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The Flora of Balıkdamı Wetland and Its Surroundings (Sivrihisar, Eskişehir - Turkey)

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Abstract: The present study involves the flora of Balıkdamı Wetland and its surroundings in Sivrihisar, Eskişehir, Turkey. This 2-year study (2002-2003) examined the plant samples collected in this region and determined that there are 51 families, as well as 250 taxa belonging to 173 genera (247 species, 1 subspecies, and 2 varieties). All of these taxa belong to the Angiosperms (201 Dicotyledons, 49 Monocotyledons) subdivision. The largest families are Brassicaceae (31), Poaceae (29), and Fabaceae (25) in terms of the number of species and subspecies included. Genera represented by the highest number of species are *Alyssum* L. (5), *Centaurea* L. (5), and *Consolida* L. (4). The phytogeographical distribution is as follows: 47 Irano-Turanian (18.8%), 27 Euro-Siberian (10.8%), 23 Mediterranean (9.2%), and 153 unknown or other-regional elements (61.2%). The number of endemic taxa within the study area is 29 (11.6%). Fifty-one taxa are new records for the B3 square.

Key Words: Flora, Balıkdamı Wetland, Eskişehir, Turkey

Balıkdamı Sulak Alanı ve Çevresinin Florası (Sivrihisar, Eskişehir - Türkiye)

Özet: Bu çalışma, Eskişehir ili Sivrihisar ilçesinde yer alan Balıkdamı Sulak Alanı ve Çevresi florasını içermektedir. Çalışma alanından 2002-2003 yıllarında 2 yıl süresince toplanan bitki örneklerinin değerlendirilmesi sonucu 51 aile ve 173 cins'e ait 250 takson (247 tür, 1 alttür, 2 varyete) bulunmuştur. Bu taksonların tamamı kapalı tohumlular alt bölümüne ait olup, 201'i çift çenekli, 49'u tek çeneklidir. İçerdikleri tür ve tür altı takson sayısı bakımından en büyük familyalar Brassicaceae (31), Poaceae (29) ve Fabaceae (25) dir. En çok türle temsil edilen cinsler ise *Alyssum* L. (5), *Centaurea* L. (5) ve *Consolida* L. (4) dir. Bitki coğrafyası elemanlarının dağılımı İran-Turan 47 (% 18,8), Avrupa-Sibirya 27 (% 10,8), Akdeniz 23 (% 9,2) ve diğer bölgeler veya fitocoğrafik bölgesi bilinmeyenler 153 (% 61,2)'dir. Çalışma alanındaki endemik takson sayısı 29 (% 11,6)'dur. 51 takson B3 karesi için yeni kayıttır.

Anahtar Sözcükler: Flora, Balıkdamı Sulak Alanı, Eskişehir, Türkiye

Introduction

Wetlands constitute the richest and the most prolific ecosystem, a rather complicated system that serves local people enormously as well as the country as a whole. Wetlands are incomparable considering all other ecosystems in that they have unique functions and values. As the effects of climatic changes upon humans and wildlife increase, the adaptation capability of wetlands to rapidly changing conditions appears to be an indispensable element. Therefore, there are an increasing

number of studies on wetlands and their functions across the world.

There are 135 wetlands in Turkey that have achieved international recognition. These wetlands make up 2,206,835 ha altogether. Our study area, which is Balıkdamı Wetland, is only one of these wetlands and comprises 1470 ha (Magnin & Yarar, 1997).

Balıkdamı is situated between 31°33'37"/ 31°40'14" E longitude and between 39°10'18"/ 39°12'48" N latitude in the district of Sivrihisar, a town in Eskişehir

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province. According to the grid system, it is situated in the B3 square (Davis, 1965-1985). Balıkdamı is quite an interesting ecosystem with its rich flora and fauna, apart from being a favourite location for migratory birds. It was declared as a site of second level importance for birds and so it is under protection (Magnin & Yarar, 1997) (Figure 1).

The most important study conducted so far on the floristic structure of the wetlands in Turkey was by Seçmen and Leblebici (1996).

In addition, one study looked into only the flora of Gökada. In that study, only Gökada marshy places, a part of the Balıkdamı wetland, and located between Balıkdamı village and Ahiler village, and its surrounding area were studied. After determination of samples collected from this area in 1994, 140 taxa that belong to 38 families were found (Türe et al., 1996).

The study area's importance in terms of its flora was the main reason for our choosing it as the study area. Furthermore, unsystematic grazing of animals and random collection of the plants occurring here pose a threat to its very existence by causing erosion. Therefore, the present study aimed to determine all the plants occurring in this region before they become extinct, as well as drawing up a list of all the endemic plants. We also aimed to record new records of plants in the B3 square,

which would add to the existing knowledge of Turkish flora.

The climate of Eskişehir seems to be a transition climate type between the West Anatolian and the Inner Anatolian climates at first glance; there is often a harsh, territorial climate in the city itself (MGM, 1997). The city is surrounded by mountains to the north and south, as well as by high plateaus to the west. While this hinders the effect of the Mediterranean and Black Sea climates on the city, it allows, albeit slightly, the West Anatolian climate to permeate into the city (Akman, 1990). The ombrothermic diagram of Eskişehir was prepared according to the climatic data obtained from meteorological stations in Eskişehir (Figure 2).

Materials and Methods

Samples of plants were collected for the wetland of Balıkdamı and its surrounding, in order to determine the floristic structure of the study area in 2002 and 2003. The research area is situated between 31°33'37"/31°40'14" E longitude and between 39°10'18"/39°12'48" N latitude in the district of Sivrihisar, a town in Eskişehir province.

The specimens were dried using standard herbarium methods. The majority of the specimens were identified

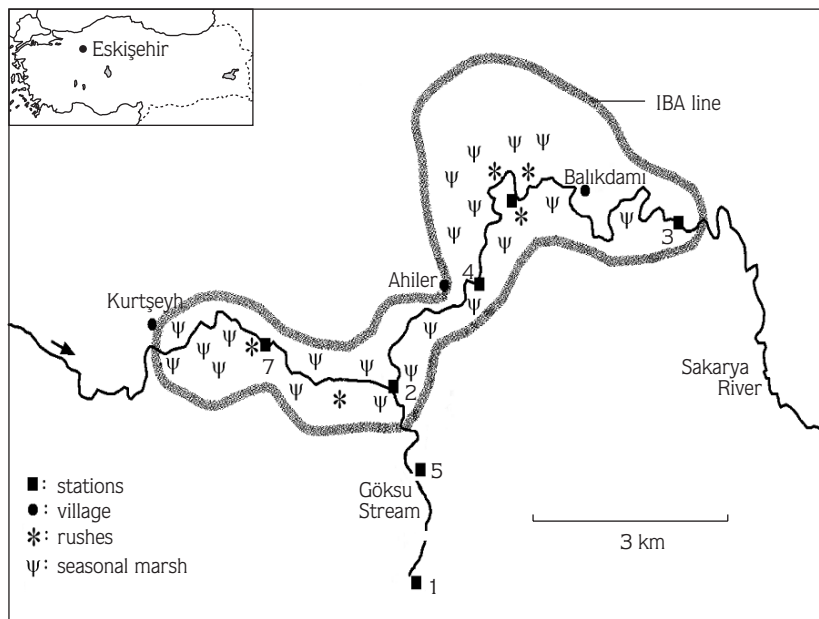


Figure 1. Map of the study area

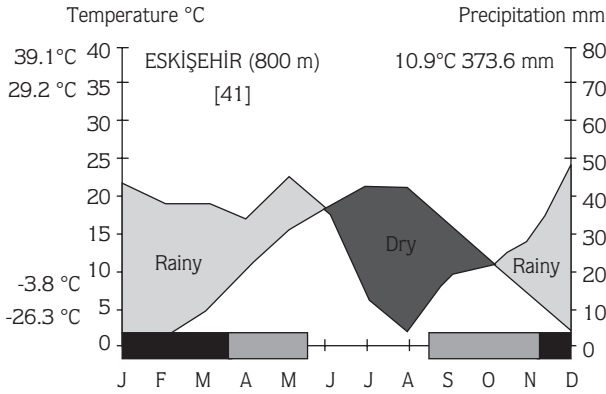


Figure 2. Ombrothermic diagrams of Eskişehir

with the help of the *Flora of Turkey and the East Aegean Islands* (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000). Some of the identifications were checked in *Flora Europaea* (Tutin et al., 1964-1980), *Flora Hellenica* (Strid & Tan, 1997), *Flora Iranica* (Rechinger, 1965-1977), *Flora of Iraq* (Townsend & Guest, 1966-1985), and *Flora Palaestina* (Zohary, 1966-1972). The herbaria of ANK, ESSE, GAZI, and HUB were used to check these specimens. All of the plant specimens are kept in the Herbarium of Eskişehir Osmangazi University Sciences and Literature Faculty (OUFE).

The plant taxa of the Balıkdamı Wetland and its surroundings are listed in the appendix. All the taxa in the floristic list are given according to the order in the *Flora of Turkey and the East Aegean Islands* (Davis, 1965-1985; Davis et al., 1988). The list gives the locality of the taxa first, followed by habitat, altitude, collection date, herbarium number, endemism, phytogeographical region, life form and IUCN (2001) threat category for endemic taxa. Grid square and city name are not mentioned for each location because the study area is completely within the square B3 Eskişehir. An asterisk in front of a plant name indicates a new record for the B3 grid square (Donner, 1990; Duman & Karavelioğulları, 1995; Yıldız & Aytaç 1995; Mutlu & Erik, 1999; Serin & Ertuğrul, 1999; Kargioğlu & Aşçı, 2001; Kaynak & Tarımcılar, 2001; Kaynak et al., 2003; Yıldırım, 1994, 1997a, 1997b, 1999, 2000, 2001a, 2001b, 2002, 2003a, 2003b, 2005).

The data of this study were compared with those of other studies (Türe et al., 1996; Ocak & Türe, 2001; Türe & Böcük, 2001).

The authors of species names are given according to Brummitt and Powell (2001).

Abbreviations

The abbreviations used in the text and the appendix are Euxine (Eux.), Euro-Siberian element (Euro-Sib.), Mediterranean element (Medit.), East Mediterranean element (E. Medit.), Irano-Turanian element (Ir.-Tur.), Hemicryptophyte (Hcrp.), Therophyte (Th.), Cryptophyte (Crp.), Chamaephyte (Ch.), Vascular parasite (Vp.), Mesophanerophyte (Msph.), Herbarium of Eskişehir Osmangazi University Sciences and Literature Faculty (OUFE).

Results and Discussion

The present study examines the flora of Balıkdamı Wetland and its surroundings. This area is an internationally recognised wetland and an ecosystem covering 1470 ha. Two hundred and fifty taxa were identified as a result of the studies performed in the region over 2 years. These taxa belong to 51 families and 173 genera, and they consist of 247 species, 1 subspecies, and 2 varieties. All of these taxa belong to Angiosperms. Two hundred and one taxa belong to the Dicotyledons while the other 49 belong to the Monocotyledons. While 29 out of the 250 taxa are endemic, 51 taxa are considered new records for the B3 square (Table 1).

The largest families are Brassicaceae (31), Poaceae (29), and Fabaceae (25) in terms of the number of species and subspecies included. Genera represented by the highest number of species are *Alyssum* L. (5), *Centaurea* L. (5), and *Consolida* L. (4). The phytogeographical distribution is 47 Irano-Turanian (18.8%), 27 Euro-Siberian (10.8%), 23 Mediterranean

Table 1. The dispersion of taxa into large taxonomic groups.

	Number of Families	Number of Genera	Number of Taxa
Spermatophyta	51	173	250
Angiospermae	51	173	250
Dicotyledoneae	42	138	201
Monocotyledoneae	9	35	49
Total	51	173	250

(9.2%), and 153 unknown or other-regional elements (61.2%). The number of endemic species within the study area is 29 (11.6%). Fifty-one taxa are new records for the B3 square.

The largest families according to the number of species in this study are presented in Table 2. The family Brassicaceae is the largest group in the study area, with 31 taxa. The family Poaceae is the second-largest group in the study area, with 29 taxa. The family Fabaceae ranks third, with 25 taxa. Table 3 compares regions close and similar to Balıkdamı Wetlands and its surroundings. It was assumed that Brassicaceae is the family containing the most taxa (Türe et al., 1996). Others studies named Asteraceae as the family with the highest number of taxa (Ocak & Türe, 2001; Türe & Böcük, 2001).

The genera containing the highest number of species in this study are listed in Table 4. According to this list,

Table 2. The families containing the highest number of taxa.

Families	Number of taxa	Rate (%)
Brassicaceae	31	12.4
Poaceae	29	11.6
Fabaceae	25	10.0
Asteraceae	25	10.0
Lamiaceae	18	7.2
Caryophyllaceae	12	4.8
Apiaceae	10	4.0
Ranunculaceae	9	3.6
Liliaceae	9	3.6
Boraginaceae	8	3.2

Table 3. Comparison of large families in Balıkdamı Wetland and neighbouring areas.

Families (%)	1	2	3	4
Brassicaceae	12.4	14.0	8.5	4.9
Poaceae	11.6	9.0	4.26	4.6
Fabaceae	10.0	10.0	9.6	7.9
Asteraceae	10.0	9.0	14.7	9.9
Lamiaceae	7.2	9.0	6.8	6.0
Caryophyllaceae	4.8	3.5	5.7	1.92
Apiaceae	4.0	0.7	5.7	3.03
Ranunculaceae	3.6	4.28	2.84	2.2
Liliaceae	3.6	2.14	8.24	1.65
Boraginaceae	3.2	3.5	5.11	3.58

1. Flora of Balıkdamı, 2. Flora of Gökada, 3. Flora of OGÜ Meşelik Campus, 4. Flora of Anadolu University Campus.

Table 4. The genera containing the highest number of taxa.

Families	Number of taxa	Rate (%)
<i>Alyssum</i>	5	2.0
<i>Centaurea</i>	5	2.0
<i>Consolida</i>	4	1.6
<i>Gypsophila</i>	4	1.6
<i>Astragalus</i>	4	1.6
<i>Trifolium</i>	4	1.6
<i>Medicago</i>	4	1.6
<i>Veronica</i>	4	1.6
<i>Salvia</i>	4	1.6

the genera *Alyssum* and *Centaurea* rank first, with 5 taxa each (2.00%).

The species of the study area, categorised according to phytogeographical regions, can be listed as follows: Irano-Turanian elements 47 (18.8%), Euro-Siberian elements 27 (10.8%), Mediterranean elements 23 (9.2%), and the remaining 153 (61.2%) taxa are unknown or other-regional. The results of the studies conducted in close and similar areas, along with phytogeographical distribution, are presented in Table 5. Many specimens belonging to the Irano-Turanian phytogeographical region were determined in this study. Euro-Siberian elements, which rank second, are followed by Mediterranean elements. A comparison between our study results and those of others carried out in the study area indicates that we can see the same phytogeographical sequence in the flora of Gökada (Türe et al., 1996).

In this study, 29 of the 250 taxa are endemic plants. The rate of endemism is 11.6% and is higher in our study than in other studies carried out in nearby areas (Table 5). Threat categories for endemic taxa are listed as follows: *Scabiosa hololeuca* Bornm. is EN (Endangered), *Thymus leucostomus* Hausskn. & Velen var. *argillaceus* Jalas is VU (Vulnerable), and other 27 endemic taxa are LC (Least Concern) (IUCN, 2001).

The life forms of the taxa according to Raunkiaer are given in Table 6. Of the taxa, 127 (50.8%) are hemicryptophytes, 83 (33.2%) are therophytes, 23 (9.2%) are cryptophytes, 13 (5.2%) are chamaephytes, 3 (1.2%) are vascular parasites, and 1 (0.4%) is a mesophanerophyte. Raunkiaer's life forms spectrum acts as an indicator of the region or climate (Raunkiaer, 1934).

Table 5. A comparison of the phytogeographical elements and endemism.

Research area	1	2	3	4
Irano-Turanian	18.8	16.40	17.80	7.7
Euro-Siberian	10.8	7.80	4.80	8.8
Mediterranean	9.2	7.00	6.10	3.3
Multi-regional or unknown	61.2	71.40	71.30	80.2
Endemism	11.6	10.00	9.00	3.0

1. Flora of Balıkdamı, 2. Flora of Gökada, 3. Flora of OGÜ Meşelik Campus, 4. Flora of Anadolu University Campus.

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Table 6. Life forms in the research area.

Life form	Number of taxa	Rate (%)
Hemicytopyte	127	50.8
Therophyte	83	33.2
Cryptophyte	23	9.2
Chamaephyte	13	5.2
Vascular parasite	3	1.2
Mesophanerophyte	1	0.4
Total	250	100

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APPENDIX

THE FLORISTIC LIST

SPERMATOPHYTA

ANGIOSPERMAE

DICOTYLEDONEAE

RANUNCULACEAE

Nigella arvensis L. var. *involucrata* Boiss.

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10654.

Hcrp.

Consolida thirkeana (Boiss.) Schröd.

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10655.

Endemic. Th. LC

C. orientalis (Gay) Schröd.

Balıkdamı bridge, roadside and fieldside, 780 m, 16.06.2002, OUFE 10656; Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10657.

Th.

C. regalis S.F.Gray subsp. *paniculata* (Host) Soo var. *paniculata*

Balıkdamı bridge, roadside and fieldside, 780 m, 16.06.2002, OUFE 10658; Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10659.

Th.

C. hellespontica (Boiss.) Chater

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10660.

Th.

Adonis flammea Jacq.

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10661; Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10662.

Th.

Ranunculus constantinopolitanus (DC.) d'Urv.

Göktepe village, around Düden, limestone rocky places, 840 m, 14.04.2002, OUFE 10663.

Hcrp.

R. damascenus Boiss. & Gaill.

Göktepe village, around Düden, limestone rocky places, 840 m, 14.04.2002, OUFE 10664.

Hcrp.

**R. trichophyllus* Chaix

Göktepe village, around Düden, limestone rocky places, 840 m, 14.04.2002, OUFE 10665.

Hcrp.

PAPAVERACEAE

Glaucium corniculatum (L.) Rud. subsp. *corniculatum*

Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10666; Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10667. Ir.-Tur.

Hcrp.

Papaver rhoeas L.

Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002,

OUFE 10668; Balıkdamı bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10669.

Th.

P. somniferum L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10670.

Cultivated. Th.

**Hypecoum procumbens* L.

Göktepe village, around Düden, limestone rocky places, 840 m, 17.05.2003, OUFE 10671.

Medit. Th.

H. imberbe Sibth. & Sm.

Göktepe village, around Düden, limestone rocky places, 840 m, 17.05.2003, OUFE 10672; Balıkdamı bridge, roadside and fieldside, 780 m, 06.06.2003, OUFE 10673.

Th.

CRUCIFERAE (BRASSICACEAE)

Eruca sativa Mill.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10674.

Th.

**Crambe orientalis* L. var. *orientalis*

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10675.

Ir.-Tur. Hcrp.

Conringia orientalis (L.) Andrz.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10676.

Th.

**C. planisiliqua* Fisch. & C.A.Mey.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10677.

- Ir.-Tur. Th.
Lepidium latifolium L.
Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10678.
Hcrp.
Cardaria draba (L.) Desv. subsp. **draba**
Balıkdanı bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10679; Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10680; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10681.
Ir.-Tur. Hcrp.
Isatis glauca Aucher ex Boiss. subsp. **glauca**
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10682.
Ir.-Tur. Hcrp.
Thlaspi perfoliatum L.
Göktepe village, around Düden, limestone rocky places, 840 m, 17.05.2003, OUFE 10683.
Th.
***T. alliaceum** L.
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10684.
Th.
***Hymenolobus procumbens** (L.) Nutt. ex Torrey & Gray
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10685.
Th.
Capsella bursa-pastoris (L.) Medik.
Göktepe village, around Düden, limestone rocky places, 840 m, 16.06.2002, OUFE 10686.
Cosmopolitan. Th.
Boreava orientalis Jaub. & Spach
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10687.
Th.
***Neslia apiculata** Fisch. & C.A.Mey. & Ave-Lall.
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10688.
Th.
- Alyssum linifolium** Steph. ex Willd. var. **linifolium**
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10689.
Th.
A. dasycarpum Steph. ex Willd.
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10690.
Th.
A. desertorum Stapf. var. **desertorum**
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10691.
Th.
A. pateri Nyar. subsp. **pateri**
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10692.
Endemic. Hcrp. LC
A. sibiricum Willd.
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10693.
Hcrp.
Draba muralis L.
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10694.
Th.
Erophila verna (L.) Chevall. subsp. **verna**
Göktepe village, around Düden, limestone rocky places, 840 m, 22.03.2002, OUFE 10695.
Th.
Arabis caucasica Willd. subsp. **caucasica**
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 22.03.2002, OUFE 10696.
Euro-Sib. Hcrp.
***A. nova** Vill.
Göktepe village, around Düden, limestone rocky places, 840 m, 25.04.2003, OUFE 10697.
Th.
***Rorippa sylvestre** (L.) Bess.
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10698.
- Hcrp.
***Barbarea vulgaris** R.Br.
Göktepe village, around Düden, limestone rocky places, 840 m, 25.04.2003, OUFE 10699.
Hcrp.
***Matthiola tricuspidata** (L.) R.Br.
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10700.
Th.
Erysimum crassipes Fisch. & C.A.Mey.
Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10701.
Hcrp.
Chorispora syriaca Boiss.
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10702.
Ir.-Tur. Th.
Sisymbrium loeselii L.
Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10703.
Hcrp.
S. altissimum L.
Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10704; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10705.
Hcrp.
Descurainia sophia (L.) Webb ex Prantl
Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10706; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10707.
Th.
Camelina rumelica Velen
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10708.
Th.
- RESEDACEAE**
Reseda lutea L. var. **lutea**
Balıkdanı village, fieldside, 800 m, 03.07.2002, OUFE 10709.

Th.

CISTACEAE

Helianthemum nummularium (L.) Mill.
subsp. *lycaonicum* Coode & Cullen

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10710.

Endemic. Ir.-Tur. Hcrp. LC

**Fumana thymifolia* (L.) Verlot var. *thymifolia*

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10711.

Medit. Hcrp.

POLYGALACEAE

**Polygala vulgaris* L.

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10712.

Euro-Sib. Hcrp.

CARYOPHYLLACEAE

**Minuartia erythrosepala* (Boiss.) Hand.-Mazz. var. *erythrosepala*

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10713.

Hcrp.

**M. urumiensis* (Bornm.) Bornm.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10714.

Ir.-Tur. Th.

**Cerastium anomalum* Waldst. & Kit.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10715.

Th.

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

Göktepe village, around Düden, limestone rocky places, 840 m, 16.06.2002, OUFE 10716; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10717.

Hcrp.

**D. giganteus* d'Urv.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10718.

Euro-Sib. Hcrp.

Gypsophila perfoliata L. var. *perfoliata*

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10719.

Hcrp.

G. eriocalyx Boiss.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10720.

Endemic. Ir.-Tur. Hcrp. LC

G. viscosa Murray

Göktepe village, around Düden, limestone rocky places, 840 m, 25.04.2003, OUFE 10721.

Ir.-Tur. Th.

G. pilosa Huds.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10722.

Ir.-Tur. Th.

Bolanthus minuartioides (Jaub. & Spach) Hub.-Mor.

Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10723.

Endemic. Hcrp. LC

Silene italica (L.) Pers.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10724.

Hcrp.

S. subconica Friv.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10725; Balıkdamı bridge, roadside and fieldside, 780 m, 06.06.2003, OUFE 10726.

Th.

ILLECEBRACEAE

**Paronychia argyroloba* Stapf

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10727.

Endemic. Hcrp. LC

POLYGONACEAE

Polygonum amphibium L.

Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10728.

Th.

**P. equisetiforme* Sibth. & Sm.

Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10729.

Hcrp.

Rumex crispus L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10730.

Hcrp.

R. dentatus L. subsp. *halacsyi* (Rech.) Rech.f.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10731.

Th.

CHENOPODIACEAE

**Chenopodium urbicum* L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10732; Balıkdamı bridge, roadside and fieldside, 780 m, 06.06.2003, OUFE 10733.

Th.

C. album L. subsp. *album* var. *album*

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10734.

Th.

**Salicornia europaea* L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10735.

Th.

AMARANTHACEAE

Amaranthus retroflexus L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10736.

Th.

HYPERICACEAE

Hypericum origanifolium Willd.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10737.

Hcrp.

H. perforatum L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10738.

Hcrp.

MALVACEAE**Malva sylvestris** L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10739.

Hcrp.

Alcea rosea L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10740.

Hcrp.

LINACEAE

Linum hirsutum L. subsp. **anatolicum** (Boiss.) Hayek var. **anatolicum**

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10741.

Endemic. Ir.-Tur. Hcrp. LC

GERANIACEAE**Erodium hoefftianum** C.A.Mey.

Göktepe village, around Düden, limestone rocky places, 840 m, 14.04.2002, OUFE 10742.

Th.

E. ciconium (L.) L'Hér.

Göktepe village, around Düden, limestone rocky places, 840 m, 16.06.2002, OUFE 10743.

Th.

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

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10744.

Th.

ZYGOPHYLLACEAE**Peganum harmala** L.

Göktepe village, around Düden, limestone rocky places, 840 m, 16.06.2002, OUFE 10745; Balıkdamı village, fieldside, 800 m, 16.06.2002, OUFE 10746.

Hcrp.

RUTACEAE**Haplophyllum myrtifolium** Boiss.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10747.

Endemic. Ir.-Tur. Hcrp. LC

FABACEAE (LEGUMINOSAE)***Astragalus pamphylicus** Boiss.

Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10748; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10749.

Medit. Hcrp.

A. glycyphyllos L. subsp. **glycyphyllos**

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10750.

Euro-Sib. Hcrp.

A. lydius Boiss.

Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10751; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10752.

Endemic. Ir.-Tur. Hcrp. LC

***A. vulnerariae** DC.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10753; Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10754.

Endemic. Ch. LC

***Lathyrus palustris** L. subsp. **palustris**

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10755.

Euro-Sib. Hcrp.

L. digitatus (M.Bieb.) Fiori

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10756.

E. Medit. Hcrp.

Ononis spinosa L. subsp. **antiquorum** (L.) Briq.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10757.

Medit. Hcrp.

Trifolium nigrescens Viv. subsp. **petrisavii** (Clem.) Holmboe

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10758.

Th.

T. fragiferum L. var. **fragiferum**

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10759.

Hcrp.

T. caudatum Boiss.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10760.

Endemic. Hcrp. LC

***T. arvense** L. var. **arvense**

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10761.

Th.

Melilotus officinalis (L.) Desr.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10762; Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10763.

Th.

Medicago lupulina L.

Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10764.

Ch.

M. sativa L. subsp. **sativa**

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10765; Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10766.

Hcrp.

M. x varia Martyn

Balıkdamı bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10767.

Hcrp.

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

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10768.

Th.

Lotus corniculatus L. var. **corniculatus**

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10769.

Hcrp.

var. **tenuifolius** L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10770.

Hcrp.

var. *alpinus* Ser.

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10771.

Euro-Sib. Hcrp.

Coronilla varia L. subsp. *varia*

Balıkdamı bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10772.

Hcrp.

Onobrychis gracilis Besser

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10773.

Hcrp.

O. armena Boiss. & Huet

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10774.

Endemic. Hcrp. LC

O. oxydonta Boiss.

Balıkdamı bridge, roadside and fieldside, 780 m, 06.06.2003, OUFE 10775.

Hcrp.

**Ebenus boissieri* Barbey

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10776.

Endemic. E. Medit. Hcrp. LC

Alhagi pseudalhagi (M.Bieb.) Desv.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10777.

Ir.-Tur. Ch.

ROSACEAE

Potentilla reptans L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10778; Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10779.

Hcrp.

Sanguisorba minor Scop. subsp. *lasiocarpa* (Boiss. & Hausskn.) Nordb.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10780.

Hcrp.

LYTHRACEAE

Lythrum salicaria L.

Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 03.07.2002, OUFE 10781.

Euro-Sib. Hcrp.

ONAGRACEAE

Epilobium hirsutum L.

Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 03.07.2002, OUFE 10782.

Hcrp.

CRASSULACEAE

Sedum acre L.

Balıkdamı bridge, roadside and fieldside, 780 m, 16.06.2002, OUFE 10783; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10784.

Ch.

APIACEAE (UMBELLIFERAE)

Eryngium campestre L. var. *virens* Link

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10785.

Hcrp.

Biforia radians M.Bieb.

Balıkdamı bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10786.

Th.

Oenanthe silaifolia M.Bieb.

Balıkdamı bridge, roadside and fieldside, 780 m, 06.06.2003, OUFE 10787.

Ch.

**O. aquatica* (L.) Poir.

Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10788.

Ch.

**Ferulago sylvatica* (Besser) Reichb.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10789.

Euro-Sib. Hcrp.

Torilis leptophylla (L.) Reichb.

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10790.

Hcrp.

Turgenia latifolia (L.) Hoffm.

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10791.

Th.

**Orlaya daucoides* (L.) Greuter

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10792.

Medit. Th.

Daucus carota L.

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10793.

Hcrp.

**D. guttatus* Sm.

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10794.

Hcrp.

DIPSACACEAE

Dipsacus laciniatus L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10801.

Hcrp.

Scabiosa hololeuca Bornm.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10802; Göktepe village, around Düden, limestone rocky places, 840 m, 24.06.2003, OUFE 10803.

Endemic. Ir.-Tur. Hcrp. EN

S. argentea L.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10804; Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10805; Göktepe village, around Düden, limestone rocky places, 840 m, 24.06.2003, OUFE 10806.

Hcrp.

ASTERACEAE (COMPOSITAE)

Xanthium spinosum L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10807.

Th.

