

## Flora of the Camili Biosphere Reserve Area (Borçka, Artvin, Turkey)

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**Abstract:** The vascular flora of the Camili Biosphere Reserve Area (Borçka, Artvin) was studied between 2002 and 2005. In the area under review, 990 taxa belonging to 432 genera and 110 families were identified. Of the 990 taxa, 37 Pteridophytes and 953 Spermatophytes were detected. Spermatophytes also contained 7 Gymnospermae and 946 Angiospermae taxa. The richest 3 families are Compositae with 114 taxa (11.5%), Gramineae with 69 taxa (7.0%), and Leguminosae with 59 taxa (6.0%). The richest genera are *Veronica* L. and *Campanula* L. (15 taxa), followed by *Geranium* L. (13 taxa). The rates of taxa included in certain phytogeographical regions were as follows: 48.2% Euro-Siberian, 3.5% Irano-Turanian, 1.9% Mediterranean, and 46.4% multi-regional or of unknown phytogeographic origin. The life form spectrum of the taxa was as follows: hemicryptophytes 359 (36.3%), cryptophytes 272 (27.5%), therophytes 162 (16.4%), chamaephytes 130 (13.1%), phanerophytes 63 (6.4%), and vasicular parasites 4 (0.4%). The endemism ratio is 2.3% (23 taxa). Threat categories were proposed for 73 taxa according to International Union for Conservation of Nature and Natural Resources (IUCN) Red List Categories.

**Key Words:** Artvin, biosphere reserve, Borçka, Camili, flora, Lesser Caucasus

### Camili Biosfer Rezerv Alanının (Borçka, Artvin, Türkiye) Florası

**Özet:** Camili Biosfer Rezerv alanının (Borçka, Artvin) damarlı bitkiler florası 2002-2005 yılları arasında çalışılmıştır. Araştırma alanında; 110 familya ve 432 cinse ait toplam 990 takson kaydedilmiştir. Bu taksonların 953'ü Spermatophyta, 37'si Pteridophyta bölümüne aittir. Spermatophyta bölümünde, 7 takson Gymnospermae ve 946 takson Angiospermae'dir. Araştırma alanında en fazla taksona sahip üç familya sırasıyla Compositae 114 takson (% 11,5), Gramineae 69 takson (% 7,0) ve Leguminosae 59 takson (% 6,0). En zengin cins *Veronica* L., ikincisi *Campanula* L. (15 takson), ve üçüncüsü ise *Geranium* L. (13 takson)'dır. Taksonların, fitocoğrafik bölgelere göre dağılımları ise şöyledir: Avrupa-Sibirya % 48,2, İran-Turan % 3,5, Akdeniz % 1,9 ve coğrafi bölgesi bilinmeyenler veya birden fazla bölgede yayılış gösterenler % 46,4'tür. Taksonların hayat formlarına dağılımı ve oranları sırasıyla şöyledir: hemikriptofit 359 (% 36,3), kriptomfit 272 (% 27,5), terofit 162 (% 16,4), kamefit 130 (% 13,1), fanerofit 63 (% 6,4) ve parazit 4 (% 0,4). Endemizm oranı % 2,3 (23 takson)'tür. IUCN tehlike kategorilerine göre 73 taksonun tehlike durumu değerlendirilmiştir.

**Anahtar Sözcükler:** Artvin, biosfer rezerv, Borçka, Camili, flora, Aşağı Kafkaslar

### Introduction

Camili Biosphere Reserve, known as the first biosphere site of Turkey, is one of the 507 sites in 102 countries worldwide. It is one of the cradles of much younger postglacial forests of Central Europe and one of the few well-known refuges for tertiary flora in the Colchic region. The study area is not only located within

the Caucasus Hotspot, one of the 25 World Biodiversity Hotspots identified by the Conservation International, but also within the Caucasus-Anatolian-Hyrcanian Temperate Forests classified as one of the 200 Global Ecoregions (WWF & IUCN, 1994; Zazanashvili et al., 1999). Moreover, it lies within the North-eastern Anatolia Centre of Plant Diversity (SWA No.19) and covers the Karçal

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Mountains, designated as one of the 122 Important Plant Areas (IPA) in Turkey (Özhatay et al., 2003, 2005).

The study area is the most significant refuge and relict area for Tertiary Forests of Western Eurasia. Deciduous temperate forests are in uninterrupted existence in this region since Tertiary. The largest natural forest ecosystems of Europe and Mid-Asia are found in this region. The main ecosystem types are boreal coniferous forest and temperate deciduous forest (WWF & IUCN, 1994; Zazanashvili et al., 1999).

Some floristic studies were carried out in localities close to the research area by Anşin (1979), Düzenli (1988), Vural (1996), Güner & Duman (1998), Eminağaoğlu & Anşin (2003, 2004), and Eminağaoğlu et al. (2006). According to the *Flora of Turkey* (Davis, 1965-1985; Güner et al., 2000), many Turkish and foreign researchers have visited and collected plant specimens from around Artvin (Davis, 1965-1985; Mirov, 1967; Davis et al., 1988; Güner et al., 2000). Especially Duman and Güner have made collections from the Camili Biosphere Reserve area (KÇOSAD, 1994; Güner & Duman, 1997).

In this research, the flora of Camili (Borçka district), located in the western lesser Caucasus corridor, was studied. Data were collected within the study area of a project named "Caucasian Mixed Temperate Rain Forest and High Alpine Meadows", part of the grant agreement of the project "Biodiversity and Natural Resource Management" prepared by the Ministry of Environment and Forestry in collaboration with the World Bank and financed by the Global Environment Facility.

## Study Area

The research area, Camili Biosphere Reserve, is located in Borçka district, 30 km north-west of Artvin, Turkey. It lies between the latitudes 41°20.49' and 41°31.32', and the longitudes 41°49.36' and 42°05.27'. The altitude of the area ranges from 370 m to 3435 m. Bordering with Georgia to the north, it is surrounded by high and very steep mountains all around. The Reserve lies within the Colchic sector of the Euro-Siberian floristic area in the Holarctic region (Davis, 1965; Zohary, 1973) and is situated in the A8-A9 squares according to Davis's grid system (Davis, 1965).

The vegetation map of the study area is shown in Figure 1. In the vicinity of the reserve, there are several

villages including Camili, Efeler, Maral, Uğur, Düzenli, and Kayalar along with many kışlas (pastures found in the lower parts of mountains) and yaylas (pastures found in the higher parts of mountains) that local people live in during spring and summer, respectively. The study area is a large watershed covering about 25,275 ha with 2 nature reserves, i.e. Camili-Gorgit Strict Nature Reserve (490.5 ha) and Camili-Efeler Forest Strict Nature Reserve (1453 ha).

Unfortunately, there is no meteorological station in the study area. The nearest stations are located in Borçka, south-west of the area at an altitude of 120 m. According to the values from Borçka station, data were obtained between 1971 and 1996 (DMİ, 2001), the mean annual temperature is 13.5 °C and precipitation is 1010.2 mm. The values of "M" and "m" of the hottest and coldest months were 27.1 and 1 °C, respectively. The coldest month is February, with a minimum temperature of -9.8 °C, and the hottest month is August, with a maximum temperature of 42.4 °C. The climatic diagram was prepared using Walter's method (Figure 2). The rainfall regime of the study area is "autumn-winter-summer-spring" of semi-terrestrial origin (Akman, 1999).

The geological structure of the research area mostly contains rocks belonging to the Upper Cretaceous period. 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 (TGM, 1975, 1984; TKH, 1990). The most common of these soil groups is brown forest soils. Both brown forest soils and noncalcareous brown forest soils are generally found in forested lands. Areas with alpine vegetation generally consist of high mountain meadow soils while alluvial and colluvial soils are only present locally in streambanks and small plains.

Forest, alpine, subalpine, rocky, and hydrophytic are the main vegetation types in the study area. Forest vegetation is the most widespread in the study area.

Forest vegetation includes *Abies nordmanniana* (Stev.) Spach. subsp. *nordmanniana*, *Picea orientalis* (L.) Link, *Pinus sylvestris* L., *Taxus baccata* L., *Ulmus glabra* Huds., *Castanea sativa* Mill., *Fagus orientalis* Lipsky, *Quercus petraea*, (Matt.) Liebl. subsp. *iberica* (Steven ex M.Bieb.) Krassiln., *Populus tremula* L., *Salix caucasica* Andersson, *Carpinus betulus* L., *Corylus avellana* L., *Ostrya carpinifolia* Scop., *Rhododendron luteum* Sweet, *R.*

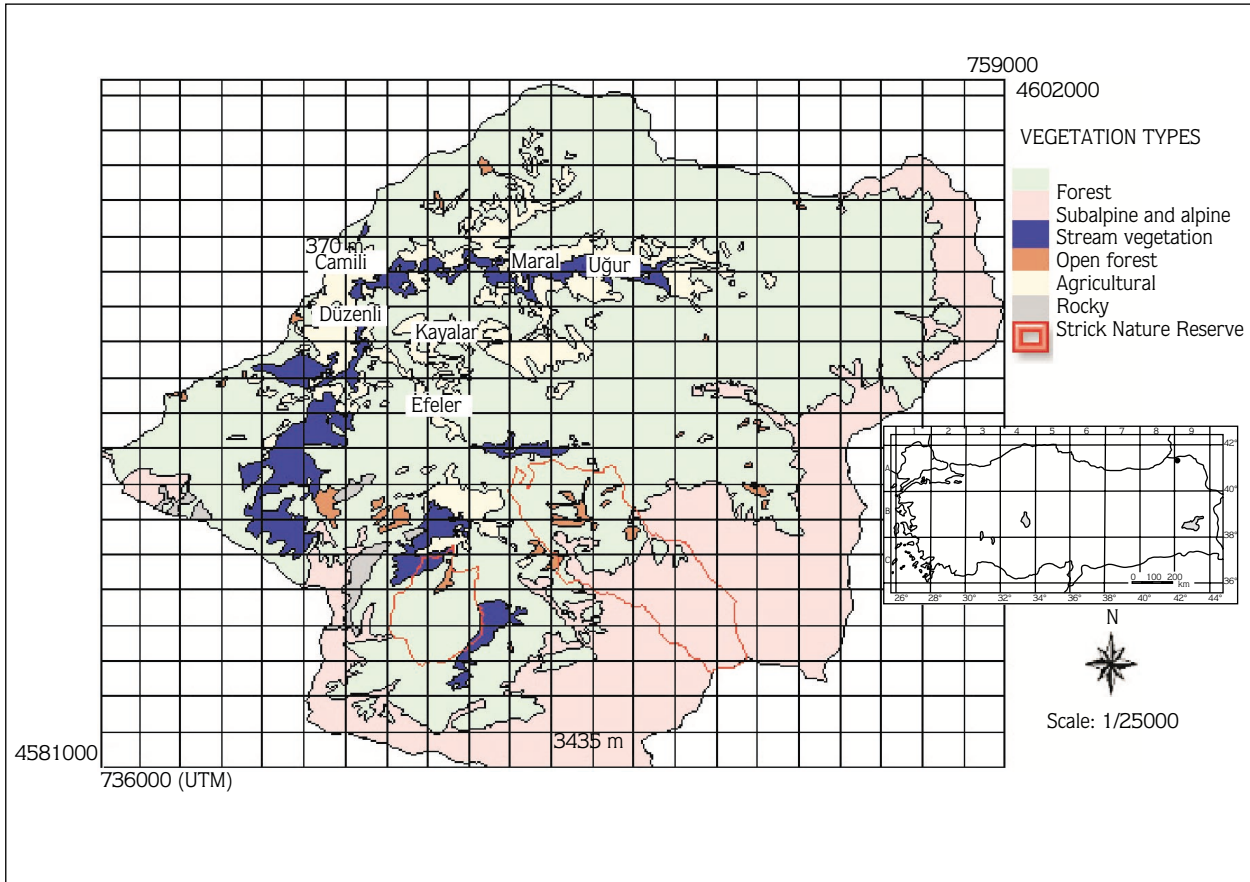


Figure 1. Vegetation map of the study area.

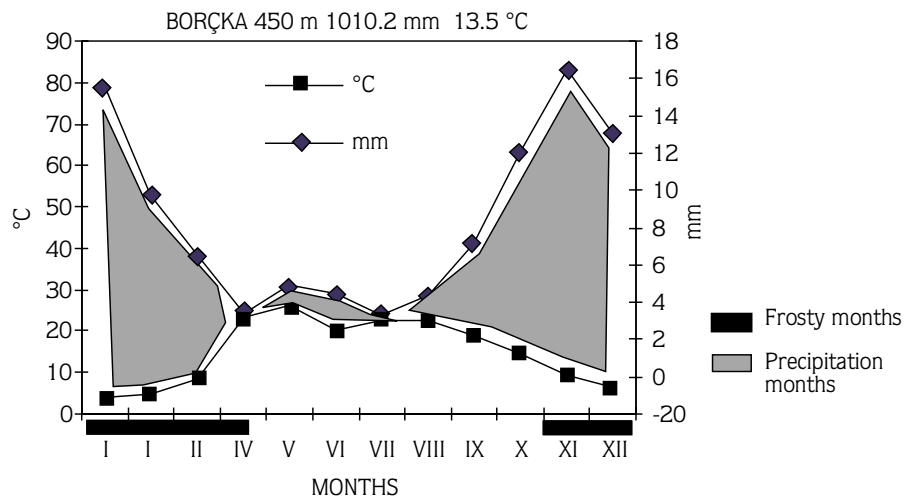


Figure 2. Climatic diagram of Borçka.

*ponticum* L. subsp. *ponticum* var. *ponticum*, *Laurocerasus officinalis* Roem., *Rubus platyphyllos* C.Koch, *Crataegus microphylla* C.Koch, *C. monogyna* Jacq. subsp. *monogyna*, *Ilex colchica* Pojark., *Acer campestre* L. var. *campestre*, *Fraxinus angustifolia* Vahl. subsp. *oxycarpa* (M.Bieb. ex Willd.) Franco & Rocha Afonso, *Sambucus nigra* L., *Tilia rubra* DC. subsp. *caucasica* (Rupr.) V.Eng., *Hedera helix* L., *H. colchica* (C.Koch) C.Koch, *Sanicula europaea* L., *Sedum stoloniferum* C.C.Gmel., *Silene compacta* Fisch., *Rumex acetocella* L., *Hypericum bupleuroides* Gris., *Alliaria petiolata* (M.Bieb.) Cavara & Grande, *Fragaria vesca* L., *Lathyrus laxiflorus* (Desf.) O.Kuntze subsp. *laxiflorus*, *Circea lutetiana* L., *Oxalis acetosella* L., *Geranium robertianum* L., *G. purpureum* Vill., and *Monotropa hypopithys* L.

Subalpine vegetation includes *Betula medwediewii* Regel, *B. recurvata* (I.V.Vassil.) A.V.Vassil., *B. litwinowii* Doluch., *Quercus pontica* C.Koch, *Rhododendron caucasicum* Pall., *Juniperus communis* L. subsp. *saxatilis* Pall., *Vaccinium myrtillus* L., *Daphne glomerata* Lam., *Acer trautvetteri* Medw., *Sorbus aucuparia* L., *Ribes biebersteinii* Berl. ex DC., *Rubus idaeus* L., *Sorbus umbellata* (Desf.) Fritsch. var. *cretica* (Lindl.) Schneid., *Lonicera caucasica* Pall. subsp. *caucasica*, *Viburnum lantana* L., *Empetrum nigrum* L. subsp. *hermaphroditum* (Hagerup) Böcher, *Silene alba* (Mill.) Krause subsp. *divaricata* (Rchb.) Walters, *Gentiana septenifida* Pall., *Scutellaria pontica* C.Koch, *Stachys macrantha* (C.Koch) Stearn, *Veronica peduncularis* M.Bieb., *Scilla siberica* Haw. subsp. *armena* (Grossh.) Mordak, and *Anemone narcissiflora* L. subsp. *narcissiflora*.

The characteristic taxa of alpine vegetation are *Sibbaldia parviflora* Willd. var. *parviflora*, *Stachys macrantha* (C.Koch) Stearn, *Thymus praecox* Opiz subsp. *grossheimii* (Ronniger) Jalas var. *grossheimii*, *Veronica gentianoides* Vahl., *Polygonum bistorta* L. subsp. *carneum* (Koch) Coode & Cullen, *Taraxacum crepidiforme* DC. subsp. *crepidiforme*, *Aconitum anthora* L., *Agrostis planifolia* C.Koch, *Alchemilla caucasica* Buser, *A. retinervis* Buser, *Anthemis marschalliana* Willd. subsp. *pectinata* (Boiss.) Grierson, *Aster alpinus* L., *Calamagrostis arundinaceae* (L.) Roth, *Campanula collina* Sims, *Carex atrata* L. subsp. *atrata*, *Coronilla orientalis* Mill. var. *balansae* (Boiss.) Hrabětova, *Cruciata taurica* (Pall. ex Willd.) Ehrend., *Deschampsia caespitosa* (L.) P.Beauv., *Erigeron caucasicus* Stev. subsp. *caucasicus*, *Gentiana septemfida* Pall., *G. verna* L. subsp. *pontica* (Soltok.)

Hayek, *Gentianella caucasea* (Lodd. ex Sims) Holub, *Myosotis sylvatica* Ehrh. ex Hoffm. subsp. *cyanea* Vestergr., *Pedicularis nordmanniana* Bunge, *Phleum alpinum* L., *Poa bulbosa* L., *P. longifolia* Trin., *Scabiosa caucasica* M.Bieb., *Tripleurospermum caucasicum* (Willd.) Hayek, and *Veratrum album* L.

Hydrophytic vegetation is found in streamside and lakeside. This vegetation is widespread along the edge of Camili Stream. The characteristic species of stream vegetation are *Alnus glutinosa* (L.) Gaertn. subsp. *barbata* (C.A.Mey.) Yalt., *Salix alba* L., *Tamarix tetrandra* Pall. ex Bieb., *Oplismenus undulatifolius* (Ard.) P.Beauv., *Thelypteris limbosperma* (All.) H.P.Fuchs, *Petasites hybridus* (L.) Gaertn., *P. albus* (L.) Gaertn., *Impatiens noli-tangere* L., *Mentha longifolia* (L.) Huds. subsp. *longifolia*, *Lythrum salicaria* L., *Polygonum amphibium* L., *Myriophyllum spicatum* L., *Alisma plantago-aquatica* L., *Veronica anagalis-aquatica* L., *Rhynhocorys stricta* (C.Koch) Albov, *Caltha polypetala* Hoschst. ex Lorent, *Cardamine raphanifolia* Pourr. subsp. *acris* (Gris.) O.E.Schultz, *Primula auriculata* Lam., and *Equisetum ramosissimum* Desf.

*Sedum album* L., *S. gracile* C.A.Mey., *Centranthus longiflorus* Stev. subsp. *longiflorus*, *Potentilla oweriniana* Rupr. ex Boiss., *Scrophularia chrysantha* Jaub. & Spach, *Asphodeline lutea* (L.) Reichb., and *Campanula aucheri* A.DC. are commonly found in the rocky parts of the research area.

## Materials and Methods

The materials of this study are some 2700 vascular plant specimens collected from Camili Biosphere Reserve Area between 2002 and 2005. At least 1 sample for each taxon was prepared by herbarium techniques (Erik et al., 1996) and kept at the Artvin Çoruh University, Faculty of Forestry Herbarium in Artvin. These specimens were mainly identified using the *Flora of Turkey* (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000), other floras (Komarov & Shishkin, 1933-1964; Grossheim, 1939-1967; Ketzkhoveli & Gagnidze, 1971-2001) and revisions (Leblebici, 1990; Aytacı, 1997; Doğan, 1999). The herbarium of the Faculty of Pharmacy, İstanbul University (ISTE), was used to check the specimens. The floristic elements are listed in the Appendix. All taxa in the floristic list are given according to the order in the *Flora of Turkey* (Davis, 1965-85). In the Appendix, every

species is represented with the following details: family and taxon name, authors of the species, geographical locations, habitats, altitudes, collection dates, and collectors' names and numbers. In addition, endemism, IUCN threat categories, their phytogeographical regions, and the life forms (according to the classification by Raunkiaer (Raunkiaer, 1934; Ellenberg & Mueller-Dombois, 1967) based on the location of overwintering, perennating parts) are given. Threatened categories are proposed for the endemic and some nonendemic taxa according to IUCN risk categories (Ekim et al., 2000; IUCN, 2001). The phytogeographical regions of the taxa were evaluated according to Davis (1965-85, 1988). Author abbreviations of plant names are given according to Brummitt & Powell (1992). The wild taxa were compared with floras of neighbouring areas (Anşin, 1979; Düzenli, 1988; Ocakverdi, 2001; Eminağaoğlu & Anşin, 2003, 2004). In order to compare floristic similarities, Sørensen's similarity formula was used (Sørensen, 1948). The abbreviations used in the text and in the floristic list are as follows: Cosm: Cosmopolitan; Euro-Sib: Euro-Siberian element; Eux: Euxine element; Hyrc-Eux: Hyrcano-Euxine element; Ir-Tur: Irano-Turanian element; Medit: Mediterranean element; E: East; mt: mountain; SNR: Strict Nature Reserve; CR: Critically endangered; EN: Endangered; LC: Least concern; NE: Not evaluated; NT: Near threatened; VU: Vulnerable; ÖE: Özgür Eminağaoğlu; AE: Arzu Ergül; Hcrp: Hemicryptophytes, Crp: Cryptophytes; Thp: Therophytes; Chp: Chamaephytes; Php: Phanerophytes; Vp: vascular parasite. Euro-Sib (mt), Hyrc-Eux, Hyrc-Eux (mt), Eux, and Eux (mt) species were evaluated as subcategories of Euro-Sib, while Medit, E.Medit, and E.Medit (mt) species were evaluated as subcategories of the Mediterranean phytogeographical region.

