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## The Flora of Gülümbe Dağı (Bilecik-Turkey)

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**Abstract:** This paper deals with the floristical characteristics and the taxa of the vascular plants of Gülümbe Dağı. Between the years 1992 and 1995, 1035 plant specimens were collected from the study area. After the identification of these specimens, 456 taxa at specific and subspecific ranks belonging to 74 families were determined. Sixty-three taxa were defined as new records for the A2 square. The largest family was found to be *Asteraceae* (52 species) and the second largest was *Fabaceae* (51 species). The largest genera were *Alyssum* L. and *Salvia* L. (8 species each). The phytogeographical spectrum of the species was found to be as follows: Mediterranean elements, 77; Irano-Turanian elements, 48; and Euro-Siberian, 40.

**Key Words:** Flora, Bilecik, Turkey.

### Gülümbe Dağı Florası (Bilecik-Türkiye)

**Özet:** Bu çalışma Gülümbe Dağının floristik özelliklerini ve vasküler bitki türlerini içermektedir. Çalışma bölgesinden 1992-1995 yıllarında 1035 bitki örneği toplanmıştır. Toplanan materyallerin değerlendirilmesi sonucu 74 familyaya ait 278 cins, 456 tür ve türaltı takson tesbit edilmiştir. Bu taksonlardan 63'ü A2 karesi için yeni kayıt olarak belirlenmiştir. En büyük familya *Asteraceae* (52 tür), ikinci *Fabaceae* (51 tür)'dir. En büyük cinsler ise 8'er türle *Alyssum* L. ve *Salvia* L.'dir. Türlerin fitocoğrafik dağılımı ise şöyledir: Mediterranean elementler 77; Irano-Turanian elementler 48 ve Euro-Siberian elementler 40'dir.

**Anahtar Sözcükler:** Flora, Bilecik, Türkiye.

### Introduction

The flora of Gülümbe Dağı was studied in detail. The main purpose of this study was to determine the floristic characteristics of the study area. A review of the literature revealed that there has never been an inclusive study of flora on this area. The area is located at the intersection of the Central Anatolia, and the Mediterranean, Marmara and western Black Sea regions and also has some floristic elements belonging to different phytogeographical regions.

### Materials and Methods

The research material was obtained in 1992-1995 and is kept in the Herbarium of Osmangazi University (OUFE). The Flora of Turkey and the East Aegean Islands (1), the Flora Europaea (2), the Flora Orientalis (3), and some other sources (4,5) were used to identify the specimens. Experts were consulted in some controversial

cases. Some specimens of *Poaceae* were identified by M. Doğan. The taxa described below were checked at Ankara University Herbarium (ANK) and Ege University Herbarium (EGE). The flora of the area is given in the appendix. The order of taxa follows the flora of Turkey (1).

The list gives the localities of the taxa first, followed by their phytogeographical regions, endemisms, an indication of whether they are new records for the A2 square, and herbarium record numbers.

The abbreviations used in the text and in the floristic list are as follows: Ir.-Tur.- Irano-Turanian; Medit.-Mediterranean; Euro-Sib.- Euro-Siberian; End.- Endemic, AO.-Atila Ocak. An asterisk indicates a new record for the A2 grid square.

### Some Geographic, Climatic and Edaphic Features of the Study Area

Gülümbe Dağı, which is located between Bilecik and Vezirhan, is in the A2 grid square, according to the scheme of Davis (6,7). Gülümbe Dağı, which is bordered

by the extension of Kapıdağı Forest in the south east and the plain of Osmaneli in the north, consists of hills with heights of 90-650 m. and the plain of Gülümbe amid these hills (Figure 1). The only water supply in Gülümbe

Dağı, which is formed of arid hills and quite narrow plains, is Tangır Stream.

The climate of the research area was examined using the data from the meteorology station in Bilecik. The

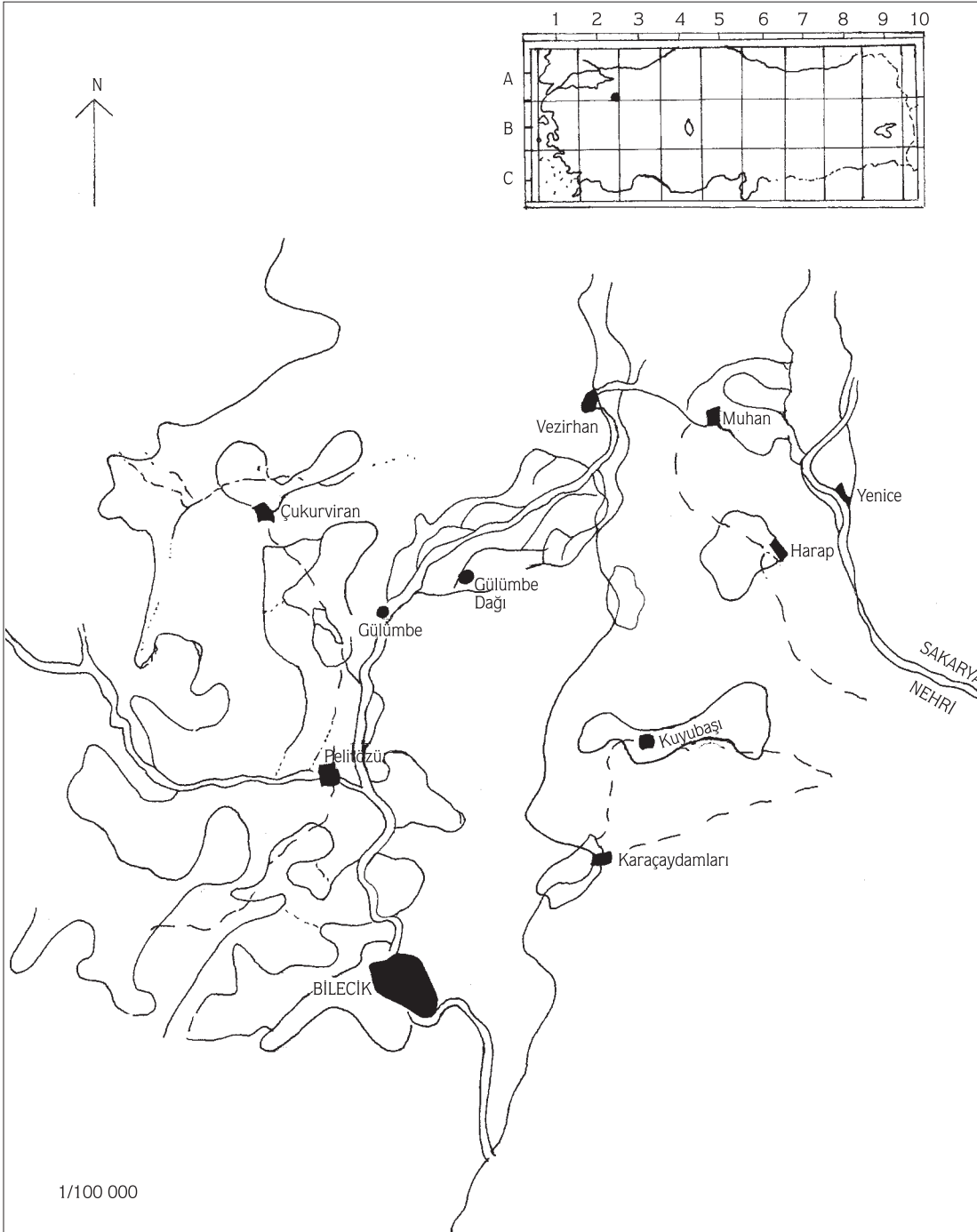


Figure 1. Map of the study area.

average rainfall in the area is 436.4 mm a year and the regime type is W.Sp.A.S. (8). The most arid and hottest month is August, with an average temperature of 21.60 °C. The average temperature for the year is 12.30 °C. When the climate data was inserted into Emberger's formula of rain and temperature factors ( $Q=55.9$ ), it was found that the research area has a Mediterranean semi-dry climate (9) (Table 1).

According to data from the Bilecik meteorology station, the annual precipitation (mm) by season and the type of precipitation regime is as given above.

Brown forest soils, and alluvial and colluvial soils were found in the study area. Brown forest soil covered most of the area. Tables 2 and 3 show the physical and chemical analysis of soil samples from the distribution area of some plant associations.

#### Vegetational Characteristics of the Research Area

Shrub, forest, stream and grass are the main vegetation types in the area. Shrub formation was found to be distributed throughout the area, especially at altitudes of 250-600m. *Quercus coccifera* L., *Q. pubescens* Willd., *Phillyrea latifolia* L., *Juniperus oxycedrus* L. subsp. *oxycedrus*, *Arbutus andrachne* L.,

*Pistacia terebinthus* L. subsp. *palaestina* (Boiss.) Engler, *Crataegus monogyna* Jacq. subsp. *monogyna*, *Daphne sericea* Vahl. and *Cistus creticus* L. are the characteristic plants of this formation.

Forest vegetation is the most common formation type in this area. This formation is distributed commonly in the form of natural vegetation between Büklücek, Kocabeyven, Lalelik and Sivri Hills. *Pinus brutia* Ten. has dominant species, and *J. excelsa* Bieb. and *Q. pubescens* are also distributed through this forest.

*Platanus orientalis* L. members are found at streamsides as a dominant vegetation type at altitudes of 90-120 m. *Salix alba* L., *Cornus sanguinea* L. subsp. *australis* (C.A. Meyer) Jav., *Rosa canina* L., *Rubus sanctus* Schreber, *Hedera helix* L., *Dracunculus vulgaris* Schott and Endl., *Sanicula europaea* L., *Galium palustre* L., *Urtica dioica* L., *Geranium asphodeloides* Burnm. subsp. *sintenisii* (Freynt), *Ranunculus constantinopolitanus* (DC.) d'Urv, *Lythrum salicaria* L., *Carex pendula* Hudson, and *Veronica aquatica-anagallis* L. are commonly distributed in this vegetation type.

Grass vegetation types are not common in the area. They are found at 100-380m. *Ranunculus repens* L.,

BILECIK	Spring	Summer	Autumn	Winter	Annual	Regime type
	129.5	69.9	90.6	146.4	436.4	W.Sp.A.S.

Table 1. The type of precipitation regime of the study area (W: winter, Sp: spring, A: autumn, S: summer).

Associations	Depth (cm)	pH	CaCO <sub>3</sub> Total %	Organic matter%	Total N%
Phillyrea latifolia	0-5	7.70	6.33	6.029	0.301
	5-25	-	-	-	-
	+25	-	-	-	-
Juniperus excelsa	0-5	8.80	39.67	3.241	0.162
	5-25	7.90	42.40	3.423	0.171
	+25	7.90	55.98	5.384	0.269
Arbutus andrachne	0-5	7.80	55.95	7.986	0.399
	5-25	7.80	56.25	8.293	0.415
	+25	7.85	64.12	2.830	0.141
Pinus brutia	0-5	7.55	32.49	5.316	0.266
	5-25	7.75	35.66	3.250	0.162
	+25	7.85	35.95	2.278	0.114

Table 2. Chemical analysis of soil in forest and macchie associations.

*Lamium amplexicaule* L., *Cephalaria transsylvanica* (L.) Schrader, *Euphorbia helioscopia* L., *Legousia speculum-veneris* (L.) Chaix, *Digitalis lamarckii* Ivan., and *Crepis foedita* L. subsp. *rhoeadifolia* (Bieb.) Celak are distributed in damp areas of this vegetation type. *Aegilops umbellulata* Zhukovsky, *Ae. geniculata* Roth., *Poa bulbosa* L., *Festuca callieri* (Heckel ex st.Yves) F. subsp. *callieri*, *stipa lessingiana* Trin. and Rupr., *Torillis leptophylla* (L.) Reichb., *Hippocrepis unisiliguosa* L. subsp. *unisiliguosa*, *Salvia cadmica* Boiss., *Crupina crupinastrum* (Moris) Vis., and *Eryngium campestre* L. var. *virens* Link are also found in semi-dry area of this plant formation.

### Conclusions and Comments

The field studies were conducted to determine the flora of Gölümbe Dağı. More than 1000 specimens were collected in 4 years and, after identification, 456 taxa were determined at the specific or lower level. Sixty-three of these taxa were defined for the A2 square as new

records (10). The dispersion of the plant taxa that were defined in the study area according to the large taxonomical groups are shown in Table 4.

Seventy-seven (16.8%) of the taxa are Mediterranean elements; 48 (10.5%) are Irano-Turanian; and 40 (8.8%) are Euro-Siberian. The rest of the 291 taxa are either multi-area elements or are elements which have not yet been accepted as members of the phytogeographic area. The data obtained from this floristic research indicate that the most common element is the Mediterranean element with 77 taxa in the area. Because the study area belongs to the semi-dry Mediterranean bioclimate stratum, it was not unexpected that the majority of the elements were found to be of Mediterranean origin. However, Gölümbe Dağı and environs are in general under the influence of the Mediterranean climate. Red pine (*Pinus brutia*) forest is the dominant vegetation type in the area. As it is known, the red pine has been used as an indicator plant to

Associations	Depth (cm)	Sand (%)	Milestone	Clay
Phillyrea latifolia	0-5	30.16	37.02	32.82
	5-25	-	-	-
	+25	-	-	-
Juniperus excelsa	0-5	28.60	21.36	50.04
	5-25	27.75	21.62	50.63
	+25	0.70	28.02	71.28
Arbutus andrachne	0-5	38.48	31.35	30.17
	5-25	35.50	27.56	36.94
	+25	32.00	25.16	42.84
Pinus brutia	0-5	39.03	21.72	39.25
	5-25	36.52	19.65	43.83
	+25	41.02	17.43	41.55

Table 3. Physical analysis of soil in forest and macchie associations.

	Number of Families	Number of Genera	Number of taxa (sp., subsp., var.)
Pteridophyta	3	4	4
Spermatophyta	71	274	452
Gymnospermae	3	3	6
Dicotyledones	60	230	384
Monocotyledones	8	41	62
Total	74	278	456

Table 4. The dispersion of taxa according to the large taxonomical groups.

determine the borders of the Mediterranean region in Turkey (11). Irano-Turanian elements are more numerous than Euro-Siberians because of the presence of many kseric steppes after the destruction of red pine forests. Relatively few Euro-Siberian elements were observed in the area. Tangır Stream and environs, located in the Gülümbe valley, where the *Platanus orientalis* association occurs naturally, serves as a suitable habitat for the plants. Since this microclimatical area has more humidity than the other parts of Gülümbe Dağı, Euro-Siberian elements occur more densely. Mediterranean and Irano-Turanian elements show wider distribution and spread in the less humid regions of the study area.

The distribution of 456 species, subspecies and varieties identified in the research area according to the largest families is shown in Table 5.

The family containing the most species is *Asteraceae* (11.4%) with 52 species. *Fabaceae* follows with 51 species (11.1%), then *Lamiaceae* with 39 species (8.3 %), *Poaceae* with 35 species (7.6 %) and *Brassicaceae* with 34 species (7.4%).

The largest 6 families contain nearly half (49.6%) of the total flora of the research area. In addition, in this area 123 (42.2%) of the 278 genera belong to these families. *Asteraceae*, *Fabaceae*, *Lamiaceae*, *Poaceae* and *Brassicaceae* are the five families containing the most species and genera in Turkey (11). These families can be seen in nearly every phytogeographical region in the country and were also found to be the largest 5 families,

in the same order of size, in the study area. Similar results have been obtained from many studies carried out in Turkey (12,13).

The largest genera are *Alyssum* and *Salvia* (8 species each); and *Trifolium*, *Centaurea* and *Euphorbia* (7 species each) in the study area. These genera are also relatively widespread in Turkey.

The proportion of endemism in the area is very low (7.8%). Only 35 species are endemic to Turkey. This is below the average for Turkey (33.5%). The main reason is that the edaphic, climatic and topographic properties of the region do not vary much, and the altitude is limited to 90-650 m. It is well known that endemic species are mostly found on high mountains and in places where ecological diversity is rich.

A comparison of the endemism determined in the study area and that of a nearby region (Sündiken Dağı) is presented below (Table 6).

This shows that the levels of endemism are similar due to similarities in ecological conditions (14).

According to the literature, only *Linum hirsutum* subsp. *anatolicum* var. *anatolicum*, of the taxa in the study area, is in the vulnerable (VU) category, but the majority of the other taxa are not threatened (NT) (15). Nevertheless, the destruction of the research area by biotic and abiotic factors has a great influence on the floristic structure of the region. Excessive pasturage and anthropogenic factors may put even widespread taxa in the area at risk in the future.

Table 5. The distribution of the species according to the largest families (Number of taxa and species of these families are the same).

Family	Number of Species	Ratio (%)
Asteraceae	52	11.37
Fabaceae	51	11.15
Lamiaceae	39	8.33
Poaceae	35	7.65
Brassicaceae	34	7.43
Apiaceae	16	3.50
Boraginaceae	16	3.50
Caryophyllaceae	14	3.07
Ranunculaceae	13	2.84
Rosaceae	13	2.87
Liliaceae	13	2.84
Scrophulariaceae	9	1.96

Table 6. Endemism in the present study compared with that in other studies in the region(%).

Family	Ocak 1996	Ekim and Akman 1991
Asteraceae	11.37	9.70
Fabaceae	11.15	9.55
Lamiaceae	8.53	5.97
Poaceae	7.65	3.73
Brassicaceae	7.43	4.92
Apiaceae	3.50	4.47
Boraginaceae	3.50	–
Caryophyllaceae	3.00	3.28
Ranunculaceae	2.84	–
Rosaceae	2.84	4.17
Liliaceae	2.84	–
Scrophulariaceae	2.00	4.32
Endemism (%)	7.8	10

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## APPENDIX THE FLORISTIC LIST

### Divisio: PTERIDOPHYTA

Classis: SPHENOPSIDA

### SINOPTERIDACEAE

*Chelianthes persica* (Bory) Kuhn

A2 Bilecik: Gülümbe Dağı, Igdecidede Hill, 380-470m., 02.06.1994, AO , OUFE 6940.

### ASPLENICEAE

*Asplenium trichomonas* L.

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90 m., 02.06.1994, AO , OUFE 6941.

*Ceterach officinarum* DC.

A2 Bilecik :Gülümbe Dağı, along Tangir Stream, 90 m., 02.06.1994, AO , OUFE 6942.

### POLYPODIACEAE

*Polypodium vulgare* L. subsp. *vulgare* L.

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., 06.10.1994, AO , OUFE 6943

Divisio: SPERMATOPHYTA

Classis: GYMNOSPERMAE

### PINACEAE

*Pinus nigra* Arn. subsp. *pallasiana* (Lamb.) Holmboe.

A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., Gülümbe Dağı, Vezirkaya Hill, south side, 180-210m., 10.06.1994, AO , OUFE 6944.

*P. brutia* Ten.

A2 Bilecik: Gülümbe Dağı, Büklücek-Sivri Hill, 240-600m., Gülümbe-Vezirhan, slopes, 200-400m, entry of Old Istanbul Road, 410-520m., 10.06.1994, AO , OUFE 6945, E. Medit. element.

### CUPRESSACEAE

*Juniperus oxycedrus* L. subsp. *oxycedrus*

A2 Bilecik: Gülümbe Dağı, Kocabeyven Hill, 400m, Gülümbe entry, open areas, 465m., 10.6.1994, AO , OUFE 6946.

*J. excelca* Bieb.

A2 Bilecik: Gülümbe Dağı, Igdecidede Hill, 380-470m., north of Tokmakkaya Hill, 250m., 10.06.1994, AO, OUFE 6947.

### EPHEDRACEAE

*Ephedra major* Host.

A2 Bilecik: Gülümbe-Vezirhan, slopes, 200-400m., Gülümbe Dağı, between

Tokmakkaya and Vezirkaya, grassland, 16.05.1992, AO, OUFE 6948.

*E. campylopoda* C.A. Meyer.

A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., Buklucek-Sivri Hills, 240-600 m., 19.06.1994, AO, OUFE 6949.

Classis: ANGIOSPERMAE

Subcl.: DICOTYLEDONES

### RANUNCULACEAE

*Nigella arvensis* L. var. *glauca* Boiss.

A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., Gülümbe-Vezirhan, slopes, 200-400m. 06.07.1994, AO , OUFE 6950.

*N. sativa* L.

A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., around Vezirkaya gas station, 120m., 08.08.1995, AO, OUFE 6951.

\**Delphinium venulosum* Boiss.

A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., Gülümbe Dağı, around Tangir Stream, slopes, 130m., 06.07.1994, AO , OUFE 6952, Ir.-Tur. element.

**Consolida orientalis** (Gay) Schröd.

A2 Bilecik: Around Vezirkaya gas station, 120m., Gülümbe around Camkoru Village, 460m., 02.06.1992, AO , OUFE 6953.

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

A2 Bilecik: Gülümbe Dağı, Vezirhan, roadside, 110m., Vezirkaya grassland, 110m., 19.06.1994, AO , OUFE 6954.

**Clematis flammula** L.

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., Tangir Stream, grassland, 90-120m., 10.06.1994, AO , OUFE 6955. Medit. element.

**C. viticella** L.

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., Vezirhan-Gülümbe road, slopes, 150-420m., 10.06.1994, AO , OUFE 6956.

**Adonis flammea** Jacq.

A2 Bilecik: Gülümbe Dağı, Tangir Stream grassland, 90-120m., Vezirkaya grassland, 110m., 23.04.1994, AO , OUFE 6957.

**Ranunculus repens** L.

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., around Vezirkaya gas station, 120m., 10.04.1994, AO , OUFE 6958.

**R. lanuginosus** L.

A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., Gülümbe Dağı, Vezirkaya grassland, 110m., 10.04.1994, AO , OUFE 6959, Euro-Sib. element.

**R. constantinopolitanus** (DC.) d'Urv.

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., around Vezirkaya gas station, 120m., 23.04.1994, AO , OUFE 6960.

**\*R. damascenus** Boiss. & Gaill.

A2 Bilecik: Gülümbe-Vezirhan, slopes, 200-400m., 23.04.1994, AO, OUFE 6961, Ir.- Tur. element.

**R. arvensis** L.

A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., Vezirkaya Hill, slopes, 190-240m., around Tangir Stream, slopes, 130m., 08.05.1994, AO, OUFE 6962.

**PAPAVERACEAE****Chelidonium majus** L.

A2 Bilecik: Gülümbe Dağı, side of Tangir Stream, 90m., 10.04.1994, AO, OUFE 6963, Euro-Sib. element,

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

A2 Bilecik: Gülümbe Dağı, Vezirhan, roadside, 110m., Vezirkaya grassland, 110m., 06.07.1994, AO , OUFE 6964, Ir.-Tur. element.

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

A2 Bilecik: Gülümbe Dağı, Vezirhan, roadside, 110m., Vezirkaya grassland, 110m., Çamalti Village, rocky area, 420m., 06.07.1994, AO, OUFE 6965, Ir.-Tur. element.

**Papaver rhoeas** L.

A2 Bilecik: Gülümbe-Vezirhan roadside, 220m, Vezirkaya Hill, slopes, 190-240m., around Vezirkaya gas station, 120m., 16.05.1992, AO , OUFE 6966.

**Hypecoum imberbe** Sibth. & Sm.

A2 Bilecik: Vezirhan-Gülümbe road, slopes, 150-420m., Vezirkaya Hill, north side. 200-240m., 10.04.1994, AO , OUFE 6967.

**\*Fumaria kralikii** Jordan

A2 Bilecik: Gülümbe Dağı, Sivri Hill 240-320m., 10.04.1994, AO, OUFE 6968, Medit. element.

**BRASSICACEAE / CRUCIFERAE****Brassica nigra** (L.) Koch

A2 Bilecik: Gülümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO , OUFE 6969.

**Calepina irregularis** (Asso) Thellung

A2 Bilecik: Gülümbe Dağı, Vezirhan, roadside, 110m., Vezirkaya Hill, south side, 180-210m., 16.04.1994, AO , OUFE 6970.

**Rapistrum rugosum** (L.) All.

A2 Bilecik: Gülümbe Dağı, Vezirkaya Hill, south side, 180-210m., 12.06.1993, AO, OUFE 6971.

**\*Conringia planisiliqua** Fisch. & Mey.

A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., Gülümbe-Vezirhan, slopes, 200-400m., 19.06.1994, AO, OUFE 6972, Ir.-Tur. element.

**\*C. perfoliata** (C.A. Mey.) Busch

A2 Bilecik: Gülümbe-Vezirhan, slopes, 190-240m., Old Istanbul Road, slopes, 300-400m., 7.06.1994, AO, OUFE 6973.

**Lepidium campestre** (L.) R.Br.

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 07.06.1994, AO, OUFE 6974.

**Cardaria draba** (L.) Desr. subsp. *draba*

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., Vezirhan-Gülümbe Road, slopes, 150-420m., 07.06.1995, AO, OUFE 6975.

**Iberis taurica** DC.

A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., Igdecidede Hill, 380-470m., Gülümbe-Vezirhan, slopes, 200-400m., 08.06.1992, AO, OUFE 6976.

**Thlaspi perfoliatum** L.

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., 10.04.1993, AO, OUFE 6977.

**\*Pachyphragma macrophyllum** (Hoffm.) Busch

A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., Gülümbe Dağı, Vezirkaya Hill, north side, 200-240m., 23.04.1994, AO, OUFE 6978, Euro-Sib. element.

**Capsella bursa-pastoris** (L.) Medik

A2 Bilecik: Gülümbe Dağı, Vezirhan, roadside, 110m., around Camkoru Village, 460m., 10.04.1994, AO, OUFE 6979

**Bunias erucago** L.

A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., 16.05.1992, AO, OUFE 6980.

**Fibigia clypeata** (L.) Medik

A2 Bilecik: Gülümbe Dağı, Buklucek-Sivri Hill, 240-600m., 07.06.1995, AO, OUFE 6981.



**F. eriocarpa** (DC.) Boiss.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., 23.04.1994, AO, OUFE 6982.

**Alyssum desertorum** Stapf var. **desertorum**

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., between Tokmakkaya and Vezirkaya grassland.10.04.1994, AO,OUFE 6983.

**A. minutum** Schlecht

A2 Bilecik: Gölümbe Dağı, between Tokmakkaya and Vezirkaya grassland, north of Tokmakkaya Hill, 250m., 10.04.1993, AO, OUFE 6984.

**A. minus** (L.) Rothm var. **minus**

A2 Bilecik: Vezirhan-Gölümbe road, slopes, 150-420m., between Kocabeyven and Sivri Hills, 350m.,10.04.1993, AO , OUFE 6985.

**A. strigosum** Banks & Sol. subsp. **strigosum**

A2 Bilecik: Around Vezirkaya gas station, 120m., entry of Old Istanbul Road, 410-520m., 10.04.1993, AO., OUFE 6986.

**A. pateri** Nyár. subsp. **pateri**

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 16.07.1993, AO, OUFE 6987, Ir.-Tur. element, End.

**A. borzaeanum** Nyár.

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., Igdecidede Hill, 380-470m., 12.06.1993, AO, OUFE 6988.

**A. sibiricum** Willd.

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFE 6989.

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

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., Old Istanbul Road, slopes, 300-400m., 08.05.1994, AO, 6990.

**Erophila verna** (L.) Chevall. subsp. **verna**

A2 Bilecik: Gölümbe-Vezirhan, slopes, 200-400m., Vezirkaya grassland, 110m., 10.04.1994, AO, OUFE 6991.

**\*Arabis nova** Vill.

A2 Bilecik: Gölümbe-Vezirhan, slopes, 190-240m., Camalti Village, 400m., 10.04.1993, AO, OUFE 6992.

**Barbarea vulgaris** R.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., Gölümbe-Vezirhan, slopes, 200-400m., 10.04.1993, AO, OUFE 6993.

**Cardamine impatiens** L. var. **pectinata** Pallas

A2 Bilecik: Gölümbe Dağı, Kocabeyven Hill, 400m., 10.04.1994, AO, OUFE 6994, Euro-Sib. element.

**C. hirsuta** L.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 07.06.1995, AO, OUFE 6995.

**Aubretia canescens** (Boiss.) Bornm. subsp. **canescens**

A2 Bilecik: Vezirhan-Gölümbe road, slopes, 150-420m., 23.04.1994, AO, OUFE 6996, End.

**\*A. pinardii** Boiss.

A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 10.04.1994, AO, OUFE 6997, Ir.-Tur. element, End.

**\*Chorispora syriaca** Boiss.

A2 Bilecik: Gölümbe Dağı, Vezirhan place, roadside, 110m., 10.04.1994, AO, OUFE 6998, Ir.-Tur. element.

**Erysimum crassipes** Fisch. & Mey.

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 14.07.1995, AO, OUFE 6999.

**Alliaria petiolata** Bieb.

A2 Bilecik: Entry of Old Istanbul Road, 410-520m., 07.06.1995, AO, OUFE 7000.

**Descurainia sophia** L.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, south side, 180-210m., 12.06.1993, AO, OUFE 7001.

**Camelina microcarpa** Andrz.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 07.06.1995, AO, OUFE 7002.

**RESEDACEAE**

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

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., Old Istanbul Road, 410-520m, 08.06.1992, AO, OUFE 7003.

**CISTACEAE**

**Cistus creticus** L.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, south side, 180-210m., and between Kocabeyven and Sivri Hills, 350m., 12.07.1992, AO, OUFE 7004, Medit. element.

**Helianthemum nummularium** (L.) Miller subsp. **nummularium**

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., Vezirhan-Gölümbe Road, slopes, 300-400m., 16.05.1992, AO, OUFE 7005.

**Fumana thymifolia** (L.) Verlot var. **viridis** (Ten.) Boiss.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., 12.07.1992, AO, OUFE 7006, Medit. element.

**VIOLACEAE**

**Viola suavis** Bieb.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, grassland, 90-120m., 10.04.1993, AO, OUFE 7007.

**V. kitaibeliana** Roem. & Schult.

A2 Bilecik: Gölümbe Dağı, along the Tangir Stream , 90m., 10.04.1994, AO, OUFE 7008.

**POLYGALACEAE**

**Polygala pruniosa** Boiss. subsp. **pruniosa**

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFE 7009.

**P. anatolica** Boiss. & Heldr.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m.,Vezirkaya gas station and around 120m., 10.06.1994, AO, OUFE 7010.

**CARYOPHYLLACEAE**

*Minuartia anatolica* (Boiss.) Woron var. *polymorpha* Mc Neill

A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 06.07.1994, AO, OUFE 7011.

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

A2 Bilecik: Gölümbe Dağı, Vezirhan place, roadside, 110m., Vezirhan-Gölümbe Road, slopes, 150-420m., 10.04.1994, AO, OUFE 7012.

*S. holostea* L.

A2 Bilecik: Gölümbe Dağı, Kesirlik Hill, 370m., 14.07.1995, AO, OUFE 7013, Euro-Sib. element.

*Cerastium banaticum* Roch.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., Gölümbe Dağı, Vezirkaya grassland, 110m., 10.04.1994, AO, OUFE 7014.

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

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 10.04.1994, AO, OUFE 7015.

\**Holosteum umbellatum* L. var. *glutinosum* (Bieb.) Gay

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., north of Tokmakkaya Hill, 250m., 10.04.1994, AO, OUFE 7016.

*Dianthus micranthus* Boiss. & Heldr.

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 14.07.1995, AO, OUFE 7017.

*D. leptopetalus* Willd.

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., Tokmakkaya Hill, 240-270m., 14.07.1995, AO, OUFE 7018.

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

A2 Bilecik: Gölümbe Dağı, Kocabeyven Hill, 370m., 14.07.1995, AO, OUFE 7019.

*D. calocephalus* Boiss.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, south side, 180-210m., Çamalti Village, rocky area, 420m., 08.05.1994, AO, OUFE 7020.

*Saponaria glutinosa* Bieb.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., around Vezirkaya gas station, 120m., 06.07.1994, AO, OUFE 7021.

*Silene italica* (L.) Pers.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., around Vezirkaya gas station, 120m., 23.04.1994, AO, OUFE 7022.

*S. vulgaris* (Moench) Garcke var. *vulgaris*

A2 Bilecik: Entry of Old Istanbul Road, 410-520m., 14.07.1995, AO, OUFE 7023.

*S. alba* (Miller) Krause subsp. *divaricata* (Reichb.) Walters

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.06.1992, AO, OUFE 7024.

**POLYGONACEAE**

*Polygonum aviculare* L.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.08.1995, AO, OUFE 7025.

*P. equisetiforme* Sibth. & Sm.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., Sivri Hill, 240-320m., 19.06.1994, AO, OUFE 7026.

*P. pulchellum* Lois.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 14.07.1995, AO, OUFE 7027.

\**P. bellardii* All.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., Vezirkaya Hill, slopes, 190-240m., 19.06.1994, AO, OUFE 7028.

*Rumex acetosella* L.

A2 Bilecik: Entry of Gölümbe Valley, 120m., 23.04.1994, AO, OUFE 7029.

*R. tuberosus* L. subsp. *tuberosus*

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 14.07.1995, AO, OUFE 7030.

*R. crispus* L.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 14.07.1995, AO, OUFE 7031.

**CHENOPODIACEAE**

*Chenopodium foliosum* (Moench.) Aschers

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 19.06.1994, AO, OUFE 7032.

*C. murale* L.

A2 Bilecik: Gölümbe Dağı, between Kocabeyven and Sivri Hills, 350m., 08.08.1995, AO, OUFE 7033.

**TAMARICACEAE**

*Tamarix smyrnensis* Bunge

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, slopes, 90-130m., 02.06.1994, AO, OUFE 7034.

**HYPERICACEAE / GUTTIFERAE**

*Hypericum perforatum* L.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 19.06.1994, AO, OUFE 7035, Medit. element.

*H. montbretii* Spach

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 08.06.1992, AO, OUFE 7036.

*H. origanifolium* Willd.

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFE 7037.

\**H. aviculariifolium* Jaub. & Spach. subsp. *aviculariifolium* var. *aviculariifolium*

A2 Bilecik: Gölümbe Dağı, Vezirkaya grassland, 110m., Vezirkaya Hill, south side rocky areas, 180-210m., 16.07.1993, AO, OUFE 7038, E. Medit. element, End.

*H. perforatum* L.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., 12.06.1993, AO, OUFE 7039.

## MALVACEAE

### *Malva sylvestris* L.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 16.05.1992, AO, OUFÉ 7040.

### *Alcea pallida* Waldst. & Kit.

A2 Bilecik: Gölümbe Dağı Old Istanbul Road, slopes, 300-400m., 10.06.1994, AO, OUFÉ 7041.

### *Althaea cannabina* L.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 08.08.1995, AO, OUFÉ 7042.

### *A. hirsuta* L.

A2 Bilecik: Gölümbe Dağı, Vezirhan-Gölümbe roadside, 150-420m., 16.05.1992, AO, OUFÉ 7043.

## LINACEAE

### \**Linum flavum* L.

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFÉ 7044, Ir.-Tur. element.

### *L. nodiflorum* L.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., 16.07.1993, AO, OUFÉ 7045, Medit. element.

### *L. strictum* L. var. *strictum*

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFÉ 7046.

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

A2 Bilecik: Gölümbe Dağı, Vezirkaya grassland, 110m., around Vezirkaya gas station, 120m., 06.07.1994, AO, OUFÉ 7047, Ir.-Tur. element, End.

### *L. austriacum* L. subsp. *austriacum*

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 06.07.1994, AO, OUFÉ 7048.

## GERANIACEAE

### *Geranium lucidum* L.

A2 Bilecik: Gölümbe Dağı, Vezirkaya grassland, 110m., 15.05.1994, AO, OUFÉ 7049.

### *G. purpureum* Vill.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, south side, 180-210m., Kocabeyven-Sivri Hills, 350m., 08.05.1994, AO, OUFÉ 7050.

### *G. rotundifolium* L.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, grassland, 90-120m., 23.04.1994, AO, OUFÉ 7051.

### *G. asphodeloides* Burm. subsp. *sintensisii* (Freyn) Davis

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, grassland, 90-120m., 23.04.1994, AO, OUFÉ 7052, Euro-Sib. element, End.

### \**G. cinereum* Cav. subsp. *subcaulescens* (L'Hérit. ex. DC.) Hayek var. *subcaulescens*

A2 Bilecik: Around Vezirkaya gas station, 120m., 10.04.1994, AO, OUFÉ 7053.

### *Erodium malacodites* (L.) L'Hérit.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, south side, 180-210m., 16.05.1992, AO, OUFÉ 7054, Medit. element

### *E. absinthoides* Willd. subsp. *absinthoides*

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, south side, 180-210m., 12.06.1993, AO, OUFÉ 7055, Ir.-Tur. element, End.

### *E. sibthorpiatum* Boiss. subsp. *sibthorpiatum*

A2 Bilecik: Around Vezirkaya gas station, 120m., 15.05.1994, AO, OUFÉ 7056, End.

### *E. cicutarium* (L.) L'Hérit subsp. *cutarium*

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 15.05.1994, AO, OUFÉ 7057.

### *E. acaule* (L.) Becherer & Thell.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., 16.07.1993, AO, OUFÉ 7058, Medit. element.

## RUTACEAE

### *Ruta montana* (L.) L.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., around Vezirkaya gas station, 120m., 08.08.1995, AO, OUFÉ 7059.

### *Haplophyllum thesioides* (Fisch ex DC.) G. Don.

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFÉ 7060.

### \**H. myrtifolium* Boiss.

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., between Kocabeyven and Sivri Hills, 350m., 16.07.1993, AO, OUFÉ 7061, Ir.-Tur. element, End.

## SIMAROUBACEAE

### *Ailanthus altissima* (Miller) Swingle.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., AO, 06.07.1994.

## VITACEAE

### *Vitis vinifera* L.

A2 Bilecik: Gölümbe Dağı, Camalti village, 400m., AO, 08.08.1995.

## RHAMNACEAE

### *Paliurus spina-christi* Miller

A2 Bilecik: Gölümbe-Vezirhan, slopes, 200-400m., 24.04.1994, AO, OUFÉ 7062.

\**Rhamnus oleoides* L. subsp. *graecus* (Boiss. & Reut.) Holmboe

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 24.04.1994, AO, OUFÉ 7063, E. Medit. element.

## ANACARDIACEAE

### *Rhus coriaria* L.

A2 Bilecik: Entry of Gölümbe valley, 120m., 06.07.1994, AO, OUFÉ 7064.

*Pistacia terebinthus* L. subsp. *palaestina* (Boiss.) Engler

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., Gölümbe Valley, rocky area, 120-210m., 16.05.1992, AO, OUFÉ 7065, E. Medit. element.

## FABACEAE / LEGUMINOSAE

### *Genista tinctoria* L.

A2 Bilecik: Gölümbe Dağı, between Kocabeyven and Sivri Hills, 350m., Gölümbe Valley, rocky area, 120-210m., 07.06.1995, AO, OUFÉ 7066, Euro-Sib. element.

### *G. lydia* Boiss. var. *lydia*

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.06.1992, AO, OUFÉ 7067.

- Lotononis genistoides* (Fenzl) Benth.  
A2 Bilecik: Gülümbe Dağı, between Kocabeyven and Sivri Hills, 350m., Gülümbe Valley, rocky area, 120-210m., 07.06.1995, AO, OUFE 7068, Ir.-Tur. element.
- Argyrolobium bieberstenii* Ball  
A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., between Kocabeyven and Sivri Hills, 350m., 08.05.1994, AO, OUFE 7069.
- Colutea cilicica* Boiss. & Bal.  
A2 Bilecik: Gülümbe Dağı, between Kocabeyven and Sivri Hills, 350m., 08.05.1994, AO, OUFE 7070.
- Astragalus cicer* L.  
A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 07.06.1995, AO, OUFE 7071.
- A. glycopyllos* L. subsp. *glycopyllos*  
A2 Bilecik: Gülümbe Dağı, Tokmakkaya Hill, 240-270m., 07.06.1995, AO, OUFE 7075, Euro-Sib. element.
- A. macrocephalus* Willd. subsp. *finitumus* (Bunge) Chamberlain  
A2 Bilecik: Gülümbe Dağı, Tokmakkaya Hill, 240-270m., 16.07.1993, AO, OUFE 7072, Ir.-Tur. element.
- A. elongatus* Willd. subsp. *elongatus*  
A2 Bilecik: Gülümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFE 7073, Ir.-Tur. element, End.
- A. vulnerariae* DC.  
A2 Bilecik: Gülümbe Dağı, Vezirkaya Hill, north side, 200-240m., 02.06.1993, AO, OUFE 7074, End.
- \**Glycyrrhiza glabra* L. var. *glandulifera*  
A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 07.06.1995, AO, OUFE 7076.
- Psorelea bituminosa* L.  
A2 Bilecik: Gülümbe Dağı, Tangir Stream grassland, 90-120m., 12.06.1994, AO, OUFE 7077, Medit. element.
- Vicia cracca* L. subsp. *stenophylla* Vel.  
A2 Bilecik: Gülümbe Dağı, Vezirkaya grassland, 110m., 15.05.1994, AO, OUFE 7078.
- V. narbonensis* L. var. *narbonensis*  
A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 07.06.1995, AO, OUFE 7079.
- Lathyrus cicera* L.  
A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.06.1992, AO, OUFE 7080.
- L. aphaca* L. var. *aphaca*  
A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 07.06.1995, AO, OUFE 7081.
- Pisum sativum* L. subsp. *elatius* var. *elatius*  
A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.06.1992, AO, OUFE 7082, Medit. element.
- Ononis pusilla* L.  
A2 Bilecik: Gülümbe Dağı, Buklucek-Sivri Hill, 240-600m., 07.06.1995, AO, OUFE 7083, Medit. element.
- Trifolium repens* L. var. *repens*  
A2 Bilecik: Vezirhan-Gülümbe Road, slopes, 150-420m., 12.06.1994, AO, OUFE 7084.
- T. campestre* Schreb.  
A2 Bilecik: Gülümbe Dağı, Buklucek-Sivri Hill, 240-600m., 07.06.1995, AO, OUFE 7085.
- T. stellatum* L. var. *stellatum*  
A2 Bilecik: Gülümbe Dağı, Buklucek-Sivri Hill, 240-600m., 07.06.1995, AO, OUFE 7086.
- T. lucanicum* Gasp.  
A2 Bilecik: Gülümbe Dağı, Igdecidede Hill, 380-470m., 07.06.1995 AO, OUFE 7087, Medit. element.
- T. hirtum* All.  
A2 Bilecik: Gülümbe, around Camkoru village, 460m., 07.06.1995, AO, OUFE 7088, Medit. element.
- T. arvense* L. var. *arvense*  
A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 07.06.1995, AO, OUFE 7089.
- T. angustifolium* L. var. *angustifolium*  
A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 07.06.1995, AO, OUFE 7090.
- Melilotus officinalis* (L.) Desr.  
A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 10.04.1993, AO, OUFE 7091.
- M. alba* Desr.  
A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., 06.07.1994, AO, OUFE 7092.
- \**Trigonella lycica* Hub.-Mor.  
A2 Bilecik: Gülümbe Dağı, Vezirkaya grassland, 110m., 15.05.1994, AO, OUFE 7093, E. Medit. element, End.
- \**Tr. velutina* Boiss.  
A2 Bilecik: Gülümbe Dağı, Kesirlik Hill, 370m., 07.06.1995, AO, OUFE 7094, Ir.-Tur. element.
- Tr. macrorrhyncha* Boiss.  
A2 Bilecik: Gülümbe Dağı, Igdecidede Hill, 380-470m., 07.06.1995, AO, OUFE 7095, E. Medit. element, End.
- \**Medicago radiata* L.  
A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 07.06.1995, AO, OUFE 7096, Ir.-Tur.- element.
- M. lupulina* L.  
A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 07.06.1995, AO, OUFE 7097.
- \**M. sativa* L. subsp. *sativa*  
A2 Bilecik: Entry of Old Istanbul Road, 410-520m., 06.07.1994, AO, OUFE 7098.
- M. minima* (L.) Bart. var. *minima*  
A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 16.05.1992, AO, OUFE 7099.
- M. rigidula* (L.) All. var. *rigidula*  
A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 07.06.1995, AO, OUFE 7100.
- Dorycnium graecum* (L.) Ser.  
A2 Bilecik: Gülümbe Dağı, between Kocabeyven and Sivri Hills, 350m., 17.06.1995, AO, OUFE 7101, Euro-Sib. element.

**D. pentaphyllum** Scop. subsp. **herbaceum** (Vill.) Rouy

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 10.06.1994, AO, OUFÉ 7102.

\***Lotus coniculatus** L. var. **corniculatus**

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, south side, 180-210m., 12.07.1992, AO, OUFÉ 7103.

**Anthyllis vulneraria** L. subsp. **pulchella** (Vis.) Bornm.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 02.06.1993, AO, OUFÉ 7104.

**Coronilla scorpiodes** (L.) Koch.

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 16.05.1992, AO, OUFÉ 7105.

**C. cretica** L.

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 07.06.1995, AO, OUFÉ 7106, E. Medit. element

**C. varia** L. subsp. **varia**

A2 Bilecik: Gölümbe, around Camkoru Village, 460m., 16.05.1992, AO, OUFÉ 7107.

**Scorpiurus muricatus** L. var. **subvillosus** (L.) Fiori & Paol

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 23.06.1992, AO, OUFÉ 7108, Medit. element.

**Hippocrepis unisiliquosa** L. subsp. **unisiliquosa**

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 12.08.1995, AO, OUFÉ 7109.

**Hedysarum varium** Willd.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 16.06.1995, AO, OUFÉ 7110, Ir.-Tur. element.

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

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-

490m., 16.06.1995, AO, OUFÉ 7111, Medit. element.

\***O. sulphurea** Boiss. & Bal. var. **sulphurea**

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 10.06.1994, AO, OUFÉ 7112, End.

\***O. pisidica** Boiss.

A2 Bilecik: Around Vezirkaya gas station, 120m., 23.06.1992, AO, OUFÉ 7113, Ir.-Tur.- element, End.

**O. armena** Boiss. & Huet.

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 10.06.1994, AO, OUFÉ 7114, End.

**O. oxydonta** Boiss.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., 27.06.1993, AO, OUFÉ 7115.

**O. hypargyrea** Boiss.

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 19.06.1994, AO, OUFÉ 7116.

**ROSACEAE**

**Prunus domestica** L.

A2 Bilecik: Camalti Village, 400m., 16.06.1995, AO.

**Amygdalus communis** L.

A2 Bilecik: Around Vezirkaya gas station, 120m., 19.06.1994, AO.

**Rubus sanctus** Schreber

A2 Bilecik: Gölümbe Dağı, Tangir Stream, grassland, 90-120m., 12.06.1994, AO, OUFÉ 7117.

**Potentilla recta** L.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., Gölümbe Dağı, Vezirkaya grassland, 110m., 12.06.1994, AO, OUFÉ 7118.

**P. reptans** L.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 12.06.1994, AO, OUFÉ 7119.

**Fragaria vesca** L.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 19.07.1994, AO, OUFÉ 7120.

**Agrimonia eupatoria** L.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 10.06.1994, AO, OUFÉ 7121.

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

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 14.07.1995, AO, OUFÉ 7122.

**Rosa canina** L.

A2 Bilecik: Around Vezirkaya gas station, 120m., 15.05.1994, AO, OUFÉ 7123.

**Cotoneaster nummularia** Fisch. & Mey.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., 16.07.1993, AO, OUFÉ 7124.

**Crataegus monogyna** Jacq. subsp. **monogyna**

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 02.06.1993, AO, OUFÉ 7125.

**Malus sylvestris** Miller

A2 Bilecik: Around Camalti Village, open areas, 400m., 12.06.1994, AO.

**Pyrus communis** L. subsp. **communis**

A2 Bilecik: Entry of Gölümbe Valley, 120m., 10.04.1993, AO, OUFÉ 7126.

**LYTHRACEAE**

**Lythrum salicaria** L.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., 12.06.1993, AO, OUFÉ 7127, Euro-Sib. element.

**ONAGRACEAE**

**Epilobium parviflorum** Schreber

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 14.07.1995, AO, OUFÉ 7128.

**CUCURBITACEAE**

**Ecballium elaterium** (L.) A. Rich.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 08.08.1995, AO, OUFÉ 7129, Medit. element.

**CRASSULACEAE**

**Sedum acre** L.

A2 Bilecik: Gölümbe Dağı, between Kocabeyven and Sivri Hills, 350m., 19.06.1994, AO, OUFÉ 7130.

**S. album L.**

A2 Bilecik: Entry of Gölümbe Valley, 120m., 06.07.1994, AO, OUFÉ 7131.

**APIACEAE / UMBELLIFERAE****Sanicula europaea L.**

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m, 08.05.1994, AO, OUFÉ 7132, Euro-Sib. element.

**Eryngium campestre L. var. virens** Link.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m, 14.07.1994, AO, OUFÉ 7133.

**\*Chaerophyllum crinitum Boiss.**

A2 Bilecik: Gölümbe Dağı, Vezirhan place, roadside, 110m., 12.07.1994, AO, OUFÉ 7134, Ir.-Tur.element.

**Scandix iberica Bieb.**

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 19.06.1994, AO, OUFÉ 7135.

**S. pecten-veneris L.**

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 08.08.1995, AO, OUFÉ 7136.

**\*Ferula szowitsiana DC.**

A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., 16.07.1993, AO, OUFÉ 7137, Ir.-Tur. element.

**F. communis L. subsp. communis**

A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 16.07.1993, AO, OUFÉ 7138, Medit. element.

**Ferulago sylvatica (Besser) Reichb.**

A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 06.07.1994, AO, OUFÉ 7139, Euro-Sib. element.

**Pastinaca sativa L.**

A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 23.06.1992, AO, OUFÉ 7140.

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

A2 Bilecik: Gölümbe Valley, rocky area, 120-210m., 14.07.1995, AO, OUFÉ 7141, Medit. element.

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

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 14.07.1995, AO, OUFÉ 7142.

**Caucalis platycarpus L.**

A2 Bilecik: Gölümbe Dağı, Tangir Stream, grassland, 90-120m., 12.06.1994, AO, OUFÉ 7143.

**Orlaya daucoides (L.) Greuter**

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 10.04.1994, AO, OUFÉ 7144, Medit. element.

**Daucus carota L.**

A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., 08.06.1992, AO, OUFÉ 7145.

**D. guttatus Sm.**

A2 Bilecik: Around Vezirkaya gas station, 120m., 14.07.1995, AO, OUFÉ 7146.

**\*Artemisia squamata L.**

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 19.06.1994, AO, OUFÉ 7147.

**ARALIACEAE****Hedera helix L.**

A2 Bilecik: Entry of Gölümbe Valley, 120m., 10.04.1993, AO, OUFÉ 7148.

**CORNACEAE**

**Cornus sanguinea L. subsp. australis** (C.A. Meyer) Jav.

A2 Bilecik: Gölümbe Dağı, Tokmakaya Hill, 240-270m., 02.06.1993, AO, OUFÉ 7149, Euro-Sib. element.

**CAPRIFOLIACEAE****Sambucus ebulus L.**

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 23.04.1994, OUFÉ 7150, Euro-Sib. element.

**Lonicera etrusca Santi. var. etrusca**

A2 Bilecik: Around Vezirkaya gas station, 120m., 06.07.1994, AO, OUFÉ 7151, Medit. element.

**VALERIANACEAE****\*Valeriana dioscoridis Sm.**

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.06.1992, AO, OUFÉ 7152, E. Medit. element.

**\*Valerianella tricerata Bornm.**

A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., 10.04.1994, AO, OUFÉ 7153, E. Medit. element.

**V. turgida (Stev.) Betcke**

A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 10.04.1994, AO, OUFÉ 7154.

**V. coronata (L.) DC.**

A2 Bilecik: Gölümbe Dağı, Vezirkaya grassland, 110m., 08.05.1995, AO, OUFÉ 7155.

**DIPSACACEAE****Cephalaria transsylvanica (L.) Schrader**

A2 Bilecik: Entry of Gölümbe Valley, 120m., 19.07.1994, AO, OUFÉ 7156.

**Scabiosa atropurpurea L. subsp. maritima (L.) Arc.**

A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., 12.06.1993, AO, OUFÉ 7157.

**\*S. reuteriana Boiss.**

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 19.06.1994, AO, OUFÉ 7158, E. Medit. element, End.

**S. lycia Stapf**

A2 Bilecik: Vezirhan-Gölümbe Road, slopes, 150-420m., 14.07.1995, AO, OUFÉ 7159, End.

**Pterocephalus plumosus (L.) Coulter**

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, south side, 180-210m., 12.07.1992, AO, OUFÉ 7160.

**ASTERACEAE / COMPOSITAE****Helianthus annuus L.**

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 06.07.1994, AO, OUFÉ 7161.

- Xanthium spinosum** L.  
A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 14.07.1995, AO, OUFE 7162.
- X. strumarium** L. subsp. **strumarium**  
A2 Bilecik: Around Vezirkaya gas station, 120m., 14.07.1995, AO, OUFE 7163.
- Inula ensifolia** L.  
A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 19.07.1994, AO, OUFE 7164, Euro-Sib. element.
- I. heterolepis** Boiss.  
A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., 12.06.1993, AO, OUFE 7165, E.Medit. element.
- Pulicaria dysenterica** (L.) Bernh.  
A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 14.07.1995, AO, OUFE 7166.
- Logfia arvensis** (L.) Holub.  
A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 18.08.1995, AO, OUFE 7167.
- \*Erigeron acer** L. subsp. **acer**  
A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 14.07.1995, AO, OUFE 7168.
- Conyza canadensis** (L.) Cronquist  
A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 14.07.1995, AO, OUFE 7169.
- Bellis perennis** L.  
A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 10.04.1994, AO, OUFE 7170, Euro-Sib. element.
- Senecio vernalis** Waldst. & Kit.  
A2 Bilecik: Around Vezirkaya gas station, 120m., 12.07.1992, AO, OUFE 7171.
- \*S. viscosus** L.  
A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., 16.07.1993, AO, OUFE 7172.
- Eupatorium cannabinum** L.  
A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 08.08.1995, AO, OUFE 7173, Euro-Sib.element.
- \*Anthemis cretica** L. subsp. **anatolica** (Boiss.) Grierson  
A2 Bilecik: Gölümbe Dağı, Tangir Stream, grassland, 90-120m., Gölümbe entry, open areas, 465m., 16.07.1993, AO, OUFE 7174.
- A. tinctoria** L. var. **tinctoria**  
A2 Bilecik: Gölümbe Dağı, Tangir Stream, grassland, 90-120m., entry of Gölümbe valley, 120m., 10.04.1994, AO, OUFE 7175.
- Achillea wilhelmsii** C. Koch  
A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 19.06.1994, AO, OUFE 7176, Ir.-Tur. element.
- \*Onopordum turcicum** Danin  
A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 14.07.1995, AO, OUFE 7177, Ir.-Tur. element.
- O. tauricum** Willd.  
A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., 16.05.1992, AO, OUFE 7178, Euro-Sib. element.
- Cirsium vulgare** (Savi) Ten.  
A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 14.07.1995, AO, OUFE 7179.
- C. arvense** (L.) Scop. subsp. **arvense**  
A2 Bilecik: Entry of Gölümbe Valley, 120m., 10.06.1994, AO, OUFE 7180.
- Picnomon acarna** (L.) Cass.  
A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 14.07.1995, AO, OUFE 7181, Medit. element.
- Carduus nutans** L. subsp. **leiophyllus** (Petr.) Stoj. & Stef.  
A2 Bilecik: Gölümbe entry, open areas, 465m., 12.06.1994, AO, OUFE 7182.
- Jurinea consanguinea** DC.  
A2 Bilecik: Gölümbe Valley, rocky area, 120-210m., 10.04.1994, AO, OUFE 7183.
- J. pontica** Hausskn & Freyn  
A2 Bilecik: Gölümbe entry, open areas, 465m., 12.06.1993, AO, OUFE 7184, Ir.-Tur. element, End.
- Centaurea olympica** C. Koch  
A2 Bilecik: Around Vezirkaya gas station, 120m., 12.07.1992, AO, OUFE 7185.
- C. virgata** Lam.  
A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 06.07.1994, AO, OUFE 7186, Ir-Tur.element.
- C. solstitialis** L. subsp. **solstitialis**  
A2 Bilecik: Gölümbe entry, open areas, 465m., 12.06.1993, AO, OUFE 7187.
- C. iberica** Trev.  
A2 Bilecik: Gölümbe Dağı, Tangir Stream, grassland, 90-120m., 12.06.1994, AO, OUFE 7188.
- C. urvillei** DC. subsp. **urvillei**  
A2 Bilecik: Gölümbe entry, open areas, 465m., 02.06.1993, AO, OUFE 7189, E. Medit. element.
- \*C. carduiformis** DC. subsp. **carduiformis** var. **carduiformis**  
A2 Bilecik: Gölümbe Dağı, between Kocabeyven and Sivri Hills, 350m., 02.06.1993, AO, OUFE 7190.
- C. depressa** Bieb.  
A2 Bilecik: Around Vezirkaya gas station, 120m., 08.08.1995, AO, OUFE 7191.
- Crupina crupinastrum** (Moris) Vis.  
A2 Bilecik: Gölümbe entry, open areas, 465m., 08.05.1994, AO, OUFE 7192.
- Xeranthemum annuum** L.  
A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 12.06.1993, AO, OUFE 7193.
- Echinops ritro** L.  
A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 14.07.1995, AO, OUFE 7194.
- Scolymus hispanicus** L.  
A2 Bilecik: Gölümbe Valley, rocky area, 120-210m., 19.07.1994, AO, OUFE 7195, Medit. element.
- Cichorium intybus** L.  
A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 06.07.1994, AO, OUFE 7196.

**\*Koelpinia linearis** Pallas

A2 Bilecik: Around Vezirkaya gas station, 120m., 16.07.1993, AO, OUFE 7197, Ir.-Tur. element.

**Scorzonera cana** (C.A. Meyer) Hoffm. var. *cana*

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hills, 240-600m., 08.06.1992, AO, OUFE 7198.

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

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFE 7199.

**Leontodon asperrimus** (Willd.) J. Ball

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFE 7200, Ir.-Tur. element.

**Sonchus asper** (L.) Hill. subsp. *glaucescens* (Jordan) Ball

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hills, 240-600m., 14.07.1995, AO, OUFE 7201.

**Hieracium pannosum** Boiss.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 14.07.1995, AO, OUFE 7202, E. Medit. element.

**Pilosella hoppeana** (Schultes) C.H. & F.W. Schultz subsp. *troica* (Zahn) Sell & West

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 10.06.1994, AO, OUFE 7203.

**P. piloselloides** (Vill.) Sojak. subsp. *piloselloides*

A2 Bilecik: Gölümbe Dağı, between Kocabeyven and Sivri Hills, 350m., 23.06.1992, AO, OUFE 7204.

**\*Cicerbita mulgediodes** (Schultz Bip. ex Vis. & Panc.) Beauverd

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 10.06.1994, AO, OUFE 7205.

**Scariola viminea** (L.) F.W. Schmidt

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.08.1995, AO, OUFE 7206.

**Taraxacum serotinum** (Waldst. & Kit.)

Poiret

A2 Bilecik: Gölümbe Dağı, Tangir Stream, grassland, 90-120m., 19.07.1994, AO, OUFE 7207.

**T. officinale** Weber

A2 Bilecik: Entry of Gölümbe Valley, 120m., 23.06.1992, AO, OUFE 7208.

**Chondrilla juncea** L. var. *juncea*

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 06.07.1994, AO, OUFE 7209.

**Crepis reuterana** Boiss. subsp. *reuterana*

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 19.06.1994, AO, OUFE 7210, E. Medit. element.

**C. foedita** L. subsp. *rhoeadifolia* (Bieb.) Celak

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 16.07.1993, AO, OUFE 7211.

**C. sancta** (L.) Babcock

A2 Bilecik: Gölümbe Dağı, Vezirhan place, roadside, 110m., 10.04.1994, AO, OUFE 7212.

**CAMPANULACEAE****Campanula lyrata** Lam. subsp. *lyrata*

A2 Bilecik: Entry of Gölümbe Valley, 120m., 10.04.1994, AO, OUFE 7213, E. Medit. element, End.

**C. rapunculoides** L. subsp. *cordifolia* (C. Koch) Dambold

A2 Bilecik: Entry of Gölümbe Valley, 120m., 08.08.1995, AO, OUFE 7214.

**Asyneuma limonifolium** (L.) Janchen subsp. *limonifolium*

A2 Bilecik: Gölümbe entry, open areas, 465m., 12.06.1994, AO, OUFE 7215.

**Legousia speculum-veneris** (L.) Chaix

A2 Bilecik: Gölümbe Valley, rocky area, 120-210m., 10.04.1994, AO, OUFE 7216, Medit. element, End.

**L. pentagonia** (L.) Thellung

A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., 23.06.1992, AO, OUFE 7217, E. Medit. element.

**ERICACEAE****Arbutus andrachne** L.

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFE 7218.

**PRIMULACEAE****Anagallis arvensis** L. var. *arvensis*

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 08.06.1992, AO, OUFE 7219.

**A. foemina** Miller.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 19.06.1994, AO, OUFE 7220, Medit. element.

**OLEACEAE****Jasminum fruticans** L.

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., north of Tokmakkaya Hill, 250m., 19.06.1994, AO, OUFE 7221, Medit. element.

**Olea europaea** L. var. *europaea*

A2 Bilecik: Gölümbe Dağı, around Tangir Stream, slopes, 130m., 08.08.1995, AO, OUFE 7222.

**Phillyrea latifolia** L.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., Çamaltı\_ village, rocky area, 420m., 08.08.1995, AO, OUFE 7223, Medit. element.

**APOCYNACEAE****Vinca herbacea** Waldst. and Kit.

A2 Bilecik: Entry of Old Istanbul Road, 410-520m., 10.04.1993, AO, OUFE 7224.

**ASCLEPIADACEAE****\*Vincetoxicum tmoleum** Boiss.

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 19.06.1994, AO, OUFE 7225, Ir.-Tur. element.

**CONVOLVULACEAE****Convolvulus cantabrica** L.

A2 Bilecik: Around Vezirkaya gas station, 120m. 23.06.1992, AO, OUFE 7226.



**C. arvensis** L.

A2 Bilecik: Gölümbe Dağı, around Tangir Stream, slopes, 130m., 19.06.1994, AO, OUFÉ 7227.

**BORAGINACEAE**

**Heliotropium europaeum** L.

A2 Bilecik: Gölümbe Dağı, Tangir Stream grassland, 90-120m., 19.07.1994, AO, OUFÉ 7228, Medit. element.

\***Lappula barbata** (Bieb.) Gürke

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 10.04.1993, AO, OUFÉ 7229, Ir.-Tur. element.

**Myosotis ramosissima** Rochel ex Schultes subsp. *ramosissima*

A2 Bilecik: Vezirhan-Gölümbe Road, slopes, 150-420m., entry of Old Istanbul Road, 410-520m., 23.04.1994, AO, OUFÉ 7230.

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

A2 Bilecik: Gölümbe, around Camkoru Village, 460m., 23.04.1994, AO, OUFÉ 7231, Euro-Sib. element.

**M. sicula** Guss

A2 Bilecik: Gölümbe Dağı, Tangir Stream, grassland, 90-120m., 23.04.1994, AO, OUFÉ 7232.

**Cynoglossum creticum** Miller

A2 Bilecik: Gölümbe entry, open areas, 465m., 10.04.1994, AO, OUFÉ 7233.

**Lithospermum purpureocaeruleum** L.

A2 Bilecik: Gölümbe Valley, rocky area, 120-210m., 10.04.1994, AO, OUFÉ 7234, Euro-Sib. element.

**Neatostema apulum** (L.) Johnston

A2 Bilecik: Gölümbe Dağı, Vezirkaya grassland, 110m., 10.04.1993, AO, OUFÉ 7235, Medit. element.

**Echium angustifolium** Miller

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 19.07.1994, AO, OUFÉ 7236, E. Medit. element.

**Onosma tauricum** Pallas ex Willd. var. *tauricum*

A2 Bilecik: Gölümbe Dağı, around Tangir Stream, slopes, 130m., 08.05.1994, AO, OUFÉ 7237.

**O. aucheranum** DC.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, south side, 180-210m., 12.07.1992, AO, OUFÉ 7238, E. Medit. element.

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

A2 Bilecik: Gölümbe Dağı, Vezirkaya grassland, 110m., 12.07.1994, AO, OUFÉ 7239.

**Symphytum orientale** L.

A2 Bilecik: Gölümbe Dağı, north of Tokmakkaya Hill, 250m., 10.04.1994, AO, OUFÉ 7240, Euro-Sib. element.

\***Brunnera orientalis** (Schenk) Johnston

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., Çamalti village, rocky area, 420m., 08.06.1992, AO, OUFÉ 7241.

**Anchusa leptophylla** Roemer & Schultes subsp. *leptophylla*

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., Çamalti Village, rocky area, 420m., 06.07.1994, AO, OUFÉ 7242.

**A. azurea** Miller var. *azurea*

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 06.07.1994, AO, OUFÉ 7243.

**SCROPHULARIACEAE**

**Verbascum orientale** (L.) All.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 02.06.1993, AO, OUFÉ 7244, E. Medit. element.

**V. cheiranthifolium** Boiss. var. *asperulum* (Boiss.) Murb.

A2 Bilecik: Gölümbe Dağı, Vezirkaya grassland, 110m., 12.06.1994, AO, OUFÉ 7245, End.

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

A2 Bilecik: Entry of Gölümbe Valley, 120m., 04.07.1995, AO, OUFÉ 7246, Ir.-Tur. element.

\***Digitalis cariensis** Boiss. ex Jaub. & Spach

A2 Bilecik: Entry of Gölümbe Valley, 120m., 06.07.1994, AO, OUFÉ 7247, E. Medit. element, End.

**D. lamarckii** Ivan.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 14.07.1995, AO, OUFÉ 7248, Ir.-Tur. element, End.

**Veronica persica** Poiret.

A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 10.04.1994, AO, OUFÉ 7249.

**V. anagallis-aquatica** L.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 08.08.1995, AO, OUFÉ 7250.

**V. pectinata** L. var. *pectinata*

A2 Bilecik: Gölümbe Dağı, Kesirlik Hill, 370m., 08.06.1992, AO, OUFÉ 7251.

**V. multifida** L.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.06.1992, AO, OUFÉ 7252, Ir.-Tur. element, End.

**OROBANCHACEAE**

**Orobanche minor** Sm.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 14.07.1995, AO, OUFÉ 7253.

**GLOBULARIACEAE**

**Globularia trichosantha** Fisch. & Mey.

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 02.06.1993, AO, OUFÉ 7254.

**LAMIACEAE / LABIATAE**

**Ajuga chamaepitys** (L.) Schreber subsp. *chia* (Schreber) Arcangeli var. *chia*

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 08.06.1992, AO, OUFÉ 7255.

**Teucrium chamaedrys** L. subsp. *chamaedrys*

A2 Bilecik: Gülümbe Dağı, Igdecidede Hill, 380-470m., 02.06.1994, AO, OUFE 7256, Euro-Sib. element.

**T. polium** L.

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 16.07.1993, AO, OUFE 7257.

**\*Scutellaria salviifolia** Benth

A2 Bilecik: Gülümbe Dağı, around Tangir Stream, slopes, 130m., 16.07.1993, AO, OUFE 7258, End.

**S. orientalis** L. subsp. *alpina* (Boiss.) O. Schwarz var. *alpina*

A2 Bilecik: Entry of Old Istanbul Road, 410-520m., 12.08.1993, AO, OUFE 7259.

**\*Lamium carianse** R. Mill

A2 Bilecik: Gülümbe Dağı, north of Tokmakkaya Hill, 250m., 10.04.1994, AO, OUFE 7260, E. Medit. element.

**L. garganicum** L. subsp. *reniforme* (Montbret & Aucher ex Benth) R. Mill

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 10.06.1994, AO, OUFE 7261.

**L. amplexicaule** L.

A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 10.04.1994, AO, OUFE 7262, Euro-Sib. element.

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

A2 Bilecik: Çamalti Village, rocky area, 420m., 10.04.1993, AO, OUFE 7263, Euro-Sib. element.

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

A2 Bilecik: Gülümbe Dağı, Vezirkaya grassland, 110m., 19.07.1994, AO, OUFE 7264, Ir.-Tur. element, End.

**\*Marrubium parviflorum** Fisch & Mey. subsp. *oligodon* (Boiss.) SeybOld

A2 Bilecik: Around Vezirkaya gas station, 120m., 02.06.1993, AO, OUFE 7265.

**\*M. heterodon** (Benth) Boiss. & Bal.

A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 08.08.1995, AO, OUFE 7266, E. Medit. element, End.

**M. peregrinum** L.

A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 12.06.1994, AO, OUFE 7267.

**Sideritis montana** L. subsp. *montana*

A2 Bilecik: Gülümbe Dağı, Kesirlik Hill, 370m., 08.06.1992, AO, OUFE 7268, Medit. element.

**S. germanicopolitana** Bornm.

A2 Bilecik: Entry of Gülümbe Valley, 120m., 14.07.1995, AO, OUFE 7269, End.

**Stachys byzantina** C. Koch

A2 Bilecik: Gülümbe Dağı, Vezirkaya Hill, north side, 200-240m., 12.06.1993, AO, OUFE 7270, Euro-Sib. element.

**S. annua** (L.) L. subsp. *annua* var. *lycaonica* Bhattacharjee

A2 Bilecik: Gülümbe Dağı, Kesirlik Hill, 370m., 12.06.1993, AO, OUFE 7271, Ir.-Tur. element.

**Melissa officinalis** L. subsp. *officinalis*

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., 19.07.1994, AO, OUFE 7272.

**Nepeta italica** L.

A2 Bilecik: Gülümbe Valley, rocky area, 120-210m., 07.06.1995, AO, OUFE 7273.

**Prunella vulgaris** L.

A2 Bilecik: Entry of Old Istanbul Road, 410-520m., 02.06.1993, AO, OUFE 7274, Euro-Sib. element.

**Calamintha sylvatica** Bromf. subsp. *ascendens* (Jordan) P. W. Ball

A2 Bilecik: Entry of Gülümbe Valley, 120m., 08.08.1995, AO, OUFE 7275.

**Clinopodium vulgare** L. subsp. *arundanum* (Boiss.) Nyman

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 14.07.1995, AO, OUFE 7276.

**Acinos rotundifolius** Pers.

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 08.05.1994, AO, OUFE 7277.

**Micromeria myrtifolia** Boiss. & Hohen.

A2 Bilecik: Gülümbe Dağı, Igdecidede Hill, 380-470m., 08.05.1994, AO, OUFE 7278, E. Medit. element.

**\*Thymus leucostomus** Hausskn. & Velen. var. *leucostomus*

A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.08.1995, AO, OUFE.7279, Ir.-Tur. element, End.

**T. longicaulis** C. Presl. subsp. *longicaulis* var. *subisophyllus* (Borb) Jalas

A2 Bilecik: Entry of Old Istanbul Road, 410-520m., 08.06.1992, AO, OUFE 7280.

**Thymbra spicata** L. var. *spicata*

A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 10.06.1994, AO, OUFE 7281, E. Medit. element.

**Mentha pulegium** L.

A2 Bilecik: Gülümbe Valley, rocky area, 120-210m., 08.08.1995, AO, OUFE 7282.

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

A2 Bilecik: Entry of Gülümbe Valley, 120m., 12.06.1994, AO, OUFE 7283.

**Ziziphora capitata** L.

A2 Bilecik: Gülümbe Dağı, Igdecidede Hill, 380-470m., 12.06.1994, AO, OUFE 7284, Ir.-Tur. element

**\*Z. tenuior** L.

A2 Bilecik: Gülümbe Dağı, Buklucek-Sivri Hills, 240-600m., 02.06.1993, AO, OUFE 7285, Ir.-Tur. element.

**Salvia tomentosa** Miller

A2 Bilecik: Gülümbe Dağı, Kesirlik Hill, 370m., 12.07.1992, AO, OUFE 7286, Medit. element.

**\*S. cadmica** Boiss.

A2 Bilecik: Gülümbe Dağı, between Kocabeyven and Sivri Hills, 350m., 16.07.1993, AO, OUFE 7287, End.

**S. viridis** L.

A2 Bilecik: Gölümbe Dağı, Kesirlik Hill, 370m., 16.05.1992, AO, OUFÉ 7288, Medit. element.

\***S. eriophora** Boiss. & Kotschy

A2 Bilecik: Around Vezirkaya gas station, 120m., 16.05.1992, AO, OUFÉ 7289, Ir.-Tur. element, End.

**S. sclarea** L.

A2 Bilecik: Gölümbe Dağı, around Tangir Stream, slopes, 130m., 12.06.1994, AO, OUFÉ 7290.

\***S. frigida** Boiss.

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 12.08.1995, AO, OUFÉ 7291, Ir.-Tur. element.

**S. virgata** Jacq.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, north side, 200-240m., 16.07.1993, AO, OUFÉ 7292, Ir.-Tur. element.

**S. napifolia** Jacq.

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 07.06.1995, AO, OUFÉ 7293, Medit. element.

**PLUMBAGINACEAE**

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

A2 Bilecik: Gölümbe Dağı, Kesirlik Hill, 370m., 11.02.1995, AO, OUFÉ 7295, Ir.-Tur. element.

**PLANTAGINACEAE**

**Plantago lanceolata** L.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 02.06.1993, AO, OUFÉ 7296.

**THYMELAEACEAE**

**Daphne sericea** Vahl

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 02.06.1993, AO, OUFÉ 7297, E. Medit. element.

**ELAEAGNACEAE**

**Elaeagnus angustifolia** L.

A2 Bilecik: Çamalti Village, rocky area, 420m., 12.06.1994, AO.

**SANTALACEAE**

**Osyris alba** L.

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFÉ 7298, Medit. element.

**LORANTHACEAE**

\***Viscum album** L. subsp. **album**

A2 Bilecik: Gölümbe Dağı, Tangir Stream, grassland, 90-120m., 16.07.1993, AO.

\***V. album** L. subsp. **austriacum** (Wiesb.) Vollman

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 12.07.1992, AO.

**EUPHORBIACEAE**

\***Euphorbia apios** L.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream 90m., 10.04.1993, AO, OUFÉ 7299, E. Medit. element.

**E. cardiophylla** Boiss. & Heldr.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 08.06.1992, AO, OUFÉ 7300, End.

**E. stricta** L.

A2 Bilecik: Gölümbe Dağı, around Tangir Stream, slopes, 130m., 16.05.1992, AO, OUFÉ 7301, Euro-Sib. element.

**E. helioscopia** L.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 18.08.1995, AO, OUFÉ 7302.

**E. peplus** L. var. **peplus**

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1994, AO, OUFÉ 7303.

**E. herniariifolia** Willd. var. **herniariifolia**

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 19.06.1994, AO, OUFÉ 7304.

**E. macroclada** Boiss.

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hill, 240-600m., 08.08.1995, AO, OUFÉ 7305, Ir.-Tur. element.

**URTICACEAE**

**Urtica dioica** L.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 08.06.1992, AO, OUFÉ 7306, Euro-Sib. element.

**MORACEAE**

**Morus alba** L.

A2 Bilecik: Gölümbe Dağı, Vezirkaya grassland, 110m., 24.04.1994, AO.

**M. rubra** L.

A2 Bilecik: Camalti village, 400m., 24.04.1994, AO.

**Ficus carica** L. subsp. **carica**

A2 Bilecik: Entry of Gölümbe Valley, 120m., 24.04.1994, AO, OUFÉ 7307.

**ULMACEAE**

**Ulmus glabra** Hudson

A2 Bilecik: Entry of Gölümbe Valley, 120m., 24.04.1994, AO, Euro-Sib. element.

**Celtis australis** L.

A2 Bilecik: Entry of Gölümbe Valley, 120m., 12.06.1994, AO, OUFÉ 7308, Medit. element.

**JUGLANDACEAE**

**Juglans regia** L.

A2 Bilecik: Gölümbe Dağı, Camalti Village, 400m., 24.04.1994, AO.

**PLATANACEAE**

**Platanus orientalis** L.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 12.06.1994, AO, OUFÉ 7309.

**FAGACEAE**

**Quercus pubescens** Willd.

A2 Bilecik: Vezirhan-Gölümbe Road, slopes, 150-420m., Gölümbe entry, open areas, 465m., Çamalti Village, rocky area, 420m., 24.04.1994, AO, OUFÉ 7310.

**Q. coccifera** L.

A2 Bilecik: Gölümbe Dağı, north of Tokmakkaya Hill, 250m., 16.07.1993, AO, OUFÉ 7311.

**SALICACEAE**

*Salix alba* L.

A2 Bilecik: Gülümbe Dağı, Tangir Stream, grassland, 90-120m., 24.04.1994, AO, Euro-Sib. element.

*Populus alba* L.

A2 Bilecik: Entry of Gülümbe Valley, 120m., 24.04.1994, AO, Euro-Sib. element.

*P. usbekistanica* Kom.

A2 Bilecik: Entry of Gülümbe Valley, 120m., 24.04.1994, AO

**RUBIACEAE**

*Asperula pestalozzae* Boiss.

A2 Bilecik: Gülümbe Dağı, Kesirlik Hill, 370m., 12.06.1993, AO, OUFÉ 7312, Euro-Sib. element, End.

*A. tenella* Heuffel ex Degen

A2 Bilecik: Gülümbe Dağı, Kesirlik Hill, 370m., 12.07.1992, AO, OUFÉ 7313.

*A. arvensis* L.

A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 14.07.1995, AO, OUFÉ 7314, Medit. element.

*Galium palustre* L.

A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.06.1992, AO, OUFÉ 7315, Euro-Sib. element.

*G. verum* L. subsp. *verum*

A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 12.07.1992, AO, OUFÉ 7316, Euro-Sib. element.

\**G. verum* L. subsp. *glabrescens* Ehrend.

A2 Bilecik: Gülümbe Dağı, Vezirkaya Hill, north side, 200-240m., 12.06.1993, AO, OUFÉ 7317, Ir.-Tur. element.

*G. paschale* Forsskal

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., 08.08.1995, AO, OUFÉ 7318, E. Medit. element.

*Cruciata taurica* (Pallas ex Willd.) Ehrend

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 02.06.1993, AO, OUFÉ 7319, Ir.-Tur. element.

Subclassis: MONOCOTYLEDONES

**ARACEAE**

*Dracunculus vulgaris* Schott

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., 10.04.1994, AO, OUFÉ 7320, E. Medit. element.

**LILIACEAE**

*Ruscus aculeatus* L. var. *aculeatus*

A2 Bilecik: Gülümbe Dağı, north of Tokmakkaya Hill, 250m., 10.04.1994, AO., OUFÉ 7321.

*R. hypoglossum* L.

A2 Bilecik: Gülümbe Dağı, Tangir Stream grassland, 90-120m., Gülümbe valley, rocky areas, 120-210m., 12.06.1994, AO, OUFÉ 7322, Euro-Sib. element.

*Asparagus aphyllus* L. subsp. *orientalis* (Baker) P.H. Davis

A2 Bilecik: Gülümbe Dağı, Igdecidede Hill, 380-470m., 16.07.1993, AO, OUFÉ 7323, E. Medit. element.

*A. tenuifolius* Lam.

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., 12.06.1994, AO, OUFÉ 7324, Euro-Sib. element.

*Allium cepa* L.

A2 Bilecik: Gülümbe Dağı, along Tangir Stream, 90m., 19.07.1994, AO, OUFÉ 7325.

*A. paniculatum* L. subsp. *paniculatum*

A2 Bilecik: Entry of Gülümbe Valley, 120m., 12.06.1994, AO, OUFÉ 7326, Medit. element.

*A. sativum* L.

A2 Bilecik: Gülümbe Dağı, Sivri Hill 240-320m., 08.08.1995, AO, OUFÉ 7328.

\**A. orientale* Boiss.

A2 Bilecik: Gülümbe Dağı, Tokmakkaya Hill, 240-270m., 14.07.1995, AO, OUFÉ 7327, E. Medit. element.

*Ornithogalum comosum* L.

A2 Bilecik: Gülümbe Dağı, Igdecidede Hill, 380-470m., 12.06.1994, AO, OUFÉ 7329.

*Muscari comosum* (L.) Miller

A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.06.1992, AO, OUFÉ 7330, Medit. element.

*M. neglectum* Guss.

A2 Bilecik: Gülümbe Dağı, around Tangir Stream, slopes, 130m., 10.04.1993, AO, OUFÉ 7331.

\**Tulipa agenensis* DC.

A2 Bilecik: Gülümbe Dağı, Kesirlik Hill, 370m., 19.06.1994, AO, OUFÉ 7332, Ir.-Tur. element.

\**Gagea granatellii* (Parl.) Parl.

A2 Bilecik: Gülümbe Dağı, north of Tokmakkaya Hill, 250m., 11.02.1995, AO, OUFÉ 7333, Medit. element.

**IRIDACEAE**

\**Iris attica* Boiss. & Heldr.

A2 Bilecik: Gülümbe-Vezirhan roadside, 220m., 10.04.1993, AO, OUFÉ 7334, E. Medit. element.

*Crocus biflorus* Miller subsp. *punctatus* Mathew

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 11.02.1995, AO, OUFÉ 7335, E. Medit. element, End.

*C. olivieri* Gay subsp. *olivieri*

A2 Bilecik: Çamalti Village, rocky area, 420m., 11.02.1995, AO, OUFÉ 7336.

*Gladiolus atroviolaceus* Boiss.

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 02.06.1993, AO, OUFÉ 7337, Ir.-Tur. element.

**ORCHIDACEAE**

*Cephalanthera epipactoides* Fisch. & Mey.

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 24.04.1994, AO, OUFÉ 7338, E. Medit. element.

*C. rubra* (L.) L. C.M. Richard

A2 Bilecik: Gülümbe Dağı, Vezirkaya Hill, slopes, 190-240m., 12.07.1992, AO, OUFÉ 7339.

\**Epipactis persica* ([ Hausskn. ex] Soo)  
Nannfeldt

A2 Bilecik: Gölümbe Dağı, north of Tokmakkaya Hill, 250m., 08.08.1995, AO, OUFÉ 7340.

*Dactylorhiza romana* (Seb).Soo'subsp. *romana*

A2 Bilecik: Gölümbe Dağı, Buklucek-Sivri Hills, 240-600m., 12.06.1994, AO, OUFÉ 7341, Medit. element.

#### DIOSCOREACEAE

*Tamus communis* L. subsp. *cretica* (L.) Kit Tan

A2 Bilecik: Gölümbe Dağı, Tangir Stream, grassland, 90-120m., 12.06.1994, AO, OUFÉ 7342.

#### JUNCACEAE

*Juncus bufonius* L.

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 12.06.1994, AO, OUFÉ 7343.

*J. inflexus* L.

A2 Bilecik: Gölümbe Dağı, Tangir Stream sides, 90m., 12.06.1994, AO, OUFÉ 7344.

#### CYPERACEAE

*Carex pendula* Hudson

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 10.04.1994, AO, OUFÉ 7345, Euro-Sib. element.

*C. halleriana* Asso

A2 Bilecik: Gölümbe Dağı, along Tangir Stream, 90m., 15.05.1994, AO, OUFÉ 7346, Medit. element.

#### POACEAE / GRAMINEAE

*Trachynia distachya* (L.) Link

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 10.06.1994, AO, OUFÉ 7347, Medit. element.

\**Aegilops cylindrica* Host

A2 Bilecik: Gölümbe Dağı, Between Tokmakkaya and Vezirkaya grassland, 130m., Gölümbe Valley, rocky areas, 100-120m., 19.06.1994, AO, OUFÉ 7348, Ir.-Tur. element.

*Ae. umbellulata* Zhukovsky subsp. *umbellulata*

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 08.08.1995, AO, OUFÉ 7349, Ir.-Tur. element.

*Ae. geniculata* Roth

A2 Bilecik: Gölümbe-Vezirhan, slopes, 200-400m., entry of Gölümbe Valley, 120m., 08.08.1995, AO, OUFÉ 7350, Medit. element.

*Hordeum bulbosum* L.

A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 08.05.1994, AO, OUFÉ 7351.

*Taeniatherum caput-medusae* (L.) Nevski subsp. *asper* (Simonkai) Melderis

A2 Bilecik: Entry of Old Istanbul Road, 410-520m., 19.06.1994, AO, OUFÉ 7352.

*Bromus japonicus* Thunb. subsp. *japonicus*

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 10.06.1994, AO, OUFÉ 7353.

*B. tectorum* L.

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 02.06.1993, AO, OUFÉ 7354.

*B. sterilis* L.

A2 Bilecik: Vezirkaya Hill, slopes, 190-240m., 12.07.1992, AO, OUFÉ 7355.

*Avena barbata* Pott ex Link subsp. *barbata*

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 10.04.1994, AO, OUFÉ 7356, Medit. element.

*Arrhenatherum elatius* (L.) P. Beauv. subsp. *elatius*

A2 Bilecik: Gölümbe Dağı, Vezirhan, roadside, 110m., 08.05.1994, AO, OUFÉ 7357, Euro-Sib. element.

*Koeleria nitidula* Velen.

A2 Bilecik: Gölümbe Dağı, Kesirlik Hill, 370m., 14.07.1995, AO, OUFÉ 7358.

*K. cristata* (L.) Pers

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 19.06.1994, AO, OUFÉ 7359.

*Phleum montanum* C. Koch subsp. *montanum*

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 23.04.1994, AO, OUFÉ 7360.

*P. exaratum* Hochst. ex Griseb. subsp. *exaratum*

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 19.06.1994, AO, OUFÉ 7361.

*Festuca callieri* (Heckel ex St.-Yves) F. Markgraf apud Hayek subsp. *callieri*

A2 Bilecik: Gölümbe Dağı, Tokmakkaya Hill, 240-270m., 12.06.1993, AO, OUFÉ 7362.

*Lolium perenne* L.

A2 Bilecik: Gölümbe-Vezirhan roadside, 220m., 14.07.1995, AO, OUFÉ 7363, Euro-Sib. element

*L. temulentum* L. var. *temulentum*

A2 Bilecik: Gölümbe Dağı, Igdecidede Hill, 380-470m., 08.08.1995, AO, OUFÉ 7364.

*Poa trivialis* L.

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 19.06.1994, AO, OUFÉ 7365.

*P. pratensis* L.

A2 Bilecik: Çamalti Village, rocky area, 420m., 19.06.1994, AO, OUFÉ 7366.

*P. bulbosa* L.

A2 Bilecik: Gölümbe Dağı, Vezirkaya Hill, south side, 180-210m., 08.05.1994, AO, OUFÉ 7367.

*Dactylis glomerata* L. Subsp. *glomerata*

A2 Bilecik: Gölümbe-Vezirhan, slopes, 200-400m., around Vezirkaya gas station, 120m., 08.05.1995, AO, OUFÉ 7368, Euro-Sib. element.

*Briza media* L.

A2 Bilecik: Gölümbe Dağı, Old Istanbul Road, slopes, 300-400m., 19.06.1994, AO, OUFÉ 7369.

*Melica ciliata* L. subsp. *ciliata*

A2 Bilecik: Gölümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 19.06.1994, AO, OUFÉ 7370.

**Stipa bromoides** (L.) Dörfler

A2 Bilecik: Gülümbe Valley, rocky area, 120-210m., 08.08.1995, AO, OUFE 7371, Medit. element.

\***S. lessingiana** Trin. & Rupr.

A2 Bilecik: Gülümbe Dağı, Tokmakkaya Hill, 240-270m., 23.04.1994, AO, OUFE 7372.

**Piptatherum coerulescens** (Desf.) P. Beauv.

A2 Bilecik: Gülümbe Dağı, Vezirkaya grassland, 110m., 23.04.1994, AO, OUFE 7373.

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

A2 Bilecik: Gülümbe Dağı, Vezirkaya Hill, south side, 180-210m., around Camkoru village, 460m., 07.06.1995, AO, OUFE 7374.

**Setaria viridis** (L.) P. Beauv.

A2 Bilecik: Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.08.1995, AO, OUFE 7375.

**S. verticillata** (L.) P. Beauv. var. **verticillata**

A2 Bilecik:Gülümbe Dağı, Lalelik Hill, around the marble mine, 250-490m., 08.08.1995, AO, OUFE 7376.

**Imperata cylindrica** (L.) Raeuschel var. **cylindrica**

A2 Bilecik: Çamalti Village, rocky area, 420m., 19.06.1994, AO, OUFE 7377.

**Sorghum halepense** (L.) Pers. var. **halepense**

A2 Bilecik: Around Vezirkaya gas station, 120m.24.04.1994, AO, OUFE 7378.

**Chrysopogon gryllus** (L.) Trin subsp. **gryllus**

A2 Bilecik:Gülümbe Dağı, Igdecidede Hill, 380-470m., 14.07.1995, AO, OUFE 7379.

**Bothriochloa ischaemum** (L.) Keng

A2 Bilecik: Gülümbe Dağı, Old Istanbul Road, slopes, 300-400m., 08.08.1995, AO, OUFE 7380.

**Zea mays** L.

A2 Bilecik: Gülümbe Dağı, Old Istanbul roadside, 340m., 19.07.1994, AO.