

## The Flora of Kaşmer Dağı (Şanlıurfa, Turkey)

Hasan AKAN

Harran University, Arts & Science Faculty, Biology Department, Şanlıurfa - TURKEY

Ömer Faruk KAYA

Ankara University, Science Faculty, Biology Department, Ankara - TURKEY

İsmail EKER

Abant İzzet Baysal University, Arts & Science Faculty, Biology Department, Gölköy, Bolu - TURKEY

Cenap CEVHERİ

Harran University, Arts & Science Faculty, Biology Department, Şanlıurfa - TURKEY

Received: 12.07.2004

Accepted: 13.12.2004

**Abstract:** This research was carried out from 2001 to 2004 in order to determine the flora of Kaşmer Dağı. The research area is situated in Şanlıurfa province and within C7 of the grid system. In the area, 262 taxa belonging to 47 families, and 156 genera were determined. Of all the collected specimens, 33 taxa are new records for C7, and 10 taxa are endemic for Turkey.

According to the floristic regions, Irano-Turanian elements ranked first with a rate of 35.87%, followed by Mediterranean elements with a rate of 11.83% and Euro-Siberian elements with a rate of 1.9%. Some 50.4% of the determined species were widespread and of unknown phytogeographic region.

The families with the most taxa in the research area are Fabaceae (57), Asteraceae (31), Poaceae (26), Lamiaceae (17) and Apiaceae (14). Concerning the number of species, the major genera in this region are as follows: *Trifolium* L. (13), *Astragalus* L. (7), *Medicago* L. (6), *Centaurea* L. (6), *Hypericum* L. (5), *Geranium* L. (5), *Vicia* L. (5), *Lathyrus* L. (5), *Trigonella* L. (5) and *Hordeum* L. (5).

According to the life forms, therophytes come first with a rate of 51.14% in the region, followed by hemicryptophytes (31.69%), geophytes (9.16%), phanerophytes (3.05%) and chamaephytes (4.96%).

**Key Words:** Flora, Kaşmer Dağı, Şanlıurfa.

### Kaşmer Dağı (Şanlıurfa) Florası

**Özet:** Bu araştırma 2001-2004 yılları arasında Kaşmer Dağının florasını tespit etmek üzere yapılmıştır. Araştırma alanı Şanlıurfa il sınırları içerisinde ve Grid sistemine göre C7 karesindedir. Araştırma bölgesinde 47 familyaya bağlı 156 cins ve 262 takson tespit edilmiştir. Bunlardan 33 takson C7 karesi için yeni kayıt, 10 takson Türkiye için endemiktir.

Araştırma alanından toplanan 262 taksonun fitocoğrafik bölgelere göre dağılımı; İran-Turan elementleri % 35,87, Akdeniz elementleri %11,83 ve Avrupa-Sibirya elementleri % 1,9 şeklindedir. Teşhisi yapılan taksonlardan hangi fitocoğrafik bölge elementi olduğu bilinmeyenler ile geniş yayılışlı olanların oranı ise % 50,4'tür.

Araştırma alanında en fazla taksona sahip familyalar: Fabaceae (57), Asteraceae (31), Poaceae (26), Lamiaceae (17) ve Apiaceae (14)'dir. Alanda en çok taksona sahip cinslerin önemlileri: *Trifolium* L. (13), *Astragalus* L. (7), *Medicago* L. (6), *Centaurea* L. (6), *Hypericum* L. (5), *Geranium* L. (5), *Vicia* L. (5), *Lathyrus* L. (5), *Trigonella* L. (5) ve *Hordeum* L. (5)'dur.

Araştırma alanından toplanan bitkilerin hayat formlarına göre dağılımı; Terofitler % 51,14, Hemikritofitler % 31,69, Geofitler % 9,16, Fanerofitler % 3,05, Kamefitler % 4,96 şeklindedir.

**Anahtar Sözcükler:** Flora, Kaşmer Dağı, Şanlıurfa.

### Introduction

This research was carried out to determine the flora of Kaşmer Dağı in Şanlıurfa. The vegetation of the area has been extensively destroyed by anthropogenic effects

and, therefore, plants try to survive under unsuitable conditions. Şanlıurfa is in the centre of the South-East Anatolia Project (GAP) area. Natural habitats have been destroyed by the construction of dams and tunnels for the

irrigation of plains. Therefore, the endemic plants have been affected by this project. After the construction of the dams, the populations of the rare plants should be examined scientifically, and new reports should be prepared for the conservation of plant species.

Some foreign researchers, such as Kotschy, Sintenis, Davis and Zohary, visited and gathered plant specimens from Şanlıurfa (Davis, 1965-1985; Davis et al., 1988; Baytop, 2003).

Some floristic and taxonomic studies were carried out around south-east Anatolia (Kaynak & Ketenoğlu, 1980; Malyer, 1981, 1983; Kaynak, 1986, 1987, 1989a, 1989b; Ertekin & Saya, 1997; Adıgüzel & Ayaç, 2001; Ertekin, 2002; Akan & Eker, 2004) but no regular floristic study has been performed in our research area, Kaşmer Dağı. Therefore, the objective of this research was to determine the flora of Kaşmer Dağı, and to determine the endemic and rare plant species.

South-east Anatolia is a "little known" or "unknown" region of Turkey, with regard to floristic studies (Davis, 1975; Çirpıcı, 1987). The research area is within the "little known" area. Thus, this study is expected to contribute to the flora of Şanlıurfa, planned to be written in the future.

Kaşmer Dağı is located north-west of Şanlıurfa, and it comprises some low hills. It is close to the Euphrates, and is an important region representing the floristic

composition of the province. The altitude varies between 500 and 954 m.

There are 8 villages, Aşikköy, Çelikler, Demircik, Küçük kargılı, Otlukalan, Öğütçü, Sarımağara, and Uyuzpınar (Figure 1), in and around the research area with generally dense settlements at the foot of the mountain. Once, when there was not enough drinkable water for the inhabitants around the mountain, the people used to go to the "Emmi Well" for water, which was near Küçük kargılı, north-east of Kaşmer Dağı. Kaşmer Dağı played an important strategic role during the Gulf War in 1991, because a Turkish army radar station was established on top of the mountain. Nowadays, the building of blocks of flats has increased in the region as well as some gravel pits. Furthermore, a motorway divides the mountain and passes through the region. The natural habitats of living organisms have been destroyed by these negative factors.

The Şanlıurfa cement factory is located on the north-east of Kaşmer Dağı, and it causes air pollution around the area.

### Vegetation

In the research area, steppe vegetation is characterised by Asteraceae, Fabaceae, and Poaceae members. The genera *Achillea* L., *Aegilops* L., *Anthemis* L., *Centaurea* L., *Hordeum* L., *Lathyrus* L., *Medicago* L., *Trifolium* L., *Trigonella* L. and *Triticum* L. are abundant in

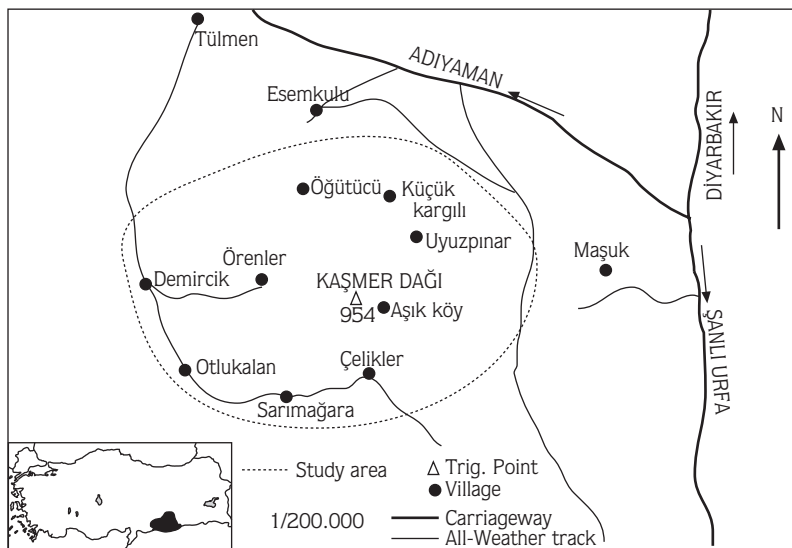


Figure 1. Geographic map of research area

the study area. *Ficus carica* L. subsp. *rupestris* (Hausskn.) Browicz, *Celtis tournefortii* Lam., *Quercus brantii* Lindl., *Crataegus orientalis* Pall. ex Bieb. var. *orientalis* and *Crataegus aronia* (L.) Bosc. ex DC. var. *aronia* are some trees and shrubs that have a natural distribution but whose populations are rare on the mountain.

The agriculture is based on cereals, essentially wheat and lentil. However, some vegetables are also grown such as tomato, pepper and eggplant. At the same time, pistachio is widely cultivated.

### Climate

The research area has a semiarid Mediterranean climate. According to Emberger, the precipitation-temperature coefficient (Q) is 42.94 (Akman, 1990). Annual mean temperature is 18.7 °C. The maximum mean temperature (M) is 46.8 °C, in July. The minimum mean temperature (m) is -6.8 °C, in February. Annual rainfall is about 457.8 mm (Meteoroloji Bülteni, 1994), and the seasonal precipitation regime is winter, spring, autumn and summer (WSAS). This is the first variant of the East Mediterranean precipitation regime. The ombrothermic diagram shows dry and rainy periods (Figure 2).

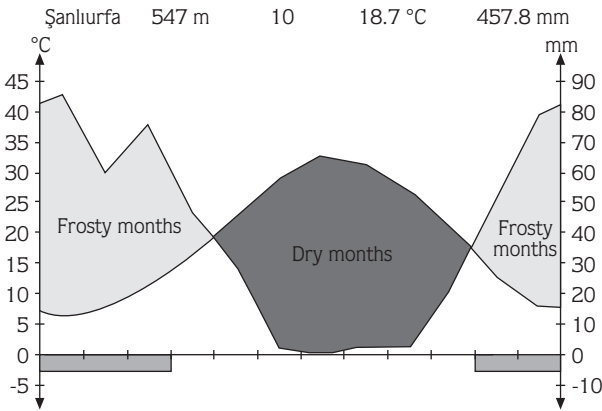


Figure 2. Ombrothermic diagram of Şanlıurfa, Turkey.

### Materials and Methods

To constitute the research material, 469 plant specimens were collected from Kaşmer Dağı from 2001 to 2004 in different vegetation seasons. A collector

number was given, and the specimens were dried according to the standard herbarium methods. The Flora of Turkey and the East Aegean Islands (Davis, 1965-1985; Davis et al., 1988) was used to identify the plant samples. The Poaceae specimens were checked by Dr. Vagif Hatemov, *Trifolium* L. members by Mustafa Keskin, *Onobrychis* Adanson and *Hedysarum* L. members by Dr. Ekrem Aktoklu, and the geopyhtes by Prof. Dr. Mehmet Koyuncu.

The list of plants is set out according to the order in the Flora of Turkey. In the floristic list of this article, the following details are given: family name, species name and the author(s), name of the district, altitude, collection date, habitat of the plant, collector number, endemism and the phytogeographic region element.

The endemic species were categorised according to IUCN Red Data categories (IUCN Survival Commission, 2001) and Ekim et al. (2000). The abbreviations used are as follows: VU-Vulnerable; LC-Least concern, NT-Near threatened, DD-Data deficient.

The area is completely within the C7 grid square and Şanlıurfa province, and so "C7 Şanlıurfa; Kaşmer Dağı" has been omitted from the citations.

The following abbreviations are used in the text:

Akan et al.: Hasan Akan, Ö. Faruk Kaya, İsmail Eker, Cenap Cevheri.

D.: Dağ

E. Çetin: Esat Çetin

Euro-Sib.: Euro-Siberian

Ir.-Tur.: Irano-Turanian

İ. Eker: İsmail Eker

İ. Eker et al.: İsmail Eker, Hasan Akan

K.: Köy

m: metre

Medit.: Mediterranean

subsp.: subspecies

T.: Tepe

var.: variety

The plant samples collected from the region were deposited in the herbarium of Harran University, Şanlıurfa.

## THE FLORISTIC LIST

### RANUNCULACEAE

#### *Adonis dentata* Delile

South slopes of Kaşmer D., 800 m, 22.05.2002, stony places, Akan 3950 et al.

#### *A. aestivalis* L. subsp. *aestivalis*

Above Öğütçü K., 800 m, 02.05.2002, steppe, Akan 2983 et al.; *ibid.*, 600 m, 31.05.2002, steppe, Akan 2042 et al.

#### *Nigella arvensis* L. var. *caudata* Boiss.

Above Aşikköy, 700 m, 23.05.2002, stony places, Akan 1970 et al.

#### *Ranunculus arvensis* L.

Above Öğütçü K., 700 m, 02.05.2002, steppe, Akan 3039 et al.; Dolamaç T., 880 m, 14.05.2001, steppe, Akan 1852 et al.; above Aşikköy, 800 m, 23.05.2001, stony places, Akan 1961 et al.

### PAPAVERACEAE

*Glaucium corniculatum* (L.) Rudolph. subsp. *refractum* (Nábélek.) Cullen

Above Aşikköy, 880 m, 14.05.2001, steppe, Akan 1817 et al.

Ir.-Tur. Element.

#### *G. grandiflorum* Boiss. & A.Huet var. *grandiflorum*

South slopes of Kaşmer D., 850 m, 22.05.2002, steppe, Akan 3935 et al.; above Uyuzpınar K., 600 m, 31.05.2002, steppe, Akan 2077 et al.

Ir.-Tur. element.

#### *Roemeria hybrida* (L.) DC. var. *hybrida*

Above Küçükkargılı K., 800 m, 02.05.2002, steppe, Akan et al.

#### *Papaver rhoeas* L.

Above Küçükkargılı K., 950 m, 02.05.2002, steppe, Akan 3019 et al.; Aşikköy, 700 m, 14.05.2001, stony places, Akan 1794 et al.; above Uyuzpınar K., 750 m, 31.05.2002, steppe, Akan 2056 et al.

### BRASSICACEAE (CRUCIFERAE)

#### *Sinapis alba* L.

Above Küçükkargılı K., 700-800 m, 02.05.2002, steppe, Akan 3048.

#### *S. arvensis* L.

Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1777 et al.

#### *Hirschfeldia incana* (L.) Lagr.-Foss.

Aşikköy, 700 m, 14.05.2001, steppe, Akan 1836 & 1837; foot of Uyuzpınar, 31.05.2002, 600-800 m, steppe, Akan 2029 et al.

#### *Erucaria hispanica* (L.) Druce

Uyuzpınar K., 02.05.2002, 800 m, fields, Akan 3040 et al.

#### *Lepidium sativum* L. subsp. *sativum*

Above Aşikköy, 700 m, 14.05.2001, steppe, Akan 1964 et al.; Aşikköy, 700-800 m, 23.05.2001, steppe, Akan 2014 et al.

#### *Alyssum strigosum* Banks & Sol. subsp. *strigosum*

Uyuzpınar K., 02.05.2002, 700 m, steppe, Akan 3047; Aşikköy, 14.05.2001, 880 m, steppe, Akan 1853 et al.

*Matthiola longipetala* (C.A.Venturi) DC. subsp. *bicornis* (Sibth. & Sm.) P. W.Ball

Uyuzpınar K., 600-800 m, 31.05.2002, Akan 2074; Dolamaç T., 14.06.2001, 700-800 m, Akan 2457 & 2444 et al.

#### *Erysimum hamosum* Blanche ex Post

Near Öğütçü K., 700-800 m, 02.05.2002, Akan 3003 & 3939 et al.

Ir.-Tur. element.

#### *Descurainia sophia* (L.) D.A.Webb ex Prantl

Aşikköy, 23.05.2001, 700-800 m, steppe, Akan 1959 et al.

#### *Camelina rumelica* Velen.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2036 et al.

### BERBERIDACEAE

#### *Bongardia chrysogonum* (L.) Spach

Above Aşikköy, 600-800 m, 11.05.2002, steppe, Akan 3173 et al.

Ir.-Tur. element.

### CAPPARACEAE

#### *Capparis ovata* L. var. *palaestina* D.Zohary

District Dolamaç T., 700-800 m, 14.06.2001, steppe, Akan 2429 et al.

**RESEDACEAE*****Reseda lutea* L. var. *lutea***

Above Aşikköy, 880 m, 14.05.2001, steppe, Akan 1810 et al.; south slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3931 et al.; above Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 2010 & 2057 et al.; Dolamaç T., 700-800 m, 14.06.2001, steppe, Akan 2446 & 2447 et al.

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

Aşikköy, 600-700 m, 14.05.2001, steppe, Akan 1769 et al.

**CARYOPHYLLACEAE**

***Minuartia montana* L. subsp. *wiesneri* (Stapf) McNeil**

Above Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1976 et al.

Ir.-Tur. element.

***Stellaria kotschyana* Fenzl**

Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1955 et al.

***Dianthus pallens* Sibth. & Sm. var. *oxylepis* Boiss.**

Above Uyuzpınar K., 800 m, 02.05.2002, steppe, Akan 3026 et al.

***D. zonatus* Fenzl var. *zonatus***

Küçükkargılı K., 800 m, 14.06.2001, steppe, Akan 2434 & 2456 et al.; above Uyuzpınar K., 650-700 m, 15.11.2001, steppe, Akan 2470 et al.

***Silene crassipes* Fenzl**

Near Ögütçü K., 700-800 m, 02.05.2002, steppe, Akan 3033 et al.

***S. coniflora* Nees**

Aşikköy, 600-700 m, 14.05.2001, steppe, Akan 1788 & 1796 et al.

***Vaccaria pyramidata* Medik. var. *oxyodonta* (Boiss.) D.Zohary**

Aşikköy, 600-700 m, 14.05.2001, steppe, Akan 1781 et al.

Ir.-Tur. element.

**POLYGONACEAE*****Polygonum cognatum* Meissn.**

The back of Halaç, 650 m, 03. 07.2004, roadsides, Akan 5185/a & E. Çetin

***Rumex scutatus* L.**

Aşikköy, 800 m, 23.05.2002, steppe, Akan 1951 & 1982 et al.