## Results and Discussion

The vascular plant flora of the Camili Biosphere Reserve area is represented by 990 taxa, 965 species, 14 subspecies, and 11 varieties belonging to 432 genera and 110 families (Appendix). Most of them belong to Spermatophyta (953 taxa) and the remainder belong to Pteridophyta (37 taxa). Gymnosperms and Angiosperms comprised 7 and 946 taxa, respectively. Of the Angiosperms, 796 taxa are Dicotyledonae and 150 taxa are Monocotyledonae. The dispersion of the plant taxa that were defined in the study area according to large taxonomical groups is shown in Table 1.

The area is a very important relictual refuge for many plant species that are remnants of an ancient Mediterranean flora such as *Periploca graeca* L. var. *graeca* (Asclepidaceae), *Cistus salviifolius* L. (Cistaceae), *Pistacia terebinthus* L. subsp. *palaestina* (Boiss.) Engler, *Cotinus coggygria* Scop., and *Rhus coriaria* L. (Anacardiaceae) (Eminağaoğlu et al., 2006). The uniqueness of the presence of many relict plant species in the region is largely due to the fact that the Caucasus was spared from the severe effects glacial retreats during the last Ice Age. The region is also unique with respect to the fact that there are many relict plant species including *Picea orientalis* (L.) Link, *Abies nordmanniana* (Stev.) Spach. subsp. *nordmanniana* (Pinaceae), *Betula medwediewii* Regel (Betulaceae), *Quercus pontica* C.Koch (Fagaceae), *Epigaea gaultherioides* (Boiss. & Ball) Takht., *Rhododendron ungerii* Trautv., *R. smirnovii* Trautv. (Ericaceae), *Osmanthus decorus* (Boiss. & Ball) Kasaplıgil (Oleaceae), and *Ruscus colchicus* Yeo (Liliaceae) (Zazanashvili et al., 1999).

The taxa of the study area, categorised according to phytogeographic regions, can be listed as follows: Euro-

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

	Families	Genera	Species	Subsp.	Var.	Taxa	Endemics
Pteridophyta	14	17	37	-	-	37	-
Spermatophyta	96	415	928	14	11	953	23
Gymnospermae	3	5	7	-	-	7	-
Angiospermae	93	410	921	14	11	946	23
Dicotyledones	82	336	772	14	10	796	22
Monocotyledones	11	74	149	-	1	150	1
Total	110	432	965	14	11	990	23

Siberian elements 477 (48.2%), Irano-Turanian elements 35 (3.5%), and Mediterranean elements 19 (1.9%). The remaining 459 (46.4%) taxa are multi-regional or of unknown phytogeographic origin. In the area, Euro-Siberian elements are more common than the other phytogeographic region elements. The dominance of the Euro-Siberian elements is not surprising because the study area is located in the Euro-Siberian phytogeographic region. The fact that Irano-Turanian elements are the second most common ones in the research area shows that Continental climate has an important effect on the area. Fourteen (1.4%) of the Euro-Siberian elements and 1 (0.1%) of the Irano-Turanian elements are endemic to Turkey. The total endemism rate is 2.3%, with 23 taxa. A total of 23 taxa, all endemic, and 49 nonendemic taxa were evaluated according to IUCN risk categories (Ekim et al., 2000;

IUCN, 2001). The results are summarised in Table 2. The distribution of the threat categories is as follows: 1 endemic and 1 nonendemic taxa in CR, 1 endemic and 2 nonendemic taxa in EN, 4 endemic and 47 nonendemic taxa in VU, 6 endemic taxa in NT, 9 endemic taxa in LC, and 2 endemic taxa in NE.

The comparison of the distribution of the phytogeographic elements and endemism ratio in the study area and neighbouring regions is given in Table 3. According to this table, the endemism rate is highest in Hatila Valley (Eminağaoğlu & Anşın, 2003). The endemism rate of the study area is very low compared with the average endemism rate (34.5%) in the *Flora of Turkey* (Güner et al., 2000). In addition, the endemism rate of the Black Sea region is about 16% (Anşın et al., 2002).

Table 2. Distribution of the phytogeographic elements, endemic, nonendemic, and threat categories.

Phytogeographic regions	Endemics		Nonendemics		Total	
	Number	%	Number	%	Number	%
Euro Sib.	14	1.4	463	46.8	477	48.2
Ir-Tur.	1	0.1	34	3.4	35	3.5
Medit.		0.0	19	1.9	19	1.9
Cosm. and others	8	0.8	451	45.6	459	46.4
<b>Total</b>	<b>23</b>	<b>2.3</b>	<b>967</b>	<b>97.7</b>	<b>990</b>	<b>100.0</b>
CR	1	0.1	1	0.1	2	0.2
EN	1	0.1	2	0.2	3	0.3
VU	4	0.4	47	4.7	51	5.2
NT	6	0.6			6	0.6
LC	9	0.8			8	0.8
NE	2	0.2			2	0.2

Table 3. The phytogeographical spectra of the taxa (%) in this study and other studies (abbreviations are below the table).

Studies	Number of taxa	Euro-Sib.	Ir-Tur.	Medit.	Cosm. and other	Endemism
Cam.	990	48.2	3.5	1.9	46.4	2.3
KS.	863	39.4	10.3	1.2	49.1	6.3
Hat.	769	35.6	6.9	2.2	55.3	7.4
Mer.	578	22.3	22.5	-	55.2	5.4
Tir.	550	50.5	7.5	5.0	37.0	-

Abbreviations:

Cam. Flora of the Camili Biosphere Reserve Area (Borçka, Artvin, Turkey).

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

Hat. The Flora of Hatila Valley National Park and its Close Environs (Artvin).

Mer. Trabzon-Meryemana Araştırma Ormanı Florası ve Saf Ladin Meşcerelerinde Floristik Araştırmalar.

Tir. Neuve aux Syntaxons Phytosociologies pour la Végétation de Turquie.

Kis. The Flora of the Mount Kısır (Kars and Ardahan) and Nearest Environs.

Tur. Flora of Turkey and the East Aegean Islands, Vol. 11

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. Similar results were obtained from other floristic studies in the Eastern Black Sea region of Turkey (Anşin, 1979; Eminağaoğlu & Anşin, 2003, 2004). One of the most important causes of the low endemism rate in the study area was the occurrence of tree species in higher parts. As a result, species diversity was decreased due to decreasing resource availability, particularly the amount of light, and the fact that areas compatible for endemic species were narrowed. Especially at higher elevations, herb species were lacking and they were outcompeted by tree species (Kikvidze & Ohsawa, 2001; Yalçın et al., 2004). Hemicryptophytes prevailed in open physiognomies, whereas the phanerophytes were the best represented class in the closed ones (Batalha & Martins, 2004).

The Euro-Siberian elements seem to be dominant in all areas studied and the Irano-Turanian elements come second. In Mount Kısır (Ocakverdi, 2001), rates of Euro-Siberian and Irano-Turanian elements are approximately equal because this area is located in the Irano-Turanian phytogeographical region. The representation of Irano-Turanian taxa shows the effects of continental climate and the transitional character of the study area. In some local regions (i.e. along the stream banks) a minor number of Mediterranean taxa occurred.

The largest families in terms of number of genera were Compositae (50), Gramineae (35), Cruciferae (28), Labiatae (22), Leguminosae (20), Rosaceae (20), Umbelliferae (17), Boraginaceae (17), Liliaceae (14), Ranunculaceae (14), Caryophyllaceae (11), and Scrophulariaceae (11).

The richest families in terms of number of taxa were Compositae (114), Gramineae (69), Leguminosae (59), Rosaceae (59), Cruciferae (47), Scrophulariaceae (47), Labiatae (43), Boraginaceae (35), Ranunculaceae (35), Caryophyllaceae (33), Liliaceae (26), and Umbelliferae (25).

The total ratio of the 10 major families is 54.6%, with the remaining families comprising 45.4%. The major family order in our study is concordant with the *Flora of Turkey* (Güner et al., 2000). 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 4. The results of this study are in agreement with those of other similar studies (Anşin, 1979; Düzenli, 1988; Ocakverdi, 2001; Eminağaoğlu & Anşin, 2003, 2004). Differences in several families might be due to the results of dissimilarities in climates and habitats. Compositae (the largest family in our list) is not only the largest family in the *Flora of Turkey* (Güner et al., 2000), but also the largest and most widespread family of flowering plants in the world (Good, 1974).

Table 4. Comparison of 10 families containing the most species in studies conducted in nearby regions (abbreviations are below Table 3).

Families	Compared studies (%)					
	Cam.	KS.	Hat.	Kıs.	Tir.	Mer.
Compositae	11,5	10.2	9.5	16.8	14.0	9.6
Gramineae	7,0	7.0	4.9	7.3	4.9	4.3
Leguminosae	6.0	8.9	8.7	7.3	8.1	8.8
Rosaceae	6.0	6.5	6.5	5.7	6.0	6.0
Cruciferae	4,7	5.2	6.4	4.7	3.8	3.9
Scrophulariaceae	4,7	5.1	4.2	5.2	3.4	4.2
Labiatae	4,3	5.9	5.5	5.7	4.7	5.1
Boraginaceae	3,5	3.1	2.9	3.5	2.5	2.0
Ranunculaceae	3,5	3.1	3.7	4.3	2.7	3.1
Caryophyllaceae	3,3	4.5	3.2	5.2	5.2	3.1

The richest genera in terms of the number of taxa were *Veronica* L. (15), *Campanula* L. (15), *Geranium* L. (13), *Trifolium* L. (12), *Carex* L. (12), *Ranunculus* L. (12), *Vicia* L. (10), *Myosotis* L. (10) *Sedum* L. (10), *Potentilla* L. (9), *Poa* L. (9), and *Astragalus* L. (8).

In this study, we were unable to collect some taxa that were cited in the *Flora of Turkey*. These are *Laserpitium affine* Ledeb. (Apiaceae), *Hieracium artvinense* (Woron. & Zahn) Juxip, *H. subartvinense* Juxip, *H. insolitum* (Zahn) Juxip (Compositae), and *Paracolpodium colchicum* (Albov) Tzvelev (Poaceae).

Pielou (1975) and Magurran (1988) pointed out that taxonomic diversity will be higher in an area in which the species are divided amongst many genera as opposed to one in which most species belong to the same genus, and even higher if these genera are divided amongst many families as opposed to few. Species:genera and genera:families ratios for the study area, neighbouring regions, and Turkey are given in Table 5. Camili and neighbouring areas (lower ratios) are more diverse than Turkey. The other significant reason for lower taxonomic diversity was decreasing resource availability due to the low amount of light, as indicated earlier.

According to Sørensen's similarity formula, the comparison of the floristic similarity in the study area and neighbouring regions is given in Table 6. The floristic resemblance varies between 16.3 and 72.3 and the highest resemblance was obtained by Eminağaoğlu & Anşin (2004). The floristic composition of the study area was similar to that of Karagöl-Sahara National Park and Hatila Valley National Park, while low similarity was found for Mount Kısır. Although a continental climate was partly seen in the study area, most of the study area belonged to the Euro-Siberian phytogeographical region and the effects of oceanic climate were more probable. In

Table 6. Comparison of the flora of the study area with other studies by Sørensen's (1948) formula (abbreviations are below Table 3).

	Compared studies (%)			
	KS.	Hat.	Kis.	Mer.
Cam.	72.3	60.3	14.0	28.8
KS.		62.3	20.1	29.0
Hat.			22.4	34.5
Kis.				16.3

Mount Kısır, however, the continental climate was much more severe than that of the study area and there were remarkable differences between both areas in terms of the floristic composition and openness to forest vegetation.

The life-form spectrum in the present study is given in Figure 3. The life-form spectrum of the taxa was as follows: hemicryptophytes 359 (36.3%), cryptophytes 272 (27.5%), therophytes 162 (16.4%), chamaephytes 130 (13.1%), phanerophytes 63 (6.4%), and vasicular

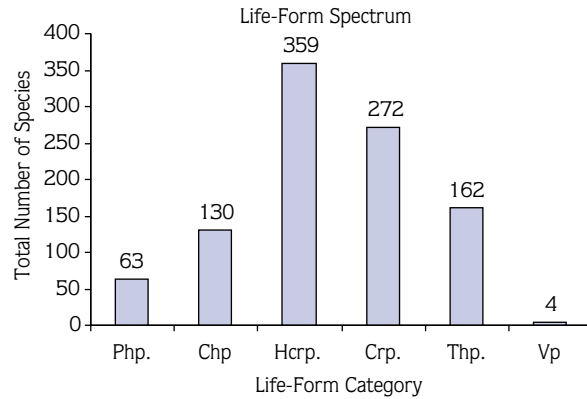


Figure 3. Life-form spectrum of the vascular flora of Camili.

Table 5. Comparative floristic richness and taxonomic diversity (abbreviations are below Table 3).

	Compared studies					
	Cam.	KS.	Hat.	Kis.	Mer.	Tur.
Total number of taxa (T)	990	863	769	578	635	10754
Total number of genera (G)	432	364	374	266	491	1168
Total number of families(F)	110	91	95	60	123	163
T/G	2.3	2.4	2.1	2.2	1.3	9.2
G/F	3.9	4.0	3.9	4.4	4.0	7.2



parasite 4 (0.4%). Hemicryptophytes were the best represented class in the study area. Hemicryptophytes were followed by cryptophytes with underground renewing buds. This could be explained by the inclusion of young individuals of phanerophytes as chamaephytes in the vegetation spectrum. These were followed by therophytes with an annual cycle as invaders and weedy species tend to be annuals (Batalha & Martins, 2004).

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APPENDIX

The Floristic List

PTERIDOPHYTA

EQUISETACEAE

*Equisetum hyemale* L.

A8 Artvin: Borçka, Camili, open forest, 550 m, 19.04.2003, ÖE 5880.

Crp.

*E. ramosissimum* Desf.

A8 Artvin: Borçka, Düzenli, lakeside, 1535 m, 07.09.2003, ÖE 6659.

Crp.

*E. fluviatile* L.

A8 Artvin: Borçka, Düzenli, wet places, 1350 m, 11.06.2004, ÖE 6862; A8 Artvin: Borçka, Camili, wet places, 400 m, 13.09.2004, ÖE 7332.

Crp.

*E. palustre* L.

A8 Artvin: Borçka, Camili, open forest, 400 m, 06.06.2003, ÖE 5996.

Crp.

*E. arvense* L.

A8 Artvin: Borçka, Efeler, streamsides, 1200 m., 07.09.2003, ÖE 6660; A8 Artvin: Borçka, Kayalar, forest, 1600 m, 16.04.2004, ÖE 6765.

Crp.

*E. telmateia* Ehrh.

A8 Artvin: Borçka, Maral, forest, 700 m, 04.04.2003, ÖE 5869.

Crp.

LYCOPODIACEAE

*Lycopodium selago* L.

A8 Artvin: Borçka, Kayalar, forest, 1200 m, 15.08.2003, ÖE 6484; A8 Artvin: Borçka, Efeler SNR, stony and rocky places, 1850 m, 13.09.2004, ÖE 7333.

Crp.

*L. clavatum* L.

A8 Artvin: Borçka, Efeler, forest, 800 m, 11.07.2003, ÖE 6207.

Crp.

*L. alpinum* L.

A9 Artvin: Borçka, Efeler SNR, forest, 1400 m, 21.08.2003, ÖE 6617.

Crp.

*L. complanatum* L. subsp. *chamaechyparissus* (A.Br.) Döll

A8 Artvin: Borçka, Maral, forest, 700 m, 23.06.2003, ÖE 6076.

Crp.

SELAGINELLACEAE

*Selaginella helvetica* (L.) Spring

A9 Artvin: Borçka, Efeler SNR, forest, 1300 m, 11.06.2004, ÖE 6863.

Euro-Sib., Crp.

OSMUNDACEAE

*Osmunda regalis* L.

A8 Artvin: Borçka, Uğur, open forest, 700 m, 08.07.2004, ÖE 7086.

Crp.

ADIANTHACEAE

*Adiantum capillus-veneris* L.

A8 Artvin: Borçka, Camili, open forest, 400 m, 15.08.2003, ÖE 6485.

Euro-Sib., Crp.

PTERIDACEAE

*Pteris cretica* L.

A8 Artvin: Borçka, Efeler, roadside, 800 m, 11.07.2005, AE 13.

Crp.

CRYPTOGRAMMACEAE

*Cryptogramma crispa* (L.) R.Br. ex Hook.

A9 Artvin: Borçka, Mereta to Efeler, stony slopes, 2400 m, 22.08.2004, ÖE 7305.

Euro-Sib., Crp.

HYPOLEPIDACEAE

*Pteridium aquilinum* (L.) Kuhn

A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, ÖE 6038; A8 Artvin: Borçka, Kayalar, forest, 1470 m, 07.09.2003, ÖE 6661; A8 Artvin: Borçka, Efeler, *Picea orientalis* forest, 1350 m, 28.09.2003, ÖE 6719.

Crp.

THELYPTERIDACEAE

*Thelypteris phegopteris* (L.) Sloss.

A8 Artvin: Borçka, Efeler, stony and rocky places, 1600 m, 14.10.2003, ÖE 6734.

Crp.

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

A8 Artvin: Borçka, Maral, streamsides, with *Alnus glutinosa*, 1600 m, 29.07.2003, ÖE 6436; A8 Artvin: Borçka, Efeler, *Picea orientalis* forest, streamsides, 1470 m, 07.09.2003, ÖE 6662.

Crp.

ASPLENIACEAE

*Asplenium trichomanes* L.

A8 Artvin: Borçka, Maral, open forest, 1570 m, 11.07.2003, ÖE 6208; A8 Artvin: Borçka, Efeler, rocky places, 1300 m, 07.09.2003, ÖE 6663; A8 Artvin: Borçka, Efeler, mixed forest, 1650 m, 13.09.2004, ÖE 7335.

Crp.

*A. viride* Huds.

A8 Artvin: Borçka, Uğur, open forest, 1200 m, 14.08.2005, AE 22.

Crp.

*A. adiantum-nigrum* L.

A8 Artvin: Borçka, Düzenli, open forest, 1450 m, 15.08.2003, ÖE 6486; A8 Artvin: Borçka, Uğur, forest, 700 m, 10.05.2004, ÖE 6766; A8 Artvin, Borçka, Uğur, forest, 1700 m, 13.09.2004, ÖE 7336.

Crp.

*A. septentrionale* (L.) H.Hoffm. subsp. *septentrionale*

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 15.08.2003, ÖE 6487; A8 Artvin: Borçka, Kayalar, on rock, 1350 m, 29.07.2003, ÖE 6437; A8 Artvin: Borçka, Efeler, damp place, 1300 m, 13.09.2004, ÖE 7337.

Crp.

*A. ruta-maria* L.

A8 Artvin: Borçka, Efeler, 1690 m, open forest, 1670 m, 13.09.2004, ÖE 7338.

Crp.

- A. woronowii** H.Christ  
A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 22.08.2004, ÖE 7306.  
Crp.
- Ceterach officinarum** DC.  
A8 Artvin: Borçka, Düzenli, amongst rock, 1450 m, 07.09.2003, ÖE 6664.  
Crp.
- Phyllitis scolopendrium** (L.) Newman  
A8 Artvin: Borçka, Kayalar, forest, 1800 m, 11.06.2004, ÖE 6864.  
Crp.
- ATHYRIACEAE**
- Athyrium filix-foemina** (L.) Roth  
A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 08.09.2005, AE 26; A9 Artvin: Borçka, Yıldız Lake, forest, 1910 m, 28.09.2003, ÖE 6720; A8 Artvin: Borçka, Maral, forest, damp places, 1560 m, 13.09.2004, ÖE 7339.  
Crp.
- A. distentifolium** Tausch ex Opiz  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 21.08.2003, ÖE 6618.  
Crp.
- ASPIDIACEAE**
- Polystichum lonchitis** (L.) Roth  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 21.08.2003, ÖE 6619; A9 Artvin: Borçka, Yıldız Lake, in scrub, rocky places, 1970 m, 13.09.2004, ÖE 7340.  
Crp.
- P. woronowii** Fomin  
A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 06.06.2003, ÖE 5997.  
VU, Hyrc-Eux., Crp.
- P. aculeatum** (L.) Roth  
A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 11.07.2003, ÖE 6209.  
Crp.
- Dryopteris filix-mas** (L.) Schott  
A8 Artvin: Borçka, Efeler, forest, 1250 m, 28.09.2003, ÖE 6721.  
Crp.
- D. abbreviata** (DC.) Newman  
A8 Artvin: Borçka, Kayalar, forest, 1700 m, 28.09.2003, ÖE 6722.  
Euro-Sib., Crp.
- D. dilatata** (Hoffm.) Gray  
A9 Artvin: Borçka, Efeler Forest SNR, open forest, 1850 m, 28.09.2003, ÖE 6723; A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300m, 08.07.2004, ÖE 7087.  
Crp.
- D. liliana** Golitsin  
A9 Artvin: Borçka, Efeler, forest, damp places, 1350 m, 07.09.2003, ÖE 6665.  
VU, Eux., Crp.
- BLECHNACEAE**
- Blechnum spicant** (L.) Roth  
A8 Artvin: Borçka, Camili, open forest, 400 m, 13.09.2004, ÖE 7341; A8 Artvin: Borçka, Efeler, forest, 1400 m, 13.09.2004, ÖE 7342.  
Crp.
- POLYPODIACEAE**
- Polypodium vulgare** L. subsp. *vulgare*  
A9 Artvin: Borçka, Efeler, *Picea orientalis* forest, 1600 m, 28.09.2003, ÖE 6724; A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 28.07.2004, ÖE 7239.  
Crp.
- SPERMATOPHYTA**
- GYMNOSPERMAE**
- PINACEAE**
- Abies nordmanniana** (Stev.) Spach subsp. *nordmanniana*  
A8 Artvin: Borçka, Efeler, with *Picea orientalis*, 1400 m, 14.10.2003, ÖE 6735; A8 Artvin: Borçka, Efeler, with *Picea orientalis* and *Pinus sylvestris*, 1700 m, 13.09.2004, ÖE 7343.  
Eux., Php.
- Picea orientalis** (L.) Link  
A8 Artvin: Borçka, Efeler, with *Abies nordmanniana*, 1450 m, 13.09.2004, ÖE 7344; A8 Artvin: Borçka, Maral, pure or mixed stands, 1100 m, 07.10.2004, ÖE 7375; A9 Artvin: Borçka, Gorgit SNR, with *Fagus orientalis*, 1650 m, 07.10.2004, ÖE 7376.  
Eux., Php.
- Pinus sylvestris** L. var. *hamata* Stev.  
A8 Artvin: Borçka, Yıldız Lake, with *Juniperus communis*, 1900 m, 25.05.2003, ÖE 5943; A8 Artvin: Borçka, Camili, with *Juniperus oxycedrus*, 1200 m, 15.08.2003, ÖE 6488; A9 Artvin: Borçka, Gorgit SNR, with *Abies nordmanniana* and *Picea orientalis*, 1650 m, 10.05.2004, ÖE 6767.  
Euro-Sib., Php.
- TAXACEAE**
- Taxus baccata** L.  
A9 Artvin: Borçka, Efeler Forest SNR, *Picea orientalis* forest, 1350 m, 19.04.2003, ÖE 5881; A9 Artvin: Borçka, Efeler forest SNR, with *Picea orientalis* and *Abies nordmanniana*, 1800 m, 27.05.2004, ÖE 6789.  
Php.
- CUPRESSACEAE**
- Juniperus communis** L. var. *saxatilis* Pall.  
A9 Artvin: Borçka, Yıldız Lake, *Pinus sylvestris* forest, 1900 m, 15.08.2003, ÖE 6489; A9 Artvin: Borçka, Efeler Forest SNR, subalpine vegetation, 1900 m, 07.09.2003, ÖE 6666; *ibid.*, 28.07.2004, ÖE 7240.  
Php.
- J. oxycedrus** L. subsp. *oxycedrus*  
A8 Artvin: Borçka, Maral, *Quercus petraea* scrub, 1100 m, 25.05.2003, ÖE 5944; A8 Artvin: Borçka, Camili, with *Cistus salviifolius*, 500 m, 15.08.2003, ÖE 6490.  
Php.
- J. foetidissima** Willd.  
A8 Artvin: Borçka, Camili, forest, 600 m, 29.07.2003, ÖE 6439.  
Php.
- ANGIOSPERMAE**
- DICOTYLEDONAE**
- RANUNCULACEAE**
- Helleborus orientalis** Lam.  
A8 Artvin: Borçka, Kayalar, forest, 1600 m, 11.07.2003, ÖE 6210; A8 Artvin: Borçka, Düzenli, forest, 1400 m, 11.06.2004, ÖE 6865.  
Eux., Hcrp.

**Nigella segetalis** M.Bieb.

A8 Artvin: Borçka, Uğur, open places, 870 m, 11.07.2003, ÖE 6211; A8 Artvin: Borçka, Maral, rocky places, 750 m, 11.07.2003, ÖE 6212; A8 Artvin: Borçka, Kayalar, open places, 1470 m, 28.07.2004, ÖE 7241.

Hcrp.

**Trollius ranunculinus** (Sm.) Stearn

A9 Artvin: Borçka, Gorgit SNR, subalpine vegetation, 1740 m, 08.07.2004, ÖE 7088; A9 Artvin: Borçka, Beyazsu Yaylası, subalpine vegetation, 1900 m, 11.07.2003, ÖE 6213.

Hcrp.

**Actaea spicata** L.

A8 Artvin: Borçka, Maral, forest, 700 m, 21.08.2003, ÖE 6620.

Hcrp.

**Caltha polypetala** Hochst. ex Lorent

A9 Artvin: Borçka, Beyazsu Yaylası, damp places, 1950 m, 19.04.2003, ÖE 5882; A9 Artvin: Borçka, Mereta Yaylası, alpine vegetation, wet places, 2350 m, 03.05.2003, ÖE 5910 ; A9 Artvin: Borçka, Gorgit SNR, open places, alpine vegetation, wet places, 2450 m, 25.05.2003, ÖE 5945.

Hcrp.

**Aconitum orientale** Mill.

A9 Artvin: Borçka, Yıldız Lake, meadow, damp places, 1890 m, 11.07.2003, ÖE 6214.

Eux., Hcrp.

**A. nasutum** Fisch. ex Rchb.

A8 Artvin: Borçka Efeler forest, open places, 1920 m, 11.07.2003, ÖE 6215; A9 Artvin: Borçka, Mereta to Efeler, roadsides, 1870 m, 28.07.2004, ÖE 7242.

Eux., Hcrp.

**A. anthora** L.

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 22.08.2004, ÖE 7307.

VU, Euro-Sib., Hcrp.

**Delphinium formosum** Boiss. & Huet

A9 Artvin: Borçka, Yıldız Lake, meadows, 11.06.2004, 2400 m, ÖE 6866.

Endemic, LC., Eux., Hcrp.

**D. linearilobum** (Trautv.) Busch

A9 Artvin: Borçka, Yıldız Lake, open places, 1980 m, 08.07.2004, ÖE 7089.

Ir-Tur., Hcrp.

**D. flexuosum** M.Bieb.

A9 Artvin: Borçka, Yıldız Lake, rocky places, 1900 m, 11.06.2004, ÖE 6867.

Eux., Hcrp.

**D. albiflorum** DC.

A9 Artvin: Borçka, Efeler Forest SNR, *Abies nordmanniana* forest, 1850 m, 13.09.2004, ÖE 7345.

Hcrp.

**D. cyphoplectrum** Boiss. var. **stenophyllum** Boiss.

A9 Artvin: Borçka, Yıldız Lake, open places, 1950 m, 11.06.2004, ÖE 6868.

VU, Hcrp.

**Consolida orientalis** (Gay) Schröd.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, open places, 1870 m, 11.06.2004, ÖE 6869; A9 Artvin: Borçka, Efeler SNR, in scrub, 1750 m, 08.07.2004, ÖE 7090.

Ir-Tur., Thp.

**C. regalis** Gray subsp. **regalis**

A8 Artvin: Borçka, Efeler, roadsides, 800 m, 26.06.2005, AE 9.

Thp.

**Anemone narcissiflora** L. subsp. **narcissiflora**

A8 Artvin: Borçka, Düzenli, Mahmudikaya, subalpine vegetation, 2200 m, 11.06.2004, ÖE 6870; A9 Artvin: Borçka, Yıldız Lake, with *Betula recurvata*, 1900 m, 08.07.2004, ÖE 7091; A8 Artvin: Borçka Maral, subalpine vegetation, with *Betula litwinowii*, 800 m, 28.07.2004, ÖE 7243.

Euro-Sib., Crp.

**A. blanda** Schott & Kotschy

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 30.03.2004, ÖE 6750.

Crp.

**A. caucasica** Willd. ex Rupr.

A9 Artvin: Borçka, Yıldız Lake, in scrub, 1970 m, 11.07.2003, ÖE 6216.

VU, Eux., Crp.

**A. albana** Stev. subsp. **armena** (Boiss.) Smirn.

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2450 m, 16.04.2004, ÖE 6752.

Ir-Tur., Crp.

**Clematis vitalba** L.

A8 Artvin: Borçka, Maral, in scrub, 700 m, 07.09.2003, ÖE 6667.

Php.

**Adonis aestivalis** L. subsp. **parviflora** (Fisch. ex DC.) Busch

A8 Artvin: Borçka, Camili, roadsides, 400 m, 11.06.2004, ÖE 6871.

Thp.

**Ranunculus cappadocicus** Willd.

A9 Artvin: Borçka, Gorgit SNR, *Picea orientalis* forest, 1850 m, 11.07.2003, ÖE 6217; A8 Artvin: Borçka, Efeler, *Picea orientalis* forest, 1550 m, 08.07.2004, ÖE 7092.

Eux., Crp.

**R. buhsei** Boiss.

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 29.07.2003, ÖE 6440.

Hycr-Eux. (mt), Crp.

**R. oreophilus** M.Bieb.

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300, 11.07.2003, ÖE 6218.

Euro-Sib., Crp.

**R. brachylobus** Boiss. & Hohen. subsp. **brachylobus**

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2300 m, 15.08.2003, ÖE 6491, A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 07.09.2003, ÖE 6668.

Hycr-Eux. (mt), Crp.

**R. caucasicus** M.Bieb. subsp. **caucasicus**

A9 Artvin: Borçka, Yıldız Lake, open places, 1950 m, 07.09.2003, ÖE 6669.

VU, Crp.

**R. dissectus** M.Bieb. subsp. **glabrescens** (Boiss.) P.H.Davis

A9 Artvin: Borçka, Gorgit SNR, open forest, 1850 m, 28.09.2003, ÖE 6725.

Crp.

- R. repens** L.  
A8 Artvin: Borçka, Düzenli, Verketil, damp places, 1900m, 25.05.2003, ÖE 5946.  
Hcrp.
- R. polyanthemus** L.  
A8 Artvin: Borçka, Efeler, damp places, 800 m, 27.05.2004, ÖE 6790.  
Chp.
- R. constantinopolitanus** (DC.) d'Urv.  
A8 Artvin: Borçka, Efeler, open places, 1470 m, 29.07.2003, ÖE 6441; A9 Artvin, Borçka, Yıldız Lake, open places, 1900 m, 11.06.2004, ÖE 6872.  
Widespread, Hcrp.
- R. oxyspermus** Willd.  
A8 Artvin: Borçka, Düzenli, open places, 1500 m, 11.06.2004, ÖE 6874.  
Crp.
- R. muricatus** L.  
A8 Artvin: Borçka, Camili, open forest, 400 m, 04.04.2003, ÖE 5870.  
Thp.
- R. arvensis** L.  
A8 Artvin: Borçka, Efeler, damp places, 800 m, 11.07.2003, ÖE 6219; A8 Artvin: Borçka, Efeler, open places, 1570 m, 11.06.2004, ÖE 6873; A8 Artvin: Borçka, Kayalar, open forest, damp places, 1900 m, 11.06.2004, ÖE 6875.  
Thp.
- Aquilegia olympica** Boiss.  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, damp places, 1910 m, 11.06.2004, ÖE 6876; A9 Artvin: Borçka Efeler SNR, in scrub, 1750 m, 08.07.2004, ÖE 7093.  
Hcrp.
- Thalictrum minus** L. var. **majus** (Crantz) Crépin  
A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 21.08.2003, ÖE 6621.  
Hcrp.
- PAEONIACEAE**  
**Paeonia wittmanniana** Hartwiss. ex Lindl.  
A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 08.09.2005, AE 25.
- Hycr-Eux., Crp.
- BERBERIDACEAE**  
**Berberis vulgaris** L.  
A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 08.07.2004, ÖE 7094.  
Eux., Php.
- Epimedium pinnatum** Fisch. subsp. **colchicum** (Boiss.) Busch  
A8 Artvin: Borçka, Maral, forest, 700 m, 16.04.2004, ÖE 6753.  
VU, Eux., Crp.
- PAPAVERACEAE**  
**Chelidonium majus** L.  
A8 Artvin: Borçka, Efeler, roadsides, on wall, 800 m, 10.06.2005, AE 4.  
Euro-Sib., Hcrp.
- Papaver paucifoliatum** (Trautv.) Fedde  
A8 Artvin: Borçka, Maral, open forest, 700 m, 11.07.2003, ÖE 6220.  
Ir-Tur., Hcrp.
- P. lateritium** Koch  
A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300, 26.06.2005, AE 17.  
Endemic, VU, Eux., Hcrp.
- P. fugax** Poir. var. **fugax**  
A9 Artvin: Borçka, Yıldız Lake, stony places, 2400m, 06.06.2003, ÖE 5998; A9 Artvin: Borçka, Yıldız Lake, roadsides, 1890 m, 10.05.2004, ÖE 6768; *ibid.*, 27.05.2004, ÖE 6791.  
Thp.
- P. dubium** L.  
A9 Artvin: Borçka, Yıldız Lake, open slopes, 2400 m, 06.06.2003, ÖE 5999.  
Thp.
- P. arenarium** M.Bieb.  
A9 Artvin: Borçka, Gorgit SNR, forest, 2100 m, 11.07.2003, ÖE 6221.  
Thp.
- Corydalis conorhiza** Ledeb.  
A9 Artvin: Borçka, Efeler SNR, open places, 2000 m, 10.05.2004, ÖE 6769.  
Eux., Crp.
- C. alpestris** C.A.Mey.  
A8 Artvin: Borçka, Düzenli, Verketil, damp places, 1950 m, 11.06.2004, ÖE 6877.  
Eux., Crp.
- C. caucasica** DC.  
A8 Artvin: Borçka, Efeler, wet places, 800 m, 10.05.2004, ÖE 6770.  
Eux., Crp.
- C. angustifolia** (M.Bieb.) DC.  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 16.04.2004, ÖE 6754.  
VU, Crp.
- C. rutifolia** (Sibth. & Sm.) DC. subsp. **erdellii** (Zucc.) Cullen & P.H.Davis  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 11.07.2003, ÖE 6222.  
Crp.
- Fumaria officinalis** L.  
A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 21.08.2003, ÖE 6622, A8 Artvin: Borçka, Uğur, open forest, 700 m, 28.07.2004, ÖE 7244.  
Thp.
- F. microcarpa** Boiss. ex Hausskn.  
A8 Artvin: Borçka, Camili, roadsides, 400 m, 11.06.2004, ÖE 6878.  
Thp.
- F. asepala** Boiss.  
A8 Artvin: Borçka, Camili, roadsides, 400 m, 11.06.2004, ÖE 6879.  
Ir-Tur., Thp.
- CRUCIFERAE (BRASSICACEAE)**  
**Hirschfeldia incana** (L.) Lag.-Foss.  
A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 27.05.2004, ÖE 6792.  
Thp.
- Raphanus raphanistrum** L.  
A8 Artvin: Borçka, Camili, streamsides, 400 m, 11.07.2003, ÖE 6223.  
Thp.
- Rapistrum rugosum** (L.) All.  
A8 Artvin: Borçka, Camili, open forest, 400 m, 03.05.2003, ÖE 5911.  
Thp.

*Conringia perfoliata* (C.A.Mey.) Busch  
 A8 Artvin: Borçka, Maral, forest, 700 m, 19.04.2003, ÖE 5883.  
 Thp.  
*Lepidium campestre* (L.) R.Br.  
 A8 Artvin: Borçka, Maral, waste places, 700 m, 11.07.2003, ÖE 6224; A8 Artvin: Borçka, Efeler, meadows, 800 m, 11.06.2004, ÖE 6880.  
 Widespread, Thp.  
*Cardaria draba* (L.) Desv. subsp. *chalepensis* (L.) O.E.Schultz  
 A9 Artvin: Borçka, Gorgit SNR, roadsides, wet places, 1730 m, 11.07.2003, ÖE 6225.  
 Widespread, Hcrp.  
*Aethionema arabicum* (L.) Andr. ex DC.  
 A8 Artvin: Borçka, Efeler, open places, 1200 m, 11.06.2004, ÖE 6881.  
 Widespread, Thp.  
*Thlaspi arvense* L.  
 A8 Artvin: Borçka, Maral, roadsides, 700 m, 29.07.2003, ÖE 6442.  
 Cosm., Thp.  
*T. huetii* Boiss.  
 A8 Artvin: Borçka, Camili, open places, 400 m, 11.07.2003, ÖE 6226.  
 Thp.  
*T. orbiculatum* Stev.  
 A8 Artvin: Borçka, Efeler, roadsides, 800 m, 11.06.2004, ÖE 6882.  
 Thp.  
*Pachyphragma macrophyllum* (Hoffm.) Busch  
 A8 Artvin: Borçka, Düzenli, *Picea orientalis* forest, 900 m, 23.06.2003, ÖE 6077.  
 Eux., Hcrp.  
*Capsella bursa-pastoris* (L.) Medik.  
 A8 Artvin: Borçka, Düzenli, open places, 900 m, 23.06.2003, ÖE 6078; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 11.06.2004, ÖE 6883; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 08.07.2004, ÖE 7095.  
 Cosm., Thp.

*Neslia paniculata* (L.) Desv.  
 A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 11.06.2004, ÖE 6884.  
 Thp.  
*Alyssoides utriculata* (L.) Med.  
 A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 27.05.2004, ÖE 6793.  
 Hcrp.  
*Fibigia clypeata* (L.) Medik.  
 A8 Artvin: Borçka, Kayalar, forest, 1100 m, 11.06.2004, ÖE 6885.  
 Hcrp.  
*F. eriocarpa* (DC.) Boiss.  
 A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 25.05.2003, ÖE 5947.  
 Hcrp.  
*Alyssum praecox* Boiss. & Ball var. *praecox*  
 A9 Artvin: Borçka, Yıldız Lake, stony places, 2040 m, 11.07.2003, ÖE 6227; A8 Artvin: Borçka, Maral, roadsides, 1100 m, 29.07.2003, ÖE 6443.  
 Endemic, LC., Hcrp.  
*A. tortuosum* Willd.  
 A9 Artvin: Borçka, Efeler, stony places, 1880 m, 11.06.2004, ÖE 6886; A8 Artvin: Borçka, Düzenli, roadsides, 1560 m, 08.07.2004, ÖE 7096.  
 Euro-Sib., Hcrp.  
*A. murale* Waldst. & Kit. var. *alpinum* Boiss. ex Nyár.  
 A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2350 m, 11.07.2003, ÖE 6228.  
 Hcrp.  
*Draba bruniifolia* Stev. subsp. *bruniifolia*  
 A8 Artvin: Borçka, Efeler, alpine vegetation, 2300 m, 11.07.2003, ÖE 6229; A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 08.07.2004, ÖE 7097.  
 Chp.  
 subsp. *armeniaca* Coode & Cullen  
 A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2350 m, 11.06.2004, ÖE 6887.

Endemic, LC., Chp.  
*D. hispida* Willd.  
 A8 Artvin: Borçka, Efeler, alpine vegetation, 2340 m, 11.06.2004, ÖE 6889.  
 Eux. (mt), Chp.  
*D. siliquosa* M.Bieb.  
 A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, rocky places, 11.06.2004, ÖE 6890.  
 Hyrc-Eux. (mt), Chp.  
*D. nemorosa* L.  
 A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2100 m, 11.07.2003, ÖE 6231; A9 Artvin: Borçka, Efeler SNR, roadsides, 1800 m, 11.06.2004, ÖE 6891.  
 Hyrc-Eux. (mt), Thp.  
*Erophila verna* (L.) Chevall. subsp. *verna*  
 A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 23.06.2003, ÖE 6079.  
 Thp.  
*Arabis caucasica* Willd. subsp. *caucasica*  
 A9 Artvin: Borçka, Camili, roadside, 500 m, 11.06.2004, ÖE 6892; A8 Artvin: Borçka, Efeler, roadsides, 750 m, 11.06.2004, ÖE 6893.  
 Eux. (mt), Hcrp.  
*A. nova* Vill.  
 A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 15.08.2003, ÖE 6492.  
 Widespread, Thp.  
*Turritis glabra* L.  
 A8 Artvin: Borçka, Efeler, open forest, 1650 m, 11.06.2004, ÖE 6894.  
 Thp.  
*Nasturtium officinale* R.Br.  
 A8 Artvin: Borçka, Efeler, streamsides, 1400 m, 08.07.2004, ÖE 7098.  
 Crp.  
*Rorippa sylvestre* (L.) Besser  
 A8 Artvin: Borçka, Kayalar, forest, 1800 m, 23.06.2003, ÖE 6080; A8 Artvin: Borçka, Maral, open places, 1130 m, 11.06.2004, ÖE 6895; A8 Artvin: Borçka, Camili, open places, 1210 m, 08.07.2004, ÖE 7099.  
 Hcrp.