- Pulicaria dysenterica* (L.) Bernh.
Balıkdami village, fieldside, 800 m, 03.07.2002, OUFE 10808.
Hcrp.
- Tussilago farfara* L.
Balıkdami village, fieldside, 800 m, 03.07.2002, OUFE 10809.
Euro-Sib. Crp.
- Anthemis tinctoria* L. var. *discoidea* (All.) DC.
Balıkdami bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10810.
Hcrp.
- A. austriaca* Jacq.
Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 16.06.2002, OUFE 10811.
Th.
- Achillea wilhelmsii* C.Koch
Balıkdami bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10812; Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 06.06.2003, OUFE 10813.
Ir.-Tur. Hcrp.
- Gundelia tournefortii* L. var. *tournefortii*
Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 16.06.2002, OUFE 10814.
Ir.-Tur. Hcrp.
- Onopordum anatolicum* (Boiss.) Eig
Balıkdami bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10815; Balıkdami bridge, roadside and fieldside, 780 m, 06.06.2003, OUFE 10816.
Endemic. Ir.-Tur. Hcrp. LC
- **Cirsium creticum* (Lam.) d'Urv. subsp. *creticum*
Balıkdami village, fieldside, 800 m, 03.07.2002, OUFE 10817; Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 06.06.2003, OUFE 10818.
E. Medit. Hcrp.
- Carduus nutans* L. subsp. *nutans sensu lato*
Balıkdami bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10819; Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 06.06.2003, OUFE 10820.
Hcrp.
- Centaurea solstitialis* L. subsp. *solstitialis*
Balıkdami bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10821.
Th.
- C. iberica* Trev. ex Spreng.
Balıkdami bridge, roadside and fieldside, 780 m, 06.06.2003, OUFE 10822; Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 06.06.2003, OUFE 10823; Göktepe village, around Düden, limestone rocky places, 840 m, 24.08.2003, OUFE 10824.
Hcrp.
- C. urvillei* DC. subsp. *urvillei*
Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 06.06.2003, OUFE 10825.
E. Medit. Hcrp.
- **C. triumfettii* All.
Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 06.06.2003, OUFE 10826.
Hcrp.
- C. depressa* M.Bieb.
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10827; Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 06.06.2003, OUFE 10828; Göktepe village, around Düden, limestone rocky places, 840 m, 24.08.2003, OUFE 10829.
Th.
- Crupina crupinastrum* (Moris) Vis.
Balıkdami village, fieldside, 800 m, 03.07.2002, OUFE 10830.
Th.
- Carlina oligocephala* Boiss. & Kotschy subsp. *oligocephala*
Balıkdami bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10831.
Hcrp.
- Xeranthemum annuum* L.
Göktepe village, around Düden, limestone rocky places, 840 m, 24.06.2003, OUFE 10832.
Th.
- Echinops ritro* L.
Balıkdami village, fieldside, 800 m, 03.07.2002, OUFE 10833.
Hcrp.
- Cichorium intybus* L. subsp. *intybus*
Balıkdami village, fieldside, 800 m, 03.07.2002, OUFE 10834.
Hcrp.
- Scorzonera suberosa* C.Koch. subsp. *suberosa*
Balıkdami village, fieldside, 800 m, 25.06.2003, OUFE 10835.
Ir.-Tur. Crp.
- Tragopogon longirostis* Bisch. ex Sch.Bip. var. *longirostis*
Balıkdami village, fieldside, 800 m, 03.07.2002, OUFE 10836.
Hcrp.
- Taraxacum serotinum* (Waldst. & Kit.) Poiriet
Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 06.06.2003, OUFE 10837.
Hcrp.
- **T. officinale* Weber
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 25.06.2003, OUFE 10838.
Hcrp.
- Chondrilla juncea* L. var. *juncea*
Balıkdami village, fieldside, 800 m, 03.07.2002, OUFE 10839.
Hcrp.
- CAMPANULACEAE**
- **Asyneuma isauricum* Contandr., Quézel & Pamukçuoğlu
Göktepe village, around Düden, limestone rocky places, 840 m, 16.06.2002, OUFE 10840.
Endemic. E. Medit. Hcrp. LC
- CONVOLVULACEAE**
- Convolvulus lineatus* L.
Göktepe village, around Düden, limestone rocky places, 840 m, 16.06.2002, OUFE 10841.

10841; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10842.

Ch.

C. galaticus Rostan ex Choisy

Göktepe village, around Düden, limestone rocky places, 840 m, 16.06.2002, OUFE 10843; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10844.

Endemic. Ir.-Tur. Crp. LC

C. betonicifolius Mill. subsp. *betonicifolius*

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10845; Göktepe village, around Düden, limestone rocky places, 840 m, 16.06.2002, OUFE 10846; Balıkdamı bridge, roadside and fieldside, 780 m, 16.06.2002, OUFE 10847.

Hcrp.

CUSCUTACEAE

Cuscuta campestris Yunck.

Balıkdamı village, fieldside, 800 m, 03.07.2002, on *Glacium* sp., OUFE 10848.

Vp.

BORAGINACEAE

Myosotis sicula Guss.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 25.06.2003, OUFE 10849.

Th.

Lithospermum purpureocaeruleum L.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 25.06.2003, OUFE 10850.

Euro-Sib. Hcrp.

Echium italicum L.

Balıkdamı bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10851; Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 06.06.2003, OUFE 10852.

Medit. Hcrp.

Moltkia aurea Boiss.

Balıkdamı village, fieldside, 800 m, 17.05.2003, OUFE 10853.

Endemic. Ir.-Tur. Hcrp. LC

Onosma aucheranum DC.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10854.

E. Medit. Hcrp.

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

Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 03.07.2002, OUFE 10855; Balıkdamı village, fieldside, 800 m, 17.05.2003, OUFE 10856.

Hcrp.

A. azurea Mill. var. *azurea*

Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 06.06.2003, OUFE 10857.

Hcrp.

Nonea caspica (Willd.) G. Don

Balıkdamı village, fieldside, 800 m, 17.05.2003, OUFE 10858.

Ir.-Tur. Th.

SOLANACEAE

Datura stramonium L.

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10859.

Th.

SCROPHULARIACEAE

Verbascum flavidum (Boiss.) Freyn & Bornm.

Göktepe village, around Düden, limestone rocky places, 840 m, 24.06.2003, OUFE 10860.

Euro-Sib. Hcrp.

V. ancyritanum Bornm.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 25.05.2002, OUFE 10861; Balıkdamı village, fieldside, 800 m, 06.06.2003, OUFE 10862.

Endemic. Ir.-Tur. Hcrp. LC

Linaria corifolia Desf.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 25.05.2002, OUFE 10863.

Endemic. Ir.-Tur. Hcrp. LC

Veronica hispidula Boiss. & Huet subsp. *hispidula*

Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10864.

Ir.-Tur. Th.

V. persica Poiret

Balıkdamı village, fieldside, 800 m, 14.04.2002, OUFE 10865.

Th.

V. hederifolia L.

Göktepe village, around Düden, limestone rocky places, 840 m, 22.03.2002, OUFE 10866.

Th.

V. anagallis-aquatica L. subsp. *anagallis-aquatica*

Balıkdamı bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10867; Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10868.

Th.

OROBANCHACEAE

Orobanche anatolica Boiss. & Reut. ex Reut.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, on *Salix* sp., OUFE 10869.

Vp.

GLOBULARIACEAE

Globularia orientalis L.

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10870; Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10871.

Ir.-Tur. Ch.

LAMIACEAE (LABIATAE)

Ajuga chamaepitys (L.) Schrb. subsp. *chia* (Schrb.) Arcang. var. *chia*

Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10872.

Hcrp.

Teucrium scordium L. subsp. *scordium*

Balıkdamı village, fieldside, 800 m, 25.04.2003, OUFE 10873.

Euro-Sib. Hcrp.

subsp. *scordioides* (Schrb.) Maire & Petitmengin

Balıkdamı village, fieldside, 800 m, 25.04.2003, OUFE 10874.

- Euro-Sib. Hcrp.
Scutellaria orientalis L. subsp. **pectinata** (Benth.) Edm.
 Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10875.
 Endemic. Ir.-Tur. Hcrp. LC
Phlomis armeniaca Willd.
 Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10876.
 Endemic. Ir.-Tur. Hcrp. LC
Lamium amplexicaule L.
 Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10877.
 Euro-Sib. Th.
Wiedemannia orientalis Fisch. & C.A.Mey.
 Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10878.
 Endemic. Ir.-Tur. Th. LC
Marrubium trachyticum Boiss.
 Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10879.
 Endemic. Ir.-Tur. Hcrp. LC
Stachys cretica L. subsp. **anatolica** Rech.f.
 Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10880.
 Endemic. Ir.-Tur. Hcrp. LC
 ***Nepeta racemosa** Lam.
 Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10881.
 Ir.-Tur. Hcrp.
Satureja thymbra L.
 Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10882.
 E. Medit. Ch.
Thymus leucostomus Hausskn. & Velen var. **argillaceus** Jalas
 Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10883.
- Endemic. Ir.-Tur. Ch. VU
Mentha spicata L. subsp. **spicata**
 Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10884.
 Hcrp.
Ziziphora tenuior L.
 Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10885.
 Ir.-Tur. Th.
Salvia wiedemannii Boiss.
 Balıkdamı village, fieldside, 800 m, 14.04.2002, OUFE 10886.
 Endemic. Ir.-Tur. Ch. LC
S. viridis L.
 Göktepe village, around Düden, limestone rocky places, 840 m, 24.08.2003, OUFE 10887.
 Medit. Th.
S. ceratophylla L.
 Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10888.
 Ir.-Tur. Hcrp.
S. frigida Boiss.
 Balıkdamı village, fieldside, 800 m, 14.04.2002, OUFE 10889.
 Ir.-Tur. Hcrp.
PLUMBAGINACEAE
Plumbago europaea L.
 Balıkdamı village, fieldside, 800 m, 25.04.2003, OUFE 10890.
 Euro-Sib. Hcrp.
Acantholimon acerosum (Willd.) Boiss. var. **acerosum**
 Göktepe village to Fettahoğlu plateau, limestone rocky places, 860 m, 19.07.2002, OUFE 10891; Göktepe village, around Düden, limestone rocky places, 840 m, 24.08.2003, OUFE 10888.
 Ir.-Tur. Ch.
A. ulicinum (Willd. ex Schult.) Boiss. subsp. **lycaonicum** (Boiss. & Heldr.) Bokhari & Edm.
 Göktepe village, around Düden, limestone rocky places, 840 m, 24.08.2003, OUFE 10892.
- Ir.-Tur. Ch.
PLANTAGINACEAE
Plantago lanceolata L.
 Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10893; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10894; Göktepe village, around Düden, limestone rocky places, 840 m, 24.06.2003, OUFE 10895.
 Hcrp.
SANTALACEAE
 ***Thesium compressum** Boiss. & Heldr.
 Balıkdamı village, fieldside, 800 m, 17.05.2003, OUFE 10896.
 Ir.-Tur. Hcrp.
LORANTHACEAE
Viscum album L. subsp. **album**
 Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, on *Salix alba*, 810 m, 03.07.2002, OUFE 10897.
 Vp.
EUPHORBIACEAE
Euphorbia stricta L.
 Balıkdamı village, fieldside, 800 m, 14.04.2002, OUFE 10898.
 Euro-Sib. Th.
URTICACEAE
Urtica dioica L.
 Balıkdamı village, fieldside, 800 m, 14.04.2002, OUFE 10899.
 Euro-Sib. Hcrp.
SALICACEAE
Salix alba L.
 Balıkdamı village, fieldside, 800 m, 14.04.2002, OUFE 10900.
 Euro-Sib. Msph.
RUBIACEAE
 ***Asperula tenella** Hauffel ex Degen
 Balıkdamı bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10795; Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10796.
 Hcrp.
Galium verum L. subsp. **verum**
 Balıkdamı bridge, roadside and fieldside, 780 m, 06.06.2003, OUFE 10797; Kurtşeyh

village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10798.

Euro-Sib. Hcrp.

G. tricornutum Dandy

Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10799; Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10800.

Medit. Th.

MONOCOTYLEDONEAE

BUTOMACEAE

Butomus umbellatus L.

Balıkdamı bridge, roadside and fieldside, 780 m, 16.06.2002, OUFE 10901.

Euro-Sib. Crp.

ALISMATACEAE

Alisma gramineum Lej.

Balıkdamı village, marshy places, 800 m, 25.08.2003, OUFE 10902.

Crp.

LILIACEAE

Allium paniculatum L. subsp. **paniculatum**

Balıkdamı bridge, roadside and fieldside, 780 m, 03.07.2002, OUFE 10903; Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10904; Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 06.06.2003, OUFE 10905.

Medit. Crp.

***A. ampeloprasum** L.

Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10906.

Medit. Crp.

A. atroviolaceum Boiss.

Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10907.

Crp.

Ornithogalum orthophyllum Ten.

Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10908; Göktepe village, around Düden, limestone rocky places, 840 m, 16.06.2002,

OUFE 10909; Balıkdamı village, fieldside, 800 m, 03.07.2002, OUFE 10910.

Crp.

Muscari neglectum Guss.

Göktepe village, around Düden, limestone rocky places, 840 m, 22.03.2002, OUFE 10911; Göktepe village, around Düden, limestone rocky places, 840 m, 25.04.2003, OUFE 10912.

Crp.

***Bellevia clusiana** Griseb.

Göktepe village, around Düden, limestone rocky places, 840 m, 22.03.2002, OUFE 10912; Göktepe village, around Düden, limestone rocky places, 840 m, 25.04.2003, OUFE 10913.

Endemic. Ir.-Tur. Crp. LC

***Gagea peduncularis** (J. & C.Presl) Pascher

Balıkdamı village, fieldside, 800 m, 14.04.2002, OUFE 10914.

Medit. Crp.

G. villosa (M.Bieb.) Duby var. **villosa**

Göktepe village, around Düden, limestone rocky places, 840 m, 22.03.2002, OUFE 10915; Göktepe village, around Düden, limestone rocky places, 840 m, 25.04.2003, OUFE 10916.

Medit. Crp.

Merendera attica (Spruner) Boiss. & Spruner

Göktepe village, around Düden, limestone rocky places, 840 m, 22.03.2002, OUFE 10917; Göktepe village, around Düden, limestone rocky places, 840 m, 25.04.2003, OUFE 10918.

E.Medit. Crp.

IRIDACEAE

***Iris suaveolens** Boiss. & Reuter

Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 25.05.2002, OUFE 10919.

E.Medit. Crp.

I. attica Boiss. & Heldr.

Kurtseyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 25.08.2003, OUFE 10920.

E.Medit. Crp.

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

Göktepe village, around Düden, limestone rocky places, 840 m, 22.03.2002, OUFE 10921.

Endemic. Ir.-Tur. Crp. LC

ORCHIDACEAE

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

Balıkdamı village, fieldside, 800 m, 25.08.2003, OUFE 10922.

E.Medit. Crp.

TYPHACEAE

Typha latifolia L.

Balıkdamı village, marshy places, 800 m, 25.08.2003, OUFE 10923.

Crp.

T. angustifolia L.

Balıkdamı village, marshy places, 800 m, 25.08.2003, OUFE 10924.

Crp.

JUNCACEAE

Juncus maritimus Lam.

Göktepe village, around Düden, marshy places, 840 m, 19.07.2002, OUFE 10925.

Crp.

J. gerardi Loisel. subsp. **gerardi**

Balıkdamı bridge, marshy places, 780 m, 03.07.2002, OUFE 10926; Kurtseyh village, Fettahoğlu plateau, marshy places, 810 m, 03.07.2002, OUFE 10927.

Euro-Sib. Crp.

CYPERACEAE

Cyperus longus L.

Kurtseyh village, Fettahoğlu plateau, marshy places, 810 m, 03.07.2002, OUFE 10928.

Crp.

POACEAE (GRAMINEAE)

Aegilops cylindrica Host

Balıkdamı village, roadside and fieldside, 800 m, 25.04.2003, OUFE 10929.

Ir.-Tur. Th.

Triticum baeoticum Boiss. subsp. **thaoudar** (Reuter ex Hausskn.) Schiemann

Balıkdamı village, roadside and fieldside, 800 m, 25.04.2003, OUFE 10930.

- Ir.-Tur. Th.
Secale cereale L. var. **ancestrale** (Zhuk.) Kit Tan
Balıkdami village, roadside and fieldside, 800 m, 25.04.2003, OUFE 10931.
- Ir.-Tur. Th.
***Hordeum marinum** Huds. var. **marinum**
Balıkdami village, roadside and fieldside, 800 m, 25.04.2003, OUFE 10932.
- Th.
***H. murinum** L. subsp. **murinum**
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10933.
- Th.
***H. distichon** L.
Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10934.
- Th.
***Bromus lanceolatus** Roth.
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10935; Balıkdami village, fieldside, 800 m, 03.07.2002, OUFE 10936; Balıkdami bridge, marshy places, 780 m, 03.07.2002, OUFE 10937.
- Th.
B. sterilis L.
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10938.
- Th.
B. cappadocicus Boiss. & Bal. subsp. **cappadocicus**
Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10939.
- Hcrp.
Avena sativa L.
Balıkdami village, roadside and fieldside, 800 m, 25.04.2003, OUFE 10940.
- Th.
Helictotrichon compressum (Heuffel) Henrard
Balıkdami village, roadside and fieldside, 800 m, 25.04.2003, OUFE 10941.
- Euro-Sib. Hcrp.
Arrhenatherum elatius (L.) P.Beauv. ex J. & C.Presl subsp. **elatius**
Balıkdami village, roadside and fieldside, 800 m, 25.04.2003, OUFE 10942.
- Euro-Sib. Hcrp.
Koeleria cristata (L.) Pers.
Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10943.
- Hcrp.
Polypogon monspeliensis (L.) Desf.
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10944; Balıkdami bridge, marshy places, 780 m, 03.07.2002, OUFE 10945; Göktepe village, around Düden, limestone rocky places, 840 m, 19.07.2002, OUFE 10946.
- Th.
Alopecurus myosuroides Huds. var. **myosuroides**
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10947.
- Euro-Sib. Th.
Phleum alpinum L.
Balıkdami village, fieldside, 800 m, 17.05.2003, OUFE 10948.
- Euro-Sib. Hcrp.
P. pratense L.
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10949.
- Euro-Sib. Hcrp.
P. bertolonii DC.
Balıkdami village, fieldside, 800 m, 17.05.2003, OUFE 10950.
- Hcrp.
***Festuca pratensis** Huds.
Balıkdami village, fieldside, 800 m, 17.05.2003, OUFE 10951.
- Hcrp.
Lolium rigidum Gaudin var. **rigidum**
Balıkdami bridge, marshy places, 780 m, 03.07.2002, OUFE 10952.
- Th.
Poa annua L.
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 16.06.2002, OUFE 10953; Balıkdami village, fieldside, 800 m, 03.07.2002, OUFE 10954.
- Th.
P. pratensis L.
Göktepe village, around Düden, limestone rocky places, 840 m, 25.04.2003, OUFE 10955.
- Hcrp.
P. bulbosa L.
Göktepe village, around Düden, limestone rocky places, 840 m, 25.04.2003, OUFE 10956.
- Hcrp.
Catabrosa aquatica (L.) P.Beauv.
Göktepe village, around Düden, limestone rocky places, 840 m, 06.06.2003, OUFE 10957.
- Hcrp.
Briza humilis M.Bieb.
Balıkdami village, open places, 800 m, 25.04.2003, OUFE 10958.
- Th.
***Melica ciliata** L. subsp. **ciliata**
Kurtşeyh village, Fettahoğlu plateau, roadside and fieldside, 810 m, 03.07.2002, OUFE 10959.
- Hcrp.
Stipa arabica Trin. & Rupr.
Balıkdami village, roadside and fieldside, 800 m, 03.07.2002, OUFE 10960.
- Ir.-Tur. Hcrp.
Phragmites australis (Cav.) Trin. ex Steudel
Balıkdami village, marshy places, 800 m, 03.07.2002, OUFE 10961.
- Euro-Sib. Hcrp.
***Cynodon dactylon** (L.) Pers. var. **dactylon**
Balıkdami village, open places, 800 m, 03.07.2002, OUFE 10962.
- Hcrp.