

1-1-2004

Flora of the Karagöl-Sahara National Park (Artvin) and Its Environs

ÖZGÜR EMİNAĞAOĞLU

RAHİM ANŞİN

Follow this and additional works at: <https://journals.tubitak.gov.tr/botany>



Part of the [Botany Commons](#)

Recommended Citation

EMİNAĞAOĞLU, ÖZGÜR and ANŞİN, RAHİM (2004) "Flora of the Karagöl-Sahara National Park (Artvin) and Its Environs," *Turkish Journal of Botany*. Vol. 28: No. 6, Article 3. Available at: <https://journals.tubitak.gov.tr/botany/vol28/iss6/3>

This Article is brought to you for free and open access by TÜBİTAK Academic Journals. It has been accepted for inclusion in Turkish Journal of Botany by an authorized editor of TÜBİTAK Academic Journals. For more information, please contact academic.publications@tubitak.gov.tr.

Flora of the Karagöl-Sahara National Park (Artvin) and Its Environs

Özgür EMİNAĞAOĞLU

Kafkas University, Artvin Faculty of Forestry, 08000, Artvin - TURKEY
E-mail: eminagaoglu@hotmail.com

Rahim ANŞİN

Karadeniz Technical University, Faculty of Forestry, 61080, Trabzon - TURKEY

Received: 20.10.2003

Accepted: 12.07.2004

Abstract: The vascular flora of the Karagöl-Sahara National Park and its environs (Şavşat, Artvin, Turkey) was assessed between 1997 and 2002. In the area under review, 872 taxa belonging to 364 genera and 91 families were identified. Of the 872 taxa, 21 *Pteridophytes* and 851 *Spermatophytes* were detected. *Spermatophytes* also contained 7 *Gymnospermae* and 844 *Angiospermae* taxa. The richest 3 families are *Compositae* with 90 taxa (10.2%), *Leguminosae* with 77 taxa (8.9%) and *Gramineae* with 60 taxa (7.0%). The richest genus is *Astragalus* L. (21 taxa) followed by *Campanula* L. (15 taxa). The rates of taxa included in certain phytogeographical regions were as follows: 39.4% Euro-Siberian, 10.3% Irano-Turanian, 1.1% Mediterranean, and 50.9% multi-regional or of unknown phytogeographic origin. The endemism ratio is 6.3% (54 taxa). Threat categories were proposed for 103 taxa according to International Union for Conservation of Nature and Natural Resources (IUCN) Red List Categories.

Key Words: Artvin, Flora, Karagöl, Sahara, Şavşat, Turkey, Yalnızçam pass

Karagöl-Sahara Milli Parkı (Artvin) ve Çevresinin Florası

Özet: Karagöl-Sahara Milli Parkı ve çevresinin (Şavşat, Artvin) damarlı bitkiler florası 1997 ve 2002 yılları arasında tespit edilmiştir. Araştırma alanında; 91 familya ve 364 cinse ait toplam 872 takson kaydedilmiştir. Bu taksonların 851'i *Spermatophyta*, 21'i *Pteridophyta* bölümüne ilişkindir. *Spermatophyta* bölümünde, 7 takson *Gymnospermae* ve 844 takson *Angiospermae*'dir. Araştırma alanında en fazla taksona sahip üç familya sırasıyla *Compositae* 90 takson (% 10,2), *Leguminosae* 77 takson (% 8,9) ve *Gramineae* 60 takson (% 7). En zengin cins *Astragalus* L. (21 takson), ikincisi ise *Campanula* L. (15 takson)'dır. Taksonların, fitocoğrafik bölgelere göre dağılımları ise şöyledir: Avrupa-Sibirya % 39,4, İran-Turan % 10,3, Akdeniz % 1,1 ve coğrafi bölgesi bilinmeyenler ve birden fazla bölgede yayılış gösterenler % 50,9'dır. Taksonların 54 adeti (% 6,3) endemiktir. IUCN tehlike kategorilerine göre 103 taksonun tehlike durumu değerlendirilmiştir.

Anahtar Sözcükler: Artvin, Flora, Karagöl, Sahara, Şavşat, Turkey, Yalnızçam geçidi

Introduction

Two parts of Turkey are included in Conservation International's 25 world "biodiversity hotspots". Southern and a small part of northeastern Anatolia are included in the "Mediterranean Basin" and "Caucasus" hotspots, respectively. Turkey is also included in 4 Global 200 Ecoregions, including "Caucasus-Anatolian-Hyrcanian Temperate Forests" (WWF & IUCN, 1994).

The research area under review is located in the Colchic section of the Euro-Siberian floristic area in the Holarctic region (Davis, 1965; Zohary, 1973). It is a transitional zone between the Euro-Siberian and Irano-Turanian phytogeographical regions and is situated in

Artvin province in Turkey within the A9 square, according to Davis's grid system (Davis, 1965).

Several floristic and vegetation studies were carried out in localities close to the research area by Anşin (1979, 1983), Düzenli (1988), Vural (1996) and Eminağaoğlu and Anşin (2003a). According to the Flora of Turkey (Davis, 1965-1985) many Turkish and foreign researchers have visited and collected plant specimens from this area. Albov, Andronakai, Anşin, Bornmüller, Davis, Düzenli, Grossheim, Güner, Handel-Mazetti, Henderson, Koch, Komarov, Krause, Louis, Maleev, Mirov, Radde, Sauer, Stainton, Vural, Vvedensky and Woronow have made collections from around Artvin. Of

these, especially Anşin, Davis, Grossheim, Sauer, Vvedensky and Woronow have made collections from the Şavşat area (Davis, 1965-1985; Mirov, 1967; Davis et al., 1988; Güner et al., 2000).

The region was selected for this study for the following reasons:

- i. It is one of the World's 25 biologically richest and most endangered terrestrial eco-regions (WWF & IUCN, 1994).
- ii. It was identified as one of the World's 200 priority eco-regions by the WWF.
- iii. It is a transitional zone between the Euro-Siberian and Irano-Turanian phytogeographical regions.
- iv. There has been no regular floristic research in the Karagöl-Sahara National Park.

In addition, the Yalnızçam Mountains, including the research area, were designated as one of the 122 Important Plant Areas (IPA) of Turkey (Özhatay et al., 2003).

The goals of this research were to determine the flora of the Karagöl-Sahara National Park, to determine rare and endemic plant species in this park and to evaluate the significance of this area for nature conservation.

The altitude of the area is between 900 and 2700 m. The area includes Ciritdüzü, Cevizli, Veliköy, Pınarlı, Meşeli, Yukarıkoyunlu, Aşağıkoyunlu, Köprülü, Kirazlı, Karaköy, Kocabey and Yavuzköy villages, Kışlas (low mountain pastures) and Yaylas (high mountain pastures). There are many lakes, streams, mountains and hills in the area. The area covers 21,912 ha. The Karagöl-Sahara National Park covers a 3,466 ha area in this watershed (Figure 1).

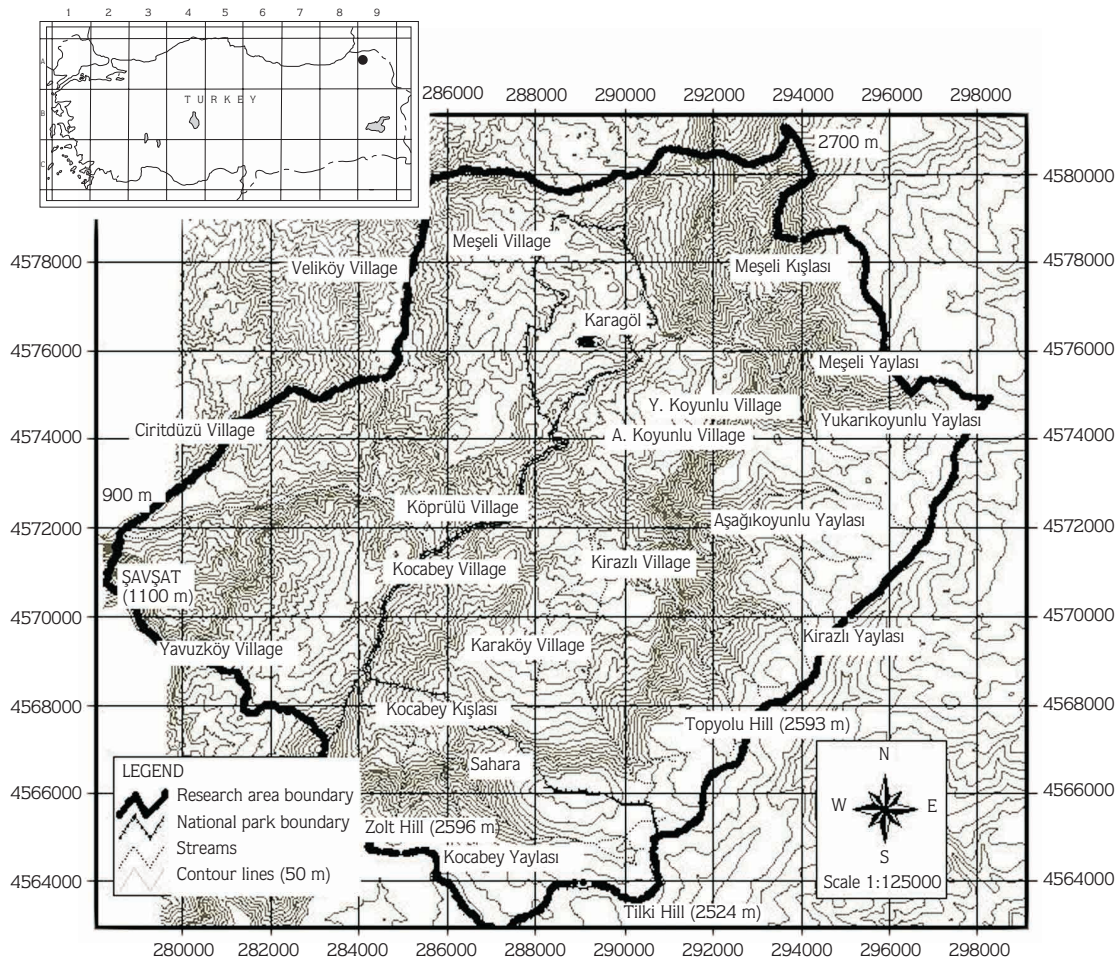


Figure 1. Topographical map of the study area (All coordinates are in UTM).

Meteorological data are only available from 1 station in the area, and were obtained between 1971 and 1996 in Şavşat (DMİGM, 2001). The mean annual temperature is 9.8 °C and precipitation is 737.9 mm. The values of “M” and “m” of the hottest and coldest months were 29.3 °C and –6.0. The coldest month is February with a minimum temperature of –19.9 °C and the hottest month is August with a maximum temperature of 38.1 °C (Table 1). The climatic diagram of the study area (Figure 2) was prepared using Walter’s method (Akman, 1999). The rainfall regime of the study area is “summer-spring-winter-autumn” of semi-terrestrial origin (Akman, 1999).

The geological structure of the research area mostly contains rocks belonging to the Upper Cretaceous period (Köy İşl. Bak. Topraksu Gn. Md., 1984; Köy İşl. Bak. Tarım ve Köy Hiz. Gn. Md., 1990). There are 7 large soil groups in the study area, namely, brown forest soils, noncalcareous brown forest soils, alluvial soils, colluvial soils, red-yellow podzolic soils and high mountain meadow soils. The most widespread of these is brown forest soils (Köy İşl. Bak. Topraksu Gn. Md., 1975).

Materials and Methods

The materials of this study included 2500 plant samples collected from the Karagöl-Sahara National Park and its environs between 1997 and 2002. These specimens were mainly identified using the Flora of Turkey (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000), other floras (Komarov, 1934-1978; Grossheim, 1939-1967; Ketzkhoveli & Gagnidze, 1971-2001) and revisions (Leblebici, 1990; Ayaç, 1997; Doğan 1999). The floristic elements are listed in the Appendix. All taxa in the floristic list are given according

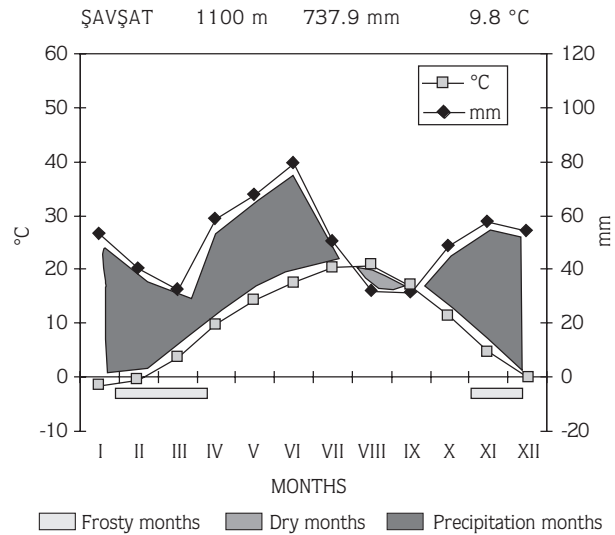


Figure 2. Climatic diagram of Şavşat.

to the order in the Flora of Turkey (Davis, 1965-1985). The taxa that we were unable to collect during this study, but which were cited in the Flora of Turkey, were added to the floristic list. These are *Astragalus imbricatus* (Boriss.) Boriss., *A. woronowii* Bornm. (*Leguminosae*), *Polygonatum verticillatum* (L.) All., *Lilium monodelphum* M.Bieb. var *szovitsianum* (Fisch. & Ave-Lall.) Elwes (*Liliaceae*), *Iris sibirica* L., (*Iridaceae*), *Cephalanthera rubra* (L.) Rich., *Goodyera repens* (L.) R.Br., *Ophrys oestriifera* M.Bieb. subsp. *oestriifera* and *Epipactis helleborine* (L.) Crantz (*Orchidaceae*). In the Appendix every species is represented with the following details: the legitimate name and the authors of the species, the geographical location, habitat of plant, collection date, collector name and number. In addition, endemism, IUCN threat categories and phytogeographical regions are given. One hundred and forty-two taxa were previously

Table 1. The average and extreme climatic values in Şavşat from 1971 to 1996.

Meteorological elements	Months												Annual
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Mean temperature (°C)	-1.7	-0.6	3.8	9.8	14.2	17.5	20.4	20.8	16.9	11.6	4.9	0.0	9.8
Max. mean temperature	3.6	5.1	10.5	17.2	21.8	25.3	28.3	29.3	25.8	19.3	10.6	5.0	16.8
Min. mean temperature	-6.5	-6.0	-2.6	2.8	6.9	10.0	13.3	13.3	9.6	5.0	-0.4	-4.6	3.4
Total rainfall (mm)	52.9	40.0	32.4	58.8	67.5	79.4	50.5	32.0	31.3	48.8	57.6	54.2	737.9

published as a new record (Eminağaoğlu & Anşin, 2003b). The area is completely within the A9 grid square and Artvin province, and so “A9 Artvin: Şavşat” has been omitted from the citations. Threat categories are proposed for endemic and some non-endemic taxa according to IUCN threat categories. Previously designated as data deficient by Ekim et al. (2000) 7 taxa, of which 1 is endemic, were detected in the study area and were re-evaluated for IUCN threat categories. The threat category of these taxa was determined by examining their distribution in the research area (Ekim et al., 2000). The phytogeographical regions of the taxa were evaluated according to Davis (1965-1985, 1988). Author abbreviations of plant names are given according to Brummitt and Powell (1992). The abbreviations used in the text and in the floristic list are as follows: cd: conservation dependent; Cosm: Cosmopolitan; E: East; EN: Endangered; Euro-Sib: Euro-Siberian element; Eux: Euxine element; Hyr-Eux: Hyrcano-Euxine element; Ir-Tur: Irano-Turanian element; lc: least concern; LR: Lower Risk; m: metre; Medit: Mediterranean element; mt: mountain; nt: near threatened; ÖE: Özgür Eminağaoğlu; VU: Vulnerable; KATO: Karadeniz Technical University Herbarium of the Faculty of Forestry in Trabzon. At least 1 specimen of each taxon is deposited in KATO.

Field work was planned by initial field observations, stand map and the topographical maps of the Karagöl-Sahara National Park and its environs with a scale of 1/25,000. The boundaries of contours, streams etc. of every section (scale 1/25,000) were transferred to computer from a digitiser. Each coverage was separately filed on computer. Feature attribute tables related to each coverage were created with ARC/INFO software with geographical data. Topographical maps of the study area on a scale of 1/125,000 were prepared.

Results and Discussion

The identification of 2500 vascular plant specimens collected in this study revealed 872 taxa and 364 genera, belonging to 91 families, present in the area. Most of them belong to *Spermatophyta* (851 taxa) and the remainder belong to *Pteridophyta* (21 taxa). Seven taxa belong to *Gymnospermae* and 844 taxa belong to *Angiospermae*. The dispersion of the plant taxa that were defined in the study area according to the large taxonomical groups is shown in Table 2.

The distribution of taxa in different floristic regions is given in Table 3. Euro-Siberian elements are more common than the others. After the identification of all taxa, the phytogeographical distributions of 439 taxa (50.9%) were determined. An evaluation of the taxa with respect to phytogeographical regions shows the following origins: 340 Euro-Siberian (17 endemics) taxa, 89 Irano-Turanian (20 endemics) taxa and 10 Mediterranean taxa. The remaining 424 taxa (17 endemics) are either cosmopolitan or phytogeographically unknown, and 9 taxa are culture plants. The dominance of the Euro-Siberian elements is not surprising because the study area is in the Euro-Siberian region.

The largest families in terms of number of genera are *Compositae* (43), *Gramineae* (31), *Leguminosae* (21), *Cruciferae* (20), *Labiatae* (20), *Rosaceae* (18), *Boraginaceae* (16), *Umbelliferae* (13), *Ranunculaceae* (12), *Liliaceae* (11), *Scrophulariaceae* (11) and *Caryophyllaceae* (11).

The richest families in terms of number of taxa are *Compositae* (90), *Leguminosae* (77), *Gramineae* (60), *Rosaceae* (56), *Labiatae* (50), *Cruciferae* (45), *Scrophulariaceae* (44), *Caryophyllaceae* (39), *Ranunculaceae* (27), *Boraginaceae* (27) and *Liliaceae* (24).

Table 2. The dispersion of taxa into large taxonomical groups.

	Families	Genera	Species	Subsp.	Var.	Taxa	Endemics
<i>Pteridophyta</i>	9	11	21	1	-	21	-
<i>Spermatophyta</i>	82	353	810	170	85	851	54
<i>Gymnospermae</i>	3	5	6	4	1	7	-
<i>Angiospermae</i>	79	348	804	166	84	844	54
<i>Dicotyledones</i>	69	288	684	142	76	722	51
<i>Monocotyledones</i>	10	60	120	24	8	122	3
Total	91	364	831	171	85	872	54

Table 3. The distribution of taxa in different floristic regions.

	Phytogeographic elements	Number of Taxa		Rate (%)
Euro-Siberian	Euro-Siberian	163	340	39.4
	Euro-Siberian (mt)	3		
	Euxine	113		
	Euxine (mt)	33		
	Hyrcono-Euxine	21		
	Hyrcono-Euxine (mt)	7		
Irano-Turanian	Irano-Turanian	89	89	10.3
Mediterranean	Mediterranean	7	10	1.2
	East Mediterranean	2		
	East Mediterranean (mt)	1		
Cosmopolitan and others		424	424	49.1
	Culture		9	
Total			872	

The richest genera in terms of the number of taxa are *Astragalus* L. (21), *Campanula* L. (15), *Trifolium* L. (14), *Veronica* L. (14), *Geranium* L. (12) *Ranunculus* L. (11) and *Vicia* L. (11).

In the study area, 54 endemic taxa were determined and the ratio of endemism is 6.3%. The endemism ratio of the study area is very low compared with the average endemism ratio (34.5%) of the Flora of Turkey in Volume 11 (Güner et al., 2000). In addition, the endemism rate of the Black Sea region is about 16% (Anşin et al., 2002). The main reason for the low endemism ratio observed in this study is the climatic and environmental similarities between Caucasian flora and the study area. A total of 54 taxa, all endemics, and 49 non-endemics were evaluated according to IUCN risk categories. The results are summarised in Table 4.

The distributions of taxa in the research area according to this and 2 other studies conducted in the area in and their phytogeographical regions are given in

Table 5. Similar results were obtained from other floristic studies in the Eastern Black Sea region of Turkey. The Euro-Siberian elements seem to be dominant in all areas studied while the Irano-Turanian elements come second in all these areas.

A comparison of families in terms of the largest number of species found in this study and in previous studies carried out in nearby regions is given in Table 6. The results of this study are in agreement with the other similar studies (Anşin, 1979; Düzenli, 1988; Ocakverdi, 2001; Eminağaoğlu & Anşin, 2003a). Differences in several families might be due to the results of dissimilarities in climates and habitats.

The research area is botanically very rich, with some 872 taxa of vascular plants occurring in its 21,912 ha. Topographical and climatic conditions produce a mosaic of habitat types in the Karagöl-Sahara National Park. There are 6 different vegetation types in the study area, namely forest, degraded forest, alpine, subalpine, marsh

Table 4. Risk categories of endemic and non-endemic taxa.

	EX	EW	CR	EN	VU	LR (lc)	LR(cd)	LR(nt)	DD	TOTAL
Endemic	-	-	2	-	13	23	5	10	1	54
Non-endemic	-	-	3	5	40	-	-	-	1	49
Total			5	5	53	23	5	10	2	103

Table 5. The phytogeographical spectra of the taxa in this study and other studies (%).

	Number of taxa	Euro.-Sib.	Ir.-Tur.	Medit.	Cosm. and other	Endemism
Present study	863	39.4	10.3	1.2	49.1	6.3
Eminağaoğlu and Anşin (2003)	769	35.6	6.9	2.2	55.3	7.4
Ocakverdi (2001)	577	22.3	22.5	-	55.2	5.4
Düzenli (1988)	550	50.5	7.5	5.0	37.0	-

Table 6. Comparison of the 7 families containing the most species in studies conducted in nearby regions (%).

Families	Present study*	Eminağaoğlu and Anşin (2003)	Ocakverdi (2001)	Düzenli (1988)	Anşin (1979)
<i>Compositae</i>	10.2	9.5	16.8	14.0	8.9
<i>Leguminosae</i>	8.9	8.7	7.3	8.1	8.1
<i>Gramineae</i>	7.0	4.9	7.3	4.9	4.0
<i>Rosaceae</i>	6.5	6.5	5.7	6.0	5.6
<i>Labiatae</i>	5.9	5.5	5.7	4.7	4.7
<i>Cruciferae</i>	5.2	6.4	4.7	3.8	3.6
<i>Scrophulariaceae</i>	5.1	4.2	5.2	3.4	3.9
Others	51.2	54.3	47.3	55.1	61.2

*Not including culture plants and taxa not detected during the present study.

and halophytic, steppe and stream. Forest vegetation is the most widespread in the area.

Today, the biodiversity and ecological integrity of the forests in the area are severely threatened by various factors: aggressive forestry techniques, including clear cutting and replanting with alien species, the spread of alien plant species, overgrazing, recreation, development projects, overharvesting, illegal logging and trade, poaching, construction of roads and dams, etc. The rivers and streams are continuously being damaged. Dams have altered the hydrology of many of the rivers in this region and planned projects are expected to continue to drastically change the environment, in which many native species have evolved. There is great concern about the ability of the many localised endemics to survive these changes. Uncontrolled bulb collection and trading and touristic developments on the highlands threaten natural habitats.

The Caucasus region has been inhabited and affected by human communities for tens of thousands of years, but several pristine areas remain in the hotspot, mostly in

remote, high-altitude areas. More remaining habitat in the Caucasus hotspot needs to be formally protected to ensure the long-term survival of the region's biodiversity. Transborder Protected Areas are not found in the Caucasus (Zazanashvili et al., 1999). A joint initiative from Turkey and Georgia could make a difference. A Transborder Protected Area is to be set up between Turkey and Georgia to cooperate in the ecoregion Conservation Initiative for the Caucasus. Development of joint projects in order to strengthen conservation of Colchic Forests in border areas and trans-boundary projects are important conservation priorities in the region to protect species on the verge of extinction.

Acknowledgements

We would like to thank the Scientific and Technical Research Council of Turkey (TÜBİTAK) for its financial support (TARP-2339), Dr. Fatih Temel for his help with the manuscript preparation and Dr. Selçuk Gümüüş for his help with the map preparation.

References

- Akman Y (1999). *İklim ve Biyoiklim (Biyoiklim Metotları ve Türkiye İklimleri)*. Ankara: Kariyer Matbaacılık.
- Anşin R (1979). *Trabzon-Meryemana Araştırma Ormanı Florası ve Saf Ladin Meşcerelerinde Floristik Araştırmalar (Flore de la forêt de Recherches de Meryemana-Trabzon et Les Recherches Floristiques Dans les Peuplements Purs D'Epicea)*. Trabzon: Karadeniz Gazetecilik ve Matbaacılık.
- Anşin R (1983). Türkiye'nin Flora Bölgeleri ve Bu Bölgelerde Yayılan Asal Vejetasyon Tipleri (The Floristic Regions and the Major Vegetation Types of Turkey). *Karadeniz Teknik Üniversitesi Orman Fakültesi Dergisi* 6: 318-339.
- Anşin R, Özkan ZC & Eminağaoğlu Ö (2002). Doğu Karadeniz Bölgesi Endemik Taksonları (Endemic Taxa of East Black Sea Region). *Artvin: II. Ulusal Karadeniz Ormanlık Kongresi Kitapçığı, Artvin* 2: 565-573.
- Aytaç Z (1997). The revision of the section *Dasphyllum* Bunge of the genus *Astragalus* L. of Turkey. *Turk J Bot* 21: 31-37.
- Brummitt RK & Powell CE (eds) (1992). *Authors of Plant Names*. Kew: Royal Botanic Gardens, Kew.
- Davis PH (ed) (1965-1985). *Flora of Turkey and the East Aegean Islands*. Vols. 1-9. Edinburgh: Edinburgh University Press.
- Davis PH, Mill RR & Tan K (eds) (1988). *Flora of Turkey and the East Aegean Islands*. Vol. 10. Edinburgh: Edinburgh University Press.
- DMİGM (State Meteorology Institute) (2001). *Ortalama Ekstrem ve Yağış Değerleri Bülteni Artvin İli Verileri*. Ankara: Devlet Meteoroloji İşleri Genel Müdürlüğü Yayını.
- Doğan M (1999). A concise taxonomic revision of genus *Alopecurus* L. (*Gramineae*). *Turk J Bot* 23: 245-262.
- Düzenli A (1988). Neuve aux Sintaxons Phytosociologies pour la Végétation de Turquie. *Ecology Mediterranean* 14: 143-148.
- Ekim T, Koyuncu M, Vural M, Duman H, Ayta Z & Adıgüzel N (2000). *Türkiye Bitkileri Kırmızı Kitabı, Eğrelti ve Tohumlu Bitkiler (Red Data Book of Turkish Plants, Pteridophyta and Spermatophyta)*. Ankara: TTKD ve Van 100. Yıl Üniversitesi Yayını.
- Eminağaoğlu Ö & Anşin R (2003a). The Flora of Hatila Valley National Park and its Close Environs (Artvin). *Turk J Bot* 27: 1-27.
- Eminağaoğlu Ö & Anşin R (2003b). A9 (Artvin) Karesi İçin Yeni Floristik Kayıtlar (New floristic records for the A9 Square). *Kafkas Üniversitesi Artvin Orman Fakültesi Dergisi*, 3: 96-108.
- Grossheim AA (1939-1967). *Flora Kavkaza*. Vol. 1-7. Baku and Leningrad.
- Güner A, Özhatay N, Ekim T & Başer KHC (eds.) (2000). *Flora of Turkey and the East Aegean Islands*. Vol. 11. Edinburgh: Edinburgh University Press.
- Ketzkhoveli NN & Gagnidze RI (eds.) (1971-2001). *Georgian Flora (Flora of Georgia)*. Vol. 1-13. Metsniereba, Tbilisi.
- Komarow, VL (ed.) (1934-1978). *Flora of the USSR*, Leningrad. (English translation by IPST, Vol. 1-24, Jerusalem: Israel).
- Köy İşl. Bak. Tarım ve Köy Hiz. Gn. Md. (Ministry of Rural Affairs) (1990). *Artvin İli Arazi Varlığı*. Ankara: Tarım ve Köy Hizmetleri Genel Müdürlüğü Yayını.
- Köy İşl. Bak. Topraksu Gn. Md. (1975). *Artvin İli Toprak Kaynağı Envanter Raporu*. Ankara: Topraksu Genel Müdürlüğü Yayını.
- Köy İşl. Bak. Topraksu Gn. Md. (1984). *Çoruh Havzası Toprakları*. Ankara: Topraksu Genel Müdürlüğü Yayını.
- Leblebici E (1990). The Genus *Polygonum* L. in Turkey. *DOĞA Tr J of Bot* 14: 203-214.
- Mirov NT (1967). The Genus *Pinus*. New York: The Ronald Press Company.
- Ocakverdi H (2001). The Flora of the Mount Kısır (Kars and Ardahan) and Nearest Environs. *Turk J Bot*, 25: 311-334.
- Özhatay N, Byfield A & Atay S (2003). Türkiye'nin Önemli Bitki Alanları, İstanbul: WWF Türkiye.
- Vural M (1996). Rize'nin Yüksek Dağ Vejetasyonu. *Turk J Bot* 20: 83-102.
- WWF & IUCN (1994). *Centres of Plant Diversity. A Guide and Strategy for their Conservation*. Volume I – Europe, Africa, South West Asia and the Middle East. Cambridge, UK: IUCN Publications Unit.
- Zazanashvili N, Sanadiradze G & Bukhnikashvili A (1999). Caucasus. In: RA Mittermeier, N Meyers, P Robles Gil, and CG Mittermeier. Hotspots: *Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions*. 268-277. Mexico: CEMEX.
- Zohary M (1973). *Geobotanical Foundations of the Middle East*. Vols 1-2. Amsterdam: Gustav Fischer Verlag.

APPENDIX

The Floristic List

PTERIDOPHYTA

EQUISETACEAE

Equisetum hyemale L.

Aşağıkoyunlu, roadside, wet place, 1450 m, 12.06.1997, ÖE 2011; Kirazlı, wet place, 1400 m, 30.09.1998, ÖE 2012.

E. ramosissimum Desf.

Meşeli, Karagöl, lakeside, 1535 m, 10.09.1997, ÖE 2013.

E. fluviatile L.

Veliköy, wet place, 1350 m, 12.06.1999, ÖE 2014; Meşeli, wet place, 1400 m, 10.09.1997, ÖE 2015.

E. arvense L.

Şavşat, Elmalı, streamside, 1200 m., 04.09.1997, ÖE 2016; Kocabey, mixed forest, wet place, 1400 m, 13.08.1998, ÖE 2017.

LYCOPODIACEAE

Lycopodium selago L.

Meşeli Kışlası, stony and rocky place, 1850 m, 17.09.1997, ÖE 2019.

HYPOLEPIDACEAE

Pteridium aquilinum (L.) Kuhn

Kirazlı, open forest, 1650 m, 13.09.1997, ÖE 2020; Veliköy, *Picea orientalis* forest, 1350 m, 30.09.1998, ÖE 2021, Kocabey, forest, 1470 m, 17.09.2000, ÖE 2022.

THELYPTERIDACEAE

Thelypteris phegopteris (L.) Sloss.

Karaköy, stony and rocky place, 1600 m, 18.10.1998, ÖE 2023.

T. limbosperma (All.) H.P.Fuchs

Kirazlı, *Picea orientalis* forest, streamside, 1470 m, 04.09.1997, ÖE 2024; Aşağıkoyunlu, streamside, with *Alnus glutinosa*, 1600 m, 30.07.2000, ÖE 2025.

ASPLENIACEAE

Asplenium trichomanes L.

Veliköy, on rock, 1300 m, 05.09.1998, ÖE 2026; Aşağıkoyunlu, open forest, 1570 m, 11.07.1999, ÖE 2027; Kirazlı, mixed forest, 1650 m, 16.09.2000, ÖE 2028.

A. adiantum-nigrum L.

Yukarıkoyunlu, mixed forest, 1700 m, 30.09.1997, ÖE 2029; Meşeli, open forest, 1450 m, 12.08.1999, ÖE 2030; Cevizli, mixed forest, 1350 m, 16.09.2000, ÖE 2031.

A. septentrionale (L.) Hoffm.

Köprülü, damp place, 1300 m, 12.09.1997, ÖE 2039; Kocabey, on rock, 1350 m, 31.07.2000, ÖE 2033.

A. ruta-maria L.

Yukarıkoyunlu, 1690 m, open forest, 1670 m, 18.09.1997, ÖE 2034.

Ceterach officinarum DC.

Cevizli, stony and rocky place, 1300 m, 30.09.1997, ÖE 2035; Meşeli, amongst rock, 1450 m, 09.09.2000, ÖE 2036.

ATHYRIACEAE

Athyrium filix-foemina (L.) Roth

Aşağıkoyunlu, mixed forest, damp place, 1560 m, 11.09.1997, ÖE 2037; Sahara, mixed forest, 1910 m, 30.09.2000, ÖE 2038.

ASPIDIACEAE

Polystichum lonchitis (L.) Roth

Sahara, in scrub, stony and rocky place, 1970 m, 12.09.1997, ÖE 2032.

Dryopteris filix-mas (L.) Schott

Köprülü, mixed forest, 1250 m, 30.09.2000, ÖE 2040.

D. abbreviata (DC.) Newman

Yukarıkoyunlu, open forest, 1700 m, 23.09.1998, ÖE 2045, Euro-Sib.

D. dilatata (Hoffm.) Gray

Meşeli Kışlası, open forest, 1850 m, 23.09.1998, ÖE 2042.

D. liliana Golitsin

Veliköy, mixed forest, damp place, 1350 m, 05.09.1997, ÖE 2043.

VU.

BLECHNACEAE

Blechnum spicant (L.) Roth

Veliköy, mixed forest, 1400 m, 12.09.1998, ÖE 2044.

POLYPODIACEAE

Polypodium vulgare L. subsp. *vulgare*

Kirazlı, *Picea orientalis* forest, 1600 m, 17.09.1998, ÖE 2041.

SPERMATOPHYTA

GYMNOSPERMAE

PINACEAE

Abies nordmanniana (Stev.) Spach subsp. *nordmanniana*

Veliköy, with *Picea orientalis*, 1400 m, 17.10.1997, ÖE 2046; Karaköy, with *Picea orientalis* and *Pinus sylvestris*, 1700 m, 12.09.1998, ÖE 2047.

Eux.

Picea orientalis (L.) Link

Şavşat, pure or mixed stands, 1100 m, 17.10.1997, ÖE 2048; Veliköy, with *Abies nordmanniana*, 1450 m, 13.09.1998, ÖE 2049; Kocabey Kışlası, with *Pinus sylvestris*, 1650 m, 10.10.2000, ÖE 2050.

Eux.

Pinus sylvestris L. var. *hamata* Stev.

Ciritdüzü, with *Juniperus oxycedrus*, 1200 m, 08.08.1997, ÖE 2051; Sahara, with *Juniperus communis*, 1900 m, 19.05.2000, ÖE 2052; Kocabey Kışlası, with *Abies nordmanniana* and *Picea orientalis*, 1650 m, 17.05.1999, ÖE 2053.

Euro-Sib.

TAXACEAE

Taxus baccata L.

Veliköy, *Picea orientalis* forest, 1350 m, 17.04.1999, ÖE 2054; Meşeli Kışlası, with *Picea orientalis* and *Abies nordmanniana*, 1800 m, 19.05.2000, ÖE 2055.

CUPRESSACEAE

Juniperus communis L.

Subsp. *saxatilis* Pall.

Sahara, *Pinus sylvestris* forest, 1900 m, 13.08.2000, ÖE 2056; Meşeli Kışlası, *Pinus sylvestris* forest, 1900 m, 04.09.1999, ÖE 2057.

Subsp. *hemisphaerica* (Presl) Nyman

Meşeli Kışlası, roadside, 1950 m, 30.07.2000, ÖE 2058.

- J. oxycedrus* L. subsp. *oxycedrus*
Şavşat, *Quercus petraea* scrub, 1100 m, 22.05.1997, ÖE 2059; Ciritdüzü, *Pinus sylvestris* forest, 1200 m, 01.08.1997, ÖE 2060.
- ANGIOSPERMAE**
- DICOTYLEDONAE**
- RANUNCULACEAE**
- Helleborus orientalis* Lam.
Veliköy, mixed forest, 1400 m, 12.06.1999, ÖE 2083; Kirazlı, mixed forest, 1600 m, 11.07.1999, ÖE 2084.
Eux.
- Nigella segetalis* M.Bieb.
Veliköy, open place, 1370 m, 11.07.1999, ÖE 2085; Kocabey, stony and rocky place, 1470 m, 11.07.1999, ÖE 2086; Meşeli, open place, 1570 m, 30.07.2000, ÖE 2087.
- Trollius ranunculinus* (Sm.) Stearn
Karaköy, streamside, 1640 m, 09.07.1998, ÖE 2102; Sahara, subalpine vegetation, 1900 m, 12.07.1999, ÖE 2103.
- Caltha polypetala* Hochst. ex Lorent
Sahara, damp place, 1950 m, 18.04.1997, ÖE 2073; Kirazlı yaylası, open place, alpine vegetation, wet place, 2450 m, 22.05.1998, ÖE 2074; Aşağıkoyunlu yaylası, alpine vegetation, wet place, 2350 m, 19.05.2000, ÖE 2075.
- Aconitum nasutum* Fisch. ex Rchb.
Sahara, open place, 1920 m, 10.07.2000, ÖE 2062; Meşeli Kışlası, open place, 1870 m, 31.07.2000, ÖE 2063.
Eux.
- A. orientale* Mill.
Sahara, meadow, damp place, 1890 m, 10.07.2000, ÖE 2064.
Eux.
- Delphinium albiflorum* DC.
Meşeli Kışlası, *Abies nordmanniana* forest, 1850 m, 17.09.2000, ÖE 2079.
- D. cyphoplectrum* Boiss. var. *stenophyllum* Boiss.
Sahara, open place, 1950 m, 13.06.2000, ÖE 2080.
VU.
- D. flexuosum* M.Bieb.
Sahara, stony and rocky places, 1900 m, 13.06.2000, ÖE 2081.
Eux.
- D. linearilobum* (Trautv.) Busch
Sahara, open place, 1980 m, 10.07.2000, ÖE 2082.
Ir-Tur.
- Consolida orientalis* (Gay) Schröd.
Sahara, open place, subalpine vegetation, 1870 m, 13.06.1999, ÖE 2077; Meşeli Kışlası, in scrub, 1750 m, 10.07.2000, ÖE 2078.
- Anemone narcissiflora* L. subsp. *narcissiflora*
Sahara, with *Betula recurvata*, 1900 m, 10.07.1999, ÖE 2068; Meşeli yaylası, subalpine vegetation, 2200 m, 13.06.1999, ÖE 2069; Aşağıkoyunlu, subalpine vegetation, with *Betula recurvata* and *B. litwinowii*, 1950 m, 31.07.2000, ÖE 2070.
Euro-Sib.
- A. caucasica* Willd. ex Rupr.
Sahara, in scrub, 1870 m, 13.07.1999, ÖE 2067.
VU.
- A. albana* Stev. subsp. *armena* (Boiss.) Smirn.
Sahara, alpine vegetation, 2450 m, 13.04.2000, ÖE 2969.
Ir-Tur.
- Clematis vitalba* L.
Şavşat, Efkar hill, in scrub, on *Carpinus*, 1150 m, 04.09.1999, ÖE 2076.
- Adonis aestivalis* L. subsp. *parviflora* (Fisch. ex DC.) Busch
Ciritdüzü, roadside, 1200 m, 13.06.1999, ÖE 2066.
- Ranunculus cappadocicus* Willd.
Yavuzköy, *Picea orientalis* forest, 1550 m, 10.07.2000, ÖE 2092; Kocabey Kışlası, *Picea orientalis* forest, 1850 m, 11.07.2000, ÖE 2093.
Eux.
- R. brachylobus* Boiss. & Hohen. subsp. *brachylobus*
Sahara, subalpine vegetation, 1900 m, 04.09.1999, ÖE 2090; Aşağıkoyunlu yaylası, alpine vegetation, 2300 m, 13.08.2000, ÖE 2091.
Hyrç.-Eux (mt).
- R. dissectus* M.Bieb. subsp. *glabrescens* (Boiss.) P.H.Davis
Kocabey Kışlası, open forest, 1850 m, 17.09.2000, ÖE 2097.
- R. repens* L.
Meşeli Yaylası, alpine vegetation, damp place, 2350 m, 22.05.1999, ÖE 2100.
- R. constantinopolitanus* (DC.) d'Urv.
Yavuzköy, open place, 1470 m, 31.07.2000, ÖE 2096.
- R. caucasicus* M.Bieb.
Subsp. *caucasicus*
Sahara, open place, 1950 m, 04.09.1999, ÖE 2094.
VU.
- Subsp. *subleiocarpus* (Som. & Lev.) P.H.Davis
Sahara, open place, 1900 m, 13.06.2000, ÖE 2095.
- R. oxyspermus* Willd.
Meşeli, open place, 1500 m, 11.06.2000, ÖE 2098.
- R. polyanthemus* L.
Veliköy, damp place, 1340 m, 22.05.1999, ÖE 2099.
- R. strigillosus* Boiss. & Huet
Karaköy Kışlası, open forest, damp place, 1900 m, 11.06.2000, ÖE 2101.
- R. arvensis* L.
Köprülü, damp place, 1250 m, 11.07.1999, ÖE 2088; Kirazlı, open place, 1570 m, 11.06.2000, ÖE 2089.
- Aquilegia olympica* Boiss.
Sahara, open, damp place, subalpine vegetation, 1910 m, 12.06.1997, ÖE 2071; Meşeli Kışlası, in scrub, 1750 m, 09.07.2000, ÖE 2072.
- PAPAVERACEAE**
- Chelidonium majus* L.
Veliköy, roadside, on wall, 1350 m, 15.07.1997, ÖE 2104.
Euro-Sib.

Papaver orientale L. var. *parviflora*
Busch

Sahara, stony and rocky place, 1950 m,
06.06.1999, ÖE 2111.

P. bracteatum Lindl.

Sahara, roadside, 1890 m, 11.05.1998,
ÖE 2108.

Ir-Tur.

P. fugax Poir. var. *fugax*

Sahara, roadside, 1900 m, 17.05.1997,
ÖE 2110.

P. dubium L.

Sahara, open slope, 1910 m,
06.06.1999, ÖE 2109.

P. paucifoliatum (Trautv.) Fedde

Şavşat, Elmalı, roadside, 1150 m,
17.07.1998, ÖE 2112.

Corydalis conorrhiza Ledeb.

Meşeli Kışlası, roadside, damp place,
11.05.1998, ÖE 2107.

Eux.

C. alpestris C.A.Mey.

Meşeli yaylası, damp place, 2450 m,
17.06.1998, ÖE 2105.

Eux.

C. caucasica DC.

Veliköy, wet place, 1340 m,
11.05.1998, ÖE 2106.

C. angustifolia (M.Bieb.)DC.

Sahara, alpine vegetation, 2400 m,
13.04.2000, ÖE 2968.

Fumaria microcarpa Boiss. ex Hausskn.

Ciritdüzü, roadside, 1100 m,
12.06.1999, ÖE 2114.

F. asepala Boiss.

Ciritdüzü, roadside, 1000 m,
12.06.2000, ÖE 2113.

Ir-Tur.

CRUCIFERAE (BRASSICACEAE)

Aethionema arabicum (L.) Andr.

Yavuzköy, open place, 1550 m,
12.06.2000, ÖE 2225.

Raphanus raphanistrum L. subsp.
raphanistrum

Ciritdüzü, streamside, 1200 m,
11.07.1999, ÖE 2266.

Lepidium campestre (L.) R.Br.

Kirazlı, meadow, 1700 m, 12.06.1997,
ÖE 2262; Köprülü, moist place, 1560 m,
10.07.2000, ÖE 2263.

Cardaria draba (L.) Desv. subsp.
chalepensis (L.) O.E.Schultz

Kocabey Kışlası, roadside, wet place,
1730 m, 11.07.1999, ÖE 2246.

Thlaspi arvense L.

Şavşat, roadside, 1100 m, 30.07.2000,
ÖE 2270.

T. huetii Boiss.

Ciritdüzü, open place, 1210 m,
09.07.2000, ÖE 2271.

T. orbiculatum Stev.

Köprülü, roadside, 1150 m,
12.06.1999, ÖE 2272.

Pachyphragma macrophyllum
(Hoffm.) Busch

Meşeli, *Picea orientalis* forest, 1470 m,
13.06.1997, ÖE 2265.

Capsella bursa-pastoris (L.) Medik.

Veliköy, roadside, 1300 m, 16.06.1999,
ÖE 2236; Meşeli, open place, 1500 m,
13.06.1999, ÖE 2237; Cevizli, roadside,
1270 m, 06.07.1999, ÖE 2238.

Cosm.

Fibigia suffruticosa (Vent.) Sweet

Ciritdüzü, roadside, 1200 m,
27.05.1998, ÖE 2257.

Alyssum praecox Boiss. & Bal. var.
praecox

Sahara, roadside, stony and rocky place,
2040 m, 09.07.2000, ÖE 2231.

Endemic, LR (lc).

A. callichorum Boiss. & Bal.

Sahara, roadside, stony and rocky place,
1880 m, 13.06.1999, ÖE 2228.

Endemic, LR (lc).

A. pateri Nyar. subsp. *prostratum*
(Nyar.) Dudley

Şavşat, Armutlu, roadside, 1100 m,
31.07.2000, ÖE 2230.

Endemic, LR (lc).

Ir-Tur.

A. tortuosum Willd.

Meşeli, roadside, 1560 m, 10.07.2000,
ÖE 2232.

Euro-Sib.

A. murale Waldst. & Kit. var. *alpinum*
Boiss. ex Nyár.

Kocabey yaylası, open slope, 2350 m,
10.07.1999, ÖE 2229.

Draba bruniifolia Stev.

Subsp. *bruniifolia*

Kirazlı yaylası, alpine vegetation, 2300
m, 10.07.1999, ÖE 2248.

Subsp. *armeniaca* Coode & Cullen

Aşağıkoyunlu yaylası, alpine vegetation,
2350 m, 10.06.1999, ÖE 2247.

Subsp. *olympica* (Sibth ex DC.) Coode &
Cullen

Kirazlı yaylası, alpine vegetation, 2300
m, 10.07.1999, ÖE 2249.

D. rigida Willd. var. *bryoides* (DC.)
Boiss.

Kirazlı yaylası, alpine vegetation, rocky
place, 2340 m, 12.06.2000, ÖE 2253.

D. hispida Willd.

Kirazlı yaylası, alpine vegetation, 2340
m, 10.06.1999, ÖE 2250.

Eux (mt).

D. siliquosa M.Bieb.

Meşeli yaylası, alpine vegetation, stony
and rocky place, 10.06.1999, ÖE 2254.

D. muralis L.

Sahara, subalpine vegetation, 2100 m,
11.07.1999, ÖE 2251.

D. nemorosa L.

Meşeli Kışlası, roadside, 1800 m,
12.06.2000, ÖE 2252.

Hycr-Eux (mt)

Arabis sagittata (Bertol.) DC.

Veliköy, roadside, 1350 m, 12.06.1999,
ÖE 2233.

Turritis glabra L.

Karaköy, open forest, 1650 m,
12.06.2000, ÖE 2273.

Nasturtium officinale R.Br.

Veliköy, streamside, 1400 m,
09.07.2000, ÖE 2264.

Rorippa austriaca (Crantz.) Besser
Şavşat, open place, 1130 m,
12.06.1997, ÖE 2267.

R. sylvestre (L.) Besser
Ciritdüzü, open place, 1210 m,
09.07.2000, ÖE 2268.

Barbarea lutea Cullen & Coode
Veliköy, open forest, 1450 m,
11.07.1999, ÖE 2234.
Endemic, EN.

B. vulgaris R.Br.
Meşeli, meadow, 1500 m, 11.07.1999,
ÖE 2235.

Cardamine bulbifera (L.) Crantz.
Meşeli, damp place, 1520 m,
23.05.1997, ÖE 2239.
Euro-Sib

C. raphanifolia Pourr. subsp. *acris*
(Gris.) O.E.Schultz
Aşağıkoyunlu yaylası, alpine vegetation,
2450 m, 09.07.2000, ÖE 2243.
Euro-Sib.

C. tenera C.C.Gmel.
Meşeli, damp place, mixed forest, 1550
m, 11.07.1999, ÖE 2244.
Hyrc-Eux.

C. uliginosa M.Bieb.
Karaköy, streamside, 1670 m,
18.06.1999, ÖE 2245.

C. hirsuta L.
Meşeli, damp place, 1370 m,
18.06.1999, ÖE 2240.

C. impatiens L.
Var. *impatiens*
Veliköy, mixed forest, wet place, 1340
m, 13.06.1999, ÖE 2241.
Euro-Sib.

Var. *pectinata* (Pall.) Trautv.
Kirazlı, mixed forest, 1650 m,
11.07.1999, ÖE 2242.

Hesperis bicuspidata (Willd.) Poir.
Veliköy, roadside, 1300 m, 10.07.1999,
ÖE 2258.

H. schischkinii Tzvelev
Meşeli, roadside, 1470 m, 15.06.1999,
ÖE 2260.

Endemic, LR (nt).

H. matronalis L. subsp. *adzharica*
(Tzvelev) Cullen
Sahara, open forest, roadside, 2050 m,
12.06.1999, ÖE 2259.

H. transcaucasica Tzvelev
Meşeli, roadside, 1500 m, 11.06.2000,
ÖE 2261.

Erysimum leptophyllum (M.Bieb.)
Andrz.
Ciritdüzü, meadow, 1270 m,
11.06.1999, ÖE 2256.

E. leptocarpum Hausskn. ex Bornm.
Köprülü, roadside, open place, 1250 m,
10.06.1999, ÖE 2255.
Endemic, EN.

Alliaria petiolata (M.Bieb.) Cavara &
Grande
Veliköy, open forest, 1400 m,
09.07.2000, ÖE 2226; Meşeli, open forest,
1470 m, 13.06.1999, ÖE 2227.

Sisymbrium officinale (L.) Scop.
Şavşat, Armutlu, open place, 1100 m,
30.07.2000, ÖE 2269.

CISTACEAE

Helianthemum nummularium (L.)
Mill.
Subsp. *ovatum* (Viv.) Schinz & Thell.
Meşeli yaylası, stony slope, 2250 m,
10.07.2000, ÖE 2205.
Subsp. *tomentosum* (Scop.) Schinz &
Thell.
Sahara, alpine vegetation, 2300 m,
12.06.1999, ÖE 2206.

VIOLACEAE

Viola odorata L.
Şavşat, Armutlu, roadside, 1100 m,
23.05.1999, ÖE 2209.

V. sieheana Becker
Ciritdüzü, mixed forest, 1270 m,
22.05.1998, ÖE 2210.

V. canina Besser
Sahara, open place, 1870 m,
12.06.1997, ÖE 2208.

V. arvensis Murray
Kirazlı yaylası, alpine vegetation, 2300
m, 07.06.2000, ÖE 2207.

POLYGALACEAE

Polygala supina Schreb.
Sahara, subalpine vegetation, 1950 m,
10.06.1999, ÖE 2499.

P. major Jacq.
Sahara, subalpine vegetation, 1950 m,
10.07.1999, ÖE 2497; Yavuzköy, meadow,
1550 m, 12.08.2000, ÖE 2498.
Euro-Sib.

P. anatolica Boiss. & Heldr.
Yavuzköy, meadow, 1550 m,
18.05.1999, ÖE 2496.

P. vulgaris L.
Yavuzköy, meadow, 1550 m,
17.07.2001, ÖE 2500.
Euro-Sib.

P. alpestris Rchb.
Kirazlı yaylası, alpine vegetation, 2350
m, 10.06.1999, ÖE 2495.
Euro-Sib.

CARYOPHYLLACEAE

Arenaria lychnidea M.Bieb.
Veliköy, wet place, 1370 m,
12.06.1999, ÖE 2138.

Minuartia imbricata (M.Bieb.)
Woronow
Kirazlı yaylası, alpine vegetation, 2300
m, 19.08.2000, ÖE 2159.

M. circassica (Albov) Woron.
Aşağıkoyunlu yaylası, alpine vegetation,
2250 m, 21.08.1999, ÖE 2158.
Eux (mt).

M. micrantha Schischk.
Meşeli yaylası, stony and rocky place,
07.07.1999, ÖE 2161.

M. hybrida (Vill.) Schischk. subsp.
turcica McNeill
Yukanıkoyunlu, stony and rocky place,
09.08.1999, ÖE 2160.

Stellaria holostea L.
Aşağıkoyunlu yaylası, alpine vegetation,
2300 m, 30.07.2000, ÖE 2176.
Euro-Sib.

Myosoton aquaticum (L.) Moench
Şavşat, Armutlu, damp place, 950 m,
17.06.1997, ÖE 2162.

- Euro-Sib.
Cerastium cerastioides (L.) Britt.
Kocabey yaylası, alpine vegetation, 2400 m, 12.06.1999, ÖE 2142.
- C. anomalum** Waldst. & Kit
Kirazlı yaylası, alpine vegetation, 2350 m, 07.06.1999, ÖE 2139.
- C. araraticum** Rupr.
Karaköy, open place, 1750 m, 16.06.1997, ÖE 2140.
Endemic, LR (lc).
Ir-Tur.
- C. armeniacum** Gren.
Meşeli yaylası, alpine vegetation, 2450 m, 19.06.2001, ÖE 2141.
Endemic, LR (lc).
- C. chlorifolium** Fisch. & J.A.Mey.
Kirazlı yaylası, alpine vegetation, 2300 m, 10.06.1998, ÖE 2143.
- C. purpurascens** Adams
Aşağıkoyunlu yaylası, alpine vegetation, 2350 m, 07.07.1999, ÖE 2145.
Euro-Sib (mt).
- C. longifolium** Willd.
Aşağıkoyunlu yaylası, alpine vegetation, 2200 m, 16.06.1997, ÖE 2144.
Ir-Tur.
- Dianthus liboschitzianus** Ser.
Meşeli Kışlası, roadside, stony and rocky place, 1700 m, 16.06.2001, ÖE 2152.
Ir-Tur.
- D. cretaceus** Adam
Sahara, roadside, stony and rocky place, 1880 m, 13.06.1999, ÖE 2148.
- D. floribundus** Boiss.
Şavşat, roadside, stony and rocky place, 1150 m, 11.06.1999, ÖE 2150.
- D. recognitus** Schischk.
Veliköy, roadside, open place, 1350 m, 09.07.2000, ÖE 2154.
Endemic, LR (cd).
- D. crinitus** Sm. var. **crinitus**
Sahara, stony and rocky place, 1900 m, 13.06.1999, ÖE 2149.
- D. orientalis** Adams
Meşeli Kışlası, roadside, 1650 m, 03.07.2000, ÖE 2153; Meşeli Kışlası, roadside, 1650 m, 03.07.2000, ÖE 2151.
- D. carthusianorum** L.
Meşeli Kışlası, stony and rocky place, 1780 m, 11.06.1999, ÖE 2147.
- D. capitatus** Balb. ex DC.
Veliköy, roadside, rocky place, 1450 m, 10.07.2000, ÖE 2146.
Euro-Sib.
- Petrorhagia saxifraga** (L.) Link
Şavşat, Armutlu, roadside, 1000 m, 16.10.1999, ÖE 2163.
Euro-Sib.
- Saponaria cerastoides** Fisch. ex C.A.Mey.
Şavşat, Armutlu, roadside, stony and rocky place, 1090 m, 16.06.1997, ÖE 2164.
CR. Distribution and population of this taxon are low.
- S. prostrata** Willd. subsp. **calvertii** (Boiss.) Hedge
Şavşat, Kaleboyu, roadside, 1100 m, 10.06.1999, ÖE 2165.
- Gypsophila tenuifolia** M.Bieb.
Kocabey yaylası, alpine vegetation, 2420 m, 24.06.1999, ÖE 2156.
VU, Eux (mt).
- G. silenoides** Rupr.
Meşeli yaylası, alpine vegetation, 2430 m, 28.06.1999, ÖE 2155.
Eux (mt).
- Silene marschallii** C.A.Mey.
Meşeli Kışlası, subalpine vegetation, 1950 m, 12.06.1999, ÖE 2172.
Ir-Tur.
- S. eremitica** Boiss.
Veliköy, open place, 1370 m, 13.06.1999, ÖE 2171; Kocabey, damp place, 1450 m, 13.06.1999.
VU.
Ir-Tur.
- S. sperquilifolia** (Desf.) M.Bieb.
Şavşat, Armutlu, open place, 1170 m, 11.06.2000, ÖE 2174.
- Ir-Tur.
S. odontopetala Fenzl.
Sahara, rocky place, 1950 m, 30.07.2000, ÖE 2173.
- S. vulgaris** (Moench) Garcke var. **vulgaris**
Sahara, alpine vegetation, 2200 m, 09.07.2000, ÖE 2175.
- S. caucasica** (Burge) Boiss.
Yukarıkoyunlu, open forest, 1650 m, 11.06.2000, ÖE 2169.
CR. Population of this taxon is low and affected by heavy grazing.
- S. compacta** Fisch.
Yavuzköy, roadside, 1550 m, 06.06.2000, ÖE 2170.
- S. armeria** L.
Kocabey, open forest, 1470 m, 03.07.1999, ÖE 2168.
Euro-Sib.
- S. alba** (Mill.) Krause
Subsp. **divaricata** (Rchb.) Walters
Veliköy, open forest, 1400 m, 12.06.1999, ÖE 2166.
Subsp. **ericalcynica** (Boiss.) Walters
Sahara, alpine vegetation, 2270 m, 28.06.2000, ÖE 2167.
- Holosteum marginatum** C.A.Mey.
Sahara, subalpine vegetation, 2050 m, 11.06.1999, ÖE 2157.
- POLYGONACEAE**
- Polygonum alpinum** All.
Sahara, stony and rocky place, alpine vegetation, 2200 m, 13.08.2000, ÖE 2177.
Euro-Sib.
- P. bistorta** L. subsp. **carneum** (Koch) Coode & Cullen
Kocabey yaylası, alpine vegetation, 2300 m, 13.08.2000, ÖE 2179; Meşeli yaylası, alpine vegetation, 2450 m, 12.08.2000, ÖE 2180; Kirazlı yaylası, alpine vegetation, 2250 m, 04.09.1999, ÖE 2181; Aşağıkoyunlu yaylası, alpine vegetation, 2300 m, 05.09.1999, ÖE 2182.
Eux (mt).

- P. amphibium* L.
Meşeli, Karagöl lake, 1550 m, 30.07.2000, ÖE 2178.
- P. luzuloides* Jaub. & Spach
Sahara, subalpine vegetation, 1900 m, 17.09.2000, ÖE 2184.
Ir-Tur.
- P. convolvulus* L.
Sahara, open forest, 1800 m, 04.09.1999, ÖE 2183.
- Rumex acetocella* L.
Aşağıkoyunlu, subalpine vegetation, 1900 m, 13.08.2000, ÖE 2185; Yukarıkoyunlu, roadside, 1700 m, 05.09.1999, ÖE 2186; Kocabey yaylası, alpine vegetation, 2350 m, 12.08.2000, ÖE 2187.
Cosm.
- R. scutatus* L.
Meşeli yaylası, alpine vegetation, 2400 m, 12.08.2000, ÖE 2192.
- R. tuberosus* L. subsp. *horizontalis* (C.Koch) Rech.
Kocabey yaylası, alpine vegetation, 2220 m, 31.07.2000, ÖE 2193.
- R. gracilescens* Rech.
Kirazlı, open place, 1600 m, 11.07.1999, ÖE 2190.
Endemic, LR (nt).
- R. patientia* L. subsp. *patientia*
Kocabey Kışlası, stony slope, 1750 m, 04.09.1999, ÖE 2191.
- R. caucasicus* Rech.
Aşağıkoyunlu, open place, 1650 m, 12.08.1999, ÖE 2188.
- R. crispus* L.
Veliköy, streamside, damp place, 1350 m, 13.08.1999, ÖE 2189.
Cosm.
- CHENOPODIACEAE**
Chenopodium murale L.
Ciritdüzü, roadside, 1250 m, 12.07.1997, ÖE 2135.
Cosm.
- Atriplex nitens* Schkuhr
Şavşat, Armutlu, open place, 1100 m, 10.06.1998, ÖE 2136.
- AMARANTHACEAE**
Amaranthus retroflexus L.
Şavşat, Armutlu, roadside, wet place, 1050 m, 11.07.1998, ÖE 2137.
- PHYTOLACCACEAE**
Phytolacca americana L.
Veliköy, open forest, 1450 m, 14.06.2001, ÖE 2134.
- TAMARICACEAE**
Tamarix tetrandra Pall. ex M.Bieb.
Şavşat, Elmalı, streamside, 970 m, 10.05.1998, ÖE 2212.
T. smyrnensis Bunge
Ciritdüzü, streamside, 950 m, 10.07.1997, ÖE 2211.
- GUTTIFERAE**
Hypericum androsaemum L.
Şavşat, Elmalı, streamside, open forest, 950 m, 12.06.2000, ÖE 2194.
- H. hirsutum* L.
Yavuzköy, open place, 1550 m, 10.07.2000, ÖE 2196.
Euro-Sib.
- H. montanum* L.
Cevizli, roadside, stony and rocky place, 1270 m, 09.07.2000, ÖE 2197.
Euro-Sib.
- H. bithynicum* Boiss.
Kocabey Kışlası, in scrub, 1700 m, 09.07.2000, ÖE 2195.
- H. orientale* L.
Meşeli Kışlası, roadside, stony and rocky place, 1550 m, 12.06.2000, ÖE 2198.
- H. perforatum* L.
Yavuzköy, open place, 1540 m, 16.09.2000, ÖE 2199.
- MALVACEAE**
Malva neglecta Wallr.
Ciritdüzü, roadside, 1250 m, 10.06.1997, ÖE 2204.
- Lavatera arborea* L.
Meşeli, damp place, 1500 m, 12.08.2000, ÖE 2203.
- Alcea calvertii* (Boiss.) Boiss.
Meşeli, roadside, 1560 m, 13.06.1999, ÖE 2201.
Endemic, LR (lc).
Ir-Tur.
- A. hohenackeri* (Boiss. & Huet) Boiss.
Veliköy, roadside, 1370 m, 09.07.2000, ÖE 2202.
- TILIACEAE**
Tilia rubra DC. subsp. *caucasica* (Rupr.) V.Engl.
Veliköy, mixed forest, 1450 m, 17.09.2000, ÖE 2200.
- LINACEAE**
Linum mucronatum Bertol. subsp. *armenum* (Bordz.) P.H.Davis
Meşeli Kışlası, subalpine vegetation, 1950 m, 10.07.1999, ÖE 2494.
Ir-Tur.
- L. hypericifolium* Salisb.
Aşağıkoyunlu, stony and rocky place, 1900 m, 10.06.1999, ÖE 2493.
- L. catharticum* L.
Meşeli, streamside, 1750 m, 12.08.1999, ÖE 2492.
- GERANIACEAE**
Geranium purpureum Vill
Karaköy, mixed forest, 1600 m, 18.04.1999, ÖE 2520; Kocabey yaylası, alpine vegetation, 2300 m, 23.05.1999, ÖE 2521.
- G. robertianum* L.
Meşeli, mixed forest, 1550 m, 23.05.1999, ÖE 2523.
- G. rotundifolium* L.
Veliköy, streamside, 1330 m, 19.05.2000, ÖE 2524.
- G. molle* L. subsp. *molle*
Şavşat, Elmalı, open place, 850 m, 18.04.1999, ÖE 2518.
- G. bohemicum* L.
Meşeli Kışlası, mixed forest, 1800 m, 10.06.1999, ÖE 2514.

- G. psilostemon** Ledeb.
Meşeli Kışlası, open place, 1850 m, 12.08.2000, ÖE 2519.
Eux (mt).
G. collinum Steph.ex Willd.
Sahara, damp place, 1800 m, 12.08.2000, ÖE 2515.
Ir-Tur.
G. sylvaticum L.
Kocabey Kışlası, stony and rocky place, 2300 m, 10.07.1999, ÖE 2525.
Euro-Sib.
G. asphodeloides Burm. subsp. **sintenisii** (Freyn) P.H.Davis
Yukarıkoyunlu, stony and rocky place, 1700 m, 19.05.2000, ÖE 2513.
Endemic, LR (lc), Eux.
G. pyrenaicum Burm.
Kirazlı, mixed forest, 1650 m, 10.06.1999, ÖE 2522.
G. ibericum Cav.
Subsp. **ibericum**
Kocabey yaylası, alpine vegetation, 2460 m, 10.07.2000, ÖE 2516.
Subsp. **jubatum** (Hand.-Mazz.) P.H.Davis
Kirazlı yaylası, alpine vegetation, 2400 m, 12.06.2000, ÖE 2517.
Endemic, LR (lc), Eux (mt).
Erodium cicutarium (L.) L'Hér. subsp. **cuticularium**
Şavşat, Armutlu, open place, 1100 m, 12.05.1999, ÖE 2512.
- OXALIDACEAE**
Oxalis acetosella L.
Meşeli, mixed forest, 1550 m, 12.06.1998, ÖE 2510.
O. corniculata L.
Köprülü, fieldside, 1200 m, 10.06.1997, ÖE 2511.
Cosm.
- BALSAMINACEAE**
Impatiens noli-tangere L.
Meşeli, streamside, 1650 m, 06.07.2000, ÖE 2526.
- Euro-Sib.
ACERACEAE
Acer tataricum L.
Şavşat, Efkar hill, in scrub, 1000 m, 10.08.2000, ÖE 2966.
A. trautvetteri Medw.
Sahara, subalpine vegetation, 1950 m, 14.10.1997, ÖE 2506.
Eux.
A. cappadocicum Gled.
Var. **cappadocicum**
Karaköy, mixed forest, 1700 m, 17.09.2000, ÖE 2503.
Hyc-Eux.
Var. **stenocarpum** Yalt.
Meşeli, mixed forest, 1550 m, 05.09.1999, ÖE 2504.
Endemic, VU, Eux.
A. platanoides L.
Şavşat, Macerelte, mixed forest, 1100 m, 16.09.2000, ÖE 2505.
Euro-Sib.
A. campestre L.
Var. **campestre**
Şavşat, Armutlu, roadside, 1100 m, 10.06.1999, ÖE 2501.
Var. **leiocarpum** (Opiz) Pax.
Köprülü, *Quercus petraea* scrub, 1150 m, 12.07.1997, ÖE 2502.
Euro-Sib.
- RHAMNACEAE**
Paliurus spina-christi Mill.
Ciritdüzü, *Quercus petraea* scrub, stony slope, 1200 m, 12.06.1999, ÖE 2489.
Frangula alnus Mill. subsp. **alnus**
Köprülü, rocky slope, 1150 m, 10.06.1999, ÖE 2488.
Euro-Sib.
Rhamnus imeretinus Booth
Kirazlı, open forest, 1650 m, 17.06.2001, ÖE 2490.
Eux.
R. microcarpus Boiss.
Meşeli, open forest, 1550 m, 10.06.1999, ÖE 2491.
- Eux (mt).
AQUIFOLIACEAE
Ilex colchica Pojark
Meşeli Kışlası, *Abies nordmanniana* forest, 1900 m, 10.07.2001, ÖE 2477.
Eux.
ANACARDIACEAE
Cotinus coggygria Scop.
Ciritdüzü, *Quercus petraea* scrub, 1100 m, 04.09.1997, ÖE 2507.
Rhus coriaria L.
Ciritdüzü, *Quercus petraea* scrub, 1100 m, 04.09.1997, ÖE 2508; Aşağıkoyunlu, in scrub, 1470 m, 04.09.1997, ÖE 2509.
- CELASTRACEAE**
Euonymus latifolius (L.) Mill.
Subsp. **latifolius**
Şavşat, Beleşet, mixed forest, 1200 m, 10.05.1999, ÖE 2475.
Euro-Sib.
Subsp. **cauconis** Coode & Cullen
Meşeli, mixed forest, 1450 m, 12.06.1999, ÖE 2476.
Endemic, LR (nt).
LEGUMINOSAE (FABACEAE)
Chamaecytisus hirsutus (L.) Link
Veliköy, roadside, 1450 m, 12.06.2000, ÖE 2398.
Genista tinctoria L.
Meşeli, roadside, 1450 m, 12.06.1999, ÖE 2406.
Euro-Sib.
Argyrobium biebersteinii Ball.
Veliköy, open forest, 1400 m, 17.09.2000, ÖE 2375.
Robinia pseudoacacia L.
Şavşat, Efkar hill, roadside, 1100 m, 10.07.1999, ÖE 2428.
Exotic or naturalised in the study area and its environs.
Colutea armena Boiss. & Huet
Yavuzköy, roadside, open place, 1550 m, 13.07.1999, ÖE 2399.
Astragalus glycyphyllos L.
Subsp. **glycyphyllos**

Şavşat, Beleşet, open forest, stony and rocky place, 970 m, 10.06.1999, ÖE 2386.

Euro-Sib.

Subsp. *glycyphyloides* (DC.) Matthews

Meşeli Kışlası, forestside, open place, 1850 m, 10.06.2001, ÖE 2387.

Euro-Sib.

A. fraxinifolius DC.

Kocabey yaylası, open place, roadside, 2300 m, 09.07.2000, ÖE 2384.

Ir-Tur.

A. microcephalus Willd.

Ciritdüzü, *Pinus sylvestris* forest, 1250 m, 12.08.2000, ÖE 2391.

Ir-Tur.

A. sommieri Freyn.

Köprülü, *Quercus petraea* scrub, 1150 m, 10.07.1999, ÖE 2395.

VU.

A. imbricatus (Boriss.) Boriss. [3:153]

A8 Çoruh, Distr. Artvin, prope p. Kutschery in declivis australibus, 6 vii 1911, Vvedensky 4264.

Endemic, DD. This specimen could not be found in the field.

A. sosnowskyi Grossh.

Sahara, roadside, 1900 m, 09.07.1999, ÖE 2396.

A. woronowii Bornm. [3:175]

A8 Çoruh, Prov. Batum (Pontus orientalis) districtus Artvin, in montis Ekuter rupestris alpinis alt. C. 2200 m, (29 vii 1911, Woronow Itinera transcaucasica 1911, 5946)

DD. This specimen could not be found in the field.

A. falcatus Lam.

Sahara, open place, 2100 m, 11.07.1999, ÖE 2382.

Eux.

A. ornithopodioides Lam.

Yavuzköy, open place, 1400 m, 10.07.1999, ÖE 2393.

Ir-Tur.

A. onobrychioides M.Bieb.

Meşeli, open place, roadside, 1450 m, 11.07.1999, ÖE 2392.

VU.

A. adzharicus Popov.

Ciritdüzü, open place, 1250 m, 10.07.1999, ÖE 2376.

VU.

A. incertus Ledeb.

Sahara, alpine vegetation, 2150 m, 12.06.2000, ÖE 2390.

A. hyalolepis Bunge

Kocabey yaylası, open place, 2400 m, 09.07.2000, ÖE 2388.

Ir-Tur.

A. bicolor Lam.

Kocabey Kışlası, open place, 1850 m, 09.07.2000, ÖE 2378.

Ir-Tur.

A. fragrans Willd.

Meşeli yaylası, subalpine vegetation, 2100 m, 10.09.2000, ÖE 2383.

Ir-Tur.

A. sanguinolentus M.Bieb.

Sahara, stony and rocky place, 2100 m, 10.07.1999, ÖE 2394.

A. czorochensis Kharadze

Kocabey yaylası, open place, 2250 m, 18.05.2000, ÖE 2381.

Endemic, VU, Eux (mt).

A. frickii Bunge

Meşeli yaylası, subalpine vegetation, 2000 m, 12.06.2000, ÖE 2385.

A. brachycarpus M.Bieb.

Kocabey Kışlası, roadside, 1800 m, 10.07.2000, ÖE 2379.

VU.

A. argyroides Becker ex Stapf

Şavşat, Beleşet, open place, 890 m, 11.06.2000, ÖE 2377.

VU.

Ir-Tur.

Oxytropis albana Stev.

Meşeli yaylası, alpine vegetation, 2450 m, 10.07.1999, ÖE 2426.

Psoralea acaulis Stev.

Veliköy, forestside, 1450 m, 08.07.1999, ÖE 2960.

Eux.

Vicia crocea (Desf.) B.Fedtsch.

Meşeli, *Picea orientalis* forest, 1550 m, 12.08.2000, ÖE 2452.

Hycr-Eux.

V. freyniana Bornm.

Sahara, subalpine vegetation, 1950, 12.06.2000, ÖE 2453.

Endemic, LR (lc), Eux.

V. cassubica L.

Sahara, forestside, 1950 m, 16.06.1999, ÖE 2449.

Euro-Sib.

V. cracca L.

Subsp. *atroviolacea* (Bornm.) P.H.Davis
Aşağıkoyunlu, open forest, 1650 m, 10.07.1999, ÖE 2450.

Subsp. *tenuifolia* (Roth.) Gaudin

Ciritdüzü, *Pinus sylvestris* forest, 1300 m, 23.05.1999, ÖE 2451.

V. villosa Roth subsp. *villosa*

Aşağıkoyunlu, meadow, damp place, 1650 m, 12.07.2000, ÖE 2456.

V. hirsuta (L.) S.F.Gray

Ciritdüzü, *Quercus petraea* scrub, 950 m, 19.05.2000, ÖE 2454.

V. balansae Boiss.

Meşeli Kışlası, mixed forest, 1900 m, 09.07.2000, ÖE 2447; Kirazlı yaylası, subalpine vegetation, 2150 m, 10.06.1999, ÖE 2448.

Eux.

V. sepium L. var. *montana* Koch

Meşeli Kışlası, *Picea orientalis* forest, damp place, 1850 m, 10.06.1999, ÖE 2458.

Euro-Sib.

V. peregrina L.

Ciritdüzü, *Quercus petraea* scrub, 1000 m, 10.06.2000, ÖE 2455.

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

Veliköy, meadow, 1450 m, 19.05.2000, ÖE 2457.

Lathyrus pratensis L.

Sahara, subalpine vegetation, streamside, 1850, 12.06.1999, ÖE 2409.

- Euro-Sib.
L. laxiflorus (Desf.) O.Kuntze subsp. *laxiflorus*
 Kocabey Kışlası, mixed forest, 1800 m, 10.07.1999, ÖE 2407.
L. roseus Stev.
 Meşeli, mixed forest, 1550 m, 08.05.1998, ÖE 2410; Kocabey Kışlası, *Pinus sylvestris* forest, roadside, 1700 m, 12.08.2000, ÖE 2411.
 Hyrc-Eux.
L. tuberosus L.
 Veliköy, field, 1350 m, 11.06.2000, ÖE 2413.
L. rotundifolius Willd. subsp. *miniatus* (M.Bieb. ex Stev.) P.H.Davis
 Yavuzköy, meadow, 1550 m, 10.07.1999, ÖE 2412.
L. nissolia L.
 Ciritdüzü, *Quercus petraea* scrub, 1200 m, 06.06.1999, ÖE 2408.
Pisum sativum L. subsp. *elatius* (M.Bieb.) Asch. & Graebn. var. *elatius*
 Şavşat, Elmalı, stony and rocky place, 850 m, 18.04.1999, ÖE 2427.
Ononis spinosa L. subsp. *leiosperma* (Boiss.) Širj.
 Veliköy, streamside, 1300 m, 12.07.1999, ÖE 2424; Yavuzköy, roadside, 1450 m, 16.06.2001, ÖE 2425.
Trifolium repens L. var. *repens*
 Veliköy, streamside, damp place, 1350 m, 18.04.1999, ÖE 2442.
T. montanum L. subsp. *humboldtianum* (A.Br. & Asch.) M.Hossain
 Kirazlı yaylası, alpine vegetation, 2350 m, 12.08.2000, ÖE 2437.
T. ambiguum M.Bieb.
 Sahara, alpine vegetation, 2300 m, 12.07.1999, ÖE 2429.
T. hybridum L. var. *hybridum*
 Meşeli Kışlası, damp place, 1850 m, 04.09.1999, ÖE 2435.
T. campestre Schreb.
 Aşağıkoyunlu, damp place, 1900 m, 18.04.1999, ÖE 2434.
T. tumens Stev. ex M.Bieb.
 Şavşat, Armutlu, open place, 1150 m, 10.07.1997, ÖE 2444.
 Hyrc-Eux.
T. pratense L.
 Var. *pratense*
 Aşağıkoyunlu, meadow, 1550 m, 10.07.1999, ÖE 2440.
 Var. *armericanum* Harz.
 Şavşat, Elmalı, roadside, 850 m, 16.06.1999, ÖE 2441.
T. medium L. var. *medium*
 Köprülü, mixed forest, 1150 m, 16.06.1999, ÖE 2436.
T. ochroleucum Huds
 Kocabey Kışlası, meadow, 1850 m, 06.06.1999, ÖE 2438; Yukarıkoyunlu, meadow, 1750 m, 10.07.1999, ÖE 2439.
T. canescens Willd.
 Sahara, subalpine vegetation, 1900 m, 12.08.2000, ÖE 2432; Ciritdüzü, streamside, 1250 m, 23.05.1999, ÖE 2433.
 Hyrc-Eux.
T. alpestre L.
 Sahara, subalpine vegetation, 2000 m, 12.08.2000, ÖE 2430.
 Euro-Sib.
T. sylvaticum Gerard ex Loisel.
 Kirazlı, open slope, 1600 m, 23.05.1999, ÖE 2443.
T. arvense L. var. *arvense*
 Yavuzköy, stony and rocky place, 1450 m, 10.06.2001, ÖE 2431.
Melilotus officinalis (L.) Desr.
 Yavuzköy, roadside, 1500 m, 11.07.1999, ÖE 2420.
Trigonella spicata Sibth. & Sm.
 Ciritdüzü, *Pinus sylvestris* forest, 1200 m, 23.05.199, ÖE 2445; Ciritdüzü, *Quercus petraea* scrub, 1100 m, 06.06.2000, ÖE 2446.
 E.Medit.
Medicago lupulina L.
 Veliköy, field, 1450 m, 23.05.1999, ÖE 2417.
M. sativa L. subsp. *sativa*
 Yavuzköy, meadow, 1550 m, 23.05.1999, ÖE 2418; Meşeli, roadside, stony and rocky place, 1450 m, 04.09.1999, ÖE 2419.
Dorycnium graecum (L.) Ser.
 Veliköy, roadside, 1450 m, 04.09.1999, ÖE 2404.
 Eux.
D. pentaphyllum Scop. subsp. *herbaceum* (Vill) Rouy
 Şavşat, Macerelte, roadside, 1100 m, 10.07.1999, ÖE 2405.
Lotus corniculatus L.
 Var. *corniculatus*
 Meşeli Kışlası, meadow, 1850 m, 10.07.1999, ÖE 2416.
 Var. *tenuifolius* L.
 Şavşat, Elmalı, open place, streamside, 850 m, 18.04.1997, ÖE 2414; Ciritdüzü, streamside, 900 m, 17.09.2000, ÖE 2415.
Anthyllis vulneraria L. subsp. *polyphylla* (DC.) Nyman
 Yavuzköy, open place, 1550 m, 12.06.2000, ÖE 2374.
 Euro-Sib.
Coronilla coronata L.
 Şavşat, Elmalı, open place, 850 m, 22.05.1999, ÖE 2400.
C. orientalis Mill.
 Var. *orientalis*
 Veliköy, stony and rocky places, 1300 m, 18.04.1999, ÖE 2402.
 Var. *balansae* (Boiss.) Hrabětova
 Meşeli yaylası, alpine vegetation, 2400 m, 10.07.2000, ÖE 2401.
C. varia L. subsp. *varia*
 Kocabey Kışlası, open slope, 1750 m, 23.05.1999, ÖE 2403.
Onobrychis stenotachya Freyn subsp. *sosnowskyi* (Grossh.) Hedge
 Kocabey yaylası, alpine vegetation, 2400 m, 10.07.1999, ÖE 2422.
 Endemic, VU.
 Ir-Tur.

- O. altissima* Grossh.
Yavuzköy, meadow, 1550 m, 06.06.1999, ÖE 2421.
- ROSACEAE**
- Aruncus vulgaris* Rafin.
Meşeli, mixed forest, damp place, 1550 m, 17.06.1999, ÖE 2322.
Euro-Sib.
- Cerasus avium* (L.) Moench
Aşağıkoyunlu, roadside, 1550 m, 10.07.1999, ÖE 2961.
- C. vulgaris* Mill.
Aşağıkoyunlu, roadside, 1550 m, 10.07.1999, ÖE 2962.
Culture.
- Rubus saxatilis* L.
Şavşat, Macerelte, open forest, 1200 m, 18.08.1999, ÖE 2363.
- R. idaeus* L.
Karaköy, open forest, 1850 m, 18.08.1999, ÖE 2361.
- R. discolor* Weihe & Nees
Şavşat, Macerelte, mixed forest, 1150 m, 09.07.2000, ÖE 2360.
- R. canescens* DC. var. *canesvens*
Aşağıkoyunlu, roadside, 1750 m, 12.08.2000, ÖE 2358.
- R. caucasicus* Focke
Meşeli yaylası, subalpine vegetation, 2200 m, 10.07.1999, ÖE 2359.
Eux.
- R. platyphyllos* C.Koch
Ciritdüzü, mixed forest, 1250 m, 22.07.1999, ÖE 2362.
- Potentilla argentea* L.
Sahara, stony and rocky places, 1850 m, 16.07.1999, ÖE 2339.
- P. inclinata* Vill
Kocabey Kışlası, open place, 1800 m, 09.07.2000, ÖE 2344.
- P. recta* L.
Kirazlı, open forest, 1750 m, 11.07.1999, ÖE 2348.
- P. anatolica* Peşmen
Kocabey yaylası, alpine vegetation, 2460, 10.06.2001, ÖE 2338.
- Endemic, LR (lc).
Ir-Tur.
P. orbiculata Th.Wolf
Meşeli Kışlası, open forest, 1850 m, 09.07.2000, ÖE 2347.
VU.
P. humifusa Willd.
Kirazlı yaylası, alpine vegetation, 2350 m, 30.07.2000, ÖE 2343.
Euro-Sib.
- P. cappadocica* Boiss.
Kocabey yaylası, alpine vegetation, 2400 m, 10.07.1997, ÖE 2340.
Endemic, LR (nt), Eux (mt).
P. geranioides Willd.
Meşeli yaylası, alpine vegetation, dry soil, 2550 m, 01.07.2001, ÖE 2342.
Ir-Tur.
P. reptans L.
Aşağıkoyunlu, streamside, 1650 m, 11.06.2000, ÖE 2349; Meşeli yaylası, alpine vegetation, 2350 m, 31.07.2000, ÖE 2350.
- P. elatior* Willd. ex Schlecht.
Meşeli yaylası, alpine vegetation, damp place, 2450 m, 10.07.1999, ÖE 2341.
Eux.
P. micrantha Ramond ex DC.
Karaköy, mixed forest, damp place, 1750 m, 10.07.2000, ÖE 2345; Aşağıkoyunlu, mixed forest, streamside, 1650 m, 12.06.2000, ÖE 2346.
- Fragaria vesca* L.
Meşeli, mixed forest, 1550 m, 17.06.1999, ÖE 2332.
- F. viridis* Duchesne subsp. *viridis*
Veliköy, open forest, 1450 m, 10.07.1999, ÖE 2333.
Euro-Sib.
- Sibbaldia parviflora* Willd. var. *parviflora*
Meşeli yaylası, alpine vegetation, 2450 m, 10.07.1999, ÖE 2366; Aşağıkoyunlu yaylası, alpine vegetation, 2350 m, 10.07.1999, ÖE 2367; Kocabey yaylası, alpine vegetation, 2460 m, 09.07.2000, ÖE 2368.
- Geum coccineum* Sm.
Sahara, alpine vegetation, 2100 m, 05.06.1997, ÖE 2334.
Euro-Sib.
G. rivale L.
Sahara, subalpine vegetation, 2200 m, 13.04.2000, ÖE 2970.
G. urbanum L.
Karaköy Kışlası, *Abies nordmanniana* forest, 1850 m, 01.07.2001, ÖE 2335.
Euro-Sib.
- Agrimonia eupatoria* L.
Veliköy, open place, 1300 m, 12.06.2000, ÖE 2311.
- Sanguisorba minor* Scop. subsp. *muricata* (Spach) Briq
Yavuzköy, roadside, open place, 1500 m, 07.07.1999, ÖE 2364; Meşeli, open place, 1480 m, 26.06.1999, ÖE 2365.
- Alchemilla sericea* Willd.
Sahara, subalpine vegetation, 2050 m, 10.07.1999, ÖE 2318.
Eux (mt).
- A. caucasica* Buser
Kocabey yaylası, alpine vegetation, 2300 m, 14.07.1999, ÖE 2314.
Eux. (mt)
- A. erythropoda* Juz.
Meşeli yaylası, subalpine vegetation, 2000 m, 10.07.1999, ÖE 2315.
- A. hirtipedicellata* Juz.
Kirazlı yaylası, alpine vegetation, 2250 m, 13.06.1999, ÖE 2316.
Eux. (mt)
- A. sintenisii* Rothm.
Kirazlı yaylası, alpine vegetation, 1850 m, 14.07.1999, ÖE 2319.
Endemic, LR (nt), Eux (mt).
- A. barbatiflora* Juz.
Sahara, subalpine vegetation, 2100 m, 09.07.2000, ÖE 2312; Kirazlı yaylası, alpine vegetation, 2350 m, 01.07.1999, ÖE 2313.
Eux.
- A. stricta* Rothm.
Meşeli Kışlası, open place, 1800 m, 13.06.1999, ÖE 2320.

A. transcaucasica Rothm.
Aşağıkoyunlu yaylası, alpine vegetation, 2350 m, 12.08.2000, ÖE 2321.
EN. Distribution of this taxon is very low.

A. retinervis Buser
Meşeli yaylası, alpine vegetation, 2450 m, 26.06.1999, ÖE 2317.
Eux. (mt)

Rosa pimpinellifolia L.
Kocabey Kışlası, stony and rocky place, 1850 m, 12.06.1999, ÖE 2357.
Euro-Sib.

R. hirtissima Lonacz.
Sahara, open place, 1950 m, 13.08.2000, ÖE 2354.
VU, Eux.

R. iberica Stev.
Karaköy, open forest, 1800 m, 09.07.2000, ÖE 2355.

R. montana Chaix subsp. *woronowii* (Lonacz.) Ö.Nilsson
Kocabey yaylası, subalpine vegetation, 2200 m, 11.06.2000, ÖE 2356.

R. canina L.
Meşeli, open place, 1550 m, 13.08.2000, ÖE 2353.

Mespilus germanica L.
Ciritdüzü, *Pinus sylvestris* forest, 1250 m, 14.10.2000, ÖE 2337.
Hyrc-Eux.

Cotoneaster integerrimus Medik.
Sahara, subalpine vegetation, stony and rocky place, 1950 m, 14.06.1999, ÖE 2323.
Euro-Sib.

C. nummularia Fisch & Mey.
Sahara, subalpine vegetation, 2000 m, 16.09.2000, ÖE 2325.

C. transcausicus Pojark.
Sahara, subalpine vegetation, 1950 m, 16.09.2000, ÖE 2326.
VU.

C. morulus Pojark.
Şavşat, Elmali, stony and rocky place, 850 m, 17.07.2001, ÖE 2324.

Pyracantha coccinea Roem.
Şavşat, Elmali, open place, 850 m, 12.08.2000, ÖE 2351.

Crataegus pentagyna Waldst. & Kit. ex Willd.
Yavuzköy, open place, 1550 m, 12.08.1999, ÖE 2330.
Euro-Sib.

C. orientalis Pall. ex M.Bieb. var. *orientalis*
Şavşat, Efkar hill, *Picea orientalis* forest, 1300 m, 16.09.2000, ÖE 2329.

C. szovitsii Pojark.
Ciritdüzü, roadside, 1250 m, 12.08.1999, ÖE 2331.

C. monogyna Jacq. subsp. *monogyna*.
Meşeli, open forest, 1500 m, 17.09.2000, ÖE 2328.

C. microphylla C.Koch.
Ciritdüzü, *Quercus petraea* forest, 1250 m, 15.08.2000, ÖE 2327.
Hyrc-Eux.

Sorbus aucuparia L.
Sahara, subalpine vegetation, 1950 m, 10.07.1999, ÖE 2369.
Euro-Sib.

S. umbellata (Desf.) Fritsch.
Var. *umbellata*
Sahara, subalpine vegetation, 1950 m, 04.09.1999, ÖE 2373.

Var. *cretica* (Lindl.) Schneid.
Meşeli Kışlası, open place, 1850 m, 05.06.1997, ÖE 2371; Cevizli, roadside, open place, 1250 m, 13.07.1999, ÖE 2372.

S. torminalis (L.) Crantz. var. *torminalis*
Karaköy, mixed forest, 1750 m, 13.07.1999, ÖE 2370.

Malus sylvestris Mill. subsp. *orientalis* (Uglitzk.) Browicz var. *orientalis*
Veliköy, open forest, 1450 m, 13.09.1998, ÖE 2336.
Culture.

Pyrus communis L. subsp. *caucasica* (Fed.) Browicz
Ciritdüzü, open place, 1270 m, 16.09.2000, ÖE 2352.

LYTHRACEAE

Lythrum salicaria L.

Veliköy, streamside, 1300 m, 11.06.1997, ÖE 2459; Şavşat, Armutlu, streamside, 1150 m, 17.07.1998, ÖE 2460.

Euro-Sib.

ONOGRACEAE

Circaea alpina L.

Karaköy, *Abies nordmanniana* forest, 1800 m, 12.08.2000, ÖE 2471.

Epilobium angustifolium L. subsp. *angustifolium*

Kocabey yaylası, stony and rocky place, 2200 m, 13.08.2000, ÖE 2465; Meşeli Kışlası, open forest, 1850 m, 10.06.1999, ÖE 2466.

E. hirsutum L.

Veliköy, wet place, 1350 m, 16.09.2000, ÖE 2467.

E. montanum L.

Kocabey Kışlası, streamside, 1750 m, 12.08.1999, ÖE 2469.

Euro-Sib.

E. lanceolatum Seb. & Mauri

Sahara, roadside, 1950 m, 10.06.1999, ÖE 2468.

E. anatolicum Hausskn. subsp. *prionophyllum* (Hausskn.) P.H.Raven

Sahara, streamside, 2100 m, 31.07.2000, ÖE 2464.

E. roseum Schreber subsp. *subsessile* (Boiss.) P.H.Raven

Sahara, streamside, 2000 m, 04.09.1999, ÖE 2470.

HALORAGIDACEAE

Myriophyllum spicatum L.

Meşeli, Karagöl, lake side, with *Polygonum amphibium*, 1550 m, 18.08.1997, ÖE 2018.

DATISCEAE

Datisca cannabina L.

Kocabey Kışlası, damp place, 1670 m, 10.07.1997, ÖE 2213.

CRASSULACEAE

Sedum spurium M.Bieb.

Sahara, subalpine vegetation, 1970 m, 18.06.2000, ÖE 2304.

- Hycr-Eux.
S. stoloniferum Gmel.
 Kocabey Kışlası, mixed forest, 1700 m, 12.06.1999, ÖE 2305.
 Hycr-Eux (mt).
S. alpestre Vill
 Sahara, subalpine vegetation, 2100 m., 22.06.1999, ÖE 2299.
S. album L.
 Sahara, rocky place, 2050 m, 16.07.1999, ÖE 2298.
S. tenellum M.Bieb.
 Meşeli yaylası, subalpine vegetation, 2100 m, 17.06.1999, ÖE 2306.
S. gracile C.A.Mey.
 Meşeli yaylası, alpine slope, rocky place, 1950 m, 13.07.1999, ÖE 2300.
 Hycr-Eux. (mt)
S. pilosum M.Bieb.
 Meşeli Kışlası, mixed forest, 1800 m, 26.06.1999, ÖE 2301.
 Hycr-Eux
S. pallidum M.Bieb.
 Var. **pallidum**
 Aşağıkoyunlu, rocky slope, 1950 m, 16.06.2000, ÖE 2303.
 Eux.
 Var. **bithynicum** (Boiss.) Chamb.
 Yukarıkoyunlu, subalpine vegetation, 1850 m, 16.06.2000, ÖE 2302.
 Eux.
Sempervivum transcaucasicum Muirhead.
 Kocabey yaylası, rocky place, 2400 m, 18.06.2000, ÖE 2307.
SAXIFRAGACEAE
Saxifraga paniculata Mill. subsp. **paniculata**
 Sahara, subalpine vegetation, stony and rocky place, 1950 m, 10.07.1999, ÖE 2309.
 Euro-Sib.
S. rotundifolia L.
 Sahara, subalpine vegetation, stony and rocky place, 1950 m, 10.07.1999, ÖE 2310.
- Euro-Sib.
S. cymbalaria L. var. **cymbalaria**
 Karaköy, streamside, 1850 m, 12.06.1999, ÖE 2308.
GROSSULARIACEAE
Ribes biebersteinii Berl. ex DC.
 Sahara, subalpine vegetation, 2100 m, 18.06.2000, ÖE 2296.
 Eux.
R. orientale Desf.
 Sahara, subalpine vegetation, 1950 m, 18.06.2000, ÖE 2297.
UMBELLIFERAE (APIACEAE)
Sanicula europaea L.
 Karaköy, mixed forest, 1800 m, 11.06.2000, ÖE 2545; Meşeli, mixed forest, 1550 m, 04.09.1999, ÖE 2546.
 Euro-Sib.
Astrantia maxima Pall. subsp. **maxima**
 Yavuzköy, meadow, 1550 m, 10.07.1999, ÖE 2528; Sahara, subalpine vegetation, 1950 m, 12.08.1999, ÖE 2529.
 Eux.
Eryngium giganteum M.Bieb.
 Meşeli, open forest, 1700 m, 25.07.1998, ÖE 2538.
 Eux.
Chaerophyllum macrospermum (Spreng.) Fisch. & C.A.Mey.
 Sahara, stony and rocky place, 1900 m, 16.07.1998, ÖE 2535.
 Ir-Tur.
C. aureum L.
 Aşağıkoyunlu, open place, 1650 m, 12.07.1998, ÖE 2536.
Carum carvi L.
 Aşağıkoyunlu, meadow, 1550 m, 10.06.1997, ÖE 2532.
C. meifolium (M.Bieb.) Boiss.
 Sahara, open place, 1950 m, 12.08.1998, ÖE 2533.
Pimpinella affinis Ledeb.
 Kirazlı yaylası, alpine vegetation, 2500 m, 23.05.1999, ÖE 2544.
- Bupleurum falcatum** L.
 Subsp. **persicum** (Boiss.) Koso-Pol.
 Sahara, subalpine vegetation, 1950 m, 10.07.1999, ÖE 2530.
 Eux. (mt)
 Subsp. **polyphyllum** (Ledeb.) Wolff
 Kocabey yaylası, alpine vegetation, 2400 m, 12.08.2000, ÖE 2531.
 Eux.
Ferula orientalis L.
 Sahara, stony slope, 1950 m, 15.05.1997, ÖE 2539.
 Ir-Tur.
Ferulago setifolia C.Koch
 Sahara, stony and rocky slope, 2050 m, 16.06.1999, ÖE 2540.
Heracleum sphondylium L. subsp. **cyclocarpum** (C.Koch) P.H.Davis
 Karaköy, mixed forest, streamside, 1800 m, 10.07.2000, ÖE 2543.
 Eux.
H. antasiaticum Manden.
 Sahara, streamside, 2100 m, 10.06.1999, ÖE 2541.
H. apiifolium Boiss.
 Aşağıkoyunlu, streamside, 2100 m, 12.08.2000, ÖE 2542.
 Eux.
Torilis japonica (Hout.) DC.
 Şavşat, Armutlu, meadow, 1150 m, 04.09.1999, ÖE 2547.
Caucalis platycarpus L.
 Sahara, open place, 1900 m, 10.06.1999, ÖE 2534.
Daucus carota L.
 Şavşat, Kaleboyu, roadside, 9700 m, 12.06.2000, ÖE 2537.
ARALIACEAE
Hedera colchica (C.Koch.) C.Koch
 Meşeli, mixed forest, 1550 m, 16.09.2000, ÖE 2527.
 Eux.
CORNACEAE
Cornus mas L.
 Şavşat, Armutlu, open place, 1100 m, 18.04.1999, ÖE 2472.

- Euro-Sib.
C. sanguinea L. subsp. *australis* (C.A.Mey.) Jáv.
 Şavşat, Macerelte, roadside, 1100 m, 19.05.2000, ÖE 2473.
- Euro-Sib.
CAPRIFOLIACEAE
Sambucus ebulus L.
 Meşeli, roadside, 1400 m, 12.08.2000, ÖE 2736.
- Euro-Sib.
S. nigra L.
 Meşeli Kışlası, *Abies nordmanniana* forest, 1850 m, 10.06.2000, ÖE 2737.
- Euro-Sib.
Viburnum lantana L.
 Sahara, subalpine vegetation, 1900 m, 16.06.1999, ÖE 2738.
- Euro-Sib.
V. orientale Pall.
 Sahara, subalpine vegetation, 1900 m, 16.06.1999, ÖE 2739.
- Eux.
Lonicera caucasica Pall.
 Subsp. *caucasica*
 Karaköy, mixed forest, 1700 m, 16.06.2000, ÖE 2733.
 Subsp. *orientalis* (Lam.) Chamb. & Long.
 Sahara, subalpine vegetation, 1900 m, 11.06.1999, ÖE 2734.
 Endemic, LR (lc).
L. iberica M.Bieb.
 Veliköy, mixed forest, 1400 m, 01.07.2000, ÖE 2735.
- Hycr-Eux.
L. caprifolium L.
 Efkar hill, forestside, 1100 m, 10.06.1999, ÖE 2732.
- VALERIANACEAE**
Valeriana alliariifolia Adams
 Meşeli Kışlası, subalpine vegetation, 1950 m, 12.08.2000, ÖE 2741.
 Euro-Sib.
- V. officinalis* L.
 Sahara, subalpine vegetation, 1950 m, 16.06.1999, ÖE 2742.
- Centranthus longiflorus* Stev. subsp. *longiflorus*
 Şavşat, Kaleboyu, rocky slope, 1150 m, 02.07.1998, ÖE 2740.
- Ir-Tur.
Valerianella uncinata (M.Bieb.) Dufr.
 Yavuzköy, meadow, 1550 m, 10.06.2000, ÖE 2744.
- Ir-Tur.
V. amblyotis Fisch. & C.A.Mey.
 Sahara, subalpine vegetation, 23.05.1999, ÖE 2743.
- Ir-Tur.
DIPSACACEAE
Dipsacus pilosus L.
 Veliköy, roadside, 1300 m, 12.08.2000, ÖE 2746.
 Euro-Sib.
- Cephalaria aristata* C.Koch.
 Yavuzköy, meadow, 1550 m, 04.09.1999, ÖE 2745.
- Knautia montana* (M.Bieb.) DC.
 Kocabay Kışlası, roadside, 1650 m, 10.06.1999, ÖE 2747.
 EN, Euro-Sib.
- Scabiosa columbaria* L. subsp. *columbaria* var. *columbaria*
 Meşeli, stony slope, 1550 m, 12.08.2000, ÖE 2748.
- S. canescens* Waldst. & Kit.
 Meşeli Kışlası, open place, 1800 m, 10.07.2000, ÖE 2749.
- Euro-Sib.
S. caucasica M.Bieb.
 Sahara, open slope, 2050 m, 12.08.2000, ÖE 2750.
- COMPOSITAE (ASTERACEAE)**
Helianthus annuus L.
 Aşağıkoyunlu, in fields, 1500 m, 10.08.1999, ÖE 2963.
 Culture.
- H. tuberosus* L.
 Aşağıkoyunlu, in fields, 1500 m, 10.08.1999, ÖE 2964.
 Culture
Xanthium spinosum L.
 Şavşat, Efkar hill, roadside, 1050 m, 20.06.1998, ÖE 2841.
 Cosm.
Telekia speciosa (Schreb.) Baumg.
 Yavuzköy, open damp place, 1550 m, 04.09.1999, ÖE 2831.
 Euro-Sib.
Inula helenium L. subsp. *orgyalis* (Boiss.) Grierson
 Sahara, subalpine vegetation, 1950 m, 04.09.1999, ÖE 2798.
 Endemic, LR (nt), Eux.
I. orientalis Lam.
 Meşeli yaylası, subalpine vegetation, 2300 m, 11.07.1999, ÖE 2800.
 Eux (mt).
I. mariae Bordz.
 Kocabay yaylası, alpine vegetation, 2350 m, 12.08.2000, ÖE 2799.
 Eux (mt).
Pulicaria dysenterica (L.) Bernh.
 Ciritdüzü, streamside, 1000 m, 12.09.1998, ÖE 2817.
Helichrysum arenarium (L.) Moench subsp. *rubicundum* (C.Koch) P.H.Davis & Kupicha
 Kocabay Kışlası, open place, 1850 m, 23.05.1999, ÖE 2793.
 Ir-Tur.
H. artvinense P.H.Davis & Kupicha
 Meşeli yaylası, alpine vegetation, 2350 m, 11.07.1999, ÖE 2794.
 Endemic, EN.
Solidago virgaurea L.
 Subsp. *virgaurea*
 Karaköy, streamside, 1750 m, 10.07.1999, ÖE 2824.
 Subsp. *alpestris* (Waldst. & Kit.) Gaudin
 Meşeli yaylası, subalpine vegetation, 2250 m, 04.09.1999, ÖE 2823.

- Euro-Sib.
Aster amellus L. subsp. *ibericus* (Stev.)
Avet.
Aşağıkoyunlu, roadside, 1800 m,
12.08.2000, ÖE 2763.
Eux.
A. alpinus L.
Kirazlı yaylası, alpine vegetation, 2250
m, 10.08.1999, ÖE 2762.
Erigeron caucasicus Stev.
Subsp. *caucasicus*
Kocabey yaylası, alpine vegetation, 2400
m, 11.07.1999, ÖE 2790.
Eux (mt).
Subsp. *venustus* (Botsch.) Grierson
Kocabey yaylası, alpine vegetation, 2400
m, 11.07.1999, ÖE 2791.
Conyza canadensis (L.) Cronquist
Şavşat, Armutlu, meadow, 1150 m,
31.10.1999, ÖE 2784.
Bellis perennis L.
Ciritdüzü, open place, 1250 m,
23.05.1999, ÖE 2764.
Euro-Sib.
Doronicum dolichotrichum Cavill.
Kocabey yaylası, alpine vegetation, 2400
m, 16.06.1999, ÖE 2786.
Eux.
D. oblongifolium DC.
Yukarıkoyunlu yaylası, alpine vegetation,
2400 m, 11.07.1999, ÖE 2787.
Euro-Sib.
Senecio pseudo-orientalis Schischk.
Kocabey Kışlası, open, damp place, 1800
m, 30.07.2000, ÖE 2821.
Ir-Tur.
S. nemorensis L. subsp. *nemorensis*
Yavuzköy, damp place, 1550 m,
16.09.2000, ÖE 2820. Kocabey yaylası,
alpine vegetation, 2400 m, 12.08.2000, ÖE
2819.
Euro-Sib.
S. vernalis Waldst. & Kit.
Şavşat, Elmalı, stony and rocky slope,
1150 m, 17.04.1999, ÖE 2822.
- Tussilago farfara** L.
Kocabey Kışlası, roadside, 1800 m,
23.05.1999, ÖE2840.
Euro-Sib.
Petasites hybridus (L.) Gaertn.
Karaköy, streamside, 1800 m,
23.05.1998, ÖE 2809.
Euro-Sib.
P. albus (L.) Gaertn.
Şavşat, Armutlu, streamside, 1150 m,
21.03.1999, ÖE 2808.
Euro-Sib.
Eupatorium cannabinum L.
Şavşat, Beleşet, damp place, 1100 m,
04.09.1999, ÖE 2792.
Euro-Sib.
Anthemis calcarea Sosn. var. *calcarea*
Meşeli, open place, 1600 m,
16.06.1999, ÖE 2753.
Endemic, CR.
A. marschalliana Willd. subsp.
pectinata (Boiss.) Grierson
Meşeli yaylası, alpine vegetation, 2450
m, 11.07.2000, ÖE 2754.
Eux.
A. tinctoria L.
Var. *tinctoria*
Ciritdüzü, slope, 850 m, 11.07.1999,
ÖE 2756.
Var. *pallida* DC.
Sahara, stony and rocky place, 1900 m,
12.06.1999, ÖE 2755.
A. triumfettii (L.) All.
Sahara, subalpine vegetation, 1900 m,
12.06.1999, ÖE 2757.
Achillea biserrata M.Bieb.
Kocabey yaylası, alpine vegetation, 2450
m, 16.06.1999, ÖE 2751.
Eux.
A. millefolium L. subsp. *millefolium*
Meşeli Kışlası, open forest, 1850 m,
12.08.1999, ÖE 2752.
Euro-Sib.
- Leucanthemum vulgare** Lam.
Ciritdüzü, open forest, 1150 m,
10.07.1999, ÖE 2805.
Euro-Sib.
Tanacetum macrophyllum (Waldst. &
Kit.) Schultz
Kocabey Kışlası, damp place, 1850 m,
12.08.2000, ÖE 2827.
Euro-Sib.
T. parthenium (L.) Schultz & Bip.
Sahara, *Pinus sylvestris* forest, 1900 m,
11.07.1999, ÖE 2828.
T. coccineum (Willd.) Grierson subsp.
chamaemelifolium (Somm. & Lev.) Grierson
Sahara, subalpine vegetation, 1900 m,
23.05.1999, ÖE 2826.
VU, Eux (mt).
Tripleurospermum caucasicum (Willd.)
Hayek
Kocabey yaylası, alpine vegetation, 2450
m, 11.07.1999, ÖE 2834.
T. melanolepis (Boiss. & Buhse) Pobed.
Sahara, *Pinus sylvestris* forest, 1900 m,
12.08.2000, ÖE 2835.
T. oreades (Boiss.) Rech. fil.
Var. *oreades*
Meşeli yaylası, alpine vegetation, 2450
m, 16.06.1999, ÖE 2837.
Var. *tchihatchewii* (Boiss.) E.Hossain
Kirazlı yaylası, alpine vegetation, 2250
m, 11.07.1999, ÖE 2838.
T. transcaucasicum (Manden) Pobed.
Kocabey Kışlası, damp place, 1850 m,
12.08.2000, ÖE 2839.
T. monticulum (Boiss. & Huet) Bornm.
Sahara, subalpine vegetation, 1900 m,
23.05.1999, ÖE 2836.
Endemic, LR (lc).
Artemisia vulgaris L.
Ciritdüzü, streamside, 1200 m,
10.08.1998, ÖE 2761.
A. chamaemelifolia Vill
Yukarıkoyunlu, stony and rocky place,
1880 m, 11.09.1997, ÖE 2760.
Euro-Sib.

- Arctium tomentosum* R.Mill. var. *glabrum* (Körn.) Arènes
Aşağıkoyunlu, roadside, 1650 m, 12.08.2000, ÖE 2759.
- A. minus* (Hill) Bernh. subsp. *pubens* (Bab.) Arènes
Meşeli, open place, 1550 m, 11.07.1999, ÖE 2758.
Euro-Sib.
- Onopordum turcicum* Danin
Kocabey Kışlası, roadside, 1800 m, 10.07.1999, ÖE 2807.
Ir-Tur.
- Circium caucasicum* (Adams) Petr.
Kocabey yaylası, alpine vegetation, 2400 m, 12.08.1999, ÖE 2780.
VU, Eux (mt).
- C. lappaceum* (M.Bieb.) Fisch. subsp. *tenuilobum* (C.Koch) P.H.Davis & Parris
Karaköy, open place, 1850 m, 04.09.1999, ÖE 2781.
Endemic, LR (lc).
Ir-Tur.
- C. pseudopersonata* Boiss. subsp. *pseudopersonata*
Yukarıkoyunlu, *Picea orientalis* forest, 1900 m, 11.07.1999, ÖE 2783.
Endemic, LR (lc), Eux.
- C. obvallatum* (M.Bieb.) Fisch
Kocabey yaylası, subalpine vegetation, streamside, 2100 m, 12.08.2000, ÖE 2782.
VU, Hyrc-Eux (mt).
- C. arvense* (L.) Scop. subsp. *arvense*
Yukarıkoyunlu, roadside, 2000 m, 12.08.1999, ÖE 2779.
Cosm.
- Ptilostemon echinocephalus* (Willd.) Greuter
Şavşat, Elmalı, stony slope, 800 m, 11.07.1999, ÖE 2816; Meşeli, streamside, 1650 m, 10.07.1999, ÖE 2815.
VU.
- Carduus adpressus* C.A.Mey.
Meşeli Kışlası, damp place, 1870 m, 12.08.1997, ÖE 2765.
- Eux.
C. hamulosus Ehrh. subsp. *hamulosus*
Sahara, open place, 1900 m, 10.07.1998, ÖE 2766.
Euro-Sib.
- Centaurea salicifolia* M.Bieb. ex Willd. subsp. *abbreviata* C.Koch
Yavuzköy, meadow, 1550 m, 16.06.1999, ÖE 2772.
- C. simplicicaulis* Boiss. & Huet
Veliköy, rocky place, 1350 m, 23.05.1999, ÖE 2773.
Eux.
- C. pecho* Albov
Ciritdüzü, stony and rocky place, 850 m, 11.07.1999, ÖE 2770.
Endemic, VU, Eux.
- C. hedgei* Wagenitz
Sahara, subalpine vegetation, 1900 m, 10.07.1999, ÖE 2768.
Endemic, VU.
Ir-Tur.
- C. pulcherrima* Willd. subsp. *pulcherrima*
Kocabey yaylası, alpine vegetation, 2400 m, 30.07.2000, ÖE 2771.
- C. cheiranthifolia* Willd. var. *purpurascens* (DC) Wagenitz
Kirazlı yaylası, alpine vegetation, 2350 m, 10.07.1999, ÖE 2767.
VU, Eux (mt).
- C. nigrifimbria* (C.Koch) Sosn.
Sahara, subalpine vegetation, 1900 m, 12.08.2000, ÖE 2769.
Eux (mt).
- C. triumfettii* All.
Sahara, *Pinus sylvestris* forest, 1900 m, 16.06.1999, ÖE 2774.
- C. woronowii* Bornm.
Meşeli, roadside, 1600 m, 11.07.1999, ÖE 2775.
Endemic, LR (cd).
- Xeranthemum annuum* L.
Şavşat, Armutlu, open dry place, 1150 m, 16.06.1999, ÖE 2842.
- Ir-Tur.
X. cylindraceum Sm.
Yavuzköy, open place, 1350 m, 12.06.1999, ÖE 2843.
- Echinops galaticus* Freyn
Ciritdüzü, *Quercus petraea* scrub, 1100 m, 12.08.2000, ÖE 2788.
Eux.
- E. pungens* Trautv. var. *transcaucasicus* (Iljin) Hedge
Sahara, roadside, 2100 m, 11.07.1999, ÖE 2789.
VU.
Ir-Tur.
- Cichorium intybus* L.
Veliköy, roadside, on wall, 1400 m, 11.06.1999, ÖE 2778.
Cosm.
- Scorzonera seidlitzii* Boiss.
Sahara, rocky slope, 2250 m, 13.07.2000, ÖE 2975.
- Tragopogon reticulatus* Boiss. & Huet
Meşeli, wet stony slope, 1650 m, 22.05.1999, ÖE 2833.
- T. pussillus* M.Bieb.
Sahara, subalpine vegetation, 1900 m, 11.07.1999, ÖE 2832.
- T. aureus* Boiss.
Yavuzköy, slope, 1550 m, 23.05.1999, ÖE 2818.
Endemic, LR (lc).
- Leontodon hispidus* L. var. *hispidus*
Meşeli, open place, 1550 m, 12.08.2000, ÖE 2803; Kirazlı yaylası, alpine vegetation, 2300 m, 04.09.1999, ÖE 2804.
- L. crispus* Vill. subsp. *asper* (Waldst. & Kit.) Roh. var. *asper*
Sahara, stony and rocky place, 2100 m, 16.06.1999, ÖE 2802.
- Sonchus arvensis* L. subsp. *uliginosus* (M.Bieb.) Beg
Meşeli, damp place, 1600 m, 12.08.2000, ÖE 2825.
- Hieracium gentiliforme* (Zah) Sell & West
Sahara, subalpine vegetation, 1950 m, 16.06.1999, ÖE 2795.

- Endemic, VU, Eux.
H. karagoellense (Zahn) Sell & West
 Ciritdüzü Yaylası, near *Pinus sylvestris* forest, 2000 m, 12.08.2000, ÖE 2797.
 Endemic, LR(Ic), Eux. Population of this taxon is low.
H. insolitum (Zahn) Juxip
 Meşeli Kışlası, open forest, 1900 m, 11.07.1999, ÖE 2796.
 Endemic, CR. Population of this taxon is low and affected by heavy grazing.
Pilosella hoppeana (Schultes) C.H. & F.W.Schultz subsp. *cilicica* (NP.) Sell & West
 Meşeli Kışlası, *Pinus sylvestris* forest, 1850 m, 11.07.1997, ÖE 2811.
P. piloselloides (Vill.) Sojak subsp. *megalomastix* (NP.) Sell & West
 Şavşat, Macerelte, *Quercus petraea* scrub, 1150 m, 23.05.1998, ÖE 2812.
P. x auriculoides (Láng) Sell & West
 Sahara Location, *Pinus sylvestris* forest, 1900 m, 11.07.1997, ÖE 2810.
Prenanthes abietina (Boiss. & Ball.) Kirpiciz
 Karaköy, *Abies nordmanniana* forest, 1800 m, 04.09.1999, ÖE 2813.
 Eux.
P. cacaliifolia (M.Bieb.) Beauverd
 Sahara, roadside, 2100 m, 12.08.2000, ÖE 2814.
 Eux.
Cicerbita bourgaei (Boiss.) Beauverd
 Sahara, open place, 1850 m, 04.09.1999, ÖE 2776.
C. racemosa (Willd.) Beauverd
 Sahara, subalpine vegetation, 1950 m, 12.08.1999, ÖE 2777.
 Eux.
Mycelis muralis (L.) Dum.
 Karaköy, mixed forest, 1700 m, 12.08.2000, ÖE 2806.
 Euro-Sib.
Lapsana communis L. subsp. *intermedia* (M.Bieb.) Hayek
 Kirazlı, mixed forest, 1650 m, 10.07.1999, ÖE 2801.
Taraxacum crepidiforme DC. subsp. *crepidiforme*
 Kocabey yaylası, alpine vegetation, 2450 m, 11.07.1999, ÖE 2829.
 Ir-Tur.
T. macrolepium Schischk.
 Meşeli Kışlası, damp place, 1850 m, 12.06.1999, ÖE 2830.
Crepis paludosa (L.) Moench
 Kirazlı, mixed forest, 1750 m, 11.07.1999, ÖE 2785.
 Euro-Sib.
CAMPANULACEAE
Campanula crispa Lam.
 Yukarıkoyunlu, stony and rocky place, 1700 m, 16.07.1999, ÖE 2709.
 Ir-Tur.
C. latifolia L.
 Karaköy, roadside, 1800 m, 10.07.1999, ÖE 2712.
 Euro-Sib.
C. rapunculoides L.
 Subsp. *rapunculoides*
 Meşeli, forestside, 1600 m, 12.08.2000, ÖE 2717.
 Euro-Sib.
 Subsp. *cardifloia* (C.Koch) Damboldt.
 Meşeli Kışlası, subalpine vegetation, 1950 m, 10.07.2000, ÖE 2718.
C. bononiensis L.
 Şavşat, Beleşet, forestside, 1100 m, 01.07.2000, ÖE 2707.
 Euro-Sib.
C. sibirica L. subsp. *hohenackeri* (Fisch. & C.A.Mey.) Damboldt
 Sahara, *Pinus sylvestris* forest, 1900 m, 11.07.2000, ÖE 2719.
 Eux.
C. glomerata L. subsp. *hispida* (Witasek) Hayek
 Meşeli Kışlası, forestside, 1800 m, 12.08.2000, ÖE 2710.
 Euro-Sib.
C. macrochlamys Boiss. & Huet
 Kirazlı, roadside, 1600 m, 23.05.1999, ÖE 2713.
C. alliarifolia Willd.
 Meşeli, *Picea orientalis* forest, 1600 m, 30.07.2000, ÖE 2705.
 Eux.
C. aucheri A.DC.
 Meşeli yaylası, alpine vegetation, 2400 m, 01.07.2000, ÖE 2706.
 Eux (mt).
C. collina Sims.
 Kocabey Kışlası, open place, 1850 m, 10.07.2000, ÖE 2708.
 Eux.
C. lactiflora M.Bieb.
 Sahara, subalpine vegetation, 1900 m, 01.07.2000, ÖE 2711.
 Eux.
C. pontica Albov
 Ciritdüzü, stony and rocky place, 950 m, 23.05.1999, ÖE 2715.
 Eux.
C. olympica Boiss.
 Kirazlı yaylası, alpine vegetation, 2300 m, 12.07.2000, ÖE 2714.
 Eux.
C. rapunculus L. var. *lambertiana* (A.DC.) Boiss.
 Karaköy, open forest, damp place, 1750 m, 16.06.1999, ÖE 2716.
 Euro-Sib.
ERICACEAE
Rhododendron luteum Sweet
 Karaköy, mixed forest, 1650 m, 08.06.2000; Aşağıkoyunlu, mixed forest, 1600 m, 17.06.1999, ÖE 2276.
 Eux.
R. caasicum Pall.
 Sahara, subalpine vegetation, 2100 m, 12.06.2000, ÖE 2274.
 Eux (mt).
R. ponticum L. subsp. *ponticum*
 Meşeli, *Picea orientalis* forest, 1530 m, 17.08.1999, ÖE 2277.
 Eux.
Vaccinium myrtillus L.
 Sahara, subalpine vegetation, 2100 m, 15.07.2000, ÖE 2279.

- Euro-Sib.
V. arctostaphylos L.
Meşeli, *Picea orientalis* forest, 1550 m, 21.08.1997, ÖE 2278.
- Eux.
Orthilia secunda (L.) House
Veliköy, *Picea orientalis* forest, 1700 m, 12.07.1999, ÖE 2280.
- Monotropa hypopithys** L.
Meşeli, *Picea orientalis* forest, 1650 m, 11.07.1999, ÖE 2281.
- PRIMULACEAE**
Primula vulgaris Huds. subsp. *sibthorpii* (Hoffm.) W.W.Sm. & Forrest
Yavuzköy, mixed forest, 1600 m, 15.04.1999, ÖE 2295.
- Eux.
P. veris L.
Subsp. *columnae* (Ten.) Lüdi
Veliköy, open place, 1450 m, 17.06.1999, ÖE 2293.
- Euro-Sib.
Subsp. *macrocalyx* (Bunge) Lüdi
Sahara, alpine vegetation, 2450 m, 13.06.2000, ÖE 2294.
- Euro-Sib.
P. elatior (L.) Hill.
Subsp. *pseudoelatior* (Kusn.) W.W.Sm. & Forrest
Kirazlı yaylası, alpine vegetation, 2400 m, 11.06.1999, ÖE 2291.
- VU, Eux (mt).
Subsp. *pallasii* (Lehm.) W.W.Sm. & Forrest
Meşeli yaylası, open place, 2000 m, 09.07.1999, ÖE 2290.
- Euro-Sib.
Subsp. *meyeri* (Rupr.) Valentine & Lamond
Sahara, subalpine vegetation, 2100 m, 09.07.1999, ÖE 2289.
- Eux (mt).
P. megaseifolia Boiss. & Bal. ex. Boiss.
Yavuzköy, *Picea orientalis* forest, 1550 m, 13.06.2000, ÖE 2292.
- VU, Eux.
P. auriculata Lam.
Aşağıkoyunlu yaylası, streamside, damp place, 2350 m, 14.06.2000, ÖE 2288.
- Ir-Tur.
P. algida Adams
Aşağıkoyunlu yaylası, streamside, damp place, 2300 m, 14.06.2000, ÖE 2287.
- Cyclamen coum** Mill.
Var. *coum*
Ciritdüzü, open place, 1250 m, 07.06.1999, ÖE 2285.
- Var. *caucasicum* (C.Koch) Medik.
Şavşat, Armutlu, open place, 1100 m, 10.05.1999, ÖE 2284.
- Lysimachia verticillaris** Spreng.
Veliköy, streamside, 1300 m, 14.06.1999, ÖE 2286.
- Hycr-Eux.
Anagallis arvensis L. var. *arvensis*
Şavşat, Efkar hill, roadside, 1000 m, 15.06.1999, ÖE 2283.
- EBENACEAE**
Diospyros lotus L.
Şavşat, Yeniköy, roadside, 900 m, 21.08.1997, ÖE 2282.
- Culture.
- OLEACEAE**
Fraxinus angustifolia Vahl. subsp. *oxycarpa* (M.Bieb. ex Willd.) Franco & Rocha Afonso
Ciritdüzü, *Quercus petraea* scrub, 1200 m, 14.10.2000, ÖE 2653; Kirazlı, streamside, 1650 m, 05.09.1999, ÖE 2654.
- Euro-Sib.
- APOCYNACEAE**
Vinca herbacea Waldst. & Kit.
Ciritdüzü, open place, 1250 m, 18.04.1999, ÖE 2555.
- GENTIANACEAE**
Centaurium erythraea Rafn subsp. *erythraea*
Ciritdüzü, *Quercus petraea* scrub, 1350 m, 12.06.1999, ÖE 2548.
- Euro-Sib.
- Gentiana asclepiadea** L.
Karaköy, roadside, damp place, 1850 m, 04.09.1999, ÖE 2549.
- Euro-Sib.
G. pyrenaica L.
Kocabey Kışlası, alpine vegetation, 2450 m, 10.07.1997, ÖE 2550.
- Euro-Sib.
G. septenfida Pall.
Kocabey Kışlası, alpine vegetation, 2450 m, 10.07.1999, ÖE 2551.
- Hycr-Eux (mt).
G. verna L. subsp. *pontica* (Soltok.) Hayek
Kocabey yaylası, alpine vegetation, 2400 m, 23.05.1998, ÖE 2552.
- Hycr-Eux (mt).
Gentianella ciliata (L.) Borkh. subsp. *blepharophora* (Bordz.) Pritch.
Meşeli Kışlası, subalpine vegetation, 1900 m, 05.09.1999, ÖE 2554.
- Hycr-Eux (mt).
G. caucasea (Lodd. ex Sims.) Holub.
Sahara, subalpine vegetation, 2100 m, 12.08.2000, ÖE 2553.
- Eux (mt).
Swertia iberica Fisch. ex C.A.Mey.
Aşağıkoyunlu yaylası, alpine vegetation, damp place, 2000 m, 10.09.1999, ÖE 2965.
- Eux (mt).
- CONVOLVULACEAE**
Convolvulus cantabrica L.
Meşeli, roadside, 1450 m, 23.05.1999, ÖE 2564.
- C. arvensis** L.
Sahara, open place, 1850 m, 04.09.1999, ÖE 2563.
- Cosm.
Calystegia silvatica (Kit.) Griseb.
Meşeli, roadside, on *Sambucus*, 1500 m, 21.08.1997, ÖE 2562.
- CUSCUTACEAE**
Cuscuta europaea L.
Aşağıkoyunlu, on *Artemisia*, 1550 m, 15.07.1997, ÖE 2565.

- C. monogyna* Vahl. subsp. *monogyna*
Meşeli Kışlası, on *Sambucus*, 1800 m,
30.07.2000, ÖE 2566.
- BORAGINACEAE**
- Heliotropium ellipticum* Ledeb.
Şavşat, Efkar hill, stony and rocky place,
1100 m, 30.07.2000, ÖE 2576.
Ir-Tur.
- Myosotis sylvatica* Ehr. ex Hoffm.
subsp. *cyanea* Vesterg.
Kocabey yaylası, alpine vegetation, 2450
m, 10.07.2000, ÖE 2582.
- M. lithospermifolia* (Willd.) Hornem.
Sahara, subalpine vegetation, stony and
rocky place, 2100 m, 19.05.2000, ÖE 2579.
- M. laxa* Lehm. subsp. *caespitosa*
(C.F.Schultz) Heyl. ex Nordh.
Yavuzköy, damp meadow, 1550 m,
10.07.1999, ÖE 2578.
- M. sparsiflora* Mikan ex Pohl
Şavşat, Elmalı, open place, 1050 m,
18.04.1999, ÖE 2581.
VU, Euro-Sib.
- M. propinqua* Fisch. & C.A.Mey. ex DC.
Meşeli, open forest, 1650 m,
11.06.2000, ÖE 2580.
Eux (mt).
- Omphalodes cappadocica* (Willd.) DC.
Şavşat, Beleşet, mixed forest, 1100 m,
17.04.1999, ÖE 2584.
Eux.
- Rindera lanata* (Lam.) Bunge var. *lanata*
Sahara, subalpine vegetation, 2200 m,
17.05.2000, ÖE 2971.
- Cynoglossum creticum* Mill.
Kocabey yaylası, alpine vegetation, 2050
m, 17.04.1999, ÖE 2571.
- C. germanicum* Jacq.
Yavuzköy, open place, 1550 m,
10.07.1999, ÖE 2572.
Euro-Sib.
- Lithospermum purpurocaeruleum* L.
Şavşat, Beleşet, mixed forest, 1050 m,
23.05.1999, ÖE 2577.
Euro-Sib.
- Buglossoides arvensis* (L.) Johnston
Aşağıkoyunlu, stony and rocky place,
1650 m, 17.04.1999, ÖE 2568.
- Echium russicum* J.F.Gmel.
Sahara, *Pinus sylvestris* forest, 1900 m,
10.07.1999, ÖE 2573.
Euro-Sib.
- E. vulgare* L.
Meşeli, *Picea orientalis* forest, 1550 m,
18.05.2000, ÖE 2574; Sahara, *Abies
nordmanniana* forest, 1950 m, 17.09.2000,
ÖE 2575.
Euro-Sib.
- Onosma sericeum* Willd.
Ciritdüzü, *Quercus petraea* scrub, 850 m,
18.04.1999, ÖE 2586; Köprülü, roadside,
1000 m, 11.07.1999, ÖE 2587.
Ir-Tur.
- O. arcuatum* Riedl.
Sahara, stony and rocky place, 1950 m,
10.06.1999, ÖE 2585.
Endemic, EN.
Ir-Tur.
- O. trapezunteum* Boiss. & Huet ex
Hand.-Mazz.
Meşeli, roadside, 1400 m, 18.04.1999,
ÖE 2588.
Endemic, LR (lc).
- Cerinth minor* L.
Subsp. *minor*
Sahara, subalpine vegetation, 1950 m,
09.07.2000, ÖE 2570.
Euro-Sib.
- Subsp. *auriculata* (Ten.) Domac
Yavuzköy, meadow, 1600 m,
17.06.1999, ÖE 2569.
- Symphytum asperum* Lepech.
Karaköy, *Picea orientalis* forest, 1850 m,
30.07.2000, ÖE 2591.
Hyrc-Eux.
- S. ibericum* Steven
Veliköy, roadside, 1300 m, 23.05.1999,
ÖE 2592.
- S. longipetiolatum* Wickens
Yavuzköy, *Picea orientalis* forest, 1550
m, 18.05.2000, ÖE 2593; Kirazlı,
streamside, 1600 m, 19.05.2000, ÖE 2594.
- Meşeli Kışlası, open forest, 1800 m,
10.06.1999, ÖE 2590.
Endemic, VU, Eux.
- Trachystemon orientalis* (L.) G.Don
Veliköy, open forest, damp place, 1350
m, 10.05.1999, ÖE 2595.
Eux.
- Brunnera macrophylla* (Adams) Johnst.
Karaköy, *Picea orientalis* forest, 1800 m,
18.05.2000, ÖE 2567.
VU, Eux.
- Anchusa azurea* Mill. var. *azurea*
Şavşat, Kaleboyu, 850 m, 18.06.2000,
ÖE 2972
- Pulmonaria dacica* Simonk.
Şavşat, Beleşet, damp place, 900 m,
18.04.1999, ÖE 2589.
Euro-Sib.
- Nonnea versicolor* (Steven) Sweet
Kocabey yaylası, alpine vegetation, 2500
m, 12.06.1999, ÖE 2583.
Eux (mt).
- SOLANACEAE**
- Solanum nigrum* L. subsp. *nigrum*
Meşeli, roadside, stony and rocky damp
place, 1500 m, 10.11.1997, ÖE 2561.
Cosm.
- S. dulcamara* L.
Veliköy, streamside, 1300 m,
10.09.1997, ÖE 2560.
Euro-Sib.
- Physalis alkekengi* L.
Köprülü, damp place, 1400 m,
10.10.1998, ÖE 2559.
- Atropa belladonna* L.
Meşeli, open forest, roadside, 1550 m,
11.07.1999, ÖE 2556.
Euro-Sib.
- Datura stramonium* L.
Şavşat, Elmalı, roadside, 1050 m,
12.08.1998, ÖE 2557.
Cosm.
- Hyoscyamus niger* L.
Veliköy, roadside, 1350 m, 12.06.1999,
ÖE 2558.

SCROPHULARIACEAE	Euro-Sib.	<i>V. anagalis-aquatica</i> L.
<i>Verbascum pyramidatum</i> M.Bieb.	<i>S. cinerascens</i> Boiss.	Veliköy, streamside, 1350 m, 10.06.2000, ÖE 2687.
Ciritdüzü, <i>Quercus petraea</i> scrub, 1150 m, 12.08.2000, ÖE 2683.	Aşağıkoyunlu, roadside, 1900 m, 01.07.1999, ÖE 2676.	<i>V. lysimachioides</i> Boiss.
Hycr-Eux.	<i>Linaria genistifolia</i> (L.) Mill. subsp. <i>confertiflora</i> (Boiss.) P.H.Davis	Veliköy, streamside, 1350 m, 10.06.2000, ÖE 2694.
<i>V. gracilescens</i> Hub.-Mor.	Aşağıkoyunlu, roadside, stony and rocky place, 1750 m, 16.06.1999, ÖE 2661.	Endemic, LR (lc).
Kocabey Kışlası, open place, 1850 m, 01.07.2000, ÖE 2682.	Endemic, LR (lc).	<i>V. michauxii</i> Lam.
Endemic, EN.	Ir-Tur.	Meşeli Kışlası, open place, 1950 m, 12.08.2000, ÖE 2695.
Ir-Tur.	<i>L. armeniaca</i> Chav.	<i>V. baranetzii</i> Bordz.
<i>V. saccatum</i> C.Koch	Kocabey, meadow, 1450 m, 23.05.1999, ÖE 2660.	Meşeli Kışlası, subalpine vegetation, 2050 m, 10.07.1999, ÖE 2689.
Kocabey Kışlası, roadside, 1850 m, 01.07.2000, ÖE 2684.	Ir-Tur.	Hycr-Eux.
Ir-Tur.	<i>Digitalis ferruginea</i> L.	<i>V. orientalis</i> Mill. subsp. <i>orientalis</i>
<i>V. georgicum</i> Benth.	Subsp. <i>ferruginea</i>	Karaköy, mixed forest, 1750 m, 16.06.1999, ÖE 2698.
Karaköy, open forest, 1750 m, 16.06.1999, ÖE 2681.	Kocabey Kışlası, mixed forest, roadside, 1850 m, 10.07.1999, ÖE 2655.	<i>V. multifida</i> L.
Ir-Tur.	Euro-Sib.	Meşeli, open forest, 1550 m, 23.05.1999, ÖE 2696.
<i>V. varians</i> Freyn & Sint.	Subsp. <i>schischkinii</i> (Ivan) Werner	Endemic, LR (lc).
Var. <i>varians</i>	Meşeli Kışlası, <i>Picea orientalis</i> forest, 1800 m, 12.08.2000, ÖE 2656.	Ir-Tur.
Şavşat, Armutlu, roadside, 1100 m, 12.06.2000, ÖE 2685.	Eux.	<i>V. armena</i> Boiss. & Huet
Var. <i>trapezunticum</i> Murb.	<i>Veronica telephifolia</i> Vahl.	Yukarıkoyunlu, stony slope, 1850 m, 23.05.1999, ÖE 2688.
Meşeli Kışlası, roadside, 1600 m, 11.06.2000, ÖE 2686.	Meşeli yaylası, stony and rocky place, 2500 m, 10.07.2000, ÖE 2701.	Ir-Tur.
Endemic, EN, Eux.	VU.	<i>V. peduncularis</i> M.Bieb.
<i>V. asperuloides</i> Hub.-Mor.	<i>V. gentianoides</i> Vahl.	Aşağıkoyunlu yaylası, open place, 2000 m, 11.06.2000, ÖE 2699.
Meşeli, open forest, 1550 m, 01.07.2000, ÖE 2680.	Kirazlı yaylası, alpine vegetation, 2250 m, 11.06.2000, ÖE 2692; Meşeli yaylası, alpine vegetation, 2450 m, 12.08.2000, ÖE 2693.	Eux.
Endemic, LR (lc).	Hycr-Eux (mt).	<i>V. officinalis</i> L.
Ir-Tur.	<i>V. serpyllifolia</i> L.	Meşeli, <i>Abies nordmanniana</i> forest, 1600 m, 01.07.2000, ÖE 2697.
<i>V. alpigenum</i> C.Koch	Sahara, streamside, 1900 m, 18.05.2000, ÖE 2700.	Euro-Sib.
Meşeli Kışlası, open place, 1850 m, 10.06.1997, ÖE 2679.	<i>V. ceratocarpa</i> C.A.Mey.	<i>Melampyrum arvense</i> L.
VU.	Veliköy, open forest, 1500 m, 16.06.1999, ÖE 2690.	Var. <i>arvense</i>
<i>Scrophularia chrysantha</i> Jaub. & Spach	VU, Hycr-Eux.	Yavuzköy, meadow, 1550 m, 11.06.2000, ÖE 2662.
Kocabey Kışlası, stony and rocky place, 1850 m, 11.07.1999, ÖE 2675.	<i>V. filiformis</i> Sm.	Euro-Sib.
Eux.	Meşeli Kışlası, streamside, 1900 m, 23.05.1999, ÖE 2691.	<i>Var elatius</i> Boiss.
<i>S. kotschyana</i> Benth.	Hycr-Eux.	Cevizli, open forest, 1700 m, 12.08.1999, ÖE 2663.
Meşeli, damp place, 1650 m, 23.05.1999, ÖE 2677.		Endemic, LR (nt), Eux.
<i>S. umbrosa</i> Dum.		<i>Euphrasia hirtella</i> Jord. ex Reut.
Karaköy, open forest, 1700 m, 11.06.2000, ÖE 2678.		Yavuzköy, meadow, 1500 m, 10.08.1999, ÖE 2657.

Euro-Sib.
E. pectinata Ten.
 Aşağıkoyunlu yaylası, alpine vegetation, damp place, 2400 m, 16.06.1999, ÖE 2658.
 Euro-Sib.
Pedicularis atropurpurea Nordm.
 Sahara, subalpine vegetation, 1900 m, 12.08.2000, ÖE 2664.
 VU, Eux (mt).
P. wilhelmsiana Fisch. ex M.Bieb.
 Sahara, *Pinus sylvestris* forest, 1900 m, 11.06.1999, ÖE 2669.
 Eux. (mt)
P. condensata M.Bieb.
 Sahara, *Abies nordmanniana* forest, 1900 m, 11.07.1999, ÖE 2667.
 Eux. (mt)
P. nordmanniana Bunge
 Kirazlı yaylası, alpine vegetation, 2300 m, 12.08.1999, ÖE 2668.
 Eux. (mt)
P. comosa L.
 Var. *sibthorpii* (Boiss.) Boiss.
 Meşeli Kışlası, slope, 1850 m, 12.06.2000, ÖE 2666.
 Var. *acmodonta* (Boiss.) Boiss.
 Kirazlı yaylası, alpine vegetation, 2250 m, 01.07.1999, ÖE 2665.
Rhinanthus angustifolius C.C.Gmel. subsp. *grandiflorus* (Wallr.) D.A.Webb
 Yavuzköy, meadow, 1550 m, 10.06.1999, ÖE 2670; Meşeli, meadow, 1600 m, 10.07.2000, ÖE 2671; Veliköy, meadow, 1300 m, 12.08.2000, ÖE 2672.
Rhynchosorys orientalis (L.) Benth.
 Meşeli Kışlası, open place, 1850 m, 11.06.2000, ÖE 2673.
 VU, Eux.
R. stricta (C.Koch) Albov
 Veliköy, meadow, 1400 m, 12.08.2000, ÖE 2674.
 Eux.
Lathraea squamaria L.
 Yavuzköy, roadside, 1550 m, 23.05.1999, ÖE 2659.

Euro-Sib.
OROBANCHACEAE
Orobanche bungeana Beck
 Meşeli, roadside, on *Alyssum*, 1470 m, 10.06.1997, ÖE 2702.
 Hyrc-Eux.
O. caryophyllaceae Switch
 Yavuzköy, roadside, 1550 m, 11.07.1998, ÖE 2703.
O. elatior Sutton
 Yavuzköy, open place, on *Centaurea*, 1470 m, 10.06.1999, ÖE 2704.
VERBENACEAE
Verbena officinalis L.
 Veliköy, streamside, 1350 m, 10.06.1999, ÖE 2596.
 Cosm.
LABIATAE (LAMIACEAE)
Ajuga orientalis L.
 Kirazlı yaylası, alpine vegetation, 2450 m, 17.04.1999, ÖE 2599; Meşeli yaylası, alpine vegetation, 2500 m, 10.07.1999, ÖE 2600.
A. genevensis L.
 Veliköy, open forest, 1300 m, 23.05.1999, ÖE 2598.
 Euro-Sib.
A. reptans L.
 Yavuzköy, meadow, 1550 m, 19.05.2000, ÖE 2601.
 Euro-Sib.
Teucrium orientale L.
 Var. *puberulens* Ekim
 Meşeli Kışlası, open place, 1800 m, 04.09.1999, ÖE 2642.
 Ir-Tur.
 Var. *glabrescens* Hausskn. ex Bornm.
 Meşeli, open forest, 1700 m, 12.08.2000, ÖE 2643.
 Ir-Tur.
T. chamaedrys L. subsp. *trapenzuntinus* Rech.
 Yavuzköy, open place, 1500 m, 10.07.1999, ÖE 2641.

Eux.
T. polium L.
 Ciritdüzü, *Quercus petraea* scrub, 1200 m, 04.09.1999, ÖE 2644.
Scutellaria albida L. subsp. *colchica* (Rech.) J.R.Edm.
 Sahara, subalpine vegetation, 1900 m, 10.07.1999, ÖE 2631.
 Eux.
S. pontica C.Koch
 Meşeli yaylası, alpine vegetation, 2400 m, 30.07.2000, ÖE 2633.
 Eux (mt).
S. orientalis L. subsp. *orientalis*
 Şavşat, Armutlu, stony and rocky place, 1200 m, 10.07.1999, ÖE 2632.
 Ir-Tur.
Eremostachys molucelloides Bunge
 Şavşat, Efkar hill, open place, 1100 m, 25.07.1997, ÖE 2606.
 Ir-Tur.
Lamium purpureum L. var. *purpureum*
 Karaköy, *Abies nordmanniana* forest, 1600 m, 18.04.1999, ÖE 2613.
 Euro-Sib.
L. album L.
 Meşeli Kışlası, *Abies nordmanniana* forest, 1800 m, 10.07.1999, ÖE 2610; Ciritdüzü, *Quercus petraea* scrub, 1050 m, 23.05.1999, ÖE 2611.
 Euro-Sib.
L. tomentosum Willd. var. *alpestre* (Trautv.) T.N.Popova
 Meşeli yaylası, alpine vegetation, 2400 m, 10.07.1999, ÖE 2614.
 CR, Ir-Tur. Distribution and population of this taxon are low and affected by heavy grazing.
L. galactophyllum Boiss. & Reut.
 Aşağıkoyunlu, roadside, rocky place, 2000 m, 23.05.1999, ÖE 2612.
 Endemic, LR (lc).
 Ir-Tur.
Galeopsis ladanum L.
 Yavuzköy, dry soil, 1600 m, 10.07.1999, ÖE 2609.

- Euro-Sib.
G. bifida Boenn.
Sahara, subalpine vegetation, 1900 m, 16.09.2000, ÖE 2607; Meşeli Kışlası, roadside, 1900 m, 12.08.2000, ÖE 2608.
- Euro-Sib.
Ballota nigra L. subsp. *nigra*
Ciritdüzü, in scrub, 1200 m, 16.09.2000, ÖE 2602.
- Euro-Sib.
Sideritis montana L. subsp. *montana*
Yavuzköy, meadow, 1550 m, 31.07.2000, ÖE 2635.
- Medit.
S. armeniaca Bornm.
Veliköy, stony slope, 1400 m, 10.07.1999, ÖE 2634.
- Endemic, LR (cd).
Ir-Tur.
Stachys spectabilis Choisy ex DC.
Sahara, subalpine vegetation, 1900 m, 04.09.1999, ÖE 2639.
- Ir-Tur.
S. sylvatica L.
Kocabey yaylası, alpine vegetation, 2400 m, 12.08.1999, ÖE 2640.
- Euro-Sib.
S. iberica M.Bieb. subsp. *stenostachya* (Boiss.) Rech.
Şavşat, Beleşet, rocky slope, 1050 m, 17.06.1999, ÖE 2636.
- Ir-Tur.
S. macrantha (C.Koch) Stearn
Kocabey yaylası, alpine vegetation, 2400 m, 12.08.2000, ÖE 2637.
- Eux.
S. officinalis (L.) Trevis. subsp. *officinalis*
Yavuzköy, wet meadow, 1550 m, 10.07.1999, ÖE 2638.
- VU, Euro-Sib.
Glechoma hederacea L.
Meşeli, roadside, 1470 m, 16.05.1998, ÖE 2597.
- Euro-Sib.
Prunella vulgaris L.
Aşağıkoyunlu, roadside, wet place, 1650 m, 10.06.1999, ÖE 2623.
- Euro-Sib.
P. laciniata (L.) L.
Ciritdüzü, *Pinus sylvestris* forest, 1250 m, 10.06.1999, ÖE 2622.
- Euro-Sib.
Origanum rotundifolium Boiss.
Kocabey Kışlası, roadside, 1650 m, 10.07.1999, ÖE 2619.
- Eux.
O. vulgare L.
Subsp. *vulgare*
Kirazlı yaylası, alpine vegetation, 2250 m, 16.09.2000, ÖE 2621.
- Euro-Sib.
Subsp. *viride* (Boiss.) Hayek
Yavuzköy, meadow, 1500 m, 28.07.1999, ÖE 2620.
- Satureja spicigera** (C.Koch) Boiss.
Veliköy, stony and rocky place, 1400 m, 04.09.1999, ÖE 2630.
- Eux.
Calamintha grandiflora (L.) Moench
Meşeli, mixed forest, 1550 m, 12.08.1999, ÖE 2603.
- Euro-Sib.
Clinopodium vulgare L.
Subsp. *vulgare*
Kocabey Kışlası, open forest, 1800 m, 04.09.1999, ÖE 2605.
- Euro-Sib.
Subsp. *arundanum* (Boiss.) Nyman
Ciritdüzü, in scrub, 1350 m, 10.07.1999, ÖE 2604.
- Thymus fallax** Fisch. & C.A.Mey.
Aşağıkoyunlu, roadside, stony slope, 1700 m, 10.07.1999, ÖE 2645.
- Ir-Tur.
T. transcaucasicus Ronniger
Meşeli yaylası, alpine vegetation, 2450 m, 16.06.1999, ÖE 2648.
- VU.
T. praecox Opiz subsp. *grossheimii* (Ronniger) Jalas var. *grossheimii*
Kocabey yaylası, alpine vegetation, 2400 m, 16.06.1999, ÖE 2646.
- T. pseudopulegioides** Klokov & Des.-Shost
Meşeli yaylası, subalpine vegetation 2000 m, 12.08.1999, ÖE 2647.
- Mentha pulegium** L.
Sahara, subalpine vegetation, 2000 m, 12.08.1999, ÖE 2618.
- M. arvensis** L.
A9 Çoruh: Ardahan, 1625 m, C.Koch.
- M. longifolia** (L.) Huds.
Subsp. *longifolia*
Yavuzköy, streamside, 1400 m, 10.07.1999, ÖE 2616.
- Eux.
Subsp. *typhoides* (Briq.) Harley var. *typhoides*
Meşeli, marshy place, 1600 m, 04.09.1999, ÖE 2617.
- Lycopus europaeus** L.
Veliköy, streamside, 1350 m, 14.10.2000, ÖE 2615.
- Euro-Sib.
Ziziphora tenuior L.
Şavşat, Kaleboyu, 980 m, 18.05.2000, ÖE 2973.
- Ir-Tur.
Salvia huberi Hedge
Sahara, *Pinus sylvestris* forest, 1950 m, 10.07.1999, ÖE 2626.
- Endemic, LR (cd).
Ir-Tur.
S. sclarea L.
Şavşat, Elmali, roadside, 1100 m, 12.07.2000, ÖE 2627.
- S. glutinosa** L.
Sahara, roadside, 1900 m, 04.09.1999, ÖE 2625.
- Hyc-Eux.
S. verticillata L.
Subsp. *verticillata*
Şavşat, Macerelte, roadside, 1100 m,

- 12.08.1999, ÖE 2629.
Euro-Sib.
Subsp. *amasiaca* (Freyn & Bornm.) Bornm.
Yavuzköy, in scrub, 1550 m, 10.07.1999, ÖE 2628.
Ir-Tur.
- PLANTAGINACEAE**
Plantago major L. subsp. *major*
Şavşat, Armutlu, streamside, 1100 m, 10.07.1999, ÖE 2652.
P. lanceolata L.
Şavşat, Efkar hill, open place, 1100 m, 18.05.2000, ÖE 2649; Kocabey Kışlası, *Pinus sylvestris* forest, 1800 m, 16.07.1999, ÖE 2650; Kirazlı yaylası, alpine vegetation, 2400 m, 14.10.2000, ÖE 2651.
- THYMELAEACEAE**
Daphne glomerata Lam.
Sahara, subalpine vegetation, 2200 m, 12.06.1999, ÖE 2461; Aşağıkoyunlu yaylası, subalpine vegetation, 2250 m, 13.06.1999, ÖE 2462.
Eux.
D. mezereum L.
Meşeli Kışlası, *Abies nordmanniana* forest, 1950 m, 11.06.1999, ÖE 2463.
Euro-Sib.
- VISCACEAE (LORANTHACEAE)**
Arceuthobium oxycedri (DC.) M.Bieb.
Yavuzköy, on *Juniperus*, 1550 m, 10.07.1999, ÖE 2624.
Viscum album L. subsp. *album*
Ciritdüzü, on *Pinus sylvestris*, 1250 m, 17.09.2000, ÖE 2474.
- ARISTOLOCHACEAE**
Aristolochia iberica Fisch. & Mey. ex Boiss.
Karaköy, mixed forest, damp place, 1650 m, 12.08.2000, ÖE 2061.
VU.
- EUPHORBIACEAE**
Euphorbia peplis L.
Ciritdüzü, open place, 850 m, 12.06.2000, ÖE 2484.
Medit.
- E. djimilensis* Boiss.
Sahara, subalpine vegetation, 1900 m, 16.06.1999, ÖE 2479.
Endemic, LR (nt), Eux.
E. grisophylla M.S.Khan
Meşeli Kışlası, open place, 1950 m, 16.06.1999, ÖE 2481.
Endemic, LR (lc).
Ir-Tur.
E. orientalis L.
Ciritdüzü, open place, 1100 m, 22.05.1999, ÖE 2483.
Ir-Tur.
E. wittmannii Boiss.
Şavşat, Elmalı, open place, 1000 m, 10.06.1999, ÖE 2487.
Eux.
E. stricta L.
Yukarıkoyunlu, open place, 1850 m, 16.06.1999, ÖE 2485.
Euro-Sib.
E. szovitsii Fisch. & C.A.Mey. var. *szovitsii*
Şavşat, Macerelte, open place, 1200 m, 18.05.1999, ÖE 2486.
Ir-Tur.
E. falcata L. subsp. *falcata* var. *falcata*
Şavşat, open place, dry soil, 1100 m, 10.06.1999, ÖE 2480.
E. denticulata Lam.
Kocabey Kışlası, open place, 1800 m, 10.07.1999, ÖE 2478
Ir-Tur.
E. iberica Boiss.
Sahara, open place, 1900 m, 19.05.2000, ÖE 2482.
Ir-Tur.
- URTICACEAE**
Urtica dioica L.
Aşağıkoyunlu, roadside, stony and rocky place, 1550 m, 12.08.2000, ÖE 2118.
Euro-Sib.
- MORACEAE**
Morus alba L.
Şavşat, in gardens, 28.06.2000, ÖE 2116.
Culture.
- M. nigra* L.
Köprülü, in gardens, 1300 m, 16.06.1999, ÖE 2117.
Culture.
- ULMACEAE**
Ulmus glabra Huds.
Karaköy, in forest, streamside, 1750 m, 17.04.1999, ÖE 2115.
Euro-Sib.
- JUGLANDACEAE**
Juglans regia L.
Şavşat, Elmalı, streamside, 1100 m, 04.09.1999, ÖE 2119; Aşağıkoyunlu, streamside, mixed forest, 1600 m, 09.07.2000, ÖE 2120; Veliköy, streamside, open place, 1360 m, 30.07.2000, ÖE 2121.
- FAGACEAE**
Fagus orientalis Lipsky
Meşeli yaylası, with *Abies nordmanniana*, subalpine vegetation, 2100 m, 10.07.2000, ÖE 2122.
Euro-Sib.
Quercus hartwissiana Steven
Köprülü, streamside, 1300 m, 13.08.1999, ÖE 2123.
Eux.
Q. petraea (Matt.) Liebl. subsp. *iberica* (Steven ex. M.Bieb.) Krassiln.
Ciritdüzü, mixed forest, 1200 m, 18.07.1999, ÖE 2124.
- CORYLACEAE**
Carpinus betulus L.
Kirazlı, mixed forest, 1650 m, 18.06.2001, ÖE 2129.
Euro-Sib.
Ostrya carpinifolia Scop.
Şavşat, open slope, 950 m, 12.08.1999, ÖE 2132; Yavuzköy, stony and rocky place, 1650 m, 26.09.1999, ÖE 2133.
Medit.
Corylus avellana L.
Var. *avellana*
Şavşat, Efkar hill, in scrub, 1150 m, 10.06.2001, ÖE 2130.

Euro-Sib.
 Var. **pontica** (C.Koch) Winkler
 Veliköy, mixed forest, 1370 m,
 22.07.1999, ÖE 2131.

Eux.

BETULACEAE

Betula litwinowii Doluch.

Meşeli Kışlası, subalpine vegetation,
 1950 m, 06.06.1999, ÖE 2126.

Eux.

B. recurvata (I.V.Vassil.) A.V.Vassil.

Sahara, subalpine vegetation, 1900 m.,
 17.06.1999, ÖE 2127; Yukarıkoyunlu,
 subalpine vegetation, 14.06.2000, ÖE 2128.

Eux.

Alnus glutinosa (L.) Gaertn. subsp.
barbata (C.A.Mey) Yalt.

Köprülü, stream vegetation, 900-1800
 m., 19.06.1999, ÖE 2125.

Eux.

SALICACEAE

Salix alba L.

Şavşat, Elmalı, streamside, 950 m,
 10.06.1999, ÖE 2215; Yavuzköy,
 streamside, 1450 m, 10.06.2000, ÖE 2216.

Euro-Sib.

S. caucasica Anderson

Aşağıkoyunlu, mixed forest, 1600 m,
 12.06.2000, ÖE 2222.

VU, Eux.

S. caprea L.

Sahara, mixed forest, 1900 m,
 13.08.1997, ÖE 2218; Veliköy, streamside,
 1350 m, 04.09.1999, ÖE 2219;
 Aşağıkoyunlu, mixed forest, 1600 m,
 05.09.1999, ÖE 2220; Yukarıkoyunlu,
 roadside, 1800 m, 18.08.2000, ÖE 2221.

Euro-Sib.

S. pseudomedemii E.Wolf

Meşeli Kışlası, roadside, 1870 m,
 12.06.1999, ÖE 2224.

Eux.

S. armenorossica A.K.Skvortsov

Meşeli, mixed forest, 1370 m,
 10.06.1999, ÖE 2217.

Eux.

S. elbursensis Boiss.

Kocabey, streamside, 1270 m,
 10.06.1997, ÖE 2223.

Hycr-Eux.

Populus tremula L.

Veliköy, open forest, 1400 m,
 15.10.2000, ÖE 2214; Sahara, subalpine
 vegetation, 1900 m, 07.09.1999.

Euro-Sib.

RUBIACEAE

Crucianella gilanic Trin. subsp. **pontica**
 (Ehrend.) Ehrend.

Şavşat, Armutlu, stony and rocky place,
 1100 m, 12.08.2000, ÖE 2722.

Eux.

Asperula laxiflora Boiss.

Kirazlı yaylası, alpine vegetation, 2250
 m, 11.07.2000, ÖE 2720.

Eux (mt).

A. orientalis Boiss. & Hohen.

Yavuzköy, roadside, 1550 m,
 16.06.1999, ÖE 2721.

Galium rotundifolium L.

Kocabey Kışlası, mixed forest, 1750 m,
 12.08.2000, ÖE 2728.

Euro-Sib.

G. odoratum (L.) Scop.

Sahara, open place, 2050 m,
 10.06.2000, ÖE 2727.

Euro-Sib.

G. uliginosum L.

Meşeli yaylası, slope, 2050 m,
 12.08.2000, ÖE 2730.

VU, Euro-Sib.

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

Sahara, subalpine vegetation, 1950 m,
 01.07.2000, ÖE 2729.

Euro-Sib.

G. consanquineum Boiss.

Meşeli Kışlası, open place, 1850 m,
 12.08.2000, ÖE 2726.

Ir-Tur.

G. aparine L.

Veliköy, in scrub, 1400 m, 23.05.1999,
 ÖE 2725.

Cruciata laevipes Opiz

Meşeli, meadow, 1600 m, 10.07.2000,
 ÖE 2723.

Euro-Sib.

C. taurica (Pall. ex Willd.) Ehrend.

Meşeli yaylası, alpine vegetation, 2400
 m, 01.07.2000, ÖE 2724.

Ir-Tur.

Rubia tinctorum L.

Meşeli, open forest, 1700 m,
 12.08.2000, ÖE 2731.

Ir-Tur.

MONOCOTYLEDONAE

ALISMATACEAE

Alisma plantago-aquatica L.

Meşeli, beside Karagöl, 1550 m,
 11.07.1999, ÖE 2844.

Euro-Sib.

LILIACEAE

Smilax excelsa L.

Cirirdüzü, mixed forest, 1150 m,
 14.10.2000, ÖE 2948.

Eux.

Polygonatum verticillatum (L.) All.
 [8:82]

A9 Çoruh: 20 km E. of Şavşat, 2200-
 2300 m, Sorger 81-76-12.

Euro-Sib. This specimen could not be
 found in the field.

P. glaberrimum C.Koch

Veliköy, mixed forest, 1300 m,
 23.05.1999, ÖE 2941.

VU, Eux.

Allium scorodoprassum L. subsp.
rotundum (L.) Stearn

Cirirdüzü, open place, 950 m,
 23.05.1999, ÖE 2924.

Medit.

Scilla winogradowii Sosn.

Kirazlı yaylası, alpine vegetation, 2350
 m, 23.05.1999, ÖE 2945.

- Eux.
S. rosenii C.Koch
 Meşeli Kışlası, subalpine vegetation, streamside, 1900 m, 11.06.1999, ÖE 2943.
 Ir-Tur.
S. monanthos C.Koch
 Meşeli yaylası, alpine vegetation, 2450 m, 23.05.1999, ÖE 2942.
 Eux (mt).
S. siberica Haw. subsp. *armena* (Grossh.) Mordak
 Kirazlı yaylası, alpine vegetation, 2200 m, 18.04.1999, ÖE 2944.
 Ir-Tur.
Ornithogalum narbonense L.
 Ciritdüzü, open place, 1200 m, 16.06.1999, ÖE 2940.
 Medit.
O. oligophyllum E.D.Clarke
 Kirazlı yaylası, alpine vegetation, 2250 m, 23.05.1999, ÖE 2939.
Muscari caucasicum (Griseb.) Baker
 Meşeli Kışlası, *Pinus sylvestris* forest, 1900 m, 11.06.2000, ÖE 2936.
 Ir-Tur.
M. tenuiflorum Tausch
 Sahara, open place, 1900 m, 23.05.1999, ÖE 2937.
M. coeleste Fomin
 Kirazlı Kışlası, alpine vegetation, 2400 m, 18.04.1999, ÖE 2935.
 Endemic, LR (lc).
 Ir-Tur.
Lilium carnolicum Bernh ex W.Koch subsp. *ponticum* (C.Koch) P.H.Davis & Hend. var. *ponticum*
 Meşeli Kışlası, open forest, 1800 m, 23.05.1999, ÖE 2932.
 VU, Eux.
L. monodelphum M.Bieb. var. *szovitsianum* (Fisch. & Ave-Lall.) Elwes [8:283]
 A9 Çoruh: Ardsha, Lake Hoşapın, Michailovsky (fide Manden., op. cit. 192 & map, 1941).
 Eux. This specimen could not be found in the field.
L. kesselringianum Miscz.
 Sahara, subalpine vegetation, 1900 m, 01.07.1999, ÖE 2933; Kocabey Kışlası, *Picea orientalis* forest, 1650 m, 16.06.1999, ÖE 2934.
 VU, Eux.
Gagea reticulata (Pall.) Schult.
 Ciritdüzü, open place, 1100 m, 21.03.1999, ÖE 2930.
 Ir-Tur.
G. fistulosa Ker Gawl.
 Meşeli Kışlası, open place, 1850 m, 16.06.1999, ÖE 2928.
G. glacialis C.Koch
 Kirazlı yaylası, alpine vegetation, 2300m, 01.07.1999, ÖE 2929.
 Ir-Tur.
G. villosa (M.Bieb.) Duby var. *villosa*
 Veliköy, open place, 1350 m, 18.04.1999, ÖE 2931.
Narthecium balansae Briq.
 Karaköy, open place, 1750 m, 01.07.1999, ÖE 2938.
 Eux.
Veratrum album L.
 Aşağıkoyunlu yaylası, alpine vegetation, 2300 m, 17.08.1999, ÖE 2946.
 Euro-Sib.
Colchicum szovitsii Fisch. & C.A.Mey.
 Kocabey yaylası, alpine vegetation, 2200 m, 18.04.1999, ÖE 2926.
 Ir-Tur.
C. speciosum Steven
 Meşeli yaylası, alpine vegetation, 2250 m, 15.10.2000, ÖE 2925.
 Hyrc-Eux
AMARYLLIDACEAE
Galanthus woronowii A.Losinks
 Yavuzköy, open place, 1550 m, 10.07.1999, ÖE 2967.
IRIDACEAE
Iris sibirica L. [8:387]
 A9 Kars: Ziyaret Da., Ardahan to Artvin, 2250 m, D.30283.
 Euro-Sib. This specimen could not be found in the field.
I. caucasica Hoffm. subsp. *caucasica*
 Sahara, alpine vegetation, 2400 m, 15.04.2000, ÖE 2974.
 Euro-Sib.
Crocus scharojanii Rupr.
 Aşağıkoyunlu yaylası, alpine vegetation, 2300 m, 10.09.1997, ÖE 999.
 Eux.
C. kotschyanus C.Koch subsp. *suworowianus* (C.Koch) Mathew
 Kocabey yaylası, alpine vegetation, 2400 m, 14.10.2000, ÖE 2927.
Gladiolus atroviolaceus Boiss.
 Kocabey Kışlası, open place, 1950 m, 11.07.2000, ÖE 2947.
ORCHIDACEAE
Cephalanthera rubra (L.) Rich. [8:459]
 A9 Çoruh: Yalnızçam Dağı, Ardahan to Ardanuç, 1750 m, Renz 9286.
 This specimen could not be found in the field.
Epipactis helleborine (L.) Crantz [8:464]
 A9 Çoruh: North slope of Yalnızçam pass, 1200-1400 m, Taub. 76.670.
 This specimen could not be found in the field.
Limodorum abortivum (L.) Swartz
 Kocabey Kışlası, *Pinus sylvestris* and *Abies nordmanniana* forest, 1700 m, 17.06.2000, ÖE 2956.
Goodyera repens (L.) R.Br. [8:471]
 A9 Çoruh: Nort side of Yalnızçam pass, 1400 m, Pasche & Taub. 75.155.1-3.
 Euro-Sib.
 This specimen could not be found in the field.
Platanthera chlorantha (Custer) Reichb.
 Veliköy, open forest, 1450 m, 16.06.1999, ÖE 2959.
Ophrys oestrifera M.Bieb. subsp. *oestrifera* [8:495]
 A9 Çoruh: Tütünlü, between Ardanuç and Yalnızçam, 1000 m, Renz & Taub. 81.277.

This specimen could not be found in the field.

Orchis coriophora L.

Meşeli, wet meadow, 1650 m, 23.05.1999, ÖE 2957.

O. purpurea Huds.

Veliköy, open forest, 1400 m, 18.04.1999, ÖE 2958.

Euro-Sib.

Dactylorhiza romana (Seb.) Soó subsp. **georgica** (Klinge) Soó ex Rentz & Taub.

Meşeli, forestside, 1600 m, 12.06.2000, ÖE 2952.

Eux.

D. saccifera (Brongn.) Sos.

Yavuzköy, meadow, 1550 m, 01.07.1999, ÖE 2954.

E.Medit.

D. urvilleana (Steud.) Baumann & Künkele

Aşağıkoyunlu yaylası, alpine vegetation, 2300 m, 11.07.1999, ÖE 2955.

Eux.

D. euxina (Nevski) H.Baumann & Künkele

Var. **euxina**

Sahara, subalpine vegetation, 2000 m, 31.07.2000, ÖE 2950.

Eux.

Var. **markowitschii** (Soó) Rentz & Taub.

Kirazlı yaylası, alpine vegetation, 2450 m, 16.06.1999, ÖE 2951.

Eux.

D. umbrosa (Kar. & Kir.) Nevski

Veliköy, open forest, 1650 m, 11.06.2000, ÖE 2953.

DIOSCOREACEAE

Tamus communis L. subsp. **communis**

Ciritdüzü, mixed forest, 1250 m, 11.06.1999, ÖE 2949.

SPARGANIACEAE

Sparganium emersum Rehmman

Aşağıkoyunlu, marshy place, 1550 m, 12.07.1997, ÖE 2923.

JUNCACEAE

Juncus effusus L.

Kocabey Kışlası, damp place, 1850 m, 23.05.1999, ÖE 2845.

Cosm.

J. alpigenus C.Koch

Meşeli Kışlası, damp place, 1900 m, 16.06.1999, ÖE 2846.

Luzula forsteri (Sm.) DC.

Kocabey yaylası, alpine vegetation, 2350 m, 23.05.1999, ÖE 2848.

Euro-Sib.

L. campestris (L.) DC.

Aşağıkoyunlu, *Pinus sylvestris* forest, 1650 m, 11.07.1999, ÖE 2847.

Euro-Sib.

CYPERACEAE

Carex oreophila C.A.Mey.

Aşağıkoyunlu yaylası, alpine vegetation, 2450 m, 12.07.1997, ÖE 2855.

Ir-Tur.

C. divisa Huds.

Sahara, open place, 1900 m, 10.06.1997, ÖE 2852.

Euro-Sib.

C. canescens L.

Meşeli, beside Karagöl, 1550 m, 10.07.1999, ÖE 2850.

Euro-Sib.

C. rostrata Stokes

Meşeli, beside Karagöl, 1550 m, 10.07.1999, ÖE 2856.

Euro-Sib.

C. sylvatica Huds. subsp. **sylvatica**

Meşeli Kışlası, open place, 1850 m, 16.06.1999, ÖE 2857.

C. atrata L. subsp. **atrata**

Kirazlı yaylası, alpine vegetation, 2300 m, 17.06.1999, ÖE 2849.

Eur-Sib (mt).

C. caucasica Steven

Aşağıkoyunlu yaylası, alpine vegetation, 2300 m, 17.06.1999, ÖE 2851.

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

Aşağıkoyunlu yaylası, alpine vegetation, 2300 m, 17.06.1999, ÖE 2853.

Eux.

C. orbicularis Boott subsp. **kotschyana** (Boiss. & Hohem) var. **caucasica** Ö.Nilsson

Kocabey yaylası, alpine vegetation, 2500 m, 16.06.1999, ÖE 2854.

Eux.

GRAMINEAE (POACEAE)

Brachypodium sylvaticum (Huds.) P.Beauv.

Aşağıkoyunlu, meadow, 1650 m, 16.06.1999, ÖE 2866.

Euro-Sib.

B. pinnatum (L.) P.Beauv.

Kocabey yaylası, alpine vegetation, 2100 m, 11.07.1999, ÖE 2867.

Euro-Sib.

Agropyron cristatum (L.) Gaertn. subsp. **pectinatum** (M.Bieb.) Tzvelev var. **pectinatum**

Meşeli Kışlası, open place, 1800 m, 11.07.1999, ÖE 2859.

Elymus nodosus (Nevski) Melderis subsp. **sinuatus** (Nevski) Melderis

Yavuzköy, stony slope, 1600 m, 23.05.1999, ÖE 2881.

Ir-Tur.

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

Kocabey yaylası, alpine vegetation, 2350 m, 12.08.2000, ÖE 2882.

Aegilops tauschii Coss. subsp. **tauschii**

Şavşat, Armutlu, open place, 1100 m, 16.06.1999, ÖE 2858.

VU.

Ir-Tur.

Triticum monococcum L.

Ciritdüzü, meadow, 1200 m, 16.06.1999, ÖE 2921.

VU.

Hordeum marinum Huds. var. **pubescens** (Guess.) Nevski

Şavşat, Armutlu, stony and rocky place, 850 m, 23.05.1999, ÖE 2891.

Euro-Sib.

- H. bulbosum* L.
Yukarıkoyunlu, forestside, 1750 m, 16.06.1999, ÖE 2890.
- H. spontaneum* C.Koch
Ciritdüzü, meadow, 1250 m, 01.07.1998, ÖE 2892.
Ir-Tur.
Hordelymus europaeus (L.) Jess.
Kocabey Kışlası, mixed forest, 1850 m, 23.05.1999, ÖE 2889.
Euro-Sib.
Bromus racemosus L.
Ciritdüzü, wet meadow, 1250 m, 01.07.1999, ÖE 2872.
Euro-Sib.
B. japonicus Thunb. subsp. *japonicus*
Karaköy, open place, 1800 m, 10.07.1999, ÖE 2871.
B. tectorum L.
Sahara, open place, 1900 m, 23.05.1999, ÖE 2873.
B. armenus Boiss.
Yukarıkoyunlu yaylası, alpine vegetation, 2300 m, 01.07.1999, ÖE 2870.
Endemic, LR (nt).
Ir-Tur.
Avena sterilis L. subsp. *ludoviciana* (Durieu) Gillet
Yavuzköy, meadow, 1550 m, 23.05.1999, ÖE 2865.
A. sativa L.
Ciritdüzü, in fields, 1100 m, 10.07.1997, ÖE 998.
Culture.
Helictotrichon argaeum (Boiss.) Parsa
Kirazlı yaylası, alpine vegetation, 2400 m, 10.07.1999, ÖE 2888.
Endemic, LR (lc).
Ir-Tur.
Trisetum rigidum (M.Bieb.) Roem. & Schult.
Kirazlı yaylası, alpine vegetation, 2400 m, 10.07.1999, ÖE 2918; Meşeli yaylası, alpine vegetation, 2450 m, 04.09.1999, ÖE 2919.
- Ir-Tur.
T. turcicum Chrtek
Meşeli yaylası, alpine vegetation, 2450 m, 12.08.2000, ÖE 2920.
Ir-Tur.
Koeleria nitidula Velen.
Kocabey Kışlası, open place, 1800 m, 16.06.1999, ÖE 2893.
Deschampsia caespitosa (L.) P.Beauv.
Kirazlı yaylası, alpine vegetation, 2300 m, 10.07.1999, ÖE 2880.
Calamagrostis arundinacea (L.) Roth
Kocabey yaylası, alpine vegetation, 2350 m, 12.08.1999, ÖE 2874.
Euro-Sib.
Agrostis canina L.
Veliköy, meadow, 1400 m, 12.08.1999, ÖE 2861.
Euro-Sib.
A. gigantea Roth
Meşeli Kışlası, streamside, 1850 m, 11.07.1999, ÖE 2862.
Euro-Sib.
A. balansae (Boiss.) Tzvelev
Kirazlı yaylası, alpine vegetation, 2400 m, 11.09.1998, ÖE 2860.
EN, Euro-Sib (mt). Population of this taxon is low.
Polygogon viridis (Gouan) Breistr.
Ciritdüzü, streamside, 1200 m, 01.07.1999, ÖE 2916.
Euro-Sib.
Phalaris arundinacea L.
Sahara, open place, 1900 m, 12.08.1999, ÖE 2900.
Alopecurus aequalis Sobol.
Sahara, subalpine vegetation, 1900 m, 16.06.1999, ÖE 2863.
Euro-Sib.
A. arundinacea Poir.
Meşeli yaylası, alpine vegetation, damp place, 2340 m, 12.05.1997, ÖE 2864.
Euro-Sib.
Phleum alpinum L.
Kirazlı yaylası, alpine slope, 2350 m, 16.06.1999, ÖE 2901.
- Euro-Sib.
P. pratense L.
Kocabey Kışlası, damp place, 1800 m, 12.08.1997, ÖE 2905.
Euro-Sib.
P. paniculatum Huds.
Karaköy, rocky slope, 1800 m, 11.06.2000, ÖE 2904.
Ir-Tur.
P. montanum C.Koch subsp. *montanum*
Sahara, subalpine vegetation, 1900 m, 01.07.1999, ÖE 2903.
P. exaratum Hochst. ex Griseb. subsp. *exaratum*
Sahara, *Pinus sylvestris* forest, 1900 m, 01.07.1999, ÖE 2902.
Festuca drymeja Mert. & Koch
Meşeli Kışlası, *Picea orientalis* forest, 1800 m, 01.07.1999, ÖE 2886.
Euro-Sib.
F. artvinensis Markgr.-Dann.
Aşağıkoyunlu yaylası, alpine vegetation, 2350 m, 16.06.1999, ÖE 2884.
Eux.
F. brunescens (Tzvelev) Galushko
Kocabey yaylası, alpine vegetation, 2400 m, 12.08.1999, ÖE 2885.
Ir-Tur
F. airoides Lam.
Kirazlı yaylası, alpine vegetation, 2300 m, 10.07.1999, ÖE 2883.
Euro-Sib (mt).
Lolium perenne L.
Veliköy, meadow, 1350 m, 23.05.1999, ÖE 2894.
Euro-Sib.
L. rigidum Gaudin var. *rigidum*
Yavuzköy, meadow, 1550 m, 16.06.1999, ÖE 2895.
Poa pratensis L.
Yukarıkoyunlu yaylası, alpine vegetation, 2400 m, 10.07.1999, ÖE 2914.
P. angustifolia L.
Ciritdüzü, *Quercus petraea* scrub, 1250 m, 01.07.1999, ÖE 2907.

- P. caucasica* Trin.
Kirazlı yaylası, alpine vegetation, 2250 m, 12.08.1999, ÖE 2909.
VU, Eux.
- P. longifolia* Trin.
Kirazlı yaylası, alpine vegetation, 2300 m, 11.07.1999, ÖE 2911.
Eux.
- P. diversifolia* (Boss. & Bal.) Hackel ex Boiss.
Ciritdüzü, meadow, 1250 m, 10.07.1999, ÖE 2910.
E. Medit (mt).
- P. masenderana* Freyn. & Sint.
Meşeli Kışlası, streamside, 1800 m, 01.07.1999, ÖE 2912.
EN, Hyrc-Eux. Population of this taxon is low.
- P. nemoralis* L.
Yavuzköy, meadow, 1550 m, 16.06.1999, ÖE 2913.
- P. sterilis* M.Bieb.
Aşağıkoyunlu, meadow, 1600 m, 12.08.1999, ÖE 2915.
- P. alpina* L. subsp. *fallax* F.Herm.
Kirazlı yaylası, alpine vegetation, 2350 m, 12.08.2000, ÖE 2906.
- P. bulbosa* L.
Aşağıkoyunlu yaylası, alpine vegetation, 2300 m, 10.07.1999, ÖE 2908.
- Catabrosella parviflora* (Boiss. & Buhse) Alex. ex R.Mill. subsp. *calvertii* (Boiss.) Alex. ex R.Mill.
Kocabey yaylası, alpine vegetation, 2400 m, 01.07.1999, ÖE 2876.
Ir-Tur.
- Dactylis glomerata* L. subsp. *hispanica* (Roth) Nyman
Şavşat, Armutlu, stony slope, 1150 m, 01.07.1999, ÖE 2879.
- Cynosurus cristatus* L.
Yavuzköy, meadow, 1550 m, 16.06.1999, ÖE 2877.
Euro-Sib.
- C. echinatus* L.
Yukarıkoyunlu, meadow, 1750 m, 23.05.1999, ÖE 2878.
Medit.
- Briza media* L.
Kocabey, meadow, 1400 m, 11.07.1999, ÖE 2869.
- B. marcoviczii* Woronow
Kirazlı yaylası, alpine vegetation, 2200 m, 01.07.1999, ÖE 2868.
Eux (mt).
- Melica persica* Kunth subsp. *inaequiglumis* (Boiss.) Bor.
Meşeli Kışlası, stony and rocky slope, 1650 m, 16.06.1999, ÖE 2896.
- Glyceria plicata* (Fr.) Fr.
Karaköy, forestside, 1800 m, 04.09.1999, ÖE 2887.
- Nardus stricta* L.
Kocabey yaylası, alpine vegetation, 2450 m, 01.07.1999, ÖE 2897; Aşağıkoyunlu yaylası, alpine vegetation, 2450 m, 01.07.1999, ÖE 2898.
Euro-Sib.
- Stipa bromoides* (L.) Dörfler
Şavşat, Elmalı, open place, 900 m, 11.06.1999, ÖE 2917.
Medit.
- Zea mays* L. subsp. *mays*
Aşağıkoyunlu, in fields, 1650 m, 12.08.1999, ÖE 2922, Culture.