**Barbarea vulgaris** R.Br.

A8 Artvin: Borçka, Düzenli, meadows, 1500 m, 11.07.2003, ÖE 6232; A8 Artvin: Borçka, Efeler, open forest, 1450 m, 11.07.2003, ÖE 6233.

Widespread, Hcrp.

**B. plantaginea** DC.

A8 Artvin: Borçka, Kayalar, forest, 1000 m, 23.06.2003, ÖE 6081; A8 Artvin: Borçka, Uğur, open forest, 700 m, 08.07.2004, ÖE 7100.

Thp.

**Cardamine bulbifera** (L.) Crantz

A8 Artvin: Borçka, Düzenli, damp places, 1520 m, 25.05.2003, ÖE 5948.

Euro-Sib., Crp.

**C. quinquefolia** (M.Bieb.) Schmalh.

A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 06.06.2003, ÖE 6000.

Euro-Sib., Crp.

**C. raphanifolia** Pourr. subsp. *acris* (Gris.) O.E.Schulz

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 15.08.2003, ÖE 6493; A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2450 m, 08.07.2004, ÖE 7101.

Euro-Sib., Crp.

**C. tenera** C.C.Gmel.

A8 Artvin: Borçka, Düzenli, damp places, 1550 m, 11.07.2003, ÖE 6234.

Hycr-Eux., Crp.

**C. uliginosa** M.Bieb.

A8 Artvin: Borçka, Efeler, streamsides, 1670 m, 23.06.2003, ÖE 6082.

Widespread, Crp.

**C. impatiens** L. var. *impatiens*

A8 Artvin: Borçka, Efeler, forest, wet places, 1340 m, 11.06.2004, ÖE 6896.

Euro-Sib., Crp.

var. *pectinata* (Pall.) Trautv.

A8 Artvin: Borçka, Düzenli, damp places, 1370 m, 23.06.2003, ÖE 6083; A8 Artvin: Borçka, Efeler, mixed forest, 1650 m, 11.07.2003, ÖE 6235.

Euro-Sib., Crp.

**Hesperis matronalis** L. subsp. *matronalis*

A8 Artvin: Borçka, Düzenli, roadsides, 1500 m, 11.06.2004, ÖE 6899; A8 Artvin: Borçka, Efeler, roadsides, open places, 1250 m, 11.06.2004, ÖE 6901.

Hcrp.

subsp. *adzharica* (Tzvelev) Cullen

A8 Artvin: Borçka, Efeler, roadsides, 1300 m, 11.07.2003, ÖE 6236; A8 Artvin: Borçka, Düzenli, roadsides, 1470 m, 11.06.2004, ÖE 6897; A9 Artvin: Borçka, Yıldız Lake, open forest, roadsides, 2050 m, 11.06.2004, ÖE 6898; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 08.07.2004, 7102.

Hcrp.

**Erysimum cuspidatum** (M.Bieb.) DC.

A8 Artvin: Borçka, Kayalar, meadows, 1270 m, 11.06.2004, ÖE 6900; A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 10.06.2005, AE 3.

Thp.

**Alliaria petiolata** (M.Bieb.) Cavara & Grande

A8 Artvin: Borçka, Efeler, open forest, 1400 m, 11.07.2003, ÖE 6237; A8 Artvin: Borçka, Düzenli, open forest, 1470 m, 10.06.2005, AE 6.

Thp.

**Sisymbrium officinale** (L.) Scop.

A8 Artvin: Borçka, Maral, open places, 1100 m, 29.07.2003, ÖE 6444.

Thp.

**S. loeselii** L.

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 15.08.2003, ÖE 6494.

Hcrp.

**Murbeckiella huetii** (Boiss.) Rothm.

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 08.07.2004, ÖE 7103.

Hcrp.

**Barbamine procumbens** A.P.Khokhr.

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2800 m, 06.06.2003, ÖE 6075.

Endemic, NE, Euro-Sib., Hcrp.

**RESEDACEAE**

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

A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 11.07.2003, ÖE 6238.

Widespread, Hcrp.

**CISTACEAE**

**Cistus salviifolius** L.

A8 Artvin: Borçka, Camili, open forest, 400 m, 06.06.2003, ÖE 6001.

Medit., Chp.

**Helianthemum nummularium** (L.) Mill. subsp. *tomentosum* (Scop.) Schinz & Thell.

A8 Artvin: Borçka, Düzenli, Verketil, stony slopes, 2250 m, 11.07.2003, ÖE 6239; A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2300 m, 11.06.2004, ÖE 6902; A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 08.07.2004, ÖE 7104.

Hcrp.

**Fumana arabica** (L.) Spach var. *arabica*

A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 11.06.2004, ÖE 6903.

Hcrp.

**VIOLACEAE**

**Viola odorata** L.

A8 Artvin: Borçka, Maral, roadsides, 1100 m, 25.05.2005, ÖE 5992; A8 Artvin: Borçka, Uğur, open forest, 700 m, 10.05.2004, ÖE 6771.

Hcrp.

**V. sieheana** Becker

A8 Artvin: Borçka, Camili, mixed forest, 1270 m, 25.05.2005, ÖE 5993; A9 Artvin: Borçka, Efeler SNR, forest to subalpine, 1200 m, 27.05.2004, ÖE 6795; A8 Artvin: Borçka, Maral, forest, 700 m, 27.05.2004, ÖE 6796.

Hcrp.

**V. canina** L.

A8 Artvin: Borçka, Efeler, roadsides, 800 m, 06.06.2003, ÖE 6002; A9 Artvin: Borçka, Yıldız Lake, open places, 1870 m, 11.06.2004, ÖE 6904.

Hcrp.

**V. altaica** Ker.-Gawl. subsp. *oreades* (M.Bieb.) Becker



A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 08.07.2004, ÖE 7105.

Hcrp.

*V. arvensis* Murray

A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2300 m, 06.06.2003, ÖE 6003.

Thp.

**POLYGALACEAE**

*Polygala supina* Schreb.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 11.06.2004, ÖE 6905.

Widespread, Hcrp.

*P. major* Jacq.

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 23.06.2003, ÖE 6085; A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 11.07.2003, ÖE 6240; A8 Artvin: Borçka, Efeler, meadows, 1550 m, 15.08.2003, ÖE 6495.

Euro-Sib., Hcrp.

*P. anatolica* Boiss. & Heldr.

A8 Artvin: Borçka, Efeler, meadows, 1550 m, 25.05.2003, ÖE 5949.

Widespread, Hcrp.

*P. vulgaris* L.

A8 Artvin: Borçka, Efeler, meadows, 1550 m, 08.07.2004, ÖE 7106; A8 Artvin: Borçka, Maral, forest, 700 m, 29.07.2003, ÖE 6445.

Euro-Sib., Hcrp.

*P. alpestris* Rchb.

A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2350 m, 11.06.2004, ÖE 6906.

Euro-Sib., Hcrp.

**CARYOPHYLLACEAE**

*Arenaria rotundifolia* M.Bieb. subsp. *rotundifolia*

A8 Artvin: Borçka, Camili, open forest, 400 m, 06.06.2003, ÖE 6004; A9 Artvin: Borçka, Efeler SNR, forest to subalpine, 1000m, 06.06.2003, ÖE 6005; A8 Artvin: Borçka, Efeler, wet places, 1370 m, 11.06.2004, ÖE 6907.

Thp.

*A. serpyllifolia* L.

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 25.05.2003, ÖE 5995.

Thp.

*Minuartia imbricata* (M.Bieb.) Woron.

A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2300 m, 21.08.2003, ÖE 6623; A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 28.07.2004, ÖE 7245.

Eux. (mt), Hcrp.

*M. circassica* (Albow) Woron.

A9 Artvin: Borçka, Mereta Yaylası, alpine vegetation, 2250 m, 21.08.2003, ÖE 6624.

Eux. (mt), Hcrp.

*M. recurva* (All.) Schinz & Thell. subsp. *oreina* (Mattf.) McNeill

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 15.08.2003, ÖE 6496.

Hcrp.

*M. juniperina* (L.) Maire & Petitm.

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 08.07.2004, ÖE 7107.

Chp.

*M. micrantha* Schischk.

A8 Artvin: Borçka, Kayalar, forest, 1000 m, 15.08.2003, ÖE 6497; A8 Artvin: Borçka, Düzenli, Verketil, stony places, 1200, 08.07.2004, ÖE 7108.

Hcrp.

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

A8 Artvin: Borçka, Camili, open forest, 400 m, 28.07.2004, ÖE 7246.

Thp.

*S. nemorum* L.

A8 Artvin: Borçka, Uğur, open forest, 700 m, 08.07.2004, ÖE 7109.

Thp.

*S. holostea* L.

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2300 m, 29.07.2003, ÖE 6447.

Euro-Sib., Hcrp.

*Myosoton aquaticum* (L.) Moench

A8 Artvin: Borçka, Maral, damp places, 950 m, 23.06.2003, ÖE 6086; A8 Artvin: Borçka, Kayalar, forest, 1200 m, 11.06.2004, ÖE 6908.

Euro-Sib., Hcrp.

*Cerastium cerastioides* (L.) Britt.

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 23.06.2003, ÖE 6087; A8 Artvin: Borçka, Efeler, alpine vegetation, 2300 m, 11.06.2004, ÖE 6909.

Hcrp.

*C. armeniacum* Gren.

A8 Artvin: Borçka, Efeler, alpine vegetation, 2350 m, 06.06.2003, ÖE 6006; A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2450 m, 23.06.2003, ÖE 6088.

Endemic, LC., Thp.

*C. gnaphalodes* Fenzl

A9 Artvin: Borçka, Efeler SNR, forest to subalpine, 2200 m, 06.06.2003, ÖE 6007.

Endemic, LC., Hcrp.

*C. purpurascens* Adams

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2200 m, 23.06.2003, ÖE 6090; A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2350 m, 08.07.2004, ÖE 7110.

Euro-Sib (mt), Hcrp.

*C. glomeratum* Thuill.

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 28.07.2004, ÖE 7247.

Cosm., Thp.

*Sagina procumbens* L.

A8 Artvin: Borçka, Kayalar, forest, 1500 m, 06.06.2003, ÖE 6008; A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 27.05.2004, ÖE 6797; A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2050 m, 11.06.2004, ÖE 6910.

Thp.

*Dianthus floribundus* Boiss.

A9 Artvin: Borçka, Efeler SNR, rocky places, 1700 m, 23.06.2003, ÖE 6091; A9 Artvin: Borçka, Yıldız Lake, rocky places, 1880 m, 11.06.2004, ÖE 6911; A8 Artvin: Borçka, Maral, roadsides, rocky places, 1150 m, 11.06.2004, ÖE 6912.

Ir-Tur., Hcrp.

*D. crinitus* Sm. var. *crinitus*

A8 Artvin: Borçka, Efeler, roadsides, 1350 m, 11.07.2003, ÖE 6242; A9 Artvin: Borçka, Yıldız Lake, rocky places, 1900 m, 11.06.2004, ÖE 6913.

Hcrp.

- D. orientalis** Adams  
 A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 06.06.2003, ÖE 6010; A9 Artvin: Borçka, Efeler SNR, roadsides, 1650 m, 29.07.2003, ÖE 6448; *ibid.*, 08.07.2004, ÖE 7112.  
 Hcrp.  
**D. carmelitarum** Reut. ex Boiss.  
 A8 Artvin: Borçka, Efeler, roadsides, rocky places, 1450 m, 11.07.2003, ÖE 6243; A9 Artvin: Borçka, Efeler SNR, rocky places, 1780 m, 11.06.2004, ÖE 6914.  
 Endemic, LC, Eux., Hcrp.  
**Petrorhagia saxifraga** (L.) Link  
 A8 Artvin: Borçka, Maral, roadsides, 1000 m, 14.10.2003, ÖE 6736.  
 Euro-Sib., Hcrp.  
**Saponaria prostrata** Willd. subsp. **calvertii** (Boiss.) Hedge  
 A8 Artvin: Borçka, Düzenli, roadsides, 700 m, 11.06.2004, ÖE 6915.  
 Thp.  
**Gypsophila tenuifolia** M.Bieb.  
 A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2420 m, 23.06.2003, ÖE 6093.  
 VU, Eux. (mt), Crp.  
**G. silenoides** Rupr.  
 A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2430 m, 23.06.2003, ÖE 6094.  
 Eux. (mt), Hcrp.  
**Silene italica** (L.) Pers.  
 A8 Artvin: Borçka, Kayalar, damp places, 1450 m, 06.06.2003; ÖE 6011; A9 Artvin: Borçka, Efeler SNR, subalpine vegetation, 1950 m, 11.06.2004, ÖE 6916.  
 Hcrp.  
**S. saxatilis** Sims  
 A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 21.08.2003, ÖE 6626; A8 Artvin: Borçka, Efeler, open places, 1370 m, 11.06.2004, ÖE 6917; A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 08.07.2004, ÖE 7113.  
 Hcrp.
- S. odontopetala** Fenzl  
 A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 25.05.2003, ÖE 5952; A9 Artvin: Borçka, Yıldız Lake, rocky places, 1950 m, 28.07.2004, ÖE 7249.  
 Hcrp.  
**S. vulgaris** (Moench) Garcke var. **vulgaris**  
 A8 Artvin: Borçka, Maral, open places, 1170 m, 11.06.2004, ÖE 6918; A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2200 m, 08.07.2004, ÖE 7114.  
 Hcrp.  
**S. compacta** Fisch.  
 A8 Artvin: Borçka, Efeler, roadsides, 1550 m, 06.06.2003, ÖE 6012.  
 Hcrp.  
**S. armeria** L.  
 A8 Artvin: Borçka, Kayalar, open forest, 1470 m, 08.07.2004, ÖE 7115.  
 Euro-Sib., Thp.  
**S. alba** (Mill.) Krause subsp. **divaricata** (Rchb.) Walters  
 A8 Artvin: Borçka, Efeler, open forest, 1400 m, 11.06.2004, ÖE 6920; A8 Artvin: Borçka, Camili, open forest, 400 m, 11.06.2004, ÖE 6921.  
 Hcrp.  
 subsp. **ericalycina** (Boiss.) Walters  
 A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2270 m, 23.06.2003, ÖE 6095; A8 Artvin: Borçka, Camili, open forest, 400 m, 29.07.2003, ÖE 6449.  
 Hcrp.
- ILLECEBRACEAE**  
**Scleranthus uncinatus** Schur  
 A8 Artvin: Borçka, Kayalar, forest, 1800 m, 28.07.2004, ÖE 7250.  
 Thp.
- POLYGONACEAE**  
**Polygonum alpinum** All.  
 A9 Artvin: Borçka, Yıldız Lake, stony places, alpine vegetation, 2200 m, 15.08.2003, ÖE 6498.  
 Euro-Sib., Hcrp.
- P. bistorta** L. subsp. **carneum** (Koch) Coode & Cullen  
 A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 06.06.2003, ÖE 6013; A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2450 m, 22.08.2004, ÖE 6442; A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2300 m, 15.08.2003, ÖE 6499; *ibid.*, 28.09.2003, ÖE 6726; A8 Artvin: Borçka, Efeler, alpine vegetation, 2250 m, 13.09.2004, ÖE 7346.  
 Eux. (mt), Hcrp.  
**P. amphibium** L.  
 A8 Artvin: Borçka, Düzenli, lakesides, 1550 m, 29.07.2003, ÖE 6450.  
 Hcrp.  
**P. persicaria** L.  
 A8 Artvin: Borçka, Düzenli, streamsides, 900 m, 15.08.2003, ÖE 6500; A8 Artvin: Borçka, Uğur, streamsides, 700 m, 07.09.2003, ÖE 6670.  
 Thp.  
**P. hydropiper** L.  
 A8 Artvin: Borçka, Camili, open forest, 400 m, 21.08.2003, ÖE 6627.  
 Thp.  
**P. aviculare** L.  
 A8 Artvin: Borçka, Uğur, open forest, 700 m, 15.08.2003, ÖE 6501; A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 08.09.2005, AE 27.  
 Cosm., Thp.  
**P. convolvulus** L.  
 A8 Artvin: Borçka, Kayalar, forest, 1000 m, 23.06.2003, ÖE 6096; A9 Artvin: Borçka, Yıldız Lake, open forest, 1800 m, 07.09.2003, ÖE 6671.  
 Hcrp.  
**Rumex acetocella** L.  
 A8 Artvin: Borçka, Maral, subalpine vegetation, 1900 m, 15.08.2003, ÖE 6502; A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2350 m, 15.08.2003, ÖE 6503; A8 Artvin: Borçka, Kayalar, forest, 1700 m, 07.09.2003, ÖE 6672; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 28.07.2004, ÖE 7251.  
 Cosm., Hcrp.

**R. scutatus L.**

A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 1900 m, 15.08.2003, ÖE 6504.

Chp.

**R. tuberosus L. subsp. horizontalis** (C.Koch) Rech.

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2220 m, 29.07.2003, ÖE 6450; A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 08.07.2004, ÖE 7116.

Crp.

**R. alpinus L.**

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 11.07.2003, ÖE 6244.

Crp.

**R. patientia L.**

A8 Artvin: Borçka, Efeler, open places, 1600 m, 11.07.2003, ÖE 6245; A9 Artvin: Borçka, Gorgit SNR, stony slopes, 1750 m, 07.09.2003, ÖE 6673.

Chp.

**R. caucasicus Rech.**

A8 Artvin: Borçka, Maral, open places, 1650 m, 15.08.2003, ÖE 6505.

Eux. (mt), Hcrp.

**R. crispus L.**

A8 Artvin: Borçka, Efeler, streamsides, 1350 m, 15.08.2003, ÖE 6506; A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 28.07.2004, ÖE 7252.

Cosm., Chp.

**R. obtusifolius L. subsp. subalpinus** (Schur) Celák.

A8 Artvin: Borçka, Efeler, roadsides, 800 m, 27.05.2004, ÖE 6798.

Hcrp.

**CHENOPODIACEAE**

**Chenopodium foliosum** (Moench) Asch.

A8 Artvin: Borçka, Düzenli, Mahmudikaya, stony slopes, 1900 m, 25.05.2003, ÖE 5953.

Widespread, Thp.

**C. murale L.**

A8 Artvin: Borçka, Camili, roadsides, 450 m, 11.07.2003, ÖE 6246.

Cosm., Thp.

**AMARANTHACEAE**

**Amaranthus retroflexus L.**

A8 Artvin: Borçka, Maral, roadsides, wet places, 1050 m, 11.07.2003, ÖE 6247; A8 Artvin: Borçka, Maral, open places, 1100 m, 11.06.2004, ÖE 6922.

Thp.

**PHYTOLACCACEAE**

**Phytolacca americana L.**

A8 Artvin: Borçka, Efeler, open forest, 1450 m, 11.06.2004, ÖE 6923; A8 Artvin: Borçka, Camili, open forest, 400 m, 28.07.2004, ÖE 7253.

Chp.

**TAMARICACEAE**

**Tamarix tetrandra** Pall. ex M.Bieb.

A8 Artvin: Borçka, Maral, streamsides, 970 m, 10.05.2004, ÖE 6772.

Php.

**DROSERACEAE**

**Drosera rotundifolia L.**

A8 Artvin: Borçka, Kayalar, wet places, 1800 m, 23.06.2003, ÖE 6097.

EN, Thp.

**GUTTIFERAE**

**Hypericum calycinum L.**

A8 Artvin: Borçka, Efeler, roadsides, 800 m, 23.06.2003, ÖE 6098.

Eux., Hcrp.

**H. androsaemum L.**

A8 Artvin: Borçka, Maral, streamsides, open forest, 950 m, 11.06.2004, ÖE 6924; A8 Artvin: Borçka, Uğur, open forest, 700 m, 08.07.2004, ÖE 7117.

Euro-Sib., Chp.

**H. bupleuroides** Gris.

A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 22.08.2004, ÖE 7308.

Eux., Chp.

**H. hirsutum L.**

A8 Artvin: Borçka, Efeler, open places, 1550 m, 11.07.2003, ÖE 6249.

Euro-Sib., Chp.

**H. linarioides** Bosse

A8 Artvin: Borçka, Uğur, open forest, 700 m, 06.06.2003, ÖE 6014.

Hcrp.

**H. montanum L.**

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 08.07.2004, ÖE 7118.

Euro-Sib., Chp.

**H. bithynicum** Boiss.

A9 Artvin: Borçka, Gorgit SNR, in scrub, 1700 m, 08.07.2004, ÖE 7119.

Eux., Hcrp.

**H. orientale L.**

A9 Artvin: Borçka, Efeler SNR, roadsides, rocky places, 1550 m, 11.06.2004, ÖE 6925.

Hcrp.

**H. perforatum L.**

A8 Artvin: Borçka, Efeler, roadsides, 800 m, 15.08.2003, ÖE 6507; A8 Artvin: Borçka, Efeler, open places, 1540 m, 13.09.2004, ÖE 7347.

Hcrp.

**MALVACEAE**

**Malva sylvestris L.**

A8 Artvin: Borçka, Camili, open forest, 400 m, 28.07.2004, ÖE 7254.

Hcrp.

**M. neglecta** Wallr.

A8 Artvin: Borçka, Camili, roadsides, 1250 m, 11.06.2004, ÖE 6926.

Thp.

**Lavatera thuringiaca L.**

A8 Artvin: Borçka, Düzenli, damp places, 1500 m, 15.08.2003, ÖE 6508; A8 Artvin: Borçka, Uğur, open forest, 700 m, 22.08.2004, ÖE 7309.

Hcrp.

**Alcea hohenackeri** (Boiss. & Huet) Boiss.

A8 Artvin: Borçka, Efeler, roadsides, 1370 m, 08.07.2004, ÖE 7120.

Hcrp.

**A. excubita** Iljin

A8 Artvin: Borçka, Kayalar, forest, 1600 m, 06.06.2003, ÖE 6015.

Ir-Tur., Hcrp.

**TILIACEAE**

*Tilia rubra* DC. subsp. *caucasica* (Rupr.) V.Engl.

A8 Artvin: Borçka, Efeler, forest, 1450 m, 28.09.2003, ÖE 6727; A8 Artvin: Borçka, Maral, forest, 700 m, 08.07.2004, ÖE 7121.

Eux., Php.

**LINACEAE**

*Linum hypericifolium* Salisb.

A8 Artvin: Borçka, Maral, rocky places, 1900 m, 11.06.2004, ÖE 6928; A9 Artvin: Borçka, Efeler Forest SNR, subalpine vegetation, 1950 m, 11.07.2005, AE 15.

Hcrp.

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

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 08.07.2004, ÖE 7122.

Hcrp.

*L. catharticum* L.

A8 Artvin: Borçka, Düzenli, streamsides, 1750 m, 15.08.2003, ÖE 6509; A8 Artvin: Borçka, Kayalar, forest, 1000, 22.08.2004, ÖE 7310.

Euro-Sib., Thp.

**GERANIACEAE**

*Geranium lucidum* L.

A8 Artvin: Borçka, Kayalar, forest, 1700 m, 27.05.2004, ÖE 6799.

Thp.

*G. purpureum* Vill.

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2300 m, 25.05.2003, ÖE 5954; A8 Artvin: Borçka, Efeler, forest, 1600 m, 18.04.2003, ÖE 6469; A9 Artvin: Borçka, Gorgit SNR, forest, 1500 m, 27.05.2004, ÖE 6800.

Thp.

*G. robertianum* L.

A8 Artvin: Borçka, Düzenli, forest, 1550 m, 27.05.2004, ÖE 6801; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 11.06.2004, ÖE 6929.

Thp.

*G. rotundifolium* L.

A8 Artvin: Borçka, Efeler, streamsides, 1330 m, 10.05.2004, ÖE 6773.

Thp.

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

A8 Artvin: Borçka, Maral, open places, 850 m, 19.04.2003, ÖE 5884.

Thp.

*G. dissectum* L.

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 16.04.2004, ÖE 6755.

Thp.

*G. bohemicum* L.

A9 Artvin: Borçka, Efeler SNR, forest, 1800 m, 11.06.2004, ÖE 6930.

Thp.

*G. psilostemon* Ledeb.

A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 29.07.2003, ÖE 6451; A9 Artvin: Borçka, Efeler Forest SNR, open places, 1850 m, 22.08.2004, ÖE 7311.

Eux. (mt), Crp.

*G. collinum* Steph. ex Willd.

A9 Artvin: Borçka, Yıldız Lake, damp places, 1800 m, 15.08.2003, ÖE 6510.

Ir-Tur., Crp.

*G. sylvaticum* L.

A9 Artvin: Borçka, Gorgit SNR, stony places, 2300 m, 11.07.2003, ÖE 6250; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 28.07.2004, ÖE 7255.

Euro-Sib., Crp.

*G. pyrenaicum* Burm.

A8 Artvin: Borçka, Efeler, forest, 1650 m, 11.06.2004, ÖE 6931; A8 Artvin: Borçka, Kayalar, forest, 1800 m, 08.07.2004, ÖE 7123.

Crp.

*G. platypetalum* Fisch. & C.A.Mey. var. *albipetalum* Erik & N.Demirkuş

A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 25.05.2003, ÖE 5955.

Hycr-Eux. (mt), Crp.

*G. ibericum* Cav. subsp. *ibericum*

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2460 m, 08.07.2004, ÖE 7124.

Eux. (mt), Crp.

*Erodium oxyrrhynchum* M.Bieb.

A9 Artvin: Borçka, Gorgit SNR, forest, 1500 m, 06.06.2003, ÖE 6016.

Ir-Tur., Thp.

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

A8 Artvin: Borçka, Maral, open places, 1100 m, 10.05.2004, ÖE 6774.

Thp.

**OXALIDACEAE**

*Oxalis acetosella* L.

A8 Artvin: Borçka, Düzenli, forest, 1550 m, 11.06.2004, ÖE 6933.

Hcrp.

*O. corniculata* L.

A8 Artvin: Borçka, Efeler, field margin, 1200 m, 11.06.2004, ÖE 6934.

Cosm., Hcrp.

**BALSAMINACEAE**

*Impatiens noli-tangere* L.

A8 Artvin: Borçka, Düzenli, streamsides, 1650 m, 08.07.2004, ÖE 7125, A8 Artvin: Borçka, Efeler, open forest, 1200 m, 11.06.2005, AE 100.

Euro-Sib., Thp.

**ACERACEAE**

*Acer tataricum* L.

A8 Artvin: Borçka, Efeler, in scrub, 1000 m, 15.08.2003, ÖE 6511.

Php.

*A. trautvetteri* Medw.

A9 Artvin: Borçka, Beyazsu Yaylası, forest to subalpine vegetation, 1950 m, 14.10.2003, ÖE 6737.

Eux., Php.

*A. cappadocicum* Gled. var. *cappadocicum*

A8 Artvin: Borçka, Efeler, forest, 1700 m, 13.09.2004, ÖE 7348.

Hycr-Eux., Php.

var. *stenocarpum* Yalt.

A8 Artvin: Borçka, Düzenli, forest, 1550 m, 07.09.2003, ÖE 6674.

Endemic, VU, Eux., Php.

**A. platanoides** L.  
A8 Artvin: Borçka, Maral, forest, 1100 m, 13.09.2004, ÖE 7349.  
Euro-Sib., Php.  
**A. campestre** L. subsp. *campestre*  
A8 Artvin: Borçka, Maral, roadsides, 1100 m, 11.06.2004, ÖE 6935.  
Php.  
subsp. *leiocarpum* (Opiz) Pax  
A8 Artvin: Borçka, Efeler, *Quercus petraea* scrub, 1150 m, 08.07.2004, ÖE 7126.  
Euro-Sib., Php.  
**A. hyrcanum** Fisch. & C.A.Mey. subsp. *hyrcanum*  
A8 Artvin: Borçka, Camili, open forest, 400 m, 06.06.2003, ÖE 6017; A8 Artvin: Borçka, Uğur, open forest, 700 m, 11.07.2003, ÖE 6251.  
Euro-Sib., Php.  
**STAPHYLEACEAE**  
**Staphylea pinnata** L.  
A8 Artvin: Borçka, Camili, open forest, 400 m, 19.04.2003, ÖE 5885.  
Php.  
**RHAMNACEAE**  
**Paliurus spina-christi** Mill.  
A8 Artvin: Borçka, Camili, *Quercus petraea* scrub, 700 m, 11.06.2004, ÖE 6936; A8 Artvin: Borçka, Efeler, roadsides, 900 m, 08.07.2004, ÖE 7127.  
Chp.  
**Frangula alnus** Mill. subsp. *alnus*  
A8 Artvin: Borçka, Maral, forest, 700 m, 06.06.2003, ÖE 6018; A8 Artvin: Borçka, Efeler, rocky slopes, 1150 m, 11.06.2004, ÖE 6937.  
Euro-Sib., Php.  
**Rhamnus imeretinus** Booth  
A8 Artvin: Borçka, Efeler, open forest, 1650 m, 23.06.2003, ÖE 6099; A8 Artvin: Borçka, Kayalar, forest, 1600 m, 27.05.2004, ÖE 6803.  
Eux., Chp.  
**R. microcarpus** Boiss.  
A8 Artvin: Borçka, Düzenli, open forest, 1550 m, 11.06.2004, ÖE 6938.

Eux. (mt), Chp.  
**AQUIFOLIACEAE**  
**Ilex colchica** Pojark.  
A9 Artvin: Borçka, Efeler Forest SNR, *Abies nordmanniana* forest, 1900 m, 11.07.2003, ÖE 6252.  
Eux., Chp.  
**ANACARDIACEAE**  
**Cotinus coggygria** Scop.  
A8 Artvin: Borçka, Camili, *Quercus petraea* scrub, 1100 m, 07.09.2003, ÖE 6675.  
Medit., Chp.  
**Rhus coriaria** L.  
A8 Artvin: Borçka, Camili, *Quercus petraea* scrub, 1100 m, 07.09.2003, ÖE 6676; A8 Artvin: Borçka, Maral, in scrub, 1470 m, 07.09.2003, ÖE 6677.  
Medit., Chp.  
**Pistacia terebinthus** L. subsp. *palaestina* (Boiss.) Engler  
A8 Artvin: Borçka, Kayalar, forest, 1500 m, 25.05.2003, ÖE 5956.  
Medit., Chp.  
**CELASTRACEAE**  
**Euonymus latifolius** (L.) Mill. subsp. *latifolius*  
A8 Artvin: Borçka, Maral, forest, 1200 m, 10.05.2004, ÖE 6776.  
Euro-Sib., Chp.  
**E. europaeus** L.  
A9 Artvin: Borçka, Gorgit SNR, forest, 1600m, 11.06.2004, ÖE 6940.  
Euro-Sib., Chp.  
**LEGUMINOSAE (FABACEAE)**  
**Chamaecytisus hirsutus** (L.) Link  
A8 Artvin: Borçka, Efeler, roadsides, 1450 m, 11.06.2004, ÖE 6941.  
Chp.  
**Genista tinctoria** L.  
A8 Artvin: Borçka, Düzenli, roadsides, 1450 m, 11.06.2004, ÖE 6942.  
Euro-Sib., Chp.  
**Argyrolobium biebersteinii** Ball  
A8 Artvin: Borçka, Efeler, open forest, 1400 m, 28.09.2003, ÖE 6728; A8 Artvin:

Borçka, Kayalar, forest, 1800 m, 22.08.2004, ÖE 7312.  
Hcrp.  
**Robinia pseudoacacia** L.  
A8 Artvin: Borçka, Maral, roadsides, 1100 m, 11.07.2003, ÖE 6253.  
Exotic or naturalised in the study area and its environs.  
Php.  
**Colutea armena** Boiss. & Huet  
A8 Artvin: Borçka, Efeler, roadsides, open places, 1550 m, 11.07.2003, ÖE 6254.  
Chp.  
**Astragalus oreades** C.A.Mey.  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 08.07.2004, ÖE 7128.  
Eux. (mt), Hcrp.  
**A. glycyphyllos** L. subsp. *glycyphyllos*  
A8 Artvin: Borçka, Maral, open forest, stony places, 1250 m, 11.06.2004, ÖE 6943; A9 Artvin: Borçka, Efeler SNR, open places, 1850 m, 11.06.2004, ÖE 6944.  
Euro-Sib., Hcrp.  
**A. falcatus** Lam.  
A9 Artvin: Borçka, Mereta to Efeler, open places, 2300 m, 11.07.2003, ÖE 6255; A9 Artvin: Borçka, Yıldız Lake, open places, 2100 m, 11.07.2003, ÖE 6256; *ibid.*, 1900 m, 08.08.2004, ÖE 7130.  
Eux. (mt), Hcrp.  
**A. adzharicus** Popov  
A8 Artvin: Borçka, Camili, open places, 550 m, 08.07.2004, ÖE 7131.  
VU, Chp.  
**A. incertus** Ledeb.  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2150 m, 11.06.2004, ÖE 6945.  
Chp.  
**A. sanguinolentus** M.Bieb.  
A9 Artvin: Borçka, Yıldız Lake, stony places, 2100 m, 11.07.2003, ÖE 6260.  
Chp.  
**A. frickii** Bunge  
A8 Artvin: Borçka, Düzenli, Verketil, subalpine vegetation, 2000 m, 11.06.2004, ÖE 6946.

- Eux. (mt), Chp.  
**A. taochius** Woron.  
 A9 Artvin: Borçka, Efeler Forest SNR, open forest, 1000 m, 25.05.2005, ÖE 5994.  
 Endemic, NE, Hcrp.  
**Oxytropis albana** Stev.  
 A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2450 m, 11.07.2003, ÖE 6262.  
 Chp.  
**Psoralea acaulis** Stev.  
 A8 Artvin: Borçka, Efeler, open forest, 1450 m, 08.07.2004, ÖE 7133; A8 Artvin: Borçka, Camili, open forest, 400 m, 28.07.2004, ÖE 7256.  
 Eux., Hcrp.  
**Vicia crocea** (Desf.) B.Fedtsch.  
 A8 Artvin: Borçka, Düzenli, *Picea orientalis* forest, 1550 m, 15.08.2003, ÖE 6512.  
 Hyrc-Eux., Hcrp.  
**V. cassubica** L.  
 A9 Artvin: Borçka, Yıldız Lake, open forest, 1950 m, 23.06.2003, ÖE 6100; A8 Artvin: Borçka, Efeler, roadsides, 900 m, 08.07.2004, ÖE 7134.  
 Euro-Sib., Hcrp.  
**V. dadianorum** Sommer & Lév.  
 A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 15.08.2003, ÖE 6513.  
 Eux., Hcrp.  
**V. cracca** L. subsp. *cracca*  
 A8 Artvin: Borçka, Maral, meadows, 1650 m, 11.07.2003, ÖE 6264; A9 Artvin: Borçka, Gorgit SNR, forest, 1300m, 08.07.2004, ÖE 7135.  
 Euro-Sib., Hcrp.  
 subsp. *tenuifolia* (Roth) Gaudin  
 A8 Artvin: Borçka, Camili, *Pinus sylvestris* forest, 400 m, 27.05.2004, ÖE 6804.  
 Hcrp.  
**V. balansae** Boiss.  
 A8 Artvin: Borçka, Efeler, subalpine vegetation, 2150 m, 11.06.2004, ÖE 6949; A9 Artvin: Borçka, Efeler SNR, forest, 1900 m, 08.07.2004, ÖE 7136.
- Eux., Hcrp.  
**V. sepium** L.  
 A8 Artvin: Borçka, Efeler, roadsides, 800 m, 06.06.2003, ÖE 6021; A8 Artvin: Borçka, Camili, *Quercus petraea* scrub, 650 m, 10.05.2004, ÖE 6777.  
 Euro-Sib., Hcrp.  
**V. peregrina** L.  
 A8 Artvin: Borçka, Camili, *Quercus petraea* scrub, 1000 m, 11.06.2004, ÖE 6951.  
 Thp.  
**V. grandiflora** Scop. var. *grandiflora*  
 A8 Artvin: Borçka, Efeler, roadsides, 800 m, 06.06.2003, ÖE 6022.  
 Euro-Sib., Thp.  
**V. sativa** L. subsp. *nigra* (L.) Ehrh. var. *nigra*  
 A8 Artvin: Borçka, Efeler, meadows, 1450 m, 25.05.2003, ÖE 5958; A8 Artvin: Borçka, Uğur, open forest, 700 m, 27.05.2004, ÖE 6805.  
 Thp.  
**Lathyrus aureus** (Stev.) Brändžä  
 A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 25.05.2003, ÖE 5959.  
 Eux., Hcrp.  
**L. vernus** (L.) Bernh.  
 A8 Artvin: Borçka, Kayalar, forest, 1400 m, 27.05.2004, ÖE 6806.  
 Euro-Sib., Hcrp.  
**L. pratensis** L.  
 A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, streamsides, 1850, 11.06.2004, ÖE 6952.  
 Euro-Sib., Hcrp.  
**L. laxiflorus** (Desf.) O.Kuntze subsp. *laxiflorus*  
 A9 Artvin: Borçka, Gorgit SNR, forest, 1800 m, 11.07.2003, ÖE 6265; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 08.07.2004, ÖE 7137.  
 Hcrp.  
**L. roseus** Stev.  
 A9 Artvin: Borçka, Gorgit SNR, *Pinus sylvestris* forest, roadsides, 1700 m,
- 15.08.2003, ÖE 6514; A8 Artvin: Borçka, Düzenli, forest, 1550 m, 10.05.2004, ÖE 6778.  
 Hyrc-Eux., Hcrp.  
**L. rotundifolius** Willd. subsp. *miniatus* (M.Bieb. ex Stev.) P.H.Davis  
 A8 Artvin: Borçka, Efeler, meadows, 1550 m, 11.07.2003, ÖE 6266; ibid., 11.06.2004, ÖE 6953; A8 Artvin: Borçka, Uğur, open forest, 700 m, 15.08.2003, ÖE 6515.  
 Hcrp.  
**L. nissolia** L.  
 A8 Artvin: Borçka, Camili, *Quercus petraea* scrub, 1200 m, 06.06.2003, ÖE 6023.  
 Thp.  
**Pisum sativum** L. subsp. *elatius* (M.Bieb.) Asch. & Graebn. var. *elatius*  
 A8 Artvin: Borçka, Maral, stony places, 850 m, 19.04.2003, ÖE 5886.  
 Thp.  
**Ononis arvensis** L.  
 A8 Artvin: Borçka, Efeler, streamsides, 1300-1450 m, 11.07.2003, ÖE 6267; ibid., 11.06.2004, ÖE 6954; A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 08.07.2004, ÖE 7138.  
 Euro-Sib., Hcrp.  
**Trifolium repens** L. var. *repens*  
 A8 Artvin: Borçka, Efeler, damp places, 1350 m, 19.04.2003, ÖE 5887.  
 Chp.  
**T. ambiguum** M.Bieb.  
 A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2300 m, 11.07.2003, ÖE 6268.  
 Hcrp.  
**T. hybridum** L. var. *hybridum*  
 A9 Artvin: Borçka, Efeler Forest SNR, damp places, 1850 m, 07.09.2003, ÖE 6678; A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 22.08.2004, ÖE 7313.  
 Hcrp.  
**T. campestre** Schreb.  
 A8 Artvin: Borçka, Maral, damp places, 1900 m, 19.04.2003, ÖE 5888.  
 Medit., Thp.

- T. tumens* Stev. ex M.Bieb.  
A8 Artvin: Borçka, Maral, open places, 1150 m, 11.07.2003, ÖE 6269.  
Hycr-Eux., Hcrp.
- T. pratense* L. var. *pratense*  
A8 Artvin: Borçka, Maral, meadows, 1550 m, 11.07.2003, ÖE 6270.  
Hcrp.
- T. medium* L. var. *medium*  
A8 Artvin: Borçka, Efeler, forest, 1150 m, 11.06.2004, ÖE 6956.  
Hcrp.
- T. ochroleucum* Huds.  
A9 Artvin: Borçka, Gorgit SNR, meadows, 1850 m, 06.06.2003, ÖE 6025; A8 Artvin: Borçka, Kayalar, forest, 1750 m, 11.07.2003, ÖE 6271.  
Hcrp.
- T. canescens* Willd.  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 12.08.2000, ÖE 6140; A8 Artvin: Borçka, Camili, streamsides, 1250 m, 17.05.2005, AE 1.  
Hycr-Eux., Chp.
- T. alpestre* L.  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2000 m, 15.08.2003, ÖE 6517.  
Euro-Sib., Crp.
- T. sylvaticum* Gérard ex Loisel.  
A8 Artvin: Borçka, Efeler, open slopes, 1600 m, 25.05.2003, ÖE 5960.  
Thp.
- T. arvense* L. var. *arvense*  
A8 Artvin: Borçka, Camili, open forest, 400 m, 06.06.2003, ÖE 6026; A8 Artvin: Borçka, Efeler, stony places, 1450 m, 11.06.2004, ÖE 6957.  
Thp.
- Melilotus officinalis* (L.) Desr.  
A8 Artvin: Borçka, Efeler, roadsides, 1500 m, 11.07.2003, ÖE 6272. A9 Artvin: Borçka, Gorgit SNR, forest, 1700 m, 28.07.2004, ÖE 7257.  
Hcrp.
- Medicago lupulina* L.  
A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 25.05.2003, ÖE 5963; A8 Artvin: Borçka, Efeler, fields, 1450 m, 27.05.2004, ÖE 6807.  
Widespread, Hcrp.
- M. sativa* L. subsp. *sativa*  
A8 Artvin: Borçka, Efeler, meadows, 1550 m, 25.05.2003, ÖE 5962; A8 Artvin: Borçka, Düzenli, roadsides, stony places, 1450 m, 07.09.2003, ÖE 6679; A8 Artvin: Borçka, Kayalar, forest, 1200 m, 08.07.2004, ÖE 7139.  
Widespread, Hcrp.
- Dorycnium graecum* (L.) Ser.  
A8 Artvin: Borçka, Efeler, roadsides, 1450 m, 07.09.2003, ÖE 6680.  
Eux., Chp.
- D. pentaphyllum* Scop. subsp. *herbaceum* (Vill.) Rouy  
A8 Artvin: Borçka, Maral, roadsides, 1100 m, 11.07.2003, ÖE 6273.  
Chp.
- Lotus corniculatus* L. var. *corniculatus*  
A9 Artvin: Borçka, Efeler Forest SNR, meadows, 1850 m, 11.07.2003, ÖE 6274.  
Hcrp.
- var. *tenuifolius* L.  
A8 Artvin: Borçka, Maral, open places, streamsides, 850 m, 19.04.2003, ÖE 5889; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 27.05.2004, ÖE 6808; A8 Artvin: Borçka, Camili, streamsides, 900 m, 13.09.2004, ÖE 7351.  
Hcrp.
- Anthyllis vulneraria* L. subsp. *polyphylla* (DC.) Nyman  
A8 Artvin: Borçka, Efeler, open places, 1550 m, 11.06.2004, ÖE 6958.  
Euro-Sib., Hcrp.
- Coronilla coronata* L.  
A8 Artvin: Borçka, Maral, open places, 850 m, 25.05.2003, ÖE 5964; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 11.06.2004, ÖE 6959.  
Hcrp.
- C. orientalis* Mill. var. *orientalis*  
A8 Artvin: Borçka, Efeler, stony places, 1300 m, 16.04.2004, ÖE 6756.  
Chp.
- var. *balansae* (Boiss.) Hrabětova  
A8 Artvin: Borçka, Düzenli, Verkekil, alpine vegetation, 2400 m, 11.07.2003, ÖE 6275.  
Chp.
- C. varia* L. subsp. *varia*  
A9 Artvin: Borçka, Gorgit SNR, open slopes, 1750 m, 27.05.2004, ÖE 6809.  
Hcrp.
- Onobrychis altissima* Grossh.  
A8 Artvin: Borçka, Efeler, meadows, 1550 m, 06.06.2003, ÖE 6028. A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 15.08.203, ÖE 6096.  
Hcrp.
- ROSACEAE
- Aruncus vulgaris* Rafin.  
A8 Artvin: Borçka, Düzenli, forest, 1550 m, 23.06.2003, ÖE 6101; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 08.07.2004, ÖE 7140.  
Crp.
- Laurocerasus officinalis* Roem.  
A8 Artvin: Borçka, Düzenli, Mahmudikaya, streamsides, 1900 m, 19.04.2003, ÖE 5890.  
Php.
- Prunus spinosa* L. subsp. *dasyphylla* (Schur) Domin  
A8 Artvin: Borçka, Kayalar, forest, 1700 m, 16.04.2004, ÖE 6757.  
Euro-Sib., Php.
- Cerasus avium* (L.) Moench  
A8 Artvin: Borçka, Camili, open forest, 400 m, 06.06.2003, ÖE 6029; A8 Artvin: Borçka, Maral, forest, 1550 m, 11.07.2003, ÖE 6277.  
Php.
- Rubus saxatilis* L.  
A8 Artvin: Borçka, Maral, open forest, 1200 m, 21.08.2003, ÖE 6629.  
Hcrp.
- R. idaeus* L.  
A8 Artvin: Borçka Efeler, open forest, 1850 m, 21.08.2003, ÖE 6630.  
Chp.

- R. caesius** L.  
A8 Artvin: Borçka, Kayalar, forest, 1200 m, 25.05.2003, ÖE 5965.  
Widespread, Chp.
- R. sanctus** Shreber  
A9 Artvin: Borçka, Gorgit SNR, forest, 1100 m, 11.06.2004, ÖE 6960.  
Widespread, Chp.
- R. discolor** Weihe & Nees  
A8 Artvin: Borçka, Maral, mixed forest, 1150 m, 08.07.2004, ÖE 7142.  
Chp.
- R. canescens** DC. var. *canescens*  
A8 Artvin: Borçka, Maral, roadsides, 1750 m, 15.08.2003, ÖE 6518.  
Chp.
- R. hirtus** Waldst. & Kit.  
A8 Artvin: Borçka, Uğur, open forest, 700 m, 29.07.2003, ÖE 6452.  
Euro-Sib., Chp.
- R. platyphyllos** C.Koch  
A8 Artvin: Borçka, Camili, forest, 1250 m, 28.07.2004, ÖE 7258.  
Eux., Chp.
- R. caucasicus** Focke  
A9 Artvin: Borçka, Beyazsu Yaylası, subalpine vegetation, 2200 m, 11.07.2003, ÖE 6279.  
Eux., Chp.
- Potentilla ruprechtii** Boiss.  
A8 Artvin: Borçka, Kayalar, forest, 1200 m, 23.06.2003, ÖE 6102; A8 Artvin: Borçka, Efeler, open forest, 1750 m, 11.07.2003, ÖE 6280; A9 Artvin: Borçka, Gorgit SNR, open places, 1800 m, 08.07.2004, ÖE 7143.  
Eux. (mt), Hcrp.
- P. orbiculata** Th.Wolf  
A9 Artvin: Borçka, Efeler Forest SNR, open forest, 1850 m, 08.07.2004, ÖE 7144.  
VU, Hcrp.
- P. crantzii** (Crantzow) Beck ex Fritsch var. *crantzii*  
A8 Artvin: Borçka, Maral, forest, 700 m, 11.07.2003, ÖE 6281.  
Euro-Sib., Chp.
- P. humifusa** Willd.  
A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2350 m, 29.07.2003, ÖE 6453.  
Euro-Sib., Hcrp.
- P. erecta** (L.) Rausch.  
A8 Artvin: Borçka, Düzenli, open forest, 900 m, 11.06.2004, ÖE 6962; A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 08.07.2004, ÖE 7146.  
Crp.
- P. reptans** L.  
A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2350 m, 29.07.2003, ÖE 6454; A8 Artvin: Borçka, Maral, streamsides, 1650 m, 11.06.2004, ÖE 6963.  
Hcrp.
- P. elatior** Willd. ex Schlecht.  
A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, damp places, 2450 m, 11.07.2003, ÖE 6283.  
Eux., Crp.
- P. oweriniana** Rupr. ex Boiss.  
A9 Artvin: Borçka, Yıldız Lake, rocky places, 2400 m, 08.07.2004, ÖE 7147.  
VU, Eux. (mt), Hcrp.
- P. micrantha** Ramond ex DC.  
A8 Artvin: Borçka, Efeler, damp places, 1750 m, 11.07.2003, ÖE 6284; A8 Artvin: Borçka, Maral, mixed forest, streamsides, 1650 m, 11.06.2004, ÖE 6964.  
Crp.
- Fragaria vesca** L.  
A8 Artvin: Borçka, Düzenli, forest, 1550 m, 23.06.2003, ÖE 6103; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 11.06.2004, ÖE 6965.  
Hcrp.
- F. viridis** Duchesne  
A8 Artvin: Borçka, Maral, forest, 700 m, 06.06.2003, ÖE 6030; A8 Artvin: Borçka, Efeler, open forest, 1450 m, 11.07.2003, ÖE 6285.  
Euro-Sib., Hcrp.
- Sibbaldia parviflora** Willd. var. *parviflora*  
A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 23.06.2003, ÖE 6104; A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2450 m, 11.07.2003, ÖE 6286; A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2350 m, 11.07.2003, ÖE 6287; *ibid.*, 08.07.2004, ÖE 7148.  
Chp.
- Geum coccineum** Sm.  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, damp places, 2100 m, 06.06.2003, ÖE 6031.  
Euro-Sib., Crp.
- G. rivale** L.  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2200 m, 16.04.2004, ÖE 6758.  
Crp.
- G. urbanum** L.  
A8 Artvin: Borçka, Kayalar, *Abies nordmanniana* forest, 1850 m, 08.07.2004, ÖE 7149.  
Euro-Sib. Widespread, Crp.
- Agrimonia eupatoria** L.  
A8 Artvin: Borçka, Efeler, open places, 1300 m, 10.06.2005, AE 8.  
Crp.
- Sanguisorba minor** Scop. subsp. *muricata* (Spach) Briq.  
A8 Artvin: Borçka, Düzenli, open places, 1480 m, 06.06.2003, ÖE 6032; A8 Artvin: Borçka Efeler, roadsides, 1500 m, 11.07.2003, ÖE 6288; A8 Artvin: Borçka, Camili, open forest, 400 m, 08.07.2004, ÖE 7150.  
Hcrp.
- Alchemilla sericea** Willd.  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2050 m, 11.07.2003, ÖE 6289.  
Eux. (mt), Hcrp.
- A. caucasica** Buser  
A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2300 m, 11.07.2003, ÖE 6290.  
Eux. (mt), Crp.
- A. erythropoda** Juz.  
A8 Artvin: Borçka, Düzenli, Verketil, subalpine vegetation, 2000 m, 11.07.2003, ÖE 6291.



- Euro-Sib., Crp.
- A. surculosa** Fröhner
- A8 Artvin: Borçka, Düzenli, Mahmudikaya, subalpine vegetation, 1900 m, 06.06.2003, ÖE 6033.
- Hycr-Eux. (mt), Crp.
- A. crinita** Buser
- A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 08.07.2004, ÖE 7151; A8 Artvin: Borçka, Kayalar, forest, 1200 m, 28.07.2004, ÖE 7260.
- Crp.
- A. hirtipedicellata** Juz.
- A8 Artvin: Borçka, alpine vegetation, 2250 m, 11.06.2004, ÖE 6966; A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 15.08.2003, ÖE 6519.
- Eux. (mt), Crp.
- A. barbatiflora** Juz.
- A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 11.06.2004, ÖE 6967; A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2100 m, 08.07.2004, ÖE 7152; A8 Artvin: Borçka, Efeler, alpine vegetation, 2350 m, 08.07.2004, ÖE 7153.
- Eux., Crp.
- A. stricta** Rothm.
- A9 Artvin: Borçka, Efeler Forest SNR, open places, 1800 m, 11.06.2004, ÖE 6968.
- Crp.
- A. retinervis** Buser
- A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2450 m, 23.06.2003, ÖE 6105; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 28.07.2004, ÖE 7261.
- Eux. (mt), Crp.
- Rosa pimpinellifolia** L.
- A9 Artvin: Borçka, Gorgit SNR, stony places, 1850 m, 11.06.2004, ÖE 6969.
- Euro-Sib., Chp.
- R. hirtissima** Lonacz.
- A9 Artvin: Borçka, Yıldız Lake, open places, 1950 m, 15.08.2003, ÖE 6521; A8 Artvin: Borçka, Uğur, open forest, 700 m, 08.07.2004, ÖE 7154.
- VU, Eux., Chp.
- R. iberica** Stev.
- A8 Artvin: Borçka, Efeler, open forest, 1800 m, 08.07.2004, ÖE 7155.
- Chp.
- R. montana** Chaix subsp. **woronowii** (Lonacz.) Ö.Nilsson
- A9 Artvin: Borçka, Mereta to Efeler, subalpine vegetation, 2200 m, 11.06.2004, ÖE 6970.
- Chp.
- R. canina** L.
- A8 Artvin: Borçka, Düzenli, open places, 1550 m, 15.08.2003, ÖE 6522.
- Chp.
- Mespilus germanica** L.
- A8 Artvin: Borçka, Camili, *Picea* forest, 1250 m, 14.10.2003, ÖE 6738; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 13.09.2004, ÖE 7352.
- Hycr-Eux., Chp.
- Cotoneaster integerrimus** Medik.
- A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, rocky places, 1950 m, 11.06.2004, ÖE 6971.
- Chp.
- C. nummularia** Fisch. & C.A.Mey.
- A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2000 m, 13.09.2004, ÖE 7353.
- Chp.
- C. morulus** Pojark.
- A8 Artvin: Borçka, Maral, stony places, 850 m, 28.07.2004, ÖE 7262.
- Chp.
- Pyracantha coccinea** Roem.
- A8 Artvin: Borçka, Maral, open places, 850 m, 15.08.2003, ÖE 6523.
- Chp.
- Crataegus pentagyna** Waldst. & Kit. ex Willd.
- A8 Artvin: Borçka, Efeler, open places, 1550 m, 15.08.2003, ÖE 6524.
- Euro-Sib., Php.
- C. orientalis** Pall. ex M.Bieb. var. **orientalis**
- A8 Artvin: Borçka, Uğur, open forest, 700 m, 22.08.2004, ÖE 7314; A8 Artvin: Borçka, Maral, *Picea orientalis* forest, 1300 m, 13.09.2004, ÖE 7355.
- Php.
- C. monogyna** Jacq. subsp. **monogyna**
- A8 Artvin: Borçka, Kayalar, forest, 1000 m, 21.08.2003, ÖE 6632; A8 Artvin: Borçka, Düzenli, open forest, 1500 m, 13.09.2004, ÖE 7356.
- Php.
- C. microphylla** C.Koch.
- A8 Artvin: Borçka, Camili, *Quercus petraea* forest, 1250 m, 15.08.2003, ÖE 6526; A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 07.09.2003, ÖE 6681.
- Hycr-Eux., Chp.
- Sorbus aucuparia** L.
- A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 11.07.2003, ÖE 6293; A9 Artvin: Borçka, Gorgit SNR, forest, 1400 m, 08.07.2004, ÖE 7156.
- Euro-Sib., Php.
- S. subfusca** (Ledeb.) Boiss.
- A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 11.06.2004, ÖE 6972.
- Eux., Php.
- S. umbellata** (Desf.) Fritsch var. **cretica** (Lindl.) Schneid.
- A9 Artvin: Borçka, Efeler Forest SNR, open places, 1850 m, 06.06.2003, ÖE 6035.
- Php.
- var. **orbiculata** (Kárpáti) Gabr.
- A9 Artvin: Borçka, Beyazsu Yaylası, subalpine vegetation, 1950 m, 07.09.2003, ÖE 6682; A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 08.07.2004, ÖE 7157.
- Php.
- S. torminalis** (L.) Crantz var. **torminalis**
- A8 Artvin: Borçka, Efeler, forest, 1750 m, 11.07.2003, ÖE 6295.
- Euro-Sib., Php.
- Malus sylvestris** Mill. subsp. **orientalis** (Uglitzk.) Browicz var. **orientalis**
- A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 28.07.2004, ÖE 7263; A8 Artvin: Borçka, Efeler, open forest, 1450 m, 13.09.2004, ÖE 7357.
- Php.

*Pyrus communis* L. subsp. *caucasica* (Fed.) Browicz

A8 Artvin: Borçka, Kayalar, forest, 1600 m, 06.06.2003, ÖE 6036; A8 Artvin: Borçka, Camili, open places, 1270 m, 13.09.2004, ÖE 7358.

Php.

#### PUNICACEAE

*Punica granatum* L.

A8 Artvin: Borçka, Camili, open forest, 400 m, 25.05.2003, ÖE 5966.

Php.

#### LYTHRACEAE

*Lythrum salicaria* L.

A8 Artvin: Borçka, Efeler, streamsides, 1300 m, 11.06.2004, ÖE 6974; A8 Artvin: Borçka, Maral, streamsides, 1150 m, 08.07.2004, ÖE 7158; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 28.07.2004, ÖE 7264.

Euro-Sib., Hcrp.

#### ONOGRACEAE

*Circaea lutetiana* L.

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 07.09.2003, ÖE 6683.

Crp.

*C. alpina* L.

A8 Artvin: Borçka, Efeler, *Abies nordmanniana* forest, 1800 m, 21.08.2003, ÖE 6633.

Crp.

*Epilobium angustifolium* L.

A9 Artvin: Borçka, Mereta to Efeler, stony places, 2200 m, 15.08.2003, ÖE 6527; A9 Artvin: Borçka, Efeler SNR, open forest, 1850 m, 11.06.2004, ÖE 6975; A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 08.07.2004, ÖE 7159.

Crp.

*E. colchicum* Albow

A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 11.07.2003, ÖE 6296.

VU, Eux. (mt), Hcrp.

*E. hirsutum* L.

A8 Artvin: Borçka, Efeler, wet places, 1350 m, 28.09.2003, ÖE 6729.

Crp.

*E. montanum* L.

A9 Artvin: Borçka, Gorgit SNR, streamsides, 1750 m, 15.08.2003, ÖE 6528.

Euro-Sib., Hcrp.

*E. lanceolatum* Seb. & Mauri

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 11.07.2003, ÖE 6297; A9 Artvin: Borçka, Yıldız Lake, roadsides, 1950 m, 11.06.2004, ÖE 6976.

Crp.

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

A9 Artvin: Borçka, Yıldız Lake, streamsides, 2100 m, 29.07.2003, ÖE 6455.

Eux. (mt), Crp.

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

A9 Artvin: Borçka, Yıldız Lake, streamsides, 2000 m, 07.09.2003, ÖE 6684.

Crp.

*E. algidum* M.Bieb.

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 21.08.2003, ÖE 6634; A8 Artvin: Borçka, Kayalar, forest, 1800 m, 08.07.2004, ÖE 7160.

Eux. (mt), Crp.

#### HALORAGIDACEAE

*Myriophyllum spicatum* L.

A8 Artvin: Borçka, Düzenli, lakesides, 900 m, 23.06.2003, ÖE 6106.

Crp.

#### CUCURBITACEAE

*Sicyos angulata* L.

A8 Artvin: Borçka, Camili, open forest, 400 m, 21.08.2003, ÖE 6658.

VU, Naturalised, Thp.

#### DATISCAEAE

*Datisca cannabina* L.

A9 Artvin: Borçka, Gorgit SNR, damp places, 1670 m, 11.07.2003, ÖE 6298; A8 Artvin: Borçka, Camili, open forest, 400 m, 08.07.2004, ÖE 7161.

Crp.

#### CRASSULACEAE

*Sedum telephium* L. subsp. *maximum* (L.) Krock.

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2200 m, 21.08.2003, ÖE 6635.

Euro-Sib., Crp.

*S. spurium* M.Bieb.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1970 m, 23.06.2003, ÖE 6107.

Hycr-Eux., Hcrp.

*S. stoloniferum* C.C.Gmel.

A9 Artvin: Borçka, Gorgit SNR, mixed forest, 1700 m, 11.06.2004, ÖE 6977.

Hycr-Eux. (mt), Hcrp.

*S. alpestre* Vill.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2100 m, 23.06.2003, ÖE 6108.

Crp.

*S. album* L.

A9 Artvin: Borçka, Yıldız Lake, rocky places, 2050 m, 28.07.2004, ÖE 7265.

Crp.

*S. tenellum* M.Bieb.

A8 Artvin: Borçka, Düzenli, Verketil, subalpine vegetation, 2100 m, 23.06.2003, ÖE 6109.

Crp.

*S. gracile* C.A.Mey.

A8 Artvin: Borçka, Heba Yaylası, rocky places, 1950 m, 11.07.2003, ÖE 6299.

Hycr-Eux. (mt), Crp.

*S. pilosum* M.Bieb.

A9 Artvin: Borçka, Efeler Forest SNR, forest, 1800 m, 23.06.2003, ÖE 6110.

Hycr-Eux., Thp.

*S. annuum* L.

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 11.07.2003, ÖE 6300.

Euro-Sib., Thp.

*S. pallidum* M.Bieb. var. *bithynicum* (Boiss.) Chamb.

A8 Artvin: Borçka, Kayalar, subalpine vegetation, 1850 m, 06.06.2003, ÖE 6037; A8 Artvin: Borçka, Maral, rocky slopes, 1950 m, 23.06.2003, ÖE 6111.

Eux., Crp.

**Sempervivum transcaucasicum**  
Muirhead

A9 Artvin: Borçka, Mereta to Efeler, rocky places, 2400 m, 23.06.2003, ÖE 6112.

Hcrp.

**S. artvinense** Muirhead

A9 Artvin: Borçka, Gorgit SNR, forest, 2100 m, 11.06.2004, ÖE 6978.

Hcrp.

**SAXIFRAGACEAE**

**Saxifraga paniculata** Mill. subsp. *paniculata*

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, stony places, 1950 m, 11.07.2003, ÖE 6301.

Euro-Sib., Chp.

subsp. *cartilaginea* (Willd.) D.A.Webb

A9 Artvin: Borçka, Gorgit SNR, forest, 1450 m, 29.07.2003, ÖE 6456.

Hycr-Eux., Chp.

**S. rotundifolia** L.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, rocky places, 1950 m, 11.07.2003, ÖE 6302; A8 Artvin: Borçka, Camili, open forest, 600 m, 28.07.2004, ÖE 7266.

Euro-Sib., Crp.

**S. cymbalaria** L. var. *cymbalaria*

A8 Artvin: Borçka, Düzenli, streamsides, 900 m, 11.07.2003, ÖE 6303; A8 Artvin: Borçka, Efeler, streamsides, 1850 m, 11.06.2004, ÖE 6980.

Thp.

**PARNASSIACEAE**

**Parnassia palustris** L.

A8 Artvin: Borçka, Kayalar, forest, 1450 m, 13.09.2004, ÖE 7359.

Hcrp.

**GROSSULARIACEAE**

**Ribes biebersteinii** Berl. ex DC.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2100 m, 23.06.2003, ÖE 6113; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 11.06.2004, ÖE 6981.

Eux., Chp.

**R. orientale** Desf.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 23.06.2003, ÖE 6114.

Chp.

**UMBELLIFERAE (APIACEAE)**

**Sanicula europaea** L.

A8 Artvin: Borçka, Düzenli, forest, 1550 m, 07.09.2003, ÖE 6685; A8 Artvin: Borçka, Efeler, forest, 1800 m, 11.06.2004, ÖE 6982.

Euro-Sib., Hcrp.

**Astrantia maxima** Pall. subsp. *maxima*

A8 Artvin: Borçka, Efeler, meadows, 1550 m, 11.07.2003, ÖE 6304; A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 15.08.2003, ÖE 6529.

Eux., Hcrp.

**Eryngium giganteum** M.Bieb.

A8 Artvin: Borçka, Düzenli, open forest, 1700 m, 28.07.2004, ÖE 7267.

Eux., Thp.

**E. caeruleum** M.Bieb.

A8 Artvin: Borçka, Kayalar, roadsides, 450 m, 11.07.2003, ÖE 6305.

Ir-Tur., Hcrp.

**Chaerophyllum macrospermum** (Spreng.) Fisch. & C.A.Mey.

A9 Artvin: Borçka, Yıldız Lake, stony places, 1900 m, 11.07.2003, ÖE 6306.

Ir-Tur., Hcrp.

**C. aureum** L.

A8 Artvin: Borçka, Maral, open places, 1650 m, 11.07.2003, ÖE 6307; A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 08.07.2004, ÖE 7162.

Crp.

**C. bulbosum** L.

A9 Artvin: Borçka, Gorgit SNR, forest, 1200 m, 29.07.2003, ÖE 6457.

Euro-Sib., Thp.

**Scandix iberica** M.Bieb.

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 27.05.2004, ÖE 6810.

Thp.

**Scaligeria tripartita** (Kalen.) Tamamsch.

A8 Artvin: Borçka, Maral, forest, 700 m, 08.07.2004, ÖE 7163.

Eux., Crp.

**Carum carvi** L.

A8 Artvin: Borçka, Maral, meadows, 1550 m, 11.06.2004, ÖE 6983.

Chp.

**C. meifolium** (M.Bieb.) Boiss.

A9 Artvin: Borçka, Yıldız Lake, open places, 1950 m, 15.08.2003, ÖE 6530.

Chp.

**C. caucasicum** (M.Bieb.) Boiss.

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 15.08.2003, ÖE 6531.

Chp.

**Chamaescadium acaule** (M.Bieb) Boiss.

A9 Artvin: Borçka, Efeler Forest SNR, forest to subalpine, 2200 m, 11.07.2003, ÖE 6308.

Hycr-Eux., Hcrp.

**Pimpinella affinis** Ledeb.

A8 Artvin: Borçka, Efeler, alpine vegetation, 2500 m, 25.05.2003, ÖE 5967.

Hcrp.

**Seseli libanotis** (L.) W.Koch

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 15.08.2003, ÖE 6532.

Euro-Sib., Crp.

**Foeniculum vulgare** Mill.

A8 Artvin: Borçka, Uğur, open forest, 700 m, 22.08.2004, ÖE 7315.

Hcrp.

**Bupleurum falcatum** L. subsp. *polyphyllum* (Ledeb.) Wolff

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 15.08.2003, ÖE 6533.

Eux. (mt), Crp.

subsp. *persicum* (Boiss.) Koso-Pol.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 11.07.2003, ÖE 6309.

Crp.

*Ligusticum alatum* (M.Bieb.) Sprengel

A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 21.08.2003, ÖE 6636.

Crp.

*Xanthogalum purpurascens* Lallemand.

A9 Artvin: Borçka, Gorgit SNR, forest, 1500 m, 29.07.2003, ÖE 6458.

Hcrp.

*Heracleum sphondylium* L. subsp. *cyclocarpum* (C.Koch) P.H.Davis

A8 Artvin: Borçka, Efeler, forest, streamsides, 1800 m, 11.07.2003, ÖE 6311.

Eux., Hcrp.

*H. antasiaticum* Manden.

A9 Artvin: Borçka, Yıldız Lake, streamsides, 2100 m, 11.06.2004, ÖE 6984; A8 Artvin: Borçka, Kayalar, forest, 1800 m, 08.07.2004, ÖE 7165.

Eux., Hcrp.

*H. apiifolium* Boiss.

A8 Artvin: Borçka, Maral, streamsides, 2100 m, 15.08.2003, ÖE 6534; A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 21.08.2003, ÖE 6637.

Eux. (mt), Hcrp.

*Torilis japonica* (Houtt.) DC.

A8 Artvin: Borçka, Maral, meadows, 1150 m, 07.09.2003, ÖE 6686.

Thp.

*Caucalis platycarpus* L.

A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 11.07.2003, ÖE 6312; A9 Artvin: Borçka, Yıldız Lake, open places, 1900 m, 11.06.2004, ÖE 6985.

Thp.

#### ARALIACEAE

*Hedera helix* L.

A9 Artvin: Borçka, Gorgit SNR, forest, 1500 m, 21.08.2003, ÖE 6638.

Chp.

*H. colchica* (C.Koch.) C.Koch

A8 Artvin: Borçka, Düzenli, forest, 1550 m, 13.09.2004, ÖE 7360.

Eux., Chp.

#### CORNACEAE

*Cornus sanguinea* L. subsp. *australis* (C.A.Mey.) Jáv.

A8 Artvin: Borçka, Maral, roadsides, 1100 m, 25.05.2003, ÖE 5969; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 06.06.2003, ÖE 6039.

Euro-Sib., Php.

*C. mas* L.

A8 Artvin: Borçka, Maral, open places, 1100 m, 19.04.2004, ÖE 6122; A8 Artvin: Borçka, Camili, open forest, 400 m, 27.05.2004, ÖE 6812.

Euro-Sib., Php.

#### CAPRIFOLIACEAE

*Sambucus ebulus* L.

A8 Artvin: Borçka, Düzenli, roadsides, 1400 m, 15.08.2003, ÖE 6535.

Euro-Sib., Hcrp.

*S. nigra* L.

A9 Artvin: Borçka, Efeler Forest SNR, *Picea orientalis* forest, 1850 m, 11.06.2004, ÖE 6987; A8 Artvin: Borçka, Camili, open forest, 400 m, 08.07.2004, ÖE 7166.

Euro-Sib., Php.

*Viburnum lantana* L.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 23.06.2003, ÖE 6116.

Euro-Sib., Chp.

*V. orientale* Pall.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 23.06.2003, ÖE 6117.

Eux., Chp.

*V. opulus* L.

A8 Artvin: Borçka, Efeler, open forest, 800 m, 27.05.2004, ÖE 6813.

Euro-Sib., Chp.

*Lonicera caucasica* Pall. subsp. *caucasica*

A8 Artvin: Borçka, Efeler, forest, 1700 m, 23.06.2003, ÖE 6118; A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 11.06.2004, ÖE 6988.

Chp.

*L. iberica* M.Bieb.

A8 Artvin: Borçka, Efeler, forest, 1400 m, 08.07.2004, ÖE 7167.

Hycr-Eux., Chp.

*L. caprifolium* L.

A8 Artvin: Borçka, Düzenli, roadsides, 1100 m, 11.06.2004, ÖE 6990.

Chp.

#### VALERIANACEAE

*Valeriana alliariifolia* Adams

A9 Artvin: Borçka, Efeler Forest SNR, subalpine vegetation, 1950 m, 15.08.2003, ÖE 6536; A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 22.08.2004, ÖE 7316.

Hcrp.

*V. alpestris* Stev.

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 21.08.2003, ÖE 6639.

Eux. (mt), Crp.

*V. officinalis* L.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 23.06.2003, ÖE 6119.

Hcrp.

*Centranthus longiflorus* Stev. subsp. *longiflorus*

A8 Artvin: Borçka, Maral, rocky slopes, 1150 m, 08.07.2004, ÖE 7168; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 28.07.2004, ÖE 7269.

Ir-Tur., Crp.

*Valerianella lasiocarpa* (Stev.) Betcke

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 25.05.2003, ÖE 5970; A8 Artvin: Borçka, Camili, open forest, 400 m, 27.05.2004, ÖE 6814; A8 Artvin: Borçka, Efeler, meadows, 1550 m, 10.06.2005, AE 7.

Ir-Tur., Thp.

#### DIPSACACEAE

*Dipsacus pilosus* L.

A8 Artvin: Borçka, Efeler, roadsides, 1300 m, 15.08.2003, ÖE 6537.

Euro-Sib., Thp.

*Cephalaria aristata* C.Koch.

A8 Artvin: Borçka, Efeler, meadows, 1550 m, 07.09.2003, ÖE 6687.

Thp.

- C. gigantea* (Ledeb.) Bobrov  
A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 21.08.2003, ÖE 6640.  
Eux. (mt), Hcrp.  
*Knautia montana* (M.Bieb.) DC.  
A9 Artvin: Borçka, Gorgit SNR, roadsides, 1650 m, 11.06.2004, ÖE 6991.  
EN, Euro-Sib., Thp.  
*K. involucrata* Somm. & Lev.  
A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 21.08.2003, ÖE 6641.  
Eux. (mt), Hcrp.  
*Scabiosa columbaria* L. subsp. *columbaria* var. *columbaria*  
A8 Artvin: Borçka, Düzenli, stony slopes, 1550 m, 15.08.2003, ÖE 6538; A8 Artvin: Borçka, Maral, forest, 700 m, 28.07.2004, ÖE 7270.  
Crp.  
*S. canescens* Waldst. & Kit.  
A9 Artvin: Borçka, Efeler SNR, open places, 1800 m, 11.07.2003, ÖE 6313.  
Euro-Sib., Crp.  
*S. caucasica* M.Bieb.  
A9 Artvin: Borçka, Yıldız Lake, open slopes, 2050 m, 15.08.2003, ÖE 6539.  
Hcrp.  
**COMPOSITAE (ASTERACEAE)**  
*Sigesbeckia orientalis* L.  
A8 Artvin: Borçka, Uğur, open forest, 700 m, 21.08.2003, ÖE 6642.  
Thp.  
*Bidens tripartita* L.  
A8 Artvin: Borçka, Düzenli, Mahmudikaya, open forest, 1900 m, 29.07.2003, ÖE 6459.  
Thp.  
*Xanthium spinosum* L.  
A8 Artvin: Borçka, Maral, roadsides, 1050 m, 23.06.2003, ÖE 6120.  
Cosm., Thp.  
*X. strumarium* L. subsp. *strumarium*  
A8 Artvin: Borçka, Kayalar, forest, 1100 m, 29.07.2003, ÖE 6460.  
Thp.
- Telekia speciosa* (Schreb.) Baumg.  
A8 Artvin: Borçka, Camili, open forest, 1100 m, 15.08.2003, ÖE 6543; *ibid.*, 13.09.2004, ÖE 7361; A8 Artvin: Borçka, Efeler, damp places, 1550 m, 07.09.2003, ÖE 6688.  
Euro-Sib., Hcrp.  
*Pallenis spinosa* (L.) Cass.  
A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 21.08.2003, ÖE 6643.  
Medit., Thp.  
*Inula helenium* L. subsp. *orgyalis* (Boiss.) Grierson  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2550 m, 07.09.2003, ÖE 6689.  
Endemic, NT, Eux., Crp.  
*I. orientalis* Lam.  
A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 11.07.2003, ÖE 6314; *ibid.*, 15.08.2003, ÖE 6542.  
Eux. (mt), Crp.  
*Antennaria dioica* (L.) Gaertner  
A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 23.06.2003, ÖE 6121.  
Euro-Sib., Crp.  
*Helichrysum armenium* DC. subsp. *armenium*  
A9 Artvin: Borçka, Gorgit SNR, open places, 1850 m, 25.05.2003, ÖE 5971; A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 10.05.2004, ÖE 6779.  
Ir-Tur., Hcrp.  
*H. artvinense* P.H.Davis & Kupicha  
A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2350 m, 11.07.2003, ÖE 6315.  
Endemic, EN, Hcrp.  
*Gnaphalium uliginosum* L.  
A9 Artvin: Borçka, Efeler SNR, forest to subalpine, 1700 m, 15.08.2003, ÖE 6544.  
Euro-Sib., Thp.  
*G. luteo-album* L.  
A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 11.06.2004, ÖE 6992; A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 13.09.2004, ÖE 7362.  
Thp.
- G. sylvaticum* L.  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 11.07.2003, ÖE 6316.  
Euro-Sib., Crp.  
*Filago vulgaris* Lam.  
A8 Artvin: Borçka, Kayalar, forest, 1000 m, 06.06.2003, ÖE 6040.  
Thp.  
*Logfia arvensis* (L.) Holub  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 27.05.2004, ÖE 6815.  
Thp.  
*Solidago virgaurea* L. subsp. *alpestris* (Waldst. & Kit.) Gaudin  
A8 Artvin: Borçka, Düzenli, Verketil, subalpine vegetation, 2250 m, 07.09.2003, ÖE 6690.  
Euro-Sib., Hcrp.  
*Aster amellus* L. subsp. *ibericus* (Stev.) Avet.  
A8 Artvin: Borçka, Maral, roadsides, 1800 m, 15.08.2005, ÖE 6589.  
Eux., Chp.  
*A. alpinus* L.  
A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2250 m, 15.08.2003, ÖE 6545; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 28.07.2004, ÖE 7271.  
Crp.  
*A. caucasicus* Willd.  
A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 29.07.2003, ÖE 6461; A8 Artvin: Borçka, Kayalar, forest, 1800 m, 21.08.2003, ÖE 6644.  
Eux., Chp.  
*Erigeron caucasicus* Stev. subsp. *caucasicus*  
A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 11.07.2003, ÖE 6318.  
Eux. (mt), Hcrp.  
subsp. *venustus* (Botsch.) Grierson  
A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 29.07.2003, ÖE 6462.  
Hcrp.

- E. annuus** (L.) Pers.  
A8 Artvin: Borçka, Efeler, roadsides, 1100 m, 11.06.2004, ÖE 6993.  
Thp.
- Conyza canadensis** (L.) Cronquist  
A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 07.09.2003, ÖE 6691; A8 Artvin: Borçka, Maral, meadows, 1150 m, 14.10.2003, ÖE 6739; A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 13.09.2004, ÖE 7363.  
Thp.
- Dichrocephala integrifolia** (L.f.) Kuntze  
A8 Artvin: Borçka, Camili, open forest, 400 m, 15.08.2003, ÖE 6546.  
Thp.
- Bellis perennis** L.  
A8 Artvin: Borçka, Camili, open places, 1250 m, 25.05.2003, ÖE 5972.  
Euro-Sib., Hcrp.
- Doronicum balansae** Cavill.  
A8 Artvin: Borçka, Fındık Yaylası, alpine meadows, 2300 m, 06.06.2003, ÖE 6042; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 23.06.2003, ÖE 6122.  
Endemic, NT, Eux., Crp.
- D. dolichotrichum** Cavill.  
A9 Artvin: Borçka, Mereta Yaylası, alpine vegetation, 2400 m, 23.06.2003, ÖE 6123.  
Eux., Crp.
- D. macrophyllum** Fisch. ex Hornem.  
A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 06.06.2003, ÖE 6041.  
VU, Eux., Crp.
- D. oblongifolium** DC.  
A9 Artvin: Borçka, Mereta Yaylası, alpine vegetation, 2400 m, 11.07.2003, ÖE 6322.  
Euro-Sib., Crp.
- Senecio aquaticus** Hill subsp. *erraticus* (Bertol.) Matthews  
A9 Artvin: Borçka, Efeler SNR, forest to subalpine, 2200 m, 07.09.2003, ÖE 6692.  
Euro-Sib., Thp.
- S. pandurifolius** C.Koch  
A8 Artvin: Borçka, Efeler, roadsides, 800 m, 19.04.2003, ÖE 5892.  
Eux., Hcrp.
- S. taraxacifolius** (M.Bieb.) DC. var. *taraxacifolius*  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 21.08.2003, ÖE 6646; A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 11.06.2004, ÖE 6994.  
Hcrp.
- S. nemorensis** L. subsp. *nemorensis*  
A9 Artvin: Borçka, Gorgit SNR, damp places, 1800 m, 29.07.2003, ÖE 6463; A8 Artvin: Borçka, Efeler, damp places, 1550 m, 13.09.2004, ÖE 7364; A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 14.08.2005, AE 21.  
Euro-Sib., Hcrp.
- S. integrifolius** (L.) Clairv. subsp. *aurantiacus* (Hoppe ex Willd.) Briq. & Cavill. var. *leiocarpus* Boiss.  
A8 Artvin: Borçka, Maral, forest, 700 m, 19.06.2003, ÖE 5893.  
Eux., Thp.
- S. vernalis** Waldst. & Kit.  
A8 Artvin: Borçka, Maral, stony slopes, 1150 m, 16.04.2004, ÖE 6759; A8 Artvin: Borçka, Camili, open forest, 400 m, 10.05.2004, ÖE 6780.  
Thp.
- Tussilago farfara** L.  
A8 Artvin: Borçka, Camili, forest, 600 m, 21.08.2003, ÖE 6645; A9 Artvin: Borçka, Gorgit SNR, roadsides, 1800 m, 27.05.2004, ÖE 6816.  
Euro-Sib., Crp.
- Petasites hybridus** (L.) Gaertn., C.A.Mey. & Scherb.  
A8 Artvin: Borçka, Efeler, streamsides, 1800 m, 25.05.2003, ÖE 5973.  
Euro-Sib., Crp.
- P. albus** (L.) Gaertn., Fruct. & Sem.  
A8 Artvin: Borçka, Maral, streamsides, 1150 m, 15.03.2004, ÖE 6749.  
Euro-Sib., Crp.
- Eupatorium cannabinum** L.  
A8 Artvin: Borçka, Maral, damp places, 1100 m, 07.09.2003, ÖE 6693.  
Euro-Sib., Hcrp.
- Anthemis marschalliana** Willd. subsp. *pectinata* (Boiss.) Grierson  
A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 06.06.2003, ÖE 6043; A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2450 m, 11.07.2003, ÖE 6323.  
Eux., Hcrp.
- A. cotula** L.  
A8 Artvin: Borçka, Efeler, roadsides, 800 m, 23.06.2003, ÖE 6125.  
Thp.
- A. tinctoria** L. var. *tinctoria*  
A8 Artvin: Borçka, Camili, slopes, 850 m, 11.07.2003, ÖE 6324; A9 Artvin: Borçka, Yıldız Lake, stony places, 1900 m, 11.06.2004, ÖE 6995.  
Widespread, Hcrp.
- A. triumfettii** (L.) All.  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 11.06.2004, ÖE 6996.  
Hcrp.
- Achillea biserrata** M.Bieb.  
A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2450 m, 23.06.2003, ÖE 6126.  
Eux., Hcrp.
- A. latiloba** Ledeb. ex Nordm.  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 11.06.2004, ÖE 6997.  
Eux. (mt), Crp.
- A. millefolium** L. subsp. *millefolium*  
A9 Artvin: Borçka, Efeler SNR, open forest, 1850 m, 15.08.2003, ÖE 6547.  
Euro-Sib., Hcrp.
- Leucanthemum vulgare** Lam.  
A8 Artvin: Borçka, Camili, open forest, 1150 m, 11.07.2003, ÖE 6325; A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 29.07.2003, ÖE 6464.  
Euro-Sib., Hcrp.
- Tanacetum macrophyllum** (Waldst. & Kit.) Sch.Bip.  
A9 Artvin: Borçka, Gorgit SNR, damp places, 1850 m, 15.08.2003, ÖE 6548.  
Euro-Sib., Hcrp.
- T. parthenium** (L.) Sch.Bip.  
A9 Artvin: Borçka, Yıldız Lake, open forest, 1900 m, 11.07.2003, ÖE 6326; A8

Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 08.07.2004, ÖE 7171.

Widespread, Hcrp.

**T. coccineum** (Willd.) Grierson subsp. **chamaemelifolium** (Somm. & Lev.) Grierson

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 27.05.2004, ÖE 6817.

VU, Eux. (mt), Hcrp.

**Tripleurospermum caucasicum** (Willd.) Hayek

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2450 m, 11.07.2003, ÖE 6327.

Crp.

**T. melanolepis** (Boiss. & Buhse) Pobed.

A9 Artvin: Borçka, Yıldız Lake, open forest, 1900 m, 15.08.2003, ÖE 6549.

Crp.

**T. oreades** (Boiss.) Rech.f. var. **oreades**

A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2450 m, 23.06.2003, ÖE 6127.

Crp.

var. **tchihatchewii** (Boiss.) E.Hossain

A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2250 m, 11.07.2003, ÖE 6328.

Crp.

**T. transcaucasicum** (Manden.) Pobed.

A9 Artvin: Borçka, Gorgit SNR, damp places, 1850 m, 15.08.2003, ÖE 6550.

Hcrp.

**Artemisia vulgaris** L.

A8 Artvin: Borçka, Camili, roadsides, 1200 m, 15.08.2003, ÖE 6551; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 08.07.2004, ÖE 7172.

Hcrp.

**A. chamaemellifolia** Vill.

A8 Artvin: Borçka, Kayalar, forest, 1880 m, 13.09.2004, ÖE 7365.

Euro-Sib., Hcrp.

**Arctium tomentosum** Mill. var. **glabrum** (Körn.) Arènes

A8 Artvin: Borçka, Maral, roadsides, 1650 m, 14.08.2005, AE 20.

Thp.

**A. platylepis** (Boiss. & Ball) Sosn. ex Grossh.

A8 Artvin: Borçka, Düzenli, open places, 1550 m, 11.07.2003, ÖE 6329; A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 11.07.2005, AE 14.

Eux., Hcrp.

**Onopordum acanthium** L.

A9 Artvin: Borçka, Gorgit SNR, roadsides, 1800 m, 11.07.2003, ÖE 6330; A8 Artvin: Borçka, Maral, forest, 700 m, 11.07.2003, ÖE 6331.

Hcrp.

**Cirsium caucasicum** (Adams) Petr.

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 15.08.2003, ÖE 6552.

VU, Eux. (mt), Hcrp.

**C. vulgare** (Savi) Ten.

A9 Artvin: Borçka, Gorgit SNR, forest, 2100 m, 21.08.2003, ÖE 6647.

Crp.

**C. hypoleucum** DC.

A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 28.07.2004, ÖE 7272.

Eux., Hcrp.

**C. pseudopersonata** Boiss. & Ball subsp. **kusnezowianum** (Somm. & Lev.) Petr.

A8 Artvin: Borçka, Kayalar, forest, 1100 m, 23.06.2003, ÖE 6128; A8 Artvin: Borçka, Kayalar, forest, 1900 m, 11.07.2003, ÖE 6332.

VU, Eux., Hcrp.

**C. obvallatum** (M.Bieb.) Fisch.

A9 Artvin: Borçka, Mereta to Efeler, subalpine vegetation, streamsides, 2100 m, 15.08.2003, ÖE 6553.

VU, Hyrc-Eux. (mt), Hcrp.

**C. simplex** C.A.Mey. subsp. **simplex**

A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 22.08.2004, ÖE 7318.

Eux. (mt), Crp.

**C. rhizocephalum** C.A.Mey. subsp. **sinuatum** (Boiss.) P.H.Davis & Parris

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 15.08.2003, ÖE 6554.

Hcrp.

**C. pubigerum** (Desf.) DC. var. **glomeratum** (Frey & Sint.) P.H.Davis & Parris

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 23.06.2003, ÖE 6129.

Hcrp.

**C. arvense** (L.) Scop. subsp. **arvense**

A8 Artvin: Borçka, Kayalar, forest, 2000 m, 15.08.2003, ÖE 6555.

Cosm., Hcrp.

**Carduus adpressus** C.A.Mey.

A8 Artvin: Borçka, Maral, stony slopes, 800 m, 11.07.2003, ÖE 6333; A8 Artvin: Borçka, Düzenli, streamsides, 650 m, 11.07.2003, ÖE 6334; A9 Artvin: Borçka, Efeler SNR, damp places, 1870 m, 15.08.2003, ÖE 6556.

Eux., Hcrp.

**C. hamulosus** Ehrh. subsp. **hamulosus**

A9 Artvin: Borçka, Yıldız Lake, open places, 1900 m, 11.07.2003, ÖE 6335.

Euro-Sib., Crp.

**Centaurea salicifolia** M.Bieb. ex Willd. subsp. **abbreviata** C.Koch

A8 Artvin: Borçka, Efeler, meadows, 1550 m, 23.06.2003, ÖE 6131; A8 Artvin: Borçka, Uğur, open forest, 700 m, 11.07.2003, ÖE 6336.

Eux., Hcrp.

**C. simplicicaulis** Boiss. & Huet

A8 Artvin: Borçka, Efeler, rocky places, 1350 m, 25.05.2003, ÖE 5975.

Eux., Hcrp.

**C. pecho** Albow

A8 Artvin: Borçka, Camili, rocky places, 850 m, 11.07.2003, ÖE 6337.

Endemic, VU, Eux., Hcrp.

**C. pulcherrima** Willd. var. **pulcherrima**

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 29.07.2003, ÖE 6465.

Chp.

**C. appendicigera** C.Koch

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2700 m, 23.06.2003, ÖE 6132.

Endemic, NT, Eux. (mt), Hcrp.

- C. cheiranthifolia** Willd. var. **purpurascens** (DC) Wagenitz  
A8 Artvin: Borçka, Efeler, alpine vegetation, 2350 m, 11.07.2003, ÖE 6339.  
VU, Eux. (mt), Crp.
- C. nigrifimbria** (C.Koch) Sosn.  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 15.08.2003, ÖE 6557.  
Eux. (mt), Chp.
- C. triumfettii** All.  
A9 Artvin: Borçka, Efeler, open forest, 1900 m, 23.06.2003, ÖE 6133.  
Widespread, Hcrp.
- C. woronowii** Bornm.  
A8 Artvin: Borçka, Düzenli, roadsides, 1100 m, 11.07.2003, ÖE 6340.  
Endemic, NT., Crp.
- Carlina vulgaris** L.  
A8 Artvin: Borçka, Uğur, open forest, 700 m, 11.06.2004, ÖE 6998.  
Thp.
- Xeranthemum annuum** L.  
A8 Artvin: Borçka, Maral, open places, 1150 m, 23.06.2003, ÖE 6134.  
Ir-Tur., Widespread, Thp.
- X. cylindraceum** Sm.  
A8 Artvin: Borçka, Efeler, open places, 1350 m, 11.06.2004, ÖE 6999.  
Thp.
- Echinops galaticus** Freyn  
A8 Artvin: Borçka, Camili, in scrub, 1100 m, 15.08.2003, ÖE 6558.  
Eux., Hcrp.
- Cichorium intybus** L.  
A8 Artvin: Borçka, Efeler, roadsides, on wall, 1400 m, 11.06.2004, ÖE 7000; A8 Artvin: Borçka, Camili, open forest, 400 m, 08.07.2004, ÖE 7174.  
Cosm., Hcrp.
- Scorzonera seidlitzii** Boiss.  
A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 08.07.2004, ÖE 7176; A9 Artvin: Borçka, Yıldız Lake, rocky slopes, 2250 m, 08.07.2004, ÖE 7177.  
Hcrp.
- Tragopogon reticulatus** Boiss. & Huet  
A8 Artvin: Borçka, Düzenli, wet slopes, 1650 m, 25.05.2003, ÖE 5976.  
Hcrp.
- T. aureus** Boiss.  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 11.07.2003, ÖE 6342; A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 22.08.2004, ÖE 7319.  
Endemic, LC., Hcrp.
- Leontodon hispidus** L. var. **hispidus**  
A8 Artvin: Borçka, Düzenli, open places, 1550 m, 15.08.2003, ÖE 6559; A8 Artvin: Borçka, Efeler, alpine vegetation, 2300 m, 07.09.2003, ÖE 6695.  
Crp.
- var. **glabratus** (W.Koch) Bisch.  
A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 28.07.2004, ÖE 7273.  
Euro-Sib., Crp.
- L. crispus** Vill. subsp. **asper** (Waldst. & Kit.) Röhl. var. **asper**  
A9 Artvin: Borçka, Yıldız Lake, stony places, 2100 m, 23.06.2003, ÖE 6136; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 08.07.2004, ÖE 7178.  
Widespread, Hcrp.
- Sonchus asper** (L.) Hill subsp. **glaucescens** (Jord.) Ball  
A8 Artvin: Borçka, Efeler, roadsides, 800 m, 29.07.2003, ÖE 6466; A8 Artvin: Borçka, Düzenli, damp places, 1600 m, 15.08.2003, ÖE 6560; A8 Artvin: Borçka, Camili, open forest, 400 m, 21.08.2003, ÖE 6648.  
Widespread, Hcrp.
- Hieracium gentiliforme** (Zahn) Sell & West  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 23.06.2003, ÖE 6137.  
Endemic, VU, Eux., Hcrp.
- H. karagoellense** (Zahn) Sell & West  
A8 Artvin: Borçka, Düzenli, Verketil, near forest, 2000 m, 15.08.2003, ÖE 6561; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 22.08.2004, ÖE 7320.  
Endemic, LC, Eux., Hcrp.
- H. prenanthoides** Vill.  
A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 15.08.2003, ÖE 6562.  
Euro-Sib., Hcrp.
- Pilosella hoppeana** (Schultes) C.H. & F.W.Schultz subsp. **cilicica** (NP.) Sell & West  
A9 Artvin: Borçka, Efeler SNR, forest, 1850 m, 11.07.2003, ÖE 6344.  
Chp.
- P. x ruprechtii** (Boiss.) Sell & West  
A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 06.06.2003, ÖE 6044.  
Chp.
- P. piloselloides** (Vill.) Soják subsp. **megalomastix** (NP.) Sell & West  
A8 Artvin: Borçka, Maral, *Quercus* scrub, 1150 m, 25.05.2003, ÖE 5977; A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 28.07.2004, ÖE 7274.  
Chp.
- P. x auriculoides** (Láng) Sell & West  
A9 Artvin: Borçka, Yıldız Lake, open forest, 1900 m, 11.07.2003, ÖE 6345; A8 Artvin: Borçka, Kayalar, forest, 1800 m, 08.07.2004, ÖE 7179.  
Chp.
- Prenanthes abietina** (Boiss. & Ball) Kirp.  
A8 Artvin: Borçka, Efeler, *Picea* forest, 1800 m, 07.09.2003, ÖE 6696.  
Eux., Crp.
- P. cacaliifolia** (M.Bieb.) Beauverd  
A9 Artvin: Borçka, Yıldız Lake, roadsides, 2100 m, 15.08.2003, ÖE 6563.  
Eux., Crp.
- Cicerbita bourgaei** (Boiss.) Beauverd  
A9 Artvin: Borçka, Yıldız Lake, open places, 1850 m, 07.09.2003, ÖE 6697; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 28.07.2004, ÖE 7275.  
Eux., Crp.
- C. racemosa** (Willd.) Beauverd  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 15.08.2003, ÖE 6564.  
Eux., Crp.



- Lactuca serriola* L.  
A8 Artvin: Borçka, Kayalar, forest, 1800 m, 11.07.2003, ÖE 6346.  
Euro-Sib., Hcrp.
- Mycelis muralis* (L.) Dum.  
A8 Artvin: Borçka, Efeler, forest, 1700 m, 15.08.2003, ÖE 6565.  
Euro-Sib., Crp.
- Lapsana communis* L. subsp. *intermedia* (M.Bieb.) Hayek  
A8 Artvin: Borçka, Efeler, forest, 1650 m, 11.07.2003, ÖE 6347; A8 Artvin: Borçka, Uğur, open forest, 700 m, 29.07.2003, ÖE 6467.  
Hcrp.
- Taraxacum crepidiforme* DC. subsp. *crepidiforme*  
A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2450 m, 11.07.2003, ÖE 6348; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 08.07.2004, ÖE 7180.  
Ir-Tur., Hcrp.
- T. buttleri* Soest  
A8 Artvin: Borçka, Uğur, open forest, 700 m, 25.05.2003, ÖE 5978; A9 Artvin: Borçka, Efeler SNR, damp places, 1850 m, 11.06.2004, ÖE 7001.  
Hcrp.
- Crepis conyzifolia* (Gouan) A.Kerner subsp. *djamilensis* (C.Koch) Lamond  
A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 15.08.2003, ÖE 6566.  
Eux., Chp.
- C. paludosa* (L.) Moench  
A8 Artvin: Borçka, Efeler, forest, 1750 m, 11.07.2003, ÖE 6349; A8 Artvin: Borçka, Kayalar, forest, 1800 m, 08.07.2004, ÖE 7181.  
Euro-Sib., Crp.
- C. foetida* L. subsp. *rhoadifolia* (M.Bieb.) Çelak.  
A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 07.09.2003, ÖE 6698.  
Widespread, Thp.
- C. setosa* Hall.  
A8 Artvin: Borçka, Camili, open forest, 450 m, 29.07.2003, ÖE 6468.  
Euro-Sib., Thp.
- CAMPANULACEAE**
- Campanula latifolia* L.  
A8 Artvin: Borçka, Efeler, roadsides, 1800 m, 11.07.2003, ÖE 6350.  
Euro-Sib., Hcrp.
- C. rapunculoides* L. subsp. *cardifolia* (C.Koch) Damboldt  
A9 Artvin: Borçka, Efeler SNR, subalpine vegetation, 1950 m, 11.07.2003, ÖE 6351.  
Hcrp.
- C. bononiensis* L.  
A8 Artvin: Borçka, Maral, open forest, 1100 m, 08.07.2004, ÖE 7182.  
Euro-Sib., Hcrp.
- C. sibirica* L. subsp. *hohenackeri* (Fisch. & C.A.Mey.) Damboldt  
A9 Artvin: Borçka, Yıldız Lake, open forest, 1900 m, 11.07.2003, ÖE 6352.  
Eux., Thp.
- C. glomerata* L. subsp. *hispida* (Witasek) Hayek  
A9 Artvin: Borçka, Efeler SNR, open forest, 1800 m, 15.08.2003, ÖE 6568; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 28.07.2004, ÖE 7278.  
Euro-Sib., Hcrp.
- C. macrochlamys* Boiss. & Huet  
A8 Artvin: Borçka, Efeler, roadsides, 1600 m, 27.05.2004, ÖE 6819.  
Thp.
- C. alliarifolia* Willd.  
A8 Artvin: Borçka, Düzenli, *Picea orientalis* forest, 1600 m, 29.07.2003, ÖE 6469.  
Eux., Hcrp.
- C. collina* Sims  
A9 Artvin: Borçka, Gorgit SNR, open places, 1850 m, 11.07.2003, ÖE 6353.  
Eux., Hcrp.
- C. tridentata* Schreber  
A8 Artvin: Borçka, Kayalar, forest, 1800 m, 11.06.2004, ÖE 7002.  
Eux. (mt), Crp.
- C. aucheri* A.DC.  
A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2400 m, 08.07.2004, ÖE 7183; A9 Artvin: Borçka, Beyazsu Yaylası, rocky places, 2000 m, 28.07.2004, ÖE 7279.  
Eux. (mt), Crp.
- C. lactiflora* M.Bieb.  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 08.07.2004, ÖE 7184; A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 28.07.2004, ÖE 7280.  
Eux., Hcrp.
- C. stevenii* M.Bieb. subsp. *stevenii*  
A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 29.07.2003, ÖE 6470.  
Hyrc-Eux., Hcrp.
- C. pontica* Albov  
A8 Artvin: Borçka, Camili, stony places, 950 m, 25.05.2003, ÖE 5979.  
Eux., Hcrp.
- C. olympica* Boiss.  
A8 Artvin: Borçka, alpine vegetation, 2300 m, 11.07.2003, ÖE 6354.  
Eux., Hcrp.
- C. rapunculus* L. var. *lambertiana* (A.DC.) Boiss.  
A8 Artvin: Borçka, Efeler, open forest, damp places, 1750 m, 23.06.2003, ÖE 6138.  
Euro-Sib., Hcrp.
- ERICACEAE**
- Rhododendron luteum* Sweet  
A8 Artvin: Borçka, Maral, forest, 1600 m, 06.06.2003, ÖE 6045; A8 Artvin: Borçka, Efeler, forest, 1650 m, 23.06.2003, ÖE 6139.  
Eux., Chp.
- R. ungermii* Trautv.  
A8 Artvin: Borçka, Düzenli, Mahmudikaya, forest, 1900 m, 23.06.2003, ÖE 6140.  
VU, Eux., Php.
- R. smirnovii* Trautv.  
A8 Artvin: Borçka, Düzenli, Mahmudikaya, open forest, 2000 m, 11.07.2003, ÖE 6355.

VU, Eux. This taxon, known from Georgia, is not endemic. Php.

**R. caucasicum** Pall.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2100 m, 11.06.2004, ÖE 7003; A9 Artvin: Borçka, Gorgit SNR, open forest, 2200 m, 08.07.2004, ÖE 7185.

Eux. (mt), Chp.

**R. ponticum** L. subsp. **ponticum**

A8 Artvin: Borçka, Düzenli, *Picea orientalis* forest, 1530 m, 15.08.2003, ÖE 6569; A8 Artvin: Borçka, Düzenli, Mahmudikaya, open forest, 1900 m, 21.08.2003, ÖE 6649.

Eux., Chp.

**R. x sochadzeae** Kharadze & Davlian.

A8 Artvin: Borçka, Kayalar, forest, 1700 m, 23.06.2003, ÖE 6141.

Eux., Chp.

**Epigaea gaultherioides** (Boiss. & Ball) Takht.

A8 Artvin: Borçka, Efeler to Mereta, subalpine vegetation, 1800 m, 08.06.2004, ÖE 7186.

VU, Eux., Chp.

**Vaccinium myrtillus** L.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2100 m, 11.07.2003, ÖE 6357.

Euro-Sib., Chp.

**V. uliginosum** L.

A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 22.08.2004, ÖE 7321.

Chp.

**V. arctostaphylos** L.

A8 Artvin: Borçka, Düzenli, *Picea orientalis* forest, 1550 m, 22.08.2004, ÖE 7322.

Eux., Chp.

**Pyrola rotundifolia** L.

A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 28.07.2004, ÖE 7281.

Euro-Sib., Crp.

**P. media** Sw.

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 11.06.2004, ÖE 7004.

Euro-Sib., Crp.

**Orthilia secunda** (L.) House

A8 Artvin: Borçka, Efeler, *Picea orientalis* forest, 1700 m, 11.07.2003, ÖE 6358.

Crp.

**Monotropa hypopithys** L.

A8 Artvin: Borçka, Düzenli, *Picea orientalis* forest, 1650 m, 11.07.2003, ÖE 6359; A8 Artvin: Borçka, Kayalar, forest, 1600 m, 08.07.2004, ÖE 7187.

Thp.

**LENTIBULARIACEAE**

**Pinguicula balcanica** Casper subsp. **pontica** Casper

A8 Artvin: Borçka, Fındık Yaylası, wet places, 1900 m, 27.05.2004, ÖE 6820.

Eux., Crp.

**PRIMULACEAE**

**Primula vulgaris** Huds. subsp. **vulgaris**

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 25.05.2003, ÖE 5980.

Euro-Sib., Hcrp.

subsp. **sibthorpii** (Hoffm.) W.W.Sm. & Forrest

A8 Artvin: Borçka, Efeler, mixed forest, 600 m, 16.04.2004, ÖE 6760.

Eux., Hcrp.

**P. veris** L. subsp. **columnae** (Ten.) Lüdi

A8 Artvin: Borçka, Efeler, open places, 1450 m, 23.06.2003, ÖE 6142.

Euro-Sib., Hcrp.

**P. elatior** (L.) Hill subsp. **pallasii** (Lehm.) W.W.Sm. & Forrest

A8 Artvin: Borçka, Düzenli, Verketil, open places, 2000 m, 08.07.2004, ÖE 7188.

Euro-Sib., Hcrp.

subsp. **pseudoelatior** (Kusn.) W.W.Sm. & Forrest

A8 Artvin: Borçka, Efeler, alpine vegetation, 2400 m, 11.06.2004, ÖE 7006.

VU, Eux. (mt), Hcrp.

subsp. **meyeri** (Rupr.) Valentine & Lamond

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2100 m, 08.07.2004, ÖE 7189.

Eux. (mt), Hcrp.

**P. megaseifolia** Boiss. & Ball ex. Boiss.

A8 Artvin: Borçka, Camili, *Picea orientalis* forest, 1550 m, 11.06.2004, ÖE 7007.

VU, Eux., Hcrp.

**P. longipes** Freyn & Sint.

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 3000 m, 23.06.2003, ÖE 6143.

Endemic, NT, Eux., Hcrp.

**P. auriculata** Lam.

A9 Artvin: Borçka, Mereta to Efeler, streamsides, damp places, 2350 m, 11.06.2004, ÖE 7008.

Ir-Tur., Hcrp.

**P. algida** Adams

A9 Artvin: Borçka, Mereta to Efeler, damp places, 2300 m, 11.06.2004, ÖE 7009.

Hcrp.

**Cyclamen coum** Mill. var. **coum**

A8 Artvin: Borçka, Camili, open places, 550 m, 06.06.2003, ÖE 6046.

Crp.

var. **caucasicum** