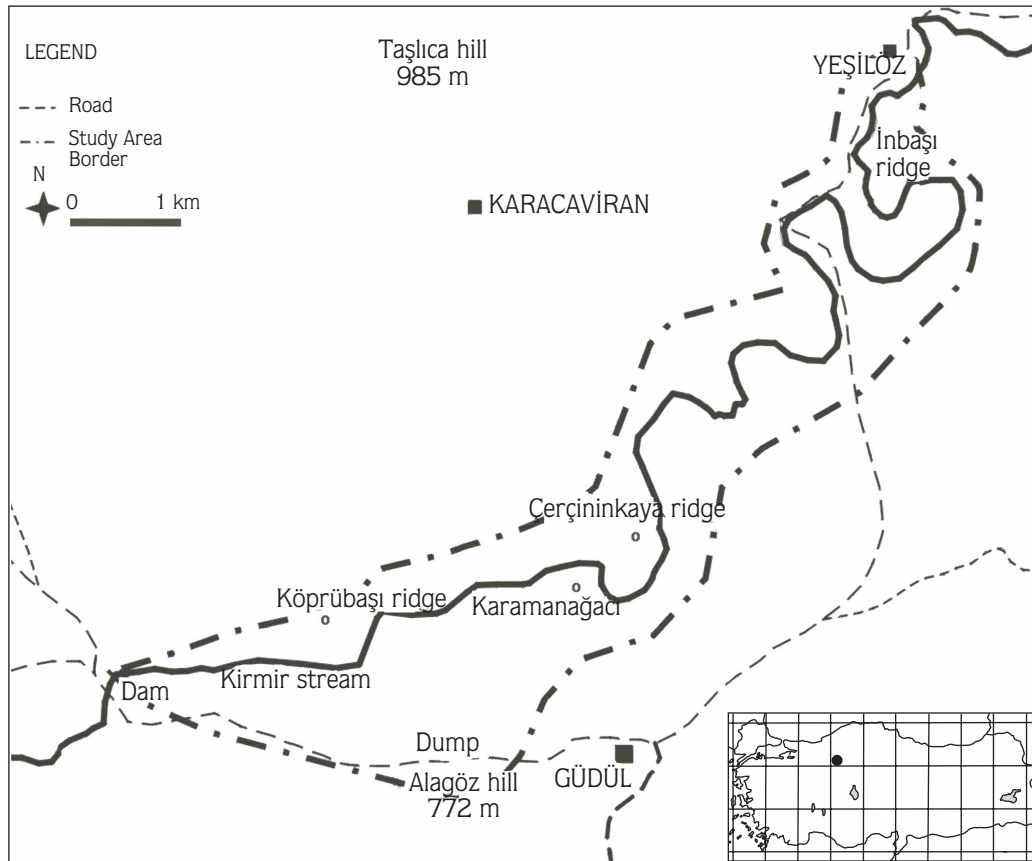


Figure 1. Geographical map of the study area.

Kızılcahamam. A warm and humid climate is present in the area owing to its topography and precipitation regime, which is East Mediterranean Type 1 WSAS (winter, spring, autumn, summer) (Akman, 1990). The

ombro-thermic climate diagrams (Figure 2) were drawn using Gausson's method (Cireli et al., 1973). As seen in Figure 2, Beypazarı has an arid climate, while Kızılcahamam has a humid one. Güdül's climate is

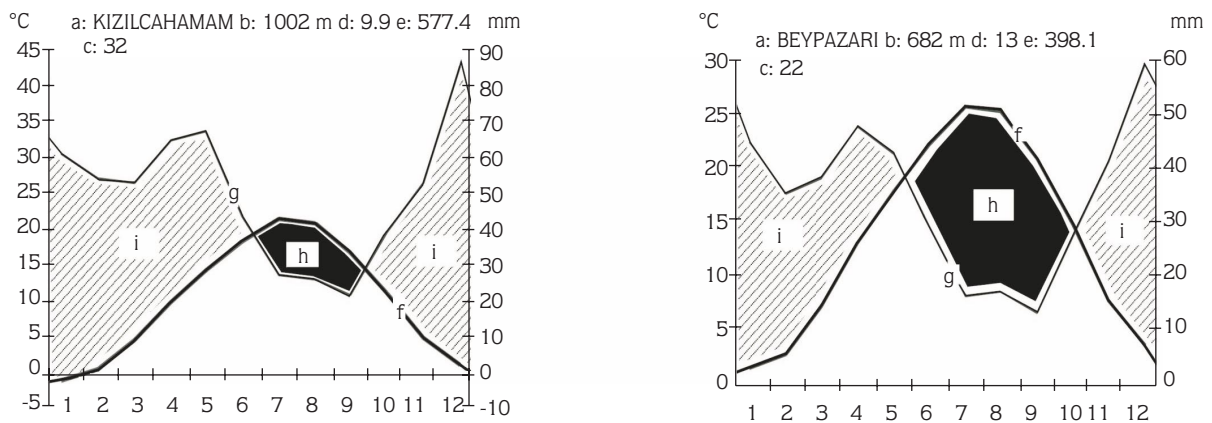


Figure 2. Ombro-thermic climate diagrams.

somewhere between those of the 2 districts. Warmth and humidity are high in the valley, giving rise to the cultivation of many Mediterranean and other plants. *Pinus brutia* Ten. and *Olea europaea* L. var. *europaea* are characteristic species for the Mediterranean area. *Cupressus sempervirens* L., *Pistacia vera* L., *Punica granatum* L., *Platanus orientalis* L. and *Persica vulgaris* Mill. are also typical examples.

There are aquatic plants in Kirmir stream (such as *Potamogeton nodosus* Poir. and *Lemna minor* L.) and marshy plants at the edge of the stream (*Typha domingensis* Pers., *Phragmites australis* (Cav.) Trin. ex Steud., *Juncus inflexus* L., *Cyperus longus* L., *C. glaber* L., *C. serotinus* Rottb. and *Sparganium erectum* L. subsp. *neglectum* (Beeby) K.Richt). In the valley basin, *Tamarix smyrnensis* Bunge, *Calamagrostis pseudophragmites* (Haller f.) Koeler, *Epilobium hirsutum* L., *Lythrum salicaria* L., *Ranunculus repens* L., *Rorippa sylvestre* (L.) Bessey, *Polygonum lapathifolium* L., *Rumex crispus* L., *Pulicaria dysenterica* (L.) Bernh., *Mentha longifolia* (L.) Hudson, and *Polypogon monspeliensis* (L.) Desf. form the dominant plant cover. Along the stream, dense aquatic gallery forest is present in some places and sparse forest in others. *Salix alba* L., *Populus nigra* L., *Elaeagnus angustifolia* L. and *Platanus orientalis* L. are the major representatives of this vegetation type.

On the valley's slopes *Paliurus spina-christi* Mill. is widespread. *Pistacia atlantica* Desf. is very common around İn Önü caves and İğdelik separately. *Quercus pubescens* Willd. becomes dominant at 750 m and higher. *Prunus spinosa* L. and *Rosa canina* L. are also common on the slopes. *Crataegus monogyna* subsp. *monogyna* J.Jacq., *Berberis crataegina* DC., *Colutea cilicica* Boiss. & Bal., *Prunus cocomilia* Ten., *Amygdalus webbii* Spach., *Rubus caesius* L., *Rubus sanctus* Schreb., *Rosa hemisphaerica* Herrm., *Cotoneaster nummulariifolia* Fisch. & C.A.Mey., *Crataegus orientalis* Pall. ex M.Bieb. var. *orientalis*, *Sorbus aucuparia* L., *Pyrus elaeagnifolia* Pall. subsp. *kotschyana* (Boiss.) Browicz, *Lonicera etrusca* Santi var. *etrusca* and *Jasminum fruticans* L. are woody species found on the slopes.

The cultivated woody species in Kirmir valley include *Cerasus vulgaris* Mill., *Armeniaca vulgaris* L., *Persica vulgaris*, *Amygdalus communis* L., *Pistacia vera*, *Cydonia oblonga* Mill., *Malus sylvestris* Mill. subsp. *mitis* (Wallr.) Mansf., *Morus alba* L., *M. nigra* L., *Cupressus sempervirens*, *Cedrus libani*, *Olea europaea* var.

europaea, *Punica granatum*, *Pyrus communis* L. subsp. *sativa* (DC.) Hegi, *Corylus avellana* L. var. *avellana* and *Pinus brutia*.

The valley has a volcanic structure formed by agglomerate, andesitic, and basaltic rocks. The common plants of this vegetation type are *Aubrieta pinardii*, *Arabis caucasica* subsp. *caucasica*, *Minuartia juniperina*, *Umbilicus erectus*, *Parietaria judaica*, *Galium verum*, *Sedum caespitosum*, *Sedum confertiflorum*, *Androsace maxima*, *Dianthus capitatus*, *Asplenium adiantum-nigrum* and *Polystichum aculeatum*.

Materials and Methods

The materials of this study are 1040 vascular plant specimens collected from Kirmir valley between 2001 and 2003. These specimens were identified basically using the Flora of Turkey (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000), other Floras (Boissier, 1867-1888; Rechinger et al., 1965-1977; Tutin & Heywood, 1964-1980; Zohary, 1966-1986; Komarov & Shishkin, 1933-1964; Townsend & Evan, 1966-1985; Bor, 1968; Pignatti, 1982) and revisions (Leblebici, 1990; Dönmez & Yıldırım, 2000). In the floristic list, whether the plant is endemic or not, and which phytogeographical region and threatened categories it belongs to are mentioned and the position of plants that are in vulnerable and data deficient categories are discussed at the end. Cultivated plants are also indicated in parentheses after the locality. Since all the plants were collected from the study area in "A4 Ankara: Güdül", this information is not repeated. Author abbreviations follow Brummitt and Powell (1992). Threatened categories are proposed for the endemic and some non-endemic taxa according to IUCN risk categories (Ekim et al., 2000; IUCN, 2001) and the position of some species in the research area is discussed. The phytogeographical regions of the taxa were evaluated according to Davis (1965-85, 1988). The wild taxa were compared with floras of neighbouring areas (Akman, 1974, 1979a, 1979b; Demircioğlu, 1990; Altınözlü & Vural, 2000). The abbreviations used in the text and the floristic list are as follows: Ir.-Tur.: Irano-Turanian; Medit.: Mediterranean; E. Medit.: East Mediterranean; E. Medit. (mt.): East Mediterranean (mountain); Euro-Sib.: Euro-Siberian; Eux.: Euxine; En.: Endemic; CR: Critically endangered; EN: Endangered; VU: Vulnerable; NT: Near threatened;

LC: Least concern; DD: Data deficient; B.T.: Burcu Tarıkahya; HUB: Hacettepe University Department of Biology Herbarium in Ankara, CA: Cluster analysis. At least one sample for each taxon was prepared by herbarium techniques (Erik et al., 1996) and deposited at HUB.

Similarities between the taxa and phytogeographical element ratios of Kirmir valley and those of 10 other studies were compared using CA. The NTSYS program written for the IBM PC by Rohlf (2000) for CA was used. The SIMQUAL similarity and COMPLETE clustering are used for analysing taxa similarities, and SIMINT similarity with Euclidian distance combined with unweighted pair group average linking was used for the CA of phytogeographical element ratios.

Discussion

Between 2000 and 2003, 1040 vascular plant specimens were collected from the area. Four hundred and thirty-six species, 6 subspecies and 6 varieties belonging to 266 genera and 74 families were determined. Besides these the cultivated ones are 45 taxa belonging to 31 genera, and 5 families. The total number of wild and cultivated plants is 493. Two of the 448 wild taxa belonged to Pteridophyta, and 446 belonged to Spermatophyta. Gymnosperms and Angiosperms

comprised 3 and 443 taxa, respectively. Of the Angiosperms 382 taxa are Dicotyledonae, and 61 taxa are Monocotyledonae.

The taxa can be categorised according to phytogeographic regions as follows: Ir.-Tur. 72 (16%), Medit. 46 (10.3%) and Euro-Sib. 43 (9.6%). The rest of the taxa are either multiregional or phytogeographically unknown (Table 1). The research area is located in the Ir.-Tur. phytogeographical region, and so Ir.-Tur. Elements are more numerous than both Euro-Sib. and Medit. elements. Medit. and Euro-Sib. elements are approximately equal in number; this is interesting because the research area is closer to the Euro-Sib. phytogeographic region. Since the stream made the weather hotter and increased the moisture in the valley, Mediterranean elements are more numerous. Twenty-one (5.5%) of the Ir.-Tur. elements, 4 (0.9%) of the Medit. elements and 1 (0.2%) of the Euro-Sib. elements are endemic to Turkey. The total endemism rate is 7%, with 32 taxa. The threat categories of endemic and non-endemic species were evaluated according to IUCN risk categories (Ekim et al., 2000; IUCN 2001). The results are summarised in Table 1. The distribution of the threat categories is as follows: 2 endemic taxa and 1 non-endemic taxon in VU, 5 endemic taxa in NT, 27 endemic and 1 non-endemic taxa in LC, and 1 non-endemic taxon in DD.

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

Phytogeographic regions	Endemics		Non-Endemics		Total	
	Number	%	Number	%	Number	%
Irano-Turanian	21	4.7	51	11.4	72	15.1
Mediterranean	4	0.9	42	9.3	46	10.2
Euro-Siberian	1	0.2	42	9.4	43	9.4
Multiregional or unknown	6	1.3	281	62.8	287	65.3
Total	32	7.1	416	92.9	448	100.0
EX	-	-	-	-	-	-
EW	-	-	-	-	-	-
CR	-	-	-	-	-	-
EN	-	-	-	-	-	-
VU	2	0.4	1	0.2	3	0.6
NT	5	1.1	-	-	5	1.1
LC	27	6.0	1	0.2	28	6.2
DD	-	-	1	0.2	1	0.2
NE	-	-	-	-	-	-

A comparison of the endemic and phytogeographical elements is given in Table 2. According to this table, endemic plant number and endemism rate are highest in C.II (Demircioğlu, 1990). Our research area has a relatively low rate of endemism since its endemic taxa number is not very low. Ir.-Tur. and Medit. elements are most numerous in Bey. (Akman & Ketenoğlu, 1974). The number of Euro.-Sib. elements is higher in our research area.

The largest 10 families according to taxa number are shown in Table 3. *Asteraceae* is first with, 43 taxa, followed by *Brassicaceae* (40), *Fabaceae* (37), *Lamiaceae* (35), *Poaceae* (29), *Boraginaceae* (23), *Apiaceae* (21),

Rosaceae (19), *Scrophulariaceae* (15), and *Liliaceae* (13). The total ratio of the 10 major families is 61.4%, with the remaining families comprising 38.6%. This means that the major number of the 10 families taxa is 2/3 of that of the remaining 64 families (173). The major families' order in our study is concordant with the Flora of Turkey (Davis, 1965-1985). According to the largest family order, Imrahor is more similar to our research area with respect to the other floristic surveys (Table 3). This is because both the Kirmir and Imrahor research areas have valley structures.

The largest genera in terms of taxa number and ratios in the area are *Alyssum* L. (10), *Veronica* L. (7), *Salvia* L.

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

Studies	Total taxa	Total endemic		Irano-Turanian		Mediterranean		Euro-Siberian	
		taxa	%	taxa	%	taxa	%	taxa	%
Gud.	448	32	7.1	72	15.1	46	10.2	43	9.4
C.II	177	20	12.0	25	15.3	5	3.0	6	3.6
Imr.	340	30	9.1	67	20.4	17	5.1	20	6.0
Bey.	616	27	4.4	87	14.1	86	14.0	12	1.9
Aya.	387	37	9.6	72	18.6	22	5.7	9	2.3
Isi.	448	26	5.7	50	11.2	52	11.7	38	8.4

Abbreviations:

Gud.: Flora of Kirmir Valley (Güdül, Ankara)

C.II: Çubuk II Barajının Florası (Demircioğlu, 1990)

Imr.: İmrahor (Ankara) Vadisi Florası (Altınözlü & Vural, 2000)

Bey.: Contribution à l'étude de la flore de la region de Beypazarı Karaşar et Nallıhan (Akman, 1974)

Aya.: Contribution à l'étude de la flore des montagnes d'Ayaş (Akman, 1979a)

Isi.: Contribution to the Flora of Işık Mountain and Kızılcahamam-Kargasekmez region (Akman, 1979b)

Table 3. Comparison of the largest families in Kirmir valley and neighbouring areas (taxa numbers and percentage).

	Floristic studies					
	Gud.	C.II	Imr.	Bey.	Aya.	Isi.
Asteraceae	43 (9.5)	19 (10.8)	51 (15)	45 (7.3)	32 (8.3)	45 (9.9)
Brassicaceae	40 (8.9)	11 (6.3)	21 (6.2)	40 (6.5)	21 (5.5)	22 (4.8)
Fabaceae	37 (8.2)	26 (14.8)	32 (9.4)	80 (12.9)	63 (16.3)	55 (12.1)
Lamiaceae	35 (7.8)	15 (8.5)	21 (6.2)	37 (6.0)	31 (8.1)	34 (7.5)
Poaceae	29 (6.5)	14 (7.9)	19 (5.6)	57 (9.2)	34 (8.8)	36 (7.9)
Boraginaceae	23 (5.1)	10 (5.7)	15 (4.4)	19 (3.1)	15 (3.8)	17 (3.7)
Apiaceae	19 (4.6)	8 (4.5)	12 (3.5)	14 (2.3)	14 (3.5)	19 (4.2)
Rosaceae	21 (4.2)	9 (5.1)	15 (4.4)	27 (4.4)	11 (2.8)	17 (3.8)
Scrophulariaceae	15 (3.3)	3 (1.7)	15 (4.4)	25 (4.0)	67 (17.3)	23 (5.0)
Liliaceae	13 (2.8)	9 (5.1)	5 (1.5)	24 (3.9)	12 (3.0)	9 (2.0)

*Abbreviations are below Table 2

(6), *Astragalus* L. (6), and *Vicia* L. (6) (Table 4). Annual *Alyssum* species are generally found around the fields in Kirmir valley.

The CA of taxa similarity of the 6 neighbouring research areas is given in Figure 3. Beypazarı is the first group, distinct from all the other areas. In Beypazarı, the Mediterranean elements are highest in number, and this research area also has the highest taxa number. In addition, it is located to the west of all the other areas. Kirmir valley comprises the second group in terms of

highest taxa number. It has a valley structure and a moist climate. Işık mountain is the third group, located to the north of all the other areas.

In Figure 4, the phytogeographic element ratio similarity CA formed using Euclidian distance is represented. According to this figure, 2 major groups are formed. The first group is Bey., Gud. and Isi. The second group is Imr., Aya. and C.II. Within the first group, Gud.-Isi. (1.90) are derived from Bey. In the second group, Aya.-C.II. (1.25) are more similar than Imr. According to

Table 4. Comparison of the largest genera in Kirmir valley and neighbouring areas (taxa numbers and percentage).

Floristic studies						
	Gud.	C.II	Imr.	Bey.	Aya.	Isi.
Alyssum	10 (2.2)	3 (1.7)	4 (1.2)	10 (1.6)	7 (1.5)	5 (1.1)
Veronica	7 (1.6)	1 (0.6)	3 (0.9)	9 (1.4)	3 (0.8)	8 (1.8)
Salvia	6 (1.3)	3 (1.7)	4 (1.2)	5 (0.8)	8 (1.8)	5 (1.1)
Astragalus	6 (1.3)	3 (1.7)	6 (1.8)	18 (8.2)	21 (4.6)	11 (2.4)
Vicia	6 (1.3)	1 (0.6)	1 (0.3)	3 (0.5)	7 (1.5)	5 (1.1)
Euphorbia	5 (1.1)	2 (1.1)	4 (1.2)	6 (1.0)	7 (1.5)	5 (1.1)
Geranium	5 (1.1)	1 (0.6)	2 (0.6)	6 (1.0)	3 (0.8)	3 (0.7)
Ranunculus	5 (1.1)	2 (1.1)	3 (0.9)	9 (1.4)	3 (0.8)	8 (1.8)
Trifolium	5 (1.1)	4 (2.3)	5 (1.5)	14 (2.3)	6 (1.3)	13 (2.9)
Centaurea	5 (1.1)	4 (2.3)	7 (2.0)	3 (0.5)	2 (0.5)	3 (0.7)

*Abbreviations are below Table 2

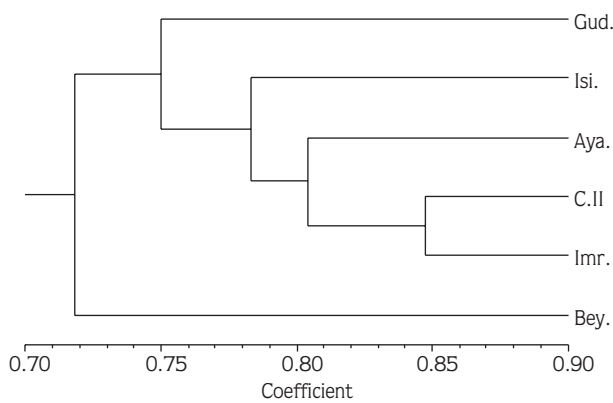


Figure 3. Cluster analysis of the taxa similarities between Gdl and compared floristic research areas (abbreviations are below Table 2).

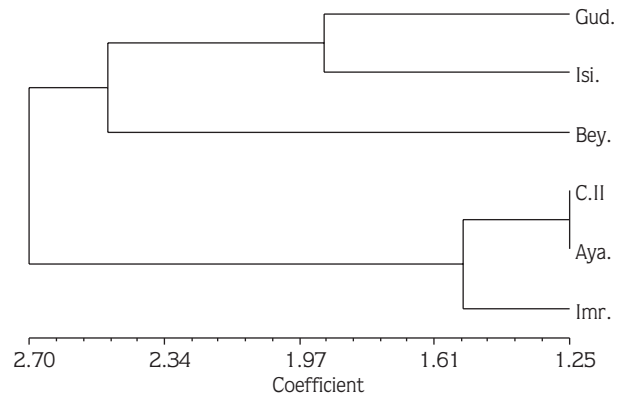


Figure 4. Cluster analysis of the phytogeographic element ratio similarity between Gdl and the compared floristic research areas (abbreviations are below Table 2).

this figure, the similarities within the second group are higher (1.54) than those within the first group (2.5).

Forty-seven species are new records for the square A4 (Donner, 1990). These new records have been published previously (Tarıkahya et al., 2003).

References

- Akman Y (1990). *İklim ve Biyoiklim*. Ankara: Palme Yayın Dağıtım, Mühendislik serisi: 103.
- Akman Y & Ketenoğlu O (1974). Contribution à l'étude de la flore de la region de Beypazarı Karaşar et Nallıhan, *Communications de la Faculté de Sciences de l'Université d'Ankara*, Série C , Tome 18, 50p.
- Akman Y & Ketenoğlu O (1979a). Contribution à l'étude de la flore des montagnes d'Ayaş, *Communications de la Faculté de Sciences de l'Université d'Ankara*, Supplement: 2, Série C2, Tome 23, 38p.
- Akman Y & Ketenoğlu O (1979b). Contribution to the Flora of Işık Mountain and Kızılcahamam-Kargasekmez region, *Communications de la Faculté de Sciences de l'Université d'Ankara*, Supplement: 3, Série C2 , Tome 23, 49p.
- Altınözlü H & Vural M (2000). İmrakor (Ankara) vadisi florası, *Ot Sistematik Botanik Dergisi* 7 (1): 29-55.
- Boissier E (ed.) (1867-1888). *Flora Orientalis*. Vols. 1-6, Geneva-Basel: unchanged reprinted in the Netherlands by NDB-Oldemarkt.
- Bor NL (1968). Gramineae Juss. in Townsend CC, Evan G, Al-Rawi A (eds.) *Flora of Iraq* Vol. 9, Baghdad: Ministry of Agriculture, Republic of Iraq.
- Brummitt RK & Powell CE (1992). *Authors of plant names*. Kew: Royal Botanic Gardens, 732p.
- Cireli B, Öztürk M & Seçmen Ö (1973). *Bitki Ekolojisi Uygulamaları*: İzmir: Ege Üniversitesi Fen Fakültesi Kitaplar Serisi No: 50, Ege Üniversitesi Matbaası, Bornova, 62p.
- Davis PH (ed.) (1965-1985). *Flora of Turkey and the East Aegean Islands*, 1-9. Edinburgh: Edinb. Univ. Press.
- Davis PH (ed.) (1988). *Flora of Turkey and the East Aegean Islands*, 10. Edinburgh: Edinb. Univ. Press.
- Demircioğlu FA (1990). Çubuk II Barajının Florası, *Gazi Üniversitesi Fen Edebiyat Fakültesi Biyoloji Dergisi* 1: 153-169.
- Donner J (1990). Verbreitungskarten zu P.H. Davis "Flora of Turkey, 1-10". *Linzer Biol Beitr* 22: 381-515.
- Dönmez AA & Yıldırım Ş (2000). Taxonomy of the genus *Prunus* L. (Rosaceae) in Turkey. *Turk J Bot* 24: 187-202.
- Ekim T, Koyuncu M, Vural M, Duman H, Aytaç Z & Adıgüzel N (2000). *Türkiye Bitkileri Kırmızı Kitabı (Eğrelti ve Tohumlu Bitkiler)*. Ankara: Türkiye Tabiatını Koruma Derneği, 246p.
- Erik S, Güner A, Yıldırım Ş & Sümbül H (1996). *Tohumlu Bitkiler Sistematigi Laboratuvar Kılavuzu*. Ankara: Literatür Yayınevi, 165p.
- Güner A, Özhatay N, Ekim T & Başer KHC (eds.) (2000). *Flora of Turkey and the East Aegean Islands*. Edinburgh: Edinb. Univ. Press.
- IUCN (2001). *IUCN Red List Categories and Criteria: Version 3.1*. IUCN, Gland, Switzerland and Cambridge: IUCN species Survival Commission. pp.ii+30.
- Komarov VL & Shishkin BK (eds.) (1933-1964). *Flora of USSR (English Translation)*, Leningrad: Akademia Nauk SSSR.
- Leblebici E (1990). The Genus *Poligonum* L. in Turkey. *Turk J Bot* 14: 203-214.
- Pignatti S (ed) (1982). *Flora d'Italia*. Vols. 1-3. Bologna, Roma, Milano: Edagricole.
- Rechinger KH (ed) (1965-1977). *Flora Iranica*. Granz-Austria: Akademische Druck, Verlagsanstalt.
- Rohlf FJ (2000). *NTSYS-pc Numerical taxonomy and multivariate analysis system, version 2.01*. Setauket New York: Applied Biostatistics, Inc.
- Tarıkahya B, Mutlu B & Erik S (2003). New Floristic Records for A4, B1, B4, B5, B7 and C3 Squares in Flora of Turkey. *Hacettepe Journal of Biology and Chemistry*. 32: 83-95.
- Townsend CC & Evan G (eds.) (1966-1985). *Flora of Iraq* Vols. 2, 3, 4, 8. Baghdad: Ministry of Agriculture, Republic of Iraq.
- Tutin TG, Heywood VH, Burges NA, Valentine DH, Walters SM & Webb DA (eds) (1964-1980). *Flora Europaea*. Vols. 1-5. Cambridge: Cambridge Univ. Press.
- Zohary M (1966-1986). *Flora Palaestina*. Vols. 1-4. Jerusalem: Academic Press, Israel.

Acknowledgements

We would like to thank the municipality of Güdül for its technical support, and Assist. Prof. Birol Mutlu, Assoc. Prof. Ali A. Dönmez, Prof. Dr. Şinasi Yıldırım, Prof. Dr. Musa Doğan, Haşim Altınözlü and Dr. Gerald Parolly for identifying some of the species.

APPENDIX

FLORISTIC LIST

PTERIDOPHYTA

ASPLENIACEAE

Asplenium adiantum-nigrum L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1069.

ASPIDIACEAE

Polystichum aculeatum (L.) Roth

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1336.

SPERMATOPHYTA

GYMNASPERMAE

PINACEAE

Picea orientalis (L.) Link

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1386. (Culture).

Cedrus libani A.Rich.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 7 ix 2002, BT 1934. Medit. (Culture).

Pinus nigra Arn. subsp. *nigra* var. *caramanica* (Loudon) Rehder

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1387.

P. brutia Ten. var. *brutia*

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7 ix 2002, BT 1918. Medit. (Culture).

CUPRESSACEAE

Cupressus sempervirens L.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 21 iv 2002, BT 1390. (Culture).

Juniperus oxycedrus L. subsp. *oxycedrus*

Balıklar, below Alagöz Hill, around Örnek vineyards, steppe, N 40° 13' 10.5" E 32° 13' 37.5" 720 m, 29 vi 2003, BT 2031.

EPHEDRACEAE

Ephedra major Host

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1036. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 11 v 2002, BT 1502.

ANGIOSPERMAE

DICOTYLEDONAE

RANUNCULACEAE

Nigella arvensis L. var. *glauca* Boiss.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 30 vi 2002, BT 1788.

N. elata Boiss.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1288. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 30 vi 2002, BT 1790.

Consolida regalis Gray subsp. *paniculata* (Host) Soó

var. *paniculata*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1341. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 30 vi 2002, BT 1776.

var. *divaricata* (Ledeb) P.H.Davis

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1737.

Clematis orientalis L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1862.

Adonis aestivalis L. subsp. *aestivalis* L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1183.

A. flammea Jacq.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32°

14' 48.1", 680 m, 27 iv 2002, BT 1474. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1011.

Ranunculus repens L.

Near dam, Kirmir valley, meadow, N 40° 12' 58"-E 33 °12' 44", 690 m, 11 v 2002, BT 1513.

R. paludosus Poir.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1432.

R. cuneatus Boiss.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 21 iv 2002, BT 1365.

R. reuterianus Boiss.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1002. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1248. Det: G. Parolly.

R. arvensis L.

Alagöz hill, around dump, steppe, K 40° 12' 37.0" D 32 ° 13' 41.3" 770 m, 11 v 2002, BT 1530. Det: B. Mutlu.

Ceratocephalus falcatus (L.) Pers.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1004. Det: B. Mutlu.

BERBERIDACEAE

Berberis crataegina DC.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1101. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 11 v 2002, BT 1520. Ir.-Tur?

PAPAVERACEAE

Chelidonium majus L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1087. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32°

13' 37.5", 720 m, 27 iv 2002, BT 1470. Euro-Sib.

Glaucium acutidentatum Hauskn. & Bornm.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT1866. En.-LC. Ir.-Tur.

Papaver rhoeas L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1601.

P. laceratum Popov

Between Gūdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 11 v 2002, BT 1488. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 11 v 2002, BT 1517.

P. dubium L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 29 iv 2001, BT 1163.

Hypocoum procumbens L.

Between Gūdül and Yeşilöz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 21 iv 2002, BT 1402. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1077. Medit.

Fumaria officinalis L.

Between Gūdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1558b. Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1382.

F. asepala Boiss.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1662. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 v 2002, BT1133. Ir.-Tur.

BRASSICACEAE

Brassica oleracea L. subsp. *oleracea*

Around new bridge between Gūdül and Yeşilöz, Kirmir valley, cultivated fields, N 40°

14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1896. (Culture).

Sinapis alba L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 11 v 2002, BT 1539. Det: B. Mutlu.

S. arvensis L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1189. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1061.

Hirschfeldia incana (L.) Lagr.-Foss.

Near dam, Kirmir valley, meadow, N 40° 12' 58"-E 33 °12' 44", 690 m, 30 vi 2002, BT 1773. Det: B. Mutlu.

Lepidium perfoliatum L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 27 iv 2002, BT 1462.

Cardaria draba (L.) Desv. subsp. *chalepensis* (L.) O.E.Schulz

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 27 iv 2002, BT 1459.

Coronopus squamatus (Forssk.) F.Asch.

Between Gūdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1545.

Aethionema arabicum (L.) Andr.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1212.

Thlaspi perfoliatum L.

Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1407. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1447.

Capsella bursa-pastoris (L.) Medik.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 13 iv 2002, BT 1427.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1067.

Boreava orientalis Jaub. & Spach

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1439. Det: A.A. Dönmez.

Fibigia clypeata (L.) Medik.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 17 vi 2003, BT 2013. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1073.

Alyssum linifolium Stephan ex Willd. var. *linifolium*

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1239.

A. huetii Boiss.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1446. En.-LC. Ir.-Tur.

A. blepharocarpum T.R.Dudley & Hub.-Mor.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1431. En.-NT. Ir.-Tur. Very widespread near the agriculture fields in Karamanağacı region and not at risk.

A. desertorum Stapf

var. *desertorum*

Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1377. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1445. Det: Ş. Yıldırımli.

var. *prostratum* T.R.Dudley

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1199. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1269.

A. minutum Schltld. ex D.C.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1053.

A. strictum Willd.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1142. Ir.-Tur.

A. minus (L.) Rothm.

var. **minus**

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1126.

var. **micranthum** (E.Mey.) T.R.Dudley

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1143. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1263.

A. murale Waldst. & Kit. var. **murale**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1563.

Clypeola jonthlasi L.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1619. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1" E 32° 14.33' 0" 754 m, 10 iv 2001, BT 1047.

Draba muralis L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1106. Det: B. Mutlu.

Erophila verna (L.) Chevall.

subsp. **verna**

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1102.

subsp. **praecox** (Stev.) Walters

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1065.

subsp. **spatulata** (Lang) Walters

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 27 iv 2002, BT 1466.

Arabis caucasica Willd. subsp. **caucasica**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 13 iv 2002, BT 1420. Det: B. Mutlu.

A. nova Vill.

Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 13 iv 2002, BT 1417. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1099.

A. aucheri Boiss.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BM 6248.

Rorippa sylvestre (L.) Bessey

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1678.

Aubrieta pinardii Boiss.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 13 iv 2002, BT 1388. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1109. En.-LC. Ir.-Tur.

Erysimum crassipes Fisch. & C.A.Mey.

Çerçininkaya ridges, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1268.

E. repandum L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1012. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1081.

Sisymbrium altissimum L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1707. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1264.

S. orientale L.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32°

15' 56.2", 760 m, 28 vii 2002, BT 1844. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1266.

S. loeselii L.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1645. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1352.

Descurainia sophia (L.) Webb ex Prantl.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 13 iv 2002, BT 1400. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1182.

D. kochii (F.Petri) Schulz

Alagöz hill, around garbage, steppe, N 40° 12' 37.0" -E 32° 13' 41.3" 770 m, 11 v 2002, BT 1533. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1255.

Arabidopsis thaliana (L.) Heynh.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1100. Det: Ş. Yıldırımli.

Camelina rumelica Vel.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 11 v 2002, BT 1503. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1213.

RESEDACEAE

Reseda lutea L.

var. **lutea**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1855. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1057.

var. **nutans** Boiss.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1864.

R. luteola L.

Around dam, Kirmir valley, 10 m from the stream, meadow, N 40° 12' 58" E 33° 12' 44" 690 m, 29 vi 2003, BT 2063.

CISTACEAE**Helianthemum salicifolium** (L.) Mill.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1441.

VIOLACEAE**Viola occulta** Lehm.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1442.

V. kitaibeliana Roem. & Schult.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1013. Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1416.

PORTULACACEAE**Portulaca oleracea** L.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1769.

CARYOPHYLLACEAE**Arenaria serpyllifolia** L.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1279.

Minuartia juniperina (L.) Maire & Petitm.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1394. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 11 v 2002, BT 1500.

M. sclerantha (Fisch. & C.A.Mey.) Thell.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1226. Ir.-Tur.

Stellaria media (L.) Vill. subsp. **media**

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1113.

Cerastium perfoliatum L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1041.

C. brachypetalum Pers. subsp. **roeseri** (Boiss. & Heldr.) Nyman

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1099.

Holosteum umbellatum L.var. **umbellatum**

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1052.

var. **glutinosa** (M.Bieb.) Gay

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 11 v 2002, BT 1527.

Moenchia mantica (L.) Bartl.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1250.

Dianthus crinitus Sm. var. **crinitus**

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1739.

D. capitatus Balb. ex DC.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1326. Euro-Sib.

Velezia pseudorigida Hub.-Mor.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1786. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1272. En. -VU. E. Medit. Distribution and population of this taxon are low.

Saponaria glutinosa M.Bieb.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1349.

S. officinalis L.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1880. Between Güdül and Yeşilöz,

around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1730.

Silene compacta Fisch.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 29 vi 2003, BT 2065.

S. subconica Friv.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1223.

ILLECEBRACEAE

Paronychia kurdica Boiss. subsp. **kurdica** var. **kurdica**

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1661. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1122.

POLYGONACEAE**Polygonum lapathifolium** L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, stream side, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7 ix 2002, BT 1917.

P. aviculare L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1687. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1774.

P. convolvulus L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1697.

Rumex scutatus L.

Around old bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1671.

R. gracilescens Rech.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1735. En. -NT. This taxon is found only locally near the stream and faces overgrazing.

R. crispus L.

Near dam, Kirmir valley, meadow, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1794.

CHENOPODIACEAE

Beta lomatogona Fisch. & C.A.Mey.

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1583. Ir.-Tur.

Chenopodium botrys L.

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7/972002, BT 1924.

C. murale L.

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7 ix 2002, BT 1914.

C. sosnowskyi Kapeller

Towards Köprübaşı ridge, Kirmir valley, meadow, 700 m, 7 ix 2002, BT 1931. Ir.-Tur.

AMARANTHACEAE

Amaranthus retroflexus L.

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7 ix 2002, BT 1923.

TAMARICACEAE

Tamarix smyrnensis Bunge

Around new bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1724. Yeşilöz town, İnbashi ridge, Kirmir valley, stream side, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1540.

HYPERICACEAE

Hypericum origanifolium Willd.

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1565.

H. perforatum L.

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1851.

MALVACEAE

Abutilon theophrastii Medik.

Near dam, Kirmir valley, dry brook, N 40° 12' 58"-E 33° 12' 44", 690 m, 29/672003, BT 2054.

Malva neglecta Wallr.

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7 ix 2002, BT 1921.

Alcea apterocarpa (Fenzl) Boiss.

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2". 760 m, 2 vi 2002, BT 1544. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1318. En. -LC. Ir.-Tur.

GERANIACEAE

Geranium lucidum L.

Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1429. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1070.

G. rotundifolium L.

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2001, BT 1847. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1136. Det: B. Mutlu.

G. pusillum Burm.f.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1265.

G. divaricatum Ehrh.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1219.

G. tuberosum L. subsp. tuberosum L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27/472002, BT 1455.

Erodium hoefftianum C.A.Mey.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1218.

E. ciconium (L.) L' Hér.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 v 2001, BT 1156. Çerçininkaya ridge, south-east side, Kirmir

valley, agglomerate rocks, 730 m, 16 v 2001, BT 1276.

E. cicutarium (L.) L'Hér. subsp. bipinnatum (Cav.) Tourlet

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 21 iv 2002, BT 1405. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1280.

E. moschatum (L.) L'Hér.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 27 iv 2002, BT 1461. Medit?

Pelargonium endlicherianum Fenzl.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1832.

ZYGOPHYLLACEAE

Tribulus terrestris L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2". 750 m, 28 vii 2002, BT 1872. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1327.

SIMAROUBACEAE

Ailanthus altissima (Mill.) Swingle

Across Köprü başı ridge, entrance of Kirmir valley, 700 m, 29 vi 2003, BT 2033. (Culture).

VITACEAE

Vitis vinifera L.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1717. (Culture).

RHAMNACEAE

Paliurus spina-christi Mill.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 2 vi 2002, BT 1562. Near dam, Kirmir valley, north side, N 40° 12' 58" E 33° 12' 44" 690 m, 29 viii 2002, BT 2100.

Zizyphus jujuba Mill.

Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15'

22.9°-E 32° 16' 2.7", 760 m, 17 vi 2003, BT 2012. (Culture).

ANACARDIACEAE

Pistacia atlantica Desf.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1234. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 23 vi 2002, BT 1733.

P. vera L.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1243. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 23 vi 2002, BT 1734. Ir.-Tur. (Culture).

FABACEAE

Gleditsia triacanthos L.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1798. Det: B. Mutlu. (Culture).

Genista sessilifolia DC.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1789. Ir.-Tur.

Galega officinalis L.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1303. Euro-Sib.

Colutea cilicica Boiss. & Bal.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1591. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1114.

Astragalus hamosus L.

Alagöz hill, around garbage, steppe, N 40° 12' 37.0"-E 32° 13' 41.3" 770 m, 11 v 2002, BT 1528.

A. melanophrurus Boiss.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1454. En.-NT. Ir.-Tur. Population and distribution of this taxon are very low.

A. pinetorum Boiss.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 23 vi 2002, BT 1748. -LC. Ir.-Tur.

A. strictifolius Boiss. var. *kutepovii* Şirj.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1839. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 28 vii 2002, BT 1902. Ir.-Tur.

A. ponticus Pall.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1767.

A. macrocephalus Willd. subsp. *finitimus* (Bunge) Chamb.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 28 vii 2002, BT 1900. Ir.-Tur.

Phaseolus vulgaris L.

Around new bridge between Güdül and Yeşilöz, Kirmir valley, cultivated fields, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1897. Balıklar, below Alagöz hill, Kirmir valley, cultivated fields, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1821. (Culture).

Cicer arietinum L.

Balıklar, below Alagöz hill, Kirmir valley, cultivated fields, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1836. (Culture).

Vicia villosa Roth.

subsp. *villosa*

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1557.

subsp. *dasycarpa* (Ten.) Cav.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1225.

V. articulata Hornem.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 11 v 2002, BT 1492.

V. ervilia (L.) Willd.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1175. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1281.

V. hirsuta (L.) Gray

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1214.

V. sativa L. subsp. *nigra* (L.) Ehrh. var. *nigra*

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1224.

Coronilla varia L. subsp. *varia*

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1574a. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1804.

Lathyrus inconspicuus L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 11 v 2002, BT 1493.

L. cicera L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1178. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1256.

L. aphaca L. var. *affinis* (Guss.) Archer

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1194.

Pisum sativum L. subsp. *elatius* (M.Bieb.) Asch. & Graebn. var. *elatius*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1130. Medit.

Ononis spinosa L. subsp. *leiosperma* (Boiss.) Şirj.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1308.

Trifolium speciosum Willd.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1254.

T. campestre Schreb.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 23 vi 2002, BT 1756. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1220.

T. fragiferum L. var. *fragiferum*

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1240.

T. sylvaticum Gérard ex Loisel

Yeşilöz town, İbnaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1604.

T. arvense L. var. *arvense*

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1559. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1147.

Melilotus officinalis (L.) Desr.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 11 v 2002, BT 1494. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1290.

M. alba Desr.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1740.

M. bicolor Boiss. & Bal.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 11 v 2002, BT 1490. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1164. En. -NT. Ir.-Tur. This taxon is widespread in the area but faces overgrazing.

Trigonella balansae Boiss. & Reut.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1207. Medit.

T. coerulescens (M.Bieb.) Hal.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1176. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1261. Ir.-Tur.

Medicago orbicularis (L.) Bartal.

Alagöz hill, around garbage, steppe, N 40° 12' 37.0"-E 32° 13' 41.3", 770 m, 11 v 2002, BT 1529.

M. x varia Martyn

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1743. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1299.

M. minima (L.) Bartal. var. *minima*

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16/572001, BT 1258.

Lotus corniculatus L. var. *tenuifolius* L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1688.

L. aegaeus (Gris.) Boiss.

Yeşilöz town, İbnaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1651. Ir.-Tur.

Onobrychis oxyodonta Boiss.

Yeşilöz town, İbnaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1637. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1192.

ROSACEAE

Prunus spinosa L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1090. Euro-Sib.

P. cocomilia Ten.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1001. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1825. Det: A.A. Dönmez. En. -VU. Widespread on the slopes and there seems no pressure.

P. x domestica L.

Yeşilöz town, İbnaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1868.

Cerasus mahaleb (L.) Mill. var. *mahaleb*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 17 vi 2003, BT 2023. Det: A.A. Dönmez.

C. avium (L.) Moench

Yeşilöz town, İbnaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1422. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1091. (Culture).

C. vulgaris Mill.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1889. (Culture).

Armeniaca vulgaris L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1898. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1088. (Culture).

Persica vulgaris Mill.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1818. (Culture).

Amygdalus communis L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1886. (Culture).

A. webbii Spach.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1007. E. Medit.

Rubus caesius L.

Between Gūdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 2 vi 2002, BT 1556.

R. sanctus Schreb.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1320. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1799.

Potentilla argentea L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1585.

P. recta L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1606. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1201.

P. supina L.

Between Gūdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1551.

P. reptans L.

Balıklar, below Alagöz hill, Kirmir valley, stream side, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1284.

Sanguisorba minor Scop. subsp. *muricata* (Spach) Briq.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1569.

Rosa hemisphaerica Herrm.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1170. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 11 v 2002, BT 1519. Ir.-Tur.

R. canina L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1158.

Cotoneaster nummulariifolia Fisch. & C.A.Mey.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1193.

Crataegus orientalis Pall. ex M.Bieb. var. *orientalis*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 7 ix 2002, BT 1942.

C. monogyna J.Jacq. subsp. *monogyna*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1096. Alagöz hill, around garbage, steppe, N 40° 12' 37.0" -E 32° 13' 41.3" 770 m, 11 v 2002, BT 1536.

Sorbus aucuparia L.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1830. Euro-Sib.

Cydonia oblonga Mill.

Around new bridge between Gūdül and Yeşilöz, Kirmir valley, cultivated fields, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1634. Around İn Önü caves, entrance of Kirmir valley, cultivated fields, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 27.4.2002, BT 1460. (Culture).

Malus sylvestris Mill. subsp. *mitis* (Wallr.) Mansf.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1421. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1807. (Culture).

Pyrus communis L. subsp. *sativa* (DC.) Hegi

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1092. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32°

13' 37.5", 720 m, 30 vi 2002, BT 1801. (Culture).

P. elaeagnifolia Pall. subsp. *kotschyana* (Boiss.) Browicz

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1835. Det: A.A. Dönmez.

PUNICACEAE**Punica granatum** L.

Yeşilöz town, Kirmir valley, roadside, cultivated fields, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1846. (Culture).

LYTHRACEAE**Lythrum salicaria** L.

Around new bridge between Gūdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1727. Balıklar, below Alagöz hill, Kirmir valley, stream side, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1814. Euro-Sib.

ONAGRACEAE**Epilobium hirsutum** L.

Between Gūdül and Yeşilöz, around old bridge, Kirmir valley, stream side, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1693a. Around İn Önü caves, Kirmir valley, stream side, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1338.

E. minutiflorum Hausskn.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1285. Ir.-Tur.

CUCURBITACEAE

Citrullus lanatus (Thunb.) Matsum. & Nakai

Balıklar, below Alagöz hill, Kirmir valley, cultivated fields, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1819. (Culture).

Ecballium elaterium (L.) A.Rich

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 28 vii 2002, BT 1909. Medit.

Cucurbita pepo L.

Balıklar, Örnek vineyards, N 40° 13' 10.5" -E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1820. (Culture).

Cucumis melo L.

Balıklar, Örnek vineyards, N 40° 13' 10.5" -E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1817. (Culture).

C. sativus L.

Balıklar, Örnek vineyards, N 40° 13' 10.5" -E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1822. (Culture).

DATISCAEAE

Datisca cannabina L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1711. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1333.

CRASSULACEAE

Umbilicus erectus DC.

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 11 v 2002, BT 1484.

Sedum confertiflorum Boiss.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1152. E. Medit.

S. caespitosum (Cav.) DC.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1228. Medit.

APIACEAE

Eryngium bithynicum Boiss.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1779. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 23 vi 2002, BT 1749. En. -LC. Ir.-Tur.

E. campestre L. var. virens Link

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1674.

Echinophora tournefortii Jaub. & Spach

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1312. Ir.-Tur.

E. tenuifolia L. subsp. sibthorpiana (Guss.) Tutin

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1331. Ir.-Tur?

Anthriscus nemorosa (M.Bieb.) Sprengel

Around İn Önü caves, Kirmir valley, stream side, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2002, BT 1203. Near dam, Kirmir valley, stream side, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1772.

A. caucalis M.Bieb.

Near dam, Kirmir valley, stream side, muddy, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1772.

Scandix stellata Banks & Sol.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1141. Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1379.

S. pectenvenersis L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1449. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 11 v 2002, BT 1509.

Bifora radians M.Bieb.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1184. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1252a.

Bunium microcarpum (Boiss.) Freyn. subsp. bourgaei (Boiss.) Hedge

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 11 v 2002, BT 1521. Ir.-Tur.?

Berula erecta (Huds.) Coville

Çerçininkaya ridge, south-east side, Kirmir valley, streamside, 730 m, 23 vi 2001, BT 1286.

Prangos ferulacea (L.) Lindl.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1200.

Bupleurum rotundifolium L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1708.

B. croceum Fenzl

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1596. Ir.-Tur.

Ferulago galbanifera (Mill.) W.Koch

Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7 ix 2002, BT 1919. Euro-Sib.

Heracleum platytaenium Boiss.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 23 vi 2002, BT 1761. En. -LC. -Eux.

Torilis ucranica Spreng.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1310. Yeşilöz town, İnbashi ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1848.

T. leptophylla (L.) Rchb.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1155.

Caucalis platycarpus L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1198.

Turgenia latifolia (L.) Hoffm.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1149.

Daucus carota L.

Between Gdl and Yeřilz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1883.

CAPRIFOLIACEAE**Sambucus ebulus** L.

Across Kpr bařı ridge, Kirmir valley, 700 m, 30 vi 2002, BT 1802. Euro-Sib.

Lonicera etrusca Santi var. **etrusca**

Between Gdl and Yeřilz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1669b. Medit.

VALERIANACEAE**Valerianella locusta** (L.) Laterr.

Karamanađacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1010. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 11 v 2002, BT 1523. Euro-Sib.

V. vesicaria (L.) Moench

Karamanađacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1179.

DIPSACACEAE**Dipsacus laciniatus** L.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 28 vii 2002, BT 1906.

Scabiosa argentea L.

Between Gdl and Yeřilz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1881. Around İn n caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1330.

S. rotata M.Bieb.

Balıklar, below Alagz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1833. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1792. Ir.-Tur.

Pteroccephalus plumosus (L.) Coult.

Yeřilz town, İnbası ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1859.

ASTERACEAE**Helianthus annuus** L.

Balıklar, below Alagz hill, Kirmir valley, cultivated fields, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1815. (Culture).

Xanthium spinosum L.

Around İn n caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 23 vi 2002, BT 1763. Between Gdl and Yeřilz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1878.

X. strumarium L. subsp. **cavanillesii** (Schouw) D.Lve & Dans.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 7 ix 2002, BT 1905.

Pulicaria odora (L.) Rchb.

Between Gdl and Yeřilz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1699. Medit.

P. dysenterica (L.) Bernh.

Around İn n caves, Kirmir valley, stream side, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1335.

Logfia arvensis (L.) Holub

Karamanađacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 23 vi 2002, BT 1757.

Conyza canadensis (L.) Cronquist

Yeřilz town, İnbası ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1867. Det: ř. Yıldırımı.

Senecio vernalis Waldst. et Kit.

Between Gdl and Yeřilz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 21 iv 2002, BT 1371. Karamanađacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1003.

Anthemis tinctoria L. var. **tinctoria**

Yeřilz town, Kirmir valley, roadside, N 40° 15' 17.0"-E 32° 15' 56.2" 760 m, 2 vi 2002, BT 1584. Around dam, Kirmir

valley, stony places, N 40° 12' 58" -E 33° 12' 44" 690 m, 30 vi 2002, BT 1768.

A. austriaca J.Jacq.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1244. Around İn n caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1120.

Achillea wilhelmsii K.Koch

Between Gdl and Yeřilz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1721. Karamanađacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1444. Ir.-Tur.

Tanacetum corymbosum (L.) Sch.Bip. subsp. **corymbosum**

Between Gdl and Yeřilz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1553. -DD. Euro-Sib. Only one individual was seen in the field in 2002 and none were found after that. Probably this species has withered because of grazing.

T. parthenium (L.) Sch.Bip.

Around İn n caves, entrance of Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 17 vi 2003, BT 2028.

Tripleurospermum decipiens (Fisch. & C.A.Mey.) Bornm.

Between Gdl and Yeřilz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 11 v 2002, BT 1495.

Onopordum tauricum Willd.

Balıklar, below Alagz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1293. Yeřilz town, İnbası ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1602. Euro-Sib.

Cirsium arvense (L.) Scop. subsp. **vestitum** (E.Wimm. & Grab.) Petr.

Near dam, Kirmir valley, meadow, N 40° 12' 58"-E 33° 12' 44", 690 m, 29 vi 2003, BT 2070.

Picnomon acarna (L.) Cass.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 28 vii 2002, BT 1903. *Medit.*

Carduus nutans L.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1653.

C. pycnocephalus L. subsp. *albidus* (M.Bieb.) Kazmi

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 16 v 2001, BT 1259.

Acroptilon repens (L.) DC.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1684. Ir.-Tur.

Centaurea virgata Lam.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1315. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1791. Ir.-Tur.

C. solstitialis L. var. *solstitialis*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1328.

C. iberica Trev. ex Spreng.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1307. Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1713.

C. urvillei DC. subsp. *stepposa* Wagenitz

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1294. Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1647. En.-LC. Ir.-Tur.

C. depressa M.Bieb.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1826.

Carlina oligocephala Boiss. & Kotschy subsp. *oligocephala*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1311.

Xeranthemum annum L.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2002, BT 1656. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1777.

X. cylindraceum Sm.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1827.

Chardinia orientalis (L.) Kuntze

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1173. Ir.-Tur.

Echinops pungens Trautv. var. *pungens*

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1301. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1323. Ir.-Tur.

Scolymus hispanicus L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1322. Between Güdül and Yeşilöz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1879. *Medit.*

Tragopogon longirostris Bisch. ex Schultz var. *longirostris*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1072.

T. dubius Scop.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1578.

Leontodon asperimus (Willd.) Ball

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32°

15' 56.2", 760 m, 2 vi 2002, BT 1577. Ir.-Tur.

Pilosella cymosa (L.) C.H. & F.W.Sch.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1629. Euro-Sib.

Lactuca serriola L.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7 ix 2002, BT 1911. Euro-Sib.

L. sativa L.

Near dam, Kirmir valley, garden, N 40° 12' 58" E 33° 12' 44" 690 m, 30 vi 2002, BT 1770. (Culture).

Taraxacum serotinum (Waldst. & Kit.) Poir.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1351.

T. macrolepium Schischk.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1392.

T. buttleri van Soest

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1433.

Chondrilla juncea L. var. *juncea*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1345. Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1843.

Crepis foetida L.

subsp. *rheoadifolia* (M.Bieb.) Celak

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 7 ix 2002, BT 1929.

subsp. *commutata* (Spreng.) Babç.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1245.

C. sancta (L.) Babç.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16

v 2001, BT 1254. Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1415.

CAMPANULACEAE

Campanula lyrata Lam. subsp. *lyrata*

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1587. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1162. En. -LC.

C. argaea Boiss.& Bal.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1332. En. -LC. Ir.-Tur.

C. olympica Boiss.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1582. Eux.

Legousia pentagonia (L.) Thell.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1586. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1203. E. Medit.

PRIMULACEAE

Androsace maxima L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1153.

Lysimachia vulgaris L.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1745. Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1709.

L. atropurpurea L.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1683. Near dam, Kirmir valley, streamside, N 40° 12' 58"-E 33° 12' 44", 690 m, 29 vi 2003, BT 2023. E. Medit.

Anagallis arvensis L. var. *caerulea* (L.) Gouan

Balıkklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1813.

A. foemina Mill.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1675. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 11 v 2002, BT 1511. Medit.

OLEACEAE

Jasminum fruticans L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1116. Balıkklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 11 v 2002, BT 1498. Medit.

Fraxinus angustifolia Vahl subsp. *angustifolia*

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1034. Balıkklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1800. (Culture).

Olea europaea L. var. *europaea* L.

Yeşilöz town, Kirmir valley, in garden, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1865. (Culture).

ASCLEPIADACEAE

Cynanchum acutum L. subsp. *acutum*

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 10 v 2001, BT 1206.

Vincetoxicum canescens (Willd.) Decne. subsp. *canescens*

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 28 vii 2002, BT 1856.

Cionura erecta (L.) Griseb.

Balıkklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1292. Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N

40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1715. Medit.

CONVOLVULACEAE

Convolvulus cantabrica L.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1271.

C. arvensis L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1598. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 11 v 2002, BT 1512.

C. galaticus Rostan ex Choisy

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1205. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1778. En. -LC. Ir.-Tur.

Ipomoea purpurea (L.) Roth

Yeşilöz town, İnbaşı ridge, Kirmir valley, near the road, garden, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1863. Across Köprü başı ridge, Kirmir valley, 700 m, 7 ix 2002, BT 1932. (Culture).

CUSCUTACEAE

Cuscuta campestris Yunck.

Around old bridge between Güdül and Yeşilöz, Kirmir valley, on Fabaceae, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 28 vii 2002, BT 1873. Near dam, Kirmir valley, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1775.

C. brevistyla A.Braun

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1720. Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1861.

C. monogyna Vahl. subsp. *esquamata* (Engelm.) Plitmann

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 7 ix 2002, BT 1928.

BORAGINACEAE

***Heliotropium europaeum* L.**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1857. Medit.

***H. dolosum* DeNot**

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1262a.

***H. hirsutissimum* Grauer**

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1324. E. Medit.

Rochelia disperma* (L.f.) K.Koch var. *disperma

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1204b. Ir.-Tur.

***Asperugo procumbens* L.**

Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1384. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1104. Euro-Sib.

***Myosotis stricta* Link ex Roem. & Schult.**

Between Güdül and Yeşilöz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 21 iv 2002, BT 1373. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1227. Euro-Sib.

M. arvensis* (L.) Hill subsp. *arvensis

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1112. Euro-Sib.

***Cynoglossum montanum* L.**

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1549. Euro-Sib.

***Buglossoides arvensis* (L.) I.M.Johnst.**

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32°

14' 48.1", 680 m, 10 iv 2001, BT 1066b. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 11 v 2002, BT 1508.

***B. glandulosum* (Velen) R.Fern.**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1419. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1066a. -VU. Euro-Sib. Det: B. Mutlu. Distribution and population of this taxon are very low and it faces overgrazing.

***Echium italicum* L.**

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1287. Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1882. Medit?

***E. angustifolium* Mill.**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1593. Medit.

***E. vulgare* L.**

Between Güdül and Yeşilöz, around bridge, Kirmir valley, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1885. Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1696. Euro-Sib.

***Onosma isaauricum* Boiss. et Heldr.**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 11 v 2002, BT 1535. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1115. En.-LC. Ir.-Tur.

***O. armenum* DC.**

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1744. En. -LC.

***O. molle* DC.**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32°

15' 56.2", 760 m, 17 vi 2003, BT 2007. Ir.-Tur.

***Cerintho minor* L. subsp. *auriculata* (Ten.) Domac**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1605.

Anchusa leptophylla* Roem. & Schult. subsp. *leptophylla

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1731. Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1581.

***A. undulata* L. subsp. *hybrida* (Ten.) Cout.**

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 11 v 2002, BT 1489. Medit.

A. azurea* Mill. var. *azurea

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 11 v 2002, BT 1507.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1171.

***A. ovata* Lehm.**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1598. Det: B. Mutlu.

***Nonea caspica* (Willd.) G.Don**

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1590. Ir.-Tur.

***N. macrosperma* Boiss. & Heldr.**

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1190. En.-LC. Ir.-Tur.

SOLANACEAE

***Solanum nigrum* L. subsp. *schultesii* (Opiz) Wessely**

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32°

14' 48.1", 680 m, 15 ix 2001, BT 1347. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1812.

S. alatum Moench.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1899.

S. dulcamara L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1702. Euro-Sib.

S. melongena L.

Around new bridge between Güdül and Yeşilöz, Kirmir valley, cultivated fields, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1888. (Culture).

Capsicum annuum L.

Around new bridge between Güdül and Yeşilöz, Kirmir valley, cultivated fields, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1887. (Culture).

Lycopersicon esculentum Mill.

Balıklar, below Alagöz hill, Kirmir valley, cultivated fields, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1816. (Culture).

Datura stramonium L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7 ix 2002, BT 1913. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 23 vi 2002, BT 1759.

Hyoscyamus niger L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 11 v 2002, BT 1482.

SCROPHULARIACEAE

Verbascum glomeratum Boiss.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1858. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1297. Ir.-Tur.

V. tossiense Freyn & Sint.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1188. En.-LC. Ir.-Tur.

V. speciosum Schrad.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1714.

V. cheiranthifolium Boiss. var. **cheiranthifolium**

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1668.

Scrophularia xanthoglossa Boiss. var. **decipiens** (Boiss. & Kotschy) Boiss.

Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 11 v 2002, BT 1486. Ir.-Tur.

Linaria corifolia Desf.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2002, BT 1181. En.-LC. Ir.-Tur.

L. simplex (Willd.) DC.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, B. Mutlu (Observation). Medit.

Digitalis cariensis Boiss. ex Jaub. & Spach.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1579. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 23 vi 2002, BT 1760. En.-LC. E. Medit.

Veronica reuterana Boiss.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1084. Ir.-Tur.

V. grisebachii Walters

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1266. Medit.

V. triphyllus L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1448. Around İn Önü caves, entrance of Kirmir valley, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 6 iii 2002, BT 1361.

V. persica Poir.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1105.

V. triloba (Opiz) A.Kern.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21/472002, BT 1425. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1020.

V. anagallis-aquatica L.

subsp. **anagallis-aquatica**

Around new bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1738. Around old bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1560.

subsp. **oxycarpa** (Boiss.) Elenevsky

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, stream side, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1682. Around İn Önü caves, Kirmir valley, stream side, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1329. Ir.-Tur.

ACANTHACEAE

Acanthus hirsutus Boiss.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1785. En.-LC.

VERBENACEAE

Verbena officinalis L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1340. Det: H. Altınözlü.

LAMIACEAE

Teucrium parviflorum Schreb.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32°

14.33' 0", 754 m, 23 vi 2002, BT 1750. Ir.-Tur.

T. chamaedrys L. subsp. *chamaedrys* L.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1623. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 30 vi 2002, BT 1796. Euro-Sib.

T. polium L.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1624. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 23 vi 2002, BT 1753.

Scutellaria rubicunda Hornem. subsp. *brevibracteata* (Stapf) J.R.Edm.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1639. En.-LC. E. Medit.

S. orientalis L. subsp. *pinnatifida* J.R.Edm.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1195.

Phlomis pungens Willd. var. *pungens*

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 30 vi 2002, BT 1795.

P. armeniaca Willd.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1595. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1150. En.-LC. Ir.-Tur.

Lamium pisidicum R.R.Mill.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 21 iv 2002, BT 1430. En.-NT. This species has a population around İnönü caves. The only possible threat factor is the tourists visiting this region.

L. amplexicaule L.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1416. Euro-Sib.

L. purpureum L. var. *purpureum* L.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1424. Euro-Sib.

Wiedemannia orientalis Fisch. & C.A.Mey.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1185. -LC. Ir.-Tur.

Molucella laevis L.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1805. Ir.-Tur.

Ballota larendana Boiss. & Heldr.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1646. En.-LC. Ir.-Tur.

B. nigra L. subsp. *anatolica* P.H.Davis

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1850. En.-LC. Ir.-Tur.

Marrubium globosum subsp. *globosum* Montbret & Aucher ex Benth.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1252c. En.-LC. Ir.-Tur.

Sideritis lanata L.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1282. Medit.

Stachys byzantina K.Koch.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1655. Euro-Sib.

S. annua (L.) L. subsp. *annua*

var. *annua*

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1663.

var. *lycaonica* R.Bhattacharjee

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 11 v

2002, BT 1497. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1119. Ir.-Tur.

S. woronowii (Schisch. ex Grossh.) R.R.Mill

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1157. Ir.-Tur.

Nepeta nuda L. subsp. *nuda* L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1118b.

N. italica L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 17 vi 2003, BT 2016.

Prunella vulgaris L.

Around old bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1693b. Euro-Sib.

Origanum sipyleum L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1337. En.-LC. E. Medit.

Satureja hortensis L.

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7 ix 2002, BT 1912. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1341.

Acinos rotundifolius Pers.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1209. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 11 v 2002, BT 1516.

Thymus longicaulis C.Presl subsp. *longicaulis* var. *subisophyllus* (Borbás) Jalas

Yeşilöz town, İbbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1545. Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 11 v 2002, BT 1526.

Mentha longifolia (L.) Hudson subsp. *typhoides* (Briq.) Harley var. *typhoides*

Around İn Önü caves, Kirmir valley, stream side, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1316. Near dam, Kirmir valley, stream side, N 40° 12' 58"-E 33 °12' 44", 690 m, 30 vi 2002, BT 1781.

Lycopus europaeus L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 7 ix 2002, BT 1926. Euro-Sib.

Salvia bracteata Banks & Sol.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1169. Ir.-Tur?

S. viridis L.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1229. Medit.

S. sclarea L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1658.

S. candidissima Vahl. subsp. *candidissima*

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 23 vi 2002, BT 1752. Ir.-Tur.

S. virgata J.Jacq.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 23 vi 2002, BT 1751. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1291. Ir.-Tur.

S. verticillata L. subsp. *amasiaca* (Freynt & Bornm.) Bornm.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1635. Ir.-Tur? Det: B. Mutlu.

PLUMBAGINACEAE

Plumbago europaea L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1860.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 11 viii 2001, BT 1325. Euro-Sib.

Acantholimon acerosum (Willd.) Boiss. var. *acerosum*

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1845. Ir.-Tur.

PLANTAGINACEAE

Plantago major L. subsp. *intermedia* (Gilib.) Lange

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1689. Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 28 vii 2002, BT 1884.

P. lanceolata L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1546.

ELAEAGNACEAE

Elaeagnus angustifolia L.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1823. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1275. (Culture).

LORANTHACEAE

Viscum album L. subsp. *album* L.

Around İn Önü caves, entrance of Kirmir valley, on *Pistacia atlantica*, N 40° 13' 18.04"-E 32° 14' 48.1", 700 m, 6 iii 2002, BT 1355.

ARISTOLOCHIACEAE

Aristolochia maurorum L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 27 iv 2002, BT 1443. Ir.-Tur.

EUPHORBIACEAE

Ricinus communis L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, roadside, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 16 xi 2002, BT 1944. (Culture).

Euphorbia chamaesyce L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 28 vii 2002, BT1870.

E. rhabdotosperma A.Radcl.-Sm.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 21 iv 2002, BT 1366. Ir.-Tur.

E. aleppica L.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 28 vii 2002, BT 1904.

E. falcata L. subsp. *falcata* L. var. *galilaea* (Boiss.) Boiss.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 23 vi 2002, BT 1754.

E. anacampseros Boiss. var. *anacampseros*

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 21 iv 2002, BT1369. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1235. En. -LC.

URTICACEAE

Urtica dioica L.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 28 iv 2001, BT 1138. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1838. Euro-Sib.

Parietaria judaica L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1609.

MORACEAE

Morus alba L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1640. (Culture).

M. nigra L.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32°

13' 37.5", 720 m, 30 vi 2002, BT 1808. (Culture).

Ficus carica L. subsp. *carica*

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1692.

ULMACEAE

Ulmus minor Mill. subsp. *Canescens* (Melville) Browicz & Ziel.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 27 iv 2002, BT 1469. E. Medit.

Celtis glabrata Steven ex Planch.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 17 vi 2003, BT 2025.

JUGLANDACEAE

Juglans regia L.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1810. (Culture).

PLATANACEAE

Platanus orientalis L.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1561. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1273. (Culture).

FAGACEAE

Quercus robur L. subsp. *robur* L.

Karamanağacı, Kirmir valley, roadsides, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 28 vii 2002, BT 1908. Euro-Sib. (Culture).

Q. pubescens Willd.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1841. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 7 ix 2002, BT 1935.

CORYLACEAE

Corylus avellana L. var. *avellana*

Çıpcıp hill slopes, Kirmir valley, 700 m, 28 vii 2002, BT 1894. Euro-Sib.

BETULACEAE

Alnus glutinosa (L.) Gaertn. subsp. *glutinosa*

Around old bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1685. Around İn Önü caves, Kirmir valley, stream side, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1094. Euro-Sib.

SALICACEAE

Salix pentandroides A.Skvortsov

Around new bridge between Güdül and Yeşilöz, İçdelik, Kirmir valley, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 29 vi 2003, BT 2052. Eux.

S. alba L.

Around new bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1741. Near dam, Kirmir valley, stream side, N 40° 12' 58"-E 33° 12' 44", 690 m, 11 v 2002, BT 1515. Euro-Sib.

Populus nigra L. subsp. *nigra* L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, stream side, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1393. Balıklar, below Alagöz hill, Kirmir valley, stream side, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1809. (Culture).

RUBIACEAE

Crucianella bithynica Boiss.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1828. E. Medit.

Asperula arvensis L.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1140. Medit.

A. setosa Jaub. & Spach

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 11 v 2002, BT 1510. Ir.-Tur.

Galium humifusum M.Bieb.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 17 vi 2003, BT 2006.

G. verum L. subsp. *glabremscens* Ehrend.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1636. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1289. Ir.-Tur?

G. spurium L. subsp. *spurium*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 29 iv 2001, BT 1127. Euro-Sib.

G. tricornutum Dandy

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1186. Medit.

G. tenuissimum M.Bieb. subsp. *trichophorum* (Kar. & P.Kir.) Ehrend.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1829. Ir.-Tur.

G. peplidifolium Boiss.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1068. E. Medit.

Cruciata taurica (Pall. ex Willd.) Ehrend.

Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1414. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 28 iv 2001, BT 1125. Ir.-Tur.

MONOCOTYLEDONAE

ALISMATACEAE

Alisma plantago-aquatica L.

Around old bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1669a. Euro-Sib.

POTAMOGETONACEAE

Potamogeton nodosus Poir.

Near dam, on Kirmir stream, N 40° 12' 58" -E 33° 12' 44" 690 m, 28 vii 2002, BT 1905.

LEMNACEAE

Lemna minor L.

Near dam, on Kirmir stream, N 40° 12' 58" -E 33° 12' 44" 690 m, 29 vi 2003, BT 2037.

LILIACEAE

Asparagus officinalis L.

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1834. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1217.

Allium cepa L.

Around new bridge between Güdül and Yeşilöz, Kirmir valley, cultivated fields, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1892. (Culture).

A. paniculatum L. subsp. *paniculatum*

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1695. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1296. Medit.

A. porrum L.

Around new bridge between Güdül and Yeşilöz, Kirmir valley, cultivated fields, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1890. (Culture).

A. atroviolaceum Boiss.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1782. Medit.

Ornithogalum pyrenaicum L.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1597. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1236.

O. sphaerocarpum Kern.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33° 12' 44", 690 m, 11 v 2002, BT 1525.

O. comosum L.

Karamanağacı, Kirmir valley, agglomerate rocks, N 40° 13.01' 1" -E 32° 14.33' 0" 754 m, 10 v 2001, BT 1168.

O. armeniacum Baker

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1" -E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1045. E. Medit.

Muscari comosum (L.) Mill.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1564. Medit.

M. armeniacum Leichtlin ex Baker

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 11 v 2002, BT 1481. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1060.

Bellevalia clusiana Griseb.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1" -E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1046. En. -LC. Ir.-Tur.

Gagea bohemica (Zauschn.) Schult. & Schult.f.

Around İn Önü caves, entrance of Kirmir valley, N 40° 13' 18.04" -E 32° 14' 48.1" 700 m, 6 iii 2002, BT 1357.

G. granatelli (Parl.) Parl.

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1" -E 32° 14.33' 0", 754 m, 10 iv 2001, BT 1021. Medit.

Colchicum triphyllum G.Kunze

Around İn Önü caves, entrance of Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 700 m, 10 iv 2001, BT 1046. Medit.

IRIDACEAE

Crocus ancyrensis (Herb.) Maw

Around İn Önü caves, entrance of Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 700 m, 6 iii 2002, BT1359. En. -LC. Ir.-Tur.

ORCHIDACEAE

Cephalanthera epipactoides Fisch. & C.A.Mey.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1215. E. Medit.

Orchis coriophora L.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1242.

SPARGANIACEAE

Sparganium erectum L.

subsp. *neglectum* (Beeby) K.Richt.

Balıklar, below Alagöz hill, Kirmir valley, stream side, N 40° 13' 10.5"-E 32° 13' 37.5", 680 m, 23 vi 2001, BT 1300. Euro-Sib.

subsp. *microcarpum* (Neuman) Domin

Near dam, Kirmir valley, stream side, N 40° 12' 58"-E 33° 12' 44", 690 m, 29 vi 2003, BT 2060.

TYPHACEAE

Typha domingensis Pers.

Near dam, Kirmir valley, stream side, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1793. Towards Köprübaşı ridge, Honda gardens, Kirmir valley, stream side, 700 m, 7 ix 2002, BT 1933.

JUNCACEAE

Juncus inflexus L.

Around old bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1690. Near dam, Kirmir valley, stream side, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1765.

CYPERACEAE

Cyperus longus L.

Around new bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1722. Balıklar, below Alagöz hill, Kirmir valley, stream side, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1306.

C. glaber L.

Around İn Önü caves, Kirmir valley, stream side, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 15 ix 2001, BT 1339.

C. serotinus Rottb.

Towards Köprübaşı ridge, Honda gardens, Kirmir valley, stream side, 700 m, 7 ix 2002, BT 1930.

Eleocharis mitracarpa Steud.

Balıklar, below Alagöz hill, Kirmir valley, stream side, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 30 vi 2002, BT 1811.

Bolboschoenus maritimus (L.) Palla
subsp. *maritimus*

Near dam, Kirmir valley, stream side, N 40° 12' 58"-E 33° 12' 44", 690 m, 29 vi 2003, BT 2055.

Scirpoides holoschoenus (L.) Sojak

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 28 vii 2002, BT 1874. Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2002, BT 1304.

Carex acuta L.

Around new bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1723. Around İn Önü caves, Kirmir valley, stream side, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1076. Euro-Sib.

C. nigra (L.) Reichard subsp. *dacica* (Heuff.) Soó

Around old bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1555. Det: B. Mutlu. Eux.

POACEAE

Elymus hispidus (Opiz) Melderis subsp. *hispidus*

Near dam, Kirmir valley, meadow, N 40° 12' 58"-E 33° 12' 44", 690 m, 30 vi 2002, BT 1764.

E. repens (L.) Gould. subsp. *repens*

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 17 vi 2003, BT 2009.

Aegilops cylindrica Host

Around dam, Kirmir valley, 10 m from the stream, meadow, N 40° 12' 58"-E 33° 12' 44", 690 m, 29 vi 2003, BT 2044.

A. triuncialis L. subsp. *triuncialis*

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1686a. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1187.

Triticum aestivum L.

Around old bridge between Güdül and Yeşilöz, Kirmir valley, cultivated fields, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002, BT 1691. (Culture).

Taeniatherum caput-medusae (L.) Nevski subsp. *crinitum* (Schreb.) Melderis

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 23 vi 2002, BT 1617. Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1174. Ir.-Tur?

Bromus scoparius L.

Alagöz hill, around garbage, steppe, N 40° 12' 37.0"-E 32° 13' 41.3", 770 m, 11 v 2002, BT 1532.

B. tectorum L.

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1238. Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1409.

B. sterilis L.

Alagöz hill, around garbage, steppe, N 40° 12' 37.0"-E 32° 13' 41.3", 770 m, 11 v 2002, BT 1534. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1251b.

Avena barbata Pott ex Link subsp. *barbata*

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1251a. Medit.

Arrhenatherum palatinum Boiss.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 21 iv 2002, BT 1624. E. Medit.

Trisetaria loeflingiana (L.) Paunero

Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1221. Det: M. Doğan. Euro-Sib.

Calamagrostis pseudophragmites (Haller f.) Koeler

Around old bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 23 vi 2002,

BT 1686b. Around new bridge between Güdül and Yeşilöz, Kirmir valley, stream side, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 23 vi 2002, BT 1725. Euro-Sib.

Polypogon monspeliensis (L.) Desf.

Balıklar, below Alagöz hill, Kirmir valley, stream side, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1309.

Milium vernale M.Bieb. subsp. *montianum* (Parl.) Jahand & Maire

Karamanağacı, Kirmir valley, steppe, near agriculture fields, N 40° 13.01' 1"-E 32° 14.33' 0", 754 m, 10 v 2001, BT 1180. Medit?

Alopecurus myosuroides Huds. var. *myosuroides*

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1086. Alagöz hill, around garbage, steppe, N 40° 12' 37.0"-E 32° 13' 41.3" 770 m, 11 v 2002, BT 1531. Euro-Sib.

Phleum phleoides (L.) H.Karst.

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1574b. Euro-Sib.

Vulpia ciliata Dumort. subsp. *ciliata*

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 2 vi 2002, BT 1554.

Poa nemoralis L.

Near dam, Kirmir valley, meadow, N 40° 12' 58"-E 33° 12' 44", 690 m, 29 vi 2003, BT 2056. Det: B. Mutlu.

P. timoleontis Heldr. ex Boiss.

Yeşilöz entrance from Çeltikçi road, Kirmir valley, agglomerate rocks, N 40° 15' 22.9"-E 32° 16' 2.7", 760 m, 21 iv 2002, BT 1411. Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 27 iv 2002, BT 1458. E. Medit.

P. bulbosa L.

Between Güdül and Yeşilöz, around bridge, Kirmir valley, stream side, meadow, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 21 iv 2002, BT 1371. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16 v 2001, BT 1257.

Dactylis glomerata L. subsp. *hispanica* (Roth) Nyman

Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 2 vi 2002, BT 1588.

Echinaria capitata (L.) Desf.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 10 iv 2001, BT 1083. Çerçininkaya ridge, south-east side, Kirmir valley, agglomerate rocks, 730 m, 16/572001, BT 1230.

Melica ciliata L. subsp. *ciliata*

Balıklar, below Alagöz hill, Kirmir valley, agglomerate rocks, N 40° 13' 10.5"-E 32° 13' 37.5", 720 m, 23 vi 2001, BT 1305.

Phragmites australis (Cav.) Trin. ex Steud.

Across Köprübaşı ridge, Honda gardens, on Kirmir stream, 700 m, 29 vi 2003, BT 2068.

Cynodon dactylon (L.) Pers. var. *villosus* Regel

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 30 vi 2002, BT 1776. Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 28 vii 2002, BT 1854.

Tragus racemosus (L.) All.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 7 ix 2002, BT 1927.

Echinochloa crusgalli (L.) P.Beauv.

Between Güdül and Yeşilöz, around old bridge, Kirmir valley, agglomerate rocks, N 40° 14' 39.2"-E 32° 15' 25.2", 750 m, 7 ix 2002, BT 1925. Yeşilöz town, İnbaşı ridge, Kirmir valley, agglomerate rocks, N 40° 15' 17.0"-E 32° 15' 56.2", 760 m, 7 ix 2002, BT 1916.

Setaria viridis (L.) P.Beauv.

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 29 vi 2003, BT 2050.

Pennisetum orientale Rich.

Around İn Önü caves, Kirmir valley, agglomerate rocks, N 40° 13' 18.04"-E 32° 14' 48.1", 680 m, 17 vi 2003, BT 2020a. Ir.-Tur.

Bothriochloa ischaemum (L.) Keng

Near dam, Kirmir valley, agglomerate rocks, N 40° 12' 58"-E 33 °12' 44", 690 m, 28 vii 2002, BT 1901.

Zea mays L. subsp. *mays* L.

Around new bridge between Güdül and Yeşilöz, Kirmir valley, cultivated fields, N 40° 14' 11.09"-E 32° 15' 44.4", 750 m, 28 vii 2002, BT 1895. (Culture).