**MALVACEAE*****Alcea striata* (DC.) Alef. subsp. *striata***

Aşikköy, 700 m, 14.05.2001, steppe, Akan 1791; ibid. 23.05.2001, Akan 1999 et al.

Ir.-Tur. element.

***A. guestii* Zohary**

District of Demircik K., 600-700 m, 03.07.2004, roadside, Akan 5181, 5182 & E. Çetin.

**LINACEAE**

***Linum mucronatum* Bertol. subsp. *armenum* (Bordz.) P.H.Davis**

Above Uyuzpınar K., 800 m, 02.05.2002, steppe, Akan 2995 & 3015; ibid., 22.05.2002, Akan 3942 & 3968 et al.; Aşikköy, 880 m, 14.05.2001, steppe, Akan 1812 et al.

Ir.-Tur. element.

**ILLECEBRACEAE*****Habrosia spinuliflora* (Ser.) Fenzl**

Above Uyuzpınar K., 800 m, 14.05.2002, steppe, Akan 4189 et al.

Ir.-Tur element.

**HYPERICACEAE (GUTTIFERAE)*****Hypericum retusum* Aucher**

Dolamaç T., 880 m, 14.05.2001, steppe, Akan 1808 et al.

Ir.-Tur. element.

***H. salsolifolium* Hand.-Mazz.**

From Dolamaç T. to Küçükkargılı K., 650 m, 03.07.2004, steppe, Akan 5188 & E. Çetin.

Endemic. Ir.-Tur. element.

***H. aviculariifolium* Jaub. & Spach subsp. *depilatum* (Frey & Bornm.) Robson var. *depilatum***

South slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3952 et al.

Endemic. Ir.-Tur. element.

**H. perforatum** L.

Aşıkköy, 23.05.2002, 700-800 m, steppe, Akan 2006 et al.; Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2086 et al.

**H. triquetrifolium** Turra

Aşıkköy, 23.05.2002, 700-800 m, steppe, Akan 2001 et al.

#### GERANIACEAE

**Geranium lucidum** L.

Above Öğütçü K., 800 m, 02.05.2002, steppe, Akan 3001 et al.; Dolamaç T., 700 m, 22.05.2001, steppe, Akan 4215 et al.; Aşıkköy, 14.05.2001, 700 m, fields, Akan 1833 et al.; ibid., 23.05.2002, steppe, Akan 2009 et al.

**G. rotundifolium** L.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2081 et al.; Aşıkköy, 14.05.2001, 600-700 m, steppe, Akan 1828 et al.

**G. molle** L. subsp. **molle**

North slopes of Kaşmer D., 600-700 m, 22.05.2001, steppe, Akan 4206 et al.

**G. tuberosum** L. subsp. **tuberosum**

District of Nergizlik, 700 m, 04.05.2002, stony places, İ. Eker 203 & Akan

subsp. **deserti-syriacum** P.H.Davis

Above Uyuzpınar K., 02.05.2002, 850 m, fields, İ. Eker 203 & Akan

Ir.-Tur. element.

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

Above Uyuzpınar K., 600-700 m, 02.05.2002, steppe, Akan 3057 et al.; above Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1784 et al.

#### RUTACEAE

**Haplophyllum buxbaumii** (Poir.) G.Don. subsp. **mesopotamicum** (Boiss.) C.C.Towns.

Above Uyuzpınar K., 800-850 m, 22.05.2002, steppe, Akan 3960 & 2015 et al.

Ir.-Tur. element.

#### FABACEAE (LEGUMINOSAE)

**Prosopis farcta** (Banks & Sol.) J.F.Macbr.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2030 et al.; Küçükkargılı K., 700-800 m, 14.06.2001, steppe, Akan 2458 et al.; the back of Halaç, 650 m, 03.07.2004, near fields, Akan 5184 & E. Çetin.

**Astragalus hamosus** L.

Above Uyuzpınar K., 700-800 m, 02.05.2002, steppe, Akan 3061 et al.; Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1767 et al.; ibid., 23.05.2001, steppe, Akan 1838 et al.

**A. lanigerus** Desf.

Aşıkköy, 880 m, 14.05.2001, steppe, Akan 1816 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2092 et al.

Ir.-Tur. element.

**A. angustiflorus** C.Koch subsp. **angustiflorus**

Above Uyuzpınar K., 800-850 m, 02.05.2002, steppe, Akan 2976 et al.

Ir.-Tur. element.

**A. lamarckii** Boiss.

Küçükkargılı K., 700-800 m, 14.06.2001, dry stony slopes, Akan 2433 et al.; ibid., 03.07.2004, Akan 5175 & E. Çetin.

Endemic. Ir.-Tur. element.

**A. aduncus** Willd.

Aşıkköy, 600-700 m, 14.05.2002, steppe, Akan 1811 et al.; South slopes of Kaşmer D., 700-800 m, 22.05.2002, steppe, Akan 3945 et al.

Ir.-Tur. element.

**A. xylobasis** Freyn & Bornm. var. **angustus** (Freyn & Sint.) Freyn & Bornm.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2072 et al.

Ir.-Tur. element.

**A. onobrychis** L.

Dolamaç T., 600-700 m, 22.05.2001, steppe, Akan 4217 et al.

**Glycyrrhiza glabra** L. var. **glabra** (Waldst. & Kit.) Boiss.

Above Halaç, 550-600 m, 03.07.2004, riverside, Akan 5178 & E. Çetin



*Cicer pinnatifidum* Jaub. & Spach

Dolamaç T., 600-700 m, 22.05.2001, steppe, Akan 4218 et al..

*C. bijugum* Rech.f.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2067 et al.

Ir.-Tur. element.

*Vicia hirsuta* (L.) S.F.Gray

Near Ögütçü K., 700-800 m, 02.05. 2002, steppe, Akan 3011 et al.

*V. aintabensis* Boiss. & Hausskn.

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1991/b et al.

Ir.-Tur. element.

*V. anatolica* Turrill

Above Uyuzpınar K., 600-700 m, 02.05.2002, steppe, Akan 3003 & 3056 et al.

Ir.-Tur. element.

*V. hybrida* L.

Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1801 et al.

*V. narbonensis* L. var. *narbonensis*

Aşıkköy, 600-700 m, 14.05.2002, fields, Akan 1795 et al.

*Lens orientalis* (Boiss.) Hand.-Mazz.

South slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3954 et al.

*Lathyrus inconspicuus* L.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2023 et al.

*L. cassius* Boiss.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2026 et al.

Medit. element.

*L. sativus* L.

Above Aşıkköy, 600-700 m, 14.05.2002, steppe, Akan 1803 et al.

*L. chrysanthus* Boiss.

Above Uyuzpınar K., 800 m, 02.05.2002, steppe, Akan 3029 & 3948 et al.

Ir.-Tur. element.

*L. aphaca* L. var. *biflorus* Post

Above Uyuzpınar K., 800 m, 02.05.2002, steppe, Akan 2997 et al.

Medit. element.

*Pisum fulvum* Sibth. & Sm.

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1997 et al.

Medit. element.

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

Dolamaç T., 600-700 m, 22.05.2001, steppe, Akan 4211 et al.; above Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 2012 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2082 et al.; Küçükargılı K., 800 m, 14.06.2001, steppe, Akan 2440 et al.

*Trifolium grandiflorum* Schreb.

Above Uyuzpınar K., 800-850 m, 22.05.2002, steppe, Akan 3962 et al.

*T. campestre* Schreb.

Above Uyuzpınar K., 600-700 m, 02.05.2002, steppe, Akan 3060 et al.; above Aşıkköy, 880 m, 14.05.2001, steppe, Akan 1843 et al.

*T. spumosum* L.

Above Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1968 et al.

Medit. element.

*T. resupinatum* L. var. *resupinatum*

Aşıkköy, 880 m, 14.05.2001, steppe, Akan 1832 et al.

*T. tomentosum* L. var. *tomentosum*

Above Uyuzpınar K., 700-800 m, 02.05.2002, steppe, Akan 3042 et al.

*T. bullatum* Boiss. & Hausskn.

Dolamaç T., 600-700 m, 22.05.2001, steppe, Akan 4209 et al.

*T. stellatum* L. var. *stellatum*

Uyuzpınar K., 800 m, 02.05. 2002, steppe, Akan 2996 & 3010 et al.

**T. lucanicum** Gasp.

Above Aşikköy, 600-700 m, 14.05.2001, steppe, Akan 1805 et al.; Dolamaç T., 600-700 m, 22.05.2001, steppe, Akan 4212 et al.

**T. hirtum** All.

Above Uyuzpınar K., 800-850 m, 22.05.2002, steppe, Akan 3955 et al.

Medit. element.

**T. echinatum** Bieb.

Near Aşikköy, 700-800 m, 23.05.2001, steppe, Akan 1948 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2062 et al.

Medit. element.

**T. leucanthum** Bieb.

Near Öğütçü K., 600-700 m, 02.05. 2002, steppe, Akan 3055 et al.; Aşikköy K., 23.05. 2002, 700-800 m, steppe, Akan 1999 et al.

**T. pauciflorum** d'Urv.

Dolamaç T., 600-700 m, 22.05.2001, steppe, Akan 4210 et al.

Medit. element.

**T. pilulare** Boiss.

Dolamaç T., 600-700 m, 22.05.2001, steppe, Akan 4213 et al.

**Trigonella coelesyriaca** Boiss.

Near Aşikköy, 600-700 m, 14.05.2002, steppe, Akan 1765 et al.

Ir.-Tur. element.

**T. spruneriana** Boiss. subsp. *spruneriana*

Aşikköy, 700-800 m, 14.05.2002, steppe, Akan 1840 et al.

Ir.-Tur. element.

**T. mesopotamica** Hub.-Mor.

Above Uyuzpınar K., 800 m, 02.05.2002, steppe, Akan 2993 et al.; Aşikköy, 700-800 m, 14.05.2001, steppe, Akan 1854 et al.; south slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3949 & 3969 et al.

Ir.-Tur. element.

**T. filipes** Boiss.

Above Uyuzpınar K., 800 m, 02.05.2002, steppe, Akan 2994 et al.

Ir.-Tur. element.

**T. monantha** C.A.Mey. subsp. *monantha*

Above Uyuzpınar K., 800 m, 02.05.2002, steppe, Akan 3030 et al.

Ir.-Tur. element.

**Medicago radiata** L.

Above Uyuzpınar K., 700-800 m, 02.05.2002, steppe, Akan 3037 et al.

Ir.-Tur. element.

**M. lupulina** L.

Near Öğütçü K., 700-800 m, 02.05.2002, steppe, Akan 3041 et al.

**M. rotata** Boiss. var. *eliezeri* Eig

Dolamaç T., 600-700 m, 22.05.2001, steppe, Akan 4208 et al.

**M. coronata** (L.) Bartal.

Above Aşikköy, 600-700 m, 14.05.2001, steppe, Akan 1768 et al.; above Aşikköy, 700-800 m, 23.05.2001, steppe, Akan 1944 et al.

Medit. element.

**M. shepardii** Post ex Boiss.

Above Aşikköy, 880 m, 14.05.2001, steppe, Akan 1844 et al.; Dolamaç T., 600-700 m, 22.05.2001, steppe, Akan 4214 et al.

Endemic. Ir.-Tur. element.

**M. turbinata** (L.) All. var. *chiotica* Urb.

Above Aşikköy, 880 m, 14.05.2001, steppe, Akan 1855 et al.

**Lotus gebelia** Vent. var. *gebelia*

Above Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 2017 et al., above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2054 & 2083 et al.

**Hymenocarpus circinnatus** (L.) Savi

Above Uyuzpınar K., 700-800 m, 02.05.2002, steppe, Akan 3050 et al.

Medit. element.



**Coronilla scorpioides** (L.) C.Koch

Above Uyuzpınar K., 700-800 m, 02.05.2002, steppe, Akan 3031 et al.; above Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1969 & 1973 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2048 et al.

**Scorpiurus muricatus** L.

Above Uyuzpınar K., 600-700 m, 02.05.2002, steppe, Akan 3049 & 3051 et al.

**Hedysarum varium** Willd.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2064 et al.

Ir.-Tur. element.

**Onobrychis caput-galli** (L.) Lam.

Above Aşikköy, 600-700 m, 14.05.2001, steppe, Akan 1775; *ibid.*, 23.05.2002, steppe, Akan 1953 et al.

Medit. element.

**O. aequidentata** (Sibth. & Sm.) d'Urv.

Above Uyuzpınar K., 700-800 m, 02.05.2002, steppe, Akan 3062 & 3045.

Medit. element.

**O. kotschyana** Fenzl

Above Aşikköy, 880 m, 14.05.2001, steppe, Akan 1846 et al.; south slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3946 et al.

**O. galegifolia** Boiss.

Aşikköy, 600-700 m, 14.05.2002, steppe, Akan 1792 et al.

Ir.-Tur. element.

**ROSACEAE****Rubus sanctus** Schreb.

Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1972 et al.

**Sanguisorba minor** Scop. subsp. *minor*

Above Uyuzpınar K., 800 m, 02.05.2002, steppe, Akan 3022 et al.

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

Above Uyuzpınar K., 800-880 m, 02.05.2002, steppe, Akan 2990 et al.

**C. aronia** (L.) Bosc. ex DC. var. *aronia*

Dolamaç T., 880 m, 14.05.2001, steppe, Akan 1807 et al.

**CUCURBITACEAE****Ecbalium elaterium** (L.) A.Rich.

Demircik K., 650-750 m, 03.07. 2004, river banks, Akan 5177 & E. Çetin.

Medit. element.

**CRASSULACEAE**

**Umbilicus horizontalis** (Guss.) DC. var. *intermedius* (Boiss.) Chamberlain

Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1960 et al.

**APIACEAE (UMBELLIFERAE)****Daucus broteri** Ten.

Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 2016 et al.; Uyuzpınar, 31.05.2002, 600-800 m, steppe, Akan 2084 et al.

Medit. element.

**Lagoecia cuminoides** L.

Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1966 et al.

Medit. element.

**Scandix iberica** Bieb.

South slopes of Kaşmer D., 22.05.2002, 800-850 m, steppe, Akan 3953 et al.

**Smyrniium cordifolium** Boiss.

Above Uyuzpınar K., 800-850 m, 02.05.2002, steppe, Akan 2987 et al.

Ir.-Tur. element.

**Bunium paucifolium** DC. var. *paucifolium*

Above Aşikköy, 600-700 m, 14.05.2001, fields, Akan 1797 et al.; south of Kaşmer D., 22.05. 2002, 800 m, steppe, Akan 3959 et al.

Ir.-Tur. element.

**Pimpinella puberula** (DC.) Boiss.

Near Ögütçü K., 02.05.2002, 700-800 m, steppe, Akan 3043 et al.

**P. eriocarpa** Banks & Sol.

Aşıkköy, 600-800 m, 23.05.2002, steppe, Akan 1962 et al.

Ir.-Tur. element.

**Bupleurum cappadocicum** Boiss.

South slopes of Kaşmer D., 22.05.2002, 850 m, steppe, Akan 3966 et al.; Uyuzpınar, 31.05. 2001, 600-900 m, steppe, Akan 2024 et al.

Ir.-Tur. element.

**Pastinaca pimpinellifolia** Bieb.

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1984 et al.

**Ormasciadum aucheri** Boiss.

Aşıkköy, 14.05.2001, 600-700 m, fields, Akan 1798 et al.

**Torilis tenella** (Delile) Reichb.

Küçükargılı K., 700-800 m, 14.06.2001, steppe, Akan 2451.

**T. arvensis** (Huds.) Link subsp. **arvensis**

Above Uyuzpınar K., 800-850 m, 02.05.2002, steppe, Akan 3963 et al.; Aşıkköy, 14.05. 2001, 600-700 m, fields, Akan 1785 et al.; south slopes of Kaşmer D., 800-850 m, 22.05. 2002, steppe, Akan 3970 et al.; Uyuzpınar K., 31.05.2002, 600-800 m, steppe, Akan 2045 et al.

Medit. element.

**T. leptophylla** (L.) Reichb.

Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1827 et al.

**Turgenia latifolia** (L.) Hoffm.

Aşıkköy, 600-700 m, 14.05.2001, fields, Akan 1779 et al.

**ARALIACEAE**

**Hedera helix** L.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2032 & 2028 et al.

**VALERIANACEAE**

**Valerianella vesicaria** (L.) Moench

Above Uyuzpınar K., 700-800 m, 02.05.2002, steppe, Akan 3035/b & 3059 et al.

**DIPSACACEAE**

**Cephalaria setosa** Boiss. & Hohen.

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1956 et al.

Ir.-Tur. element.

**C. syriaca** (L.) Schrad.

Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2053 et al.; south slopes of Kaşmer D., 850 m, 22.05.2002, steppe, Akan 3957.

**Scabiosa argentea** L.

Uyuzpınar K., 800 m, 31.05.2002, steppe, Akan 2052/a et al.

**S. prolifera** L.

Uyuzpınar K., 800 m, 31.05.2002, steppe, Akan 2052/b et al.

Medit. element.

**S. rotata** Bieb.

Above Uyuzpınar K., 800-850 m, 22.05.2002, steppe, Akan 3930 et al.; Aşıkköy, 14.05.2001, 600-700 m, fields, Akan 1787 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2039 et al.

Ir.-Tur. element.

**ASTERACEAE (COMPOSITAE)**

**Filago pyramidata** L.

Above Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1965 et al.

**Senecio vernalis** Waldst. & Kit.

Near Ögütçü K., 700-800 m, 02.05.2002, steppe Akan 2050 & 3021 et al.; above Aşıkköy, 880 m, 14.05.2001, steppe, Akan 1825 & 1771 et al.; ibid., 23.05.2002, steppe, Akan 1954 et al.

**Anthemis hyalina** DC.

Above Uyuzpınar K., 700-800 m, 02.05.2002, steppe, Akan 3032 et al.

**A. altissima** L.

Above Aşıkköy, 650-700 m, 14.05.2001, Akan 1766 & 1786 et al.; ibid., 23.05.2002, Akan 1988 et al., Uyuzpınar K., 600-800 m, 31.05.2002, Akan 2078 et al.

**Achillea aleppica** DC. subsp. *aleppica*

Above Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1770 et al.; Uyuzpınar K., 800-850 m, 22.05.2002, steppe, Akan 3934 et al.

Ir.-Tur. element.

**A. biebersteinii** Afan.

Uyuzpınar K., 600-800 m, 31.05.2002, Akan 2055 & 2061 et al.

Ir.-Tur. element.

**Tanacetum argenteum** (Lam.) Willd. subsp. *argenteum*

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2076 et al.; above Uyuzpınar K., 800-850 m, 22.05.2002, steppe, Akan 3961 et al.

Endemic. Ir.-Tur. Element.

**Gundelia tournefortii** L. var. *armata* Freyn & Sint.

Above Uyuzpınar K., 700-800 m, 02.05.2002, steppe, Akan 3012 et al.; above Aşıkköy, 880 m, 14.05.2001, steppe, Akan 1815 et al.

Ir.-Tur. element.

**Onopordum carduchorum** Bornm. & Beauverd

Küçükkargılı K., 700-800 m, 14.06.2001, steppe, Akan 2428 et al.

Ir.-Tur. element.

**Notobasis syriaca** (L.) Cass.

Above Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1776 et al.

Medit. element.

**Carduus nutans** L. subsp. *nutans* sensu lato

Above Uyuzpınar K., 600-700 m, 02.05.2002, steppe, Akan 3053 et al.; Uyuzpınar K., 22.05.2002, 800-850 m, steppe, Akan 3923 et al.

**C. pycnocephalus** L. subsp. *breviphyllarius* P.H.Davis

Above Uyuzpınar K., 800-850 m, 22.05.2002, steppe, Akan 3923 et al.

Ir.-Tur. element.

**Centaurea virgata** Lam.

Küçükkargılı K., 700-800 m, 14.06.2001, steppe, Akan 2459 et al.

**C. solstitialis** L. subsp. *solstitialis*

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2069 et al.

**C. iberica** Trev. ex Sprengel

Above Demircik K., 700 m, 03.07.2004, roadside, Akan 5187 et al.

**C. stapfiana** (Hand.-Mazz.) Wagenitz

The back of Halaç, 650 m, 03.07.2004, dry stony slopes, Akan 5173 & E. Çetin.

Endemic. Ir.-Tur. element.

**C. sclerolepis** Boiss.

Around Demirlik K., 650-750 m, 03.07.2004, roadside, Akan 5172 & E. Çetin

Endemic. Ir.-Tur. element.

**C. triumfettii** All.

Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2051.

**Crupina crupinastrum** (Moris) Vis.

Above Uyuzpınar K., 800 m, 22.05.2002, steppe, Akan 3951 & 3933 et al.; ibid., 31.05.2002, steppe, Akan 2059 et al.

**Chardinia orientalis** (L.) O.Kuntze

Near Ögütçü K., 700-800 m, 02.05.2002, steppe, Akan 3035/a et al.

Ir.-Tur. element.

**Scorzonera laciniata** L. subsp. *laciniata*

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1992/b et al.

**S. mollis** M.Bieb. subsp. *szowitzii* (DC.) Chamb.

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1992/a et al.

Ir.-Tur. element.

**Tragopogon longirostris** Bisch. ex Sch.Bip. var. *longirostris*

Above Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1992 et al.; Küçükkargılı K., 700-800 m, 14.06.2002, steppe, Akan 2448 et al.

**Leontodon hispidus** L. var. *glabratus* (W.Koch) Bisch.

Near Ögütçü K., 02.05.2002, 600-800 m, steppe, Akan 3028 et al.

Euro-Sib. element.

**L. asperrimus** (Willd.) Ball

South slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3958 et al.

Ir.-Tur. element.

**Rhagadiolus stellatus** (L.) Gaertn. var. **stellatus**

Above Aşikköy, 880 m, 14.05.2001, steppe, Akan 1856 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2046 et al.

Medit. element.

**R. angulosus** (Jaub. & Spach) Kupicha

Uyuzpınar K., 02.05.2002, steppe, 600-700 m, Akan 3052 et al.

**Lactuca serriola** L.

Above Uyuzpınar K., 650-700 m, 15.11.2001, steppe, Akan 2472 et al.

Euro-Sib. element.

**Crepis foetida** L. subsp. **rhoeadifolia** (M.Bieb.) Celak.

Above Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1980 et al.; Uyuzpınar K., 800 m, 31.05.2002, steppe, Akan 2020 et al.

**C. sancta** (L.) Babç.

Above Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 2008 et al.

**C. micrantha** Czern.

Aşikköy, 880 m, 14.05.2001, steppe, Akan 1851 et al.

**CAMPANULACEAE**

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

Near Öğütçü K., 800 m, 02.05.2002, steppe, Akan 3025 et al.; Aşikköy, 700 m, 23.05.2001, steppe, Akan 1942 et al.; above Uyuzpınar K., 31.05.2001, 600-700 m, steppe, Akan 2019 et al.

Medit. element.

**PRIMULACEAE**

**Androsace maxima** L.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2021 et al.

**ASCLEPIADACEAE**

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

Above Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 2013 et al.

Ir.-Tur. element.

**CONVOLVULACEAE**

**Convolvulus dorycnium** L. subsp. **oxysepalus** (Boiss.) Rech.f.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2033, 2079 et al.

Medit. element.

**C. siculus** L. subsp. **siculus**

Near Öğütçü K., 02.05.2002, steppe, 600-700 m, Akan 3058 et al.

Medit. element.

**C. arvensis** L.

Above Aşikköy, 700 m, 14.05.2001, steppe, Akan 1773 & 1793 et al.; ibid., 23.05.2002, steppe, Akan 1989 et al.; south slopes of Kaşmer D., 850 m, 22.05.2002, steppe, Akan 3929 et al.; Küçükkargılı K., 700-800 m, 14.06.2002, steppe, Akan 2435 et al.

**C. betonicifolius** Miller subsp. **peduncularis** (Boiss.) Parris

Above Aşikköy, 700 m, 14.05.2001, steppe, Akan 1764 & 1783 et al.; north slopes of Kaşmer D., 700 m, 22.05.2001, steppe, Akan 4205 et al.

Ir.-Tur. element.

**CUSCUTACEAE**

**Cuscuta babylonica** Aucher ex Choisy var. **elegans** (Boiss. & Ball) Engelm.

Uyuzpınar K., 600-800 m, 31.05.2002, steppe, on *Hypericum* sp., Akan 2027 et al.

Ir.-Tur. element.

**BORAGINACEAE**

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

Above Aşikköy, 600-700 m, 14.05.2001, steppe, Akan 1806 et al.

**Onosma sericeum** Willd.

South slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3936 et al.

Ir.-Tur. element.

**O. frutescens** Lam.

Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1778 et al.

Medit. element.

**O. isauricum** Boiss. & Heldr.

Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1774 et al.; Küçükargılı K., 700-800 m, 14.06.2001, steppe, Akan 2454 et al.

Endemic. Ir.-Tur. element.

**Anchusa azurea** Mill. var. *azurea*

Near Öğütçü K., 800-850 m, 02.05.2002, steppe, Akan 2980 et al.; district of Küçükargılı K., 700-800 m, 14.06.2001, steppe, Akan 2442 et al.

var. *kurdica* (Guşul) Chamb.

Aşıkköy, 700-800 m, 23.05.2001, steppe, Akan 1950 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2038 et al.

**A. strigosa** Labill.

Above Öğütçü K., 600-700 m, 02.05.2002, steppe, Akan 3054 et al.; Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1818 et al.

**Alkanna hirsutissima** (Bertol.) DC.

Above Öğütçü K., 700-800 m, 02.05.2002, steppe, Akan 3006 et al.; Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1835 et al.; south slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3943 et al.; around Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2080 et al.

Ir.-Tur. element.

**SCROPHULARIACEAE****Verbascum tenue** Murb.

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1983 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2037 et al.

Endemic. Ir.-Tur. element.

**V. kotschy** Boiss. & Hohen.

Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1790 & 1789 et al.

Ir.-Tur. element.

**Scrophularia mesopotamica** Boiss.

Küçükargılı K., 700-800 m, 14.06.2001, steppe, Akan 2431 et al.

Endemic. Ir.-Tur. element.

**Veronica orientalis** Mill. subsp. *orientalis*

Above Öğütçü K., 700-800 m, 02.05.2002, steppe, Akan 3013 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2043 et al.

Ir.-Tur. element.

**OROBANCHACEAE****Orobanche nana** Noé ex Beck

Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1820 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2087 et al.

**LAMIACEAE (LABIATAE)**

**Ajuga chamaepitys** (L.) Schreber. subsp. *laevigata* (Banks & Sol.) P.H.Davis

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 2005 et al.

Ir.-Tur. element.

**Teucrium multicaule** Montbret & Aucher ex. Benth.

Above Aşıkköy, 600-700 m, 14.05.2001, Akan 1813 et al.; above Uyuzpınar K., 700-800 m, 22.05.2002, steppe, Akan 3034 & 3964 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2040 et al.

Ir.-Tur. element.

**T. polium** L.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2068 et al.; Küçükargılı K., 700-800 m, 14.06.2001, steppe, Akan 2432 et al.

**Scutellaria galericulata** L.

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1971 & 2004/a et al.

**S. tomentosa** Bertol.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2034 & 2071 et al.; Dolamaç T., 700-800 m, 14.06.2001, steppe, Akan 2441 & 2443 et al.

Ir.-Tur. element.

**Phlomis rigida** Labill.

Above Uyuzpınar K., 800-850 m, 22.05.2002, steppe, Akan 3940 et al.

Ir.-Tur. element



**P. kurdica** Rech.f.

Aşikköy, 800 m, 23.05.2002, steppe, Akan 1978, 1975 et al.; above Uyuzpınar K., 31.05.2002, 600-800 m, steppe, Akan 2085 et al.; district of Dolamaç T., 700-800 m, 14.06.2001, steppe, Akan 2436 et al.

Ir.-Tur. element.

**Lamium amplexicaule** L.

Above Öğütçü K., 700-800 m, 02.05.2002, steppe, Akan 3046 et al.

Euro-Sib. element.

**Marrubium parviflorum** A.Fish. & C.A.Mey. subsp. **parviflorum**

Aşikköy, 880 m, 14.05.2001, steppe, Akan 1814 et al.; Uyuzpınar, 31.05. 2002, 600-800 m, steppe, Akan 2070 et al.; Dolamaç T., 14.06.2001, 800 m, steppe, Akan 2445 et al.

Ir.-Tur. element.

**Stachys burgsdorffiioides** (Benth.) Boiss. subsp. **burgsdorffiioides**

Aşikköy, 700-800 m, 23.05.2001, steppe, Akan 1946 et al.

Ir.-Tur. element.

**Nepeta italica** L.

Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 2003 et al.

**Ziziphora capitata** L.

Above Öğütçü K., 02.05. 2002, 700-800 m, steppe, Akan 3036/b et al.; Aşikköy, 600-700 m, 14.05.2001, steppe, Akan 1830 et al.

Ir.-Tur. element.

**Z. tenuior** L.

Above Öğütçü K., 02.05.2002, 700-800 m, steppe, Akan 3036/a; Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1967 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2041, 2047 et al.

Ir.-Tur. element.

**Thymus fallax** Fisch. & C.A.Mey

Between the back of Halaç and Dolamaç T., 650 m, 03.07.2004, steppe, Akan 5174 & E. Çetin.

Ir.-Tur. element.

**Salvia multicaulis** Vahl

Above Öğütçü K., 700-800 m, 02.05.2002, steppe, Akan 3018 & 3009 et al.; Aşikköy, 880 m, 14.05.2001, steppe, Akan 1821, 1822 & 1823 et al.; Above Uyuzpınar K., 800-850 m, 22.05.2002, steppe, Akan 3932 et al.; Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1975 et al.

Ir.-Tur. element.

**S. syriaca** L.

Aşikköy, 600-700 m, 14.05.2001, Akan 1763 et al.; ibid., 23.05.2002, steppe, Akan 1986 & 2004/b et al.; Dolamaç T., 700-800 m, 14.06.2001, steppe, Akan 2447 et al.

Ir.-Tur. element.

**S. palaestina** Benth.

Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1979 et al.

Ir.-Tur. element.

**PLUMBAGINACEAE**

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

South slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3938 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2088 et al.

Ir.-Tur. element.

**ARISTOLOCHIACEAE**

**Aristolochia bottae** Jaub. & Spach

Above Öğütçü K., 700-800 m, 02.05.2002, steppe, Akan 3000 et al.; district of Aşikköy, 700-800 m, 23.05.2002, steppe, Akan 1993 et al.

Ir.-Tur. element.

**EUPHORBIACEAE**

**Euphorbia falcata** L. subsp. **falcata**

Above Öğütçü K., 700-800 m, 02.05.2002, Akan 3063 et al.; Aşikköy, 700-800 m, 23.05.2001, steppe, Akan 1939 & 1947 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, Akan 2007 et al.; Dolamaç T., 700-800 m, 14.06.2001, Akan 2452 et al.

**E. cheiradenia** Boiss. & Hohen.

Aşikköy, 600 m, 23.05.2002, steppe, Akan 2000 et al.; above Uyuzpınar K., 800 m, 31.05.2002, Akan 2066 et al., Dolamaç T., 800 m, 14.06. 2001, steppe, Akan 2437 et al.



**URTICACEAE*****Parietaria officinalis* L.**

Dolamaç T., 600-700 m, 22.05.2001, steppe, Akan 4216 et al.

Euro-Sib. element.

**MORACEAE*****Ficus carica* L. subsp. *rupestris* (Hauskn.) Browicz**

Above Öğütçü K., 800-880 m, 02.05.2002, steppe, Akan 2989 et al., above Uyuzpınar K., 800-880 m, 23.05.2002, steppe, Akan 1998 et al.

Ir.-Tur. element.

**ULMACEAE*****Celtis tournefortii* Lam.**

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1996 et al.; above Uyuzpınar K., 650-700 m, 15.11.2001, steppe, Akan 2471 et al.

**FAGACEAE*****Quercus brantii* Lindl.**

Above Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1987 & 1990 et al.

Ir.-Tur. element.

**RUBIACEAE*****Andrachne telephioides* L.**

Aşıkköy, 23.05.2001, 700-800 m, steppe, Akan 1994 et al.; above Uyuzpınar K., 31.05.2002, 600-800 m, steppe, Akan 2063 et al.

***Asperula orientalis* Boiss. & Hohen.**

South slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3972, 3944 et al.; above Öğütçü K., 700-800 m, 02.05.2002, steppe, Akan 3005 et al.

Ir.-Tur. element.

***Crucianella exasperata* M.A.Fisch. & C.A.Mey.**

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1952 et al.

Ir.-Tur. element.

***Galium canum* Req. ex DC. subsp. *canum***

Demircik K., 650-750 m, 03.07.2004, beneath rocks, Akan 5186 & E. Çetin

Medit. element.

***G. aparine* L.**

Aşıkköy, 800 m, 14.05.2001, steppe, Akan 1974 & 1826 et al.

Ir.-Tur. element

***G. tricornutum* Dandy**

Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1824 et al.

Medit. element.

***Callipeltis cucullaria* (L.) Steven**

Above Öğütçü K., 700-800 m, 02.05.2002, steppe, Akan 3044 et al., Aşıkköy, 600-800 m, 23.05.2002, steppe, Akan 1958 et al.

Ir.-Tur. element.

***Cruciata taurica* (Pall. ex Willd.) Ehrend.**

Above Öğütçü K., 800 m, 02.05.2002, steppe, Akan 2992 et al.; Dolamaç T., 880 m, 14.05.2001, steppe, Akan 1809 et al.; south slopes of Kaşmer D., 800-850 m, 22.05.2002, steppe, Akan 3947 & 3956 et al.

Ir.-Tur. element.

**MONOCOTYLEDONES****ARACEAE*****Eminium spiculatum* (Blume) Schott var. *spiculatum***

Öğütçü K., 700 m, 02.05.2002, fields, İ. Eker 208 et al.

Ir.-Tur. element

**LILIACEAE*****Allium pallens* L. subsp. *pallens***

Above Uyuzpınar K., 750 m, 27.05.2002, steppe, Akan 1831 et al.

Medit. element.

***A. flavum* L. subsp. *tauricum* (Besser ex Reichb.) Stearn var. *tauricum***

Dolamaç T., 700-800 m, 14.06.2001, steppe, Akan 2453 et al.

Medit. element.

***A. stamineum* Boiss.**

Above Uyuzpınar K., 650 m, 15.04.2004, steppe, Akan 5170 et al.

Medit. element.

**A. scorodoprasum** L. subsp. **rotundum** (L.) Stearn  
Dolamaç T., 800 m, 22.05.2001, steppe, İ. Eker 212 et al.

Medit. element.

**Ornithogalum narbonense** L.

Above Uyuzpınar K., 700 m, 22.05.2002, İ. Eker 214 et al.

Medit. element.

**Muscari comosum** (L.) Mill.

Above Uyuzpınar K., 600-800 m, 30.04.2002, steppe, Akan 2930 et al.

Medit. element.

**M. neglectum** Guss.

Dolamaç T., 780 m, 08.03.2003, steppe, İ. Eker 333 et al.

**Hyacinthella nervosa** (Bertol.) Chouard

Dolamaç T., 600 m, 07.03.2002, stony places, İ. Eker 23 et al.

Ir.-Tur. element.

**Gagea reticulata** (Pall.) Schult. & Schult.f.

Above Uyuzpınar K., 600-800 m, 11.05.2002, steppe, Akan 3164 et al.

Ir.-Tur. element.

**G. chlorantha** (Bieb.) Schult. & Schult.f.

Dolamaç T., 600 m, 07.03.2002, steppe, İ. Eker 22 et al.

Ir.-Tur. element.

**Colchicum cilicicum** (Boiss.) Dammer

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2089 et al.

Medit. element.

#### AMARYLLIDACEAE

**Sternbergia fischeriana** (Herb.) Rupr.

District of Nergizlik , 600 m, 07.03.2002, fields, İ. Eker 331 et al.

**Ixiolirion tataricum** (Pall.) Herb. subsp. **montanum** (Labill.) Takht.

Above Uyuzpınar K., 800 m, 02.05.2002, steppe, İ. Eker 199 et al.

Ir.-Tur. element.

#### IRIDACEAE

**Iris persica** L.

Dolamaç T., 600 m, 07.03.2002, stony places, İ. Eker 30 et al.

Ir.-Tur. element.

**Crocus pallasii** Goldb. subsp. **turcicus** B.Mathew

Dolamaç T., 700 m, 15.11.2001, stony places, İ. Eker 10 et al.

**C. cancellatus** Herb. subsp. **damascenus** (Herb.) B.Mathew

Dolamaç T., 700 m, 15.11.2001, stony places, İ. Eker 9 et al.

Ir.-Tur. element.

**Gladiolus italicus** Mill.

Above Uyuzpınar K., 850 m, 02.05.2002, steppe, İ. Eker 200/b et al.

**G. atroviolaceus** Boiss.

Uyuzpınar K., 600 m, 22.05.2002, fields, İ. Eker 215 et al.

Ir.-Tur. element.

#### CYPERACEAE

**Scirpoides holoschoenus** (L.) Sojak

Dolamaç T., 700-800 m, 14.06.2001, steppe, Akan 2438 et al.

#### POACEAE (GRAMINEAE)

**Eremopyrum bonaepartis** (Spreng.) Nevski subsp. **bonaepartis**

Above Öğütçü K., 700-800 m, 02.05.2002, steppe, Akan 3065 et al.; Dolamaç T., 880 m, 14.05.2001, steppe, Akan 1842 et al.

Ir.-Tur. element.

**Aegilops umbellulata** Zhuk. subsp. **umbellulata**

Above Uyuzpınar K., 800-850 m, 22.05.2001, steppe, Akan 3922 et al.

Ir.-Tur. element.

**A. triuncialis** L. subsp. **triuncialis**

North slopes of Kaşmer D., 600-700 m, 22.05.2001, steppe, Akan 4207 et al.

**A. biuncialis** Vis.

Dolamaç T., 700-800 m, 14.06.2001, steppe, Akan 2455 et al.

**Hordeum marinum** Huds. var. *marinum*

Above Öğütçü K., 880 m, 02.05.2002, steppe, Akan 2986 et al.; Dolamaç T., 880 m, 14.05.2001, steppe, Akan 1839 et al.; above Uyuzpınar K., 800 m, 22.05.2002, steppe, Akan 3922.

**H. murinum** L. subsp. *glaucum* (Steud.) Tzvelev

Above Öğütçü K., 800-880 m, 02.05.2002, steppe, Akan 2988 et al.

**H. murinum** L. subsp. *leporinum* (Link) Arcang. var. *leporinum*

Aşıkköy, 14.05.2001, steppe, Akan 1804 et al.; ibid., 23.05.2001, steppe, Akan 1985 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 1845 & 2090 et al.

**H. bulbosum** L. var. *bulbosum*

Above Öğütçü K., 800-880 m, 02.05.2002, steppe, Akan 3064 et al.; Nergizlik district, 700-800 m, 14.05.2002, steppe, Akan 1829 et al., above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2058 et al.

**H. spontaneum** C.Koch

Above Öğütçü K., 800-880 m, 02.05.2002, steppe, Akan 2984 & 3016 et al.; above Uyuzpınar K., 800-850 m, 22.05.2002, steppe, Akan 3928 et al.; Aşıkköy, 700-800 m, 23.05.2001, steppe, Akan 1943 & 1977 et al.

Ir.-Tur. element.

**Bromus japonicus** Thunb. subsp. *japonicus*

Dolamaç T., 880 m, 14.05.2001, steppe, Akan 1848 et al.; above Uyuzpınar K., 800-850 m, 22.05.2001, steppe, Akan 3926 et al.

**B. sterilis** L.

Above Öğütçü K., 800 m, 02.05.2002, steppe, Akan 2991 & 3002 et al.

**Avena eriantha** Durieu

Aşıkköy, 700-800 m, 14.05.2001, steppe, Akan 1841 et al.

**A. sterilis** L. subsp. *sterilis*

Above Öğütçü K., 800 m, 02.05.2002, steppe, Akan 3066; Aşıkköy, 700 m, 14.05.2001, fields, Akan 1800

et al.; Dolamaç T., 800 m, 14.06.2001, steppe, Akan 2439 et al.

**Arrhenatherum Kotschy** Boiss.

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1850 et al., Dolamaç T., 700-800 m, 14.06.2001, steppe, Akan 2449 et al.

Ir.-Tur. element.

**Phleum exaratum** Hochst. ex Griseb. subsp. *exaratum*

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2022 et al.

**Festuca callieri** (M.Hack. ex St.-Yves) Markgr. apud Hayek subsp. *callieri*

Above Öğütçü K., 800-850 m, 02.05.2002, steppe, Akan 2979 et al.

**Lolium persicum** Boiss. & Hohen. ex Boiss.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2091 et al.

Ir.-Tur. element.

**Lolium rigidum** Gaudin var. *rigidum*

Above Aşıkköy, 600-700 m, 14.05.2001, steppe, Akan 1802 & 1807 et al.; above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2049 & 2092 et al.

**Poa bulbosa** L.

Above Öğütçü K., 800-850 m, 02.05.2002, steppe, Akan 2977 et al.

**Catabrosa aquatica** (L.) P.Beauv.

Aşıkköy, 700-800 m, 23.05.2001, steppe, Akan 1938 et al.

**Echinaria capitata** (L.) Desf.

Above Öğütçü K., 800-850 m, 02.05.2002, steppe, Akan 2978 et al.

**Melica persica** Kunth subsp. *persica*

Aşıkköy, 700-800 m, 23.05.2002, steppe, Akan 1940, 1957 et al.

**Stipa holoserica** Trin.

Dolamaç T., 880 m, 14.05.2001, steppe, Akan 1849 et al.; above Uyuzpınar K., 800-850 m, 22.05.2001, steppe, Akan 3925 et al.

Ir.-Tur. element.

**Phragmites australis** (Cav.) Trin. ex Steudel

Above Küçükkargılı K., 600-700 m, 03.07.2004, stream banks, Akan 5189.

Euro-Sib. element.

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

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2025 et al.

**Imperata cylindrica** (L.) Raeusch.

Above Uyuzpınar K., 600-800 m, 31.05.2002, steppe, Akan 2060 et al.

## Results and Discussion

After the identification of the specimens and the collection of all relevant data, the floristic data of Kaşmer Dağı were obtained. The research was carried out over 3 years. During the floristic study, 469 plant specimens belonging to 47 families, 156 genera, and 262 taxa were collected. All of the 262 taxa belonged to the division *Spermatophyta*. The subdivision *Gymnospermae* was not recorded from the research area. On the other hand, 46 taxa of *Angiospermae* belonged to *Monocotyledones*, while the rest (216 taxa) belonged to *Dicotyledones*.

The total number of endemic taxa is 10 (3.81%) in our research area. The endemism rate is 2.4% for Ceylanpınar State Farm (Adigüzel & Aytaç, 2001), and 5.79% for Karacadağ (Ertekin, 2002), i.e. similar to that in our research area.

Among the endemic plants in our research area, *Astragalus lamarckii*, *Hypericum aviculariifolium* subsp. *depilatum* var. *depilatum*, *Onosma isauricum* and *Tanacetum argenteum* subsp. *argenteum* have scattered distributions, while *Centaurea stapfiana* is localised to B7, B8, and C8 squares; *Medicago shepardii* is distributed only in the B6 and C6 squares; *Centaurea sclerolepis* is distributed only in the B8, C6 and C7 squares (the type locality is C7 Şanlıurfa); *Centaurea stapfiana* is distributed only in the B7 and C8 squares, and *Scrophularia mesopotamica* (the type locality is C7 Şanlıurfa) is known from the B7, B8, C7, C8 and C9 squares. These endemic plants are generally local for the south and south-east Anatolia regions and are localised around the Anatolian Diagonal (Ekim & Güner, 1986).

With regard to endemism, south-east Anatolia is the poorest region in Turkey. In fact, its climatic, topographic

and ecological features are homogeneous, and most plants that grow in the northern parts of Syria and Iraq grow in south-east Anatolia as well. Therefore, the endemism rate in our collection is not high, but some non-endemic plants have restricted ranges, namely *Capparis ovata* Desf. var. *palaestina*, *Geranium tuberosum* subsp. *deserti-syriacum* (the type locality is C7 Şanlıurfa), *Astragalus aleppicus*, *Trigonella mesopotamica*, *T. coelesyriaca*, *Silene coniflora* (the type locality is C7 Şanlıurfa), *S. crassipes*, *Adonis dentata*, *Nigella arvensis* var. *caudata*, *Erysimum hamosum*, *Eminium spiculatum* var. *spiculatum*, *Vicia aintabensis* and *Achillea aleppica* subsp. *aleppica*.

According to the floristic regions, Irano-Turanian elements, with a rate of 35.87%, rank first, followed by Mediterranean and Euro-Siberian elements with rates of 11.83% and 1.9% respectively. Furthermore 50.4% of determined species are widespread and multi-regional, or of unknown phytogeographic origin. The vast number of Irano-Turanian elements can be explained by the fact that the research area lies wholly within the Irano-Turanian phytogeographic region. It shows that the Irano-Turanian steppic plants have a widespread distribution in our research area. Moreover, Irano-Turanian elements are abundant, with a rate of 29.9% on Ceylanpınar State Farm (Adigüzel & Aytaç, 2001), 31.9% on Tektek Dağı (personal communication with Kaya), 22.2% around Birecik Dam Lake (personal communication with Aslan), 22.6% around Karkamış Dam Lake (personal communication with Türkmen) and 35% on Karacadağ (Ertekin, 2002).

Concerning the number of taxa, *Leguminosae* is the largest family in the research area, with 57 taxa. Following *Leguminosae*, *Compositae* is represented by 31 taxa, *Gramineae* by 26, *Labiatae* by 17 and *Umbelliferae* by 14. *Leguminosae* is also the most common family on Karacadağ (Ertekin, 2002), on Ceylanpınar State Farm (Adigüzel & Aytaç, 2001) and on Tektek Dağı (personal communication with Kaya). However, the family *Compositae* ranks first around Karkamış Dam (personal communication with Türkmen). It may be concluded that the area is parallel to the Flora of Turkey since *Leguminosae* is the second richest family in Turkey. In most floristic studies, *Leguminosae* and *Compositae* are the 2 richest families in the Flora of Turkey. This can be explained by the diversity of vegetation types, soil construction, climatic conditions, and topography.

Concerning the number of species, the major genera in this region are as follows: *Trifolium* (13), *Astragalus* (7), *Centaurea* (6), *Medicago* (6), *Vicia* (5), *Trigonella* (5), and *Hordeum* (5). The genera with the highest number of taxa vary slightly in the studies. In our study, the genus *Trifolium* ranks first due to ecological factors, and the habitat of the species. The genus *Trifolium* ranks first on Karacadağ (Ertekin 2002) and Tektek Dağı (personal communication with Kaya) as well. However, the genus *Astragalus* ranks first on Ceylanpınar State Farm (Adıgüzel & Aytaç, 2001).

According to Red Data Book categories (Ekim et al., 2000; IUCN Species Survival Commission, 2001), *Hypericum salsolifolium* is DD; *Astragalus lamarckii*, *Hypericum aviculariifolium* subsp. *depilatum* var. *depilatum*, *Onosma isauricum*, *Tanacetum argenteum* subsp. *argenteum* and *Scrophularia mesopotamica* are LC; *Centaurea stapfiana* is NT; and *Medicago shepardii*, *Centaurea sclerolepis* and *Verbascum tenue* are VU. The populations of the endemic plants in the research area have been extensively destroyed by anthropogenic effects, and therefore plants try to survive under unsuitable conditions. Natural habitats have been destroyed by the construction of dams and tunnels for the irrigation of plains.

Of all the collected specimens, 33 taxa are new records for the C7 square (Davis, 1965-1985; Davis et

al., 1988; Donner, 1990; Yıldırım, 1992, 1994; Yıldız & Aktoklu, 1996; Ertekin & Saya, 1997; Adıgüzel & Aytaç, 2001; Ertekin, 2002; Aslan & Türkmen 2001, 2003; Türkmen et al., 2002)

The area is one of the richest genetic sources for wheat and edible legumes. Some cultivated plants such as *Triticum durum* Desf., *T. turgidum* L., *T. aestivum* L., *Lens culinaris* Medik., *Pisum sativum* L., and *Medicago sativa* L. are common.

*Juglans regia* L., *Vitis vinifera* L., *Morus nigra* L., *Ficus carica* L., and *Pistacia vera* L. are some woody plants cultivated in the region.

### Acknowledgements

We are grateful to Prof. Dr. Mehmet Koyuncu for his help in the identification of geophytes, to Dr. Vagif Hatemov for Poaceae, to Dr. Ekrem Aktoklu for *Hedysarum* and *Onobrychis*, to Mustafa Keskin for *Trifolium*, to Dr. Esat Çetin for his participation in the field trip in July 2004 and his assistance in the identification of some *Centaurea* members, to Research Assistant Nazmiye Gürel for checking the English grammar, and to Harran University (HÜBAK, project no: 248) for its financial support.

### References

- Adıgüzel N & Aytaç Z (2001). Flora of Ceylanpınar state farm (Şanlıurfa-Turkey). *Fl Medit*, 11: 333-361.
- Akan H & Eker İ (2004). Some morphological and anatomical investigations on autumn species of *Crocus* L. occurring in Şanlıurfa. *Turk J Bot* 28: 185-191.
- Akman Y (1990). *İklim ve Biyoiklim*. Ankara: Palme Yayınları. Mühendislik Serisi: 103.
- Aslan M & Türkmen N (2001). New floristic records for C7 grid square. *Ot Sistematik Botanik Dergisi* 8 (2): 69-73.
- Aslan M & Türkmen N (2003). New floristic records for squares C6 and C7 from Turkey. *Ot Sistematik Botanik Dergisi* 10 (2): 163-168.
- Baytop A (2003). *Türkiye'de Botanik Tarihi Araştırmaları*. İstanbul: Çetin Matbaacılık.
- Çırpıcı A (1987). Türkiye'nin flora ve vejetasyonu üzerindeki çalışmalar. *Doğa TU Bot Derg* 11 (2): 217-232.
- Davis PH (1975). Turkey: present state of floristic knowledge. *Coll Int C N R S* 235: 93-113.
- Davis PH (ed.) (1965-1985). *Flora of Turkey and the East Aegean Islands*. vol. 1-9. Edinburgh: Edinburgh University Press.
- Davis PH, Mill RR & Tan K (eds) (1988). *Flora of Turkey and the East Aegean Islands* (Supplement) vol. 10. Edinburgh: Edinburgh University Press.
- Donner J (1990). Verbreitungskarten zu P.H. Davis Flora of Turkey, 1-10. *Linzer Biol Beitr* 22 (2): 381-515.
- Ekim T & Güner A (1986). The Anatolian diagonal: fact or fiction? *Proceedings of Royal Society of Edinburgh*, 89B: 69-77.
- Ekim T, Koyuncu M, Vural M, Duman H, Aytaç Z & Adıgüzel N (2000). *Türkiye Bitkileri Kırmızı Kitabı (Red Data Book of Turkish Plants)*. Ankara: Türkiye Tabiatını Koruma Derneği.
- Ertekin AS & Saya Ö (1997). New floristic records for the various grid squares from the Fabaceae. *Tr J Bot* 21: 187-189.
- Ertekin AS (2002). *Karacadağ Bitki Çeşitliliği*. Ankara: Sürdürülebilir Kırsal ve Kentsel Kalkınma Derneği.

- IUCN Species Survival Commission (2001). *IUCN Red List Categories and Criteria*. Approved by the 51st Meeting of the IUCN Council, Version 3.1 Switzerland: Gland.
- Kaynak G & Ketenöğlü O (1980). New fern specimens in south east Anatolian region. *İst Üniv Fen Fak Mec* Seri B, 45: 199-202.
- Kaynak G (1986). New floristic records from Urfa and Diyarbakır provinces, SE Turkey. *Willdenowia* 16: 79-86.
- Kaynak G (1987). Türkiye florasındaki bazı kareler için yeni kayıtlar. *Doğa TU Bot Derg* 11 (2): 118-123.
- Kaynak G (1989a). Contribution to the flora of Karacadağ (Urfa and Diyarbakır provinces). *Doğa TU Bot Derg* 13 (3): 376-397.
- Kaynak G (1989b). Diyarbakır ve çevre illerin eğreltileri üzerinde ekolojik ve korolojik incelemeler. *Doğa TU Bot Derg* 13 (3): 437-451.
- Malyer H (1981). Diyarbakır bölgesinin Iridaceae familyasına ait geofitleri üzerinde korolojik bir çalışma. *Doğa Bilim Derg* Temel B, 6: 17-20.
- Malyer H (1983). Karacadağ'daki (Diyarbakır-Urfa arasındaki) Liliaceae ve Iridaceae familyalarına ait geofitler üzerinde korolojik ve ekolojik incelemeler. *Doğa Bilim Derg* Seri C, 7 (3): 279-288.
- Meteoroloji Bülteni (1994). T.C. Başbakanlık Devlet Meteoroloji İşleri Genel Müdürlüğü Araştırma ve Bilgi İşlem Dairesi Başkanlığı. Ankara.
- Türkmen N, Aslan M & Düzenli A (2002). New records for the various squares in the Flora of Turkey. *Ot Sistematik Botanik Dergisi*, 9 (2): 63-68
- Yıldırım Ş (1992). Türkiye'den çeşitli kareler için yeni bitki yayılışları. *Doğa TU Bot Derg* 16: 207-214.
- Yıldırım Ş (1994). Türkiye'den *Brassicaceae* (*Cruciferae*) familyasından çeşitli kareler için yeni floristik kayıtlar. *Tr J Bot* 18: 389-392.
- Yıldız B & Aktoklu E (1996). C7 karesinden (Malatya-Adıyaman) yeni floristik kayıtlar. *Tr J Bot* 20: 207-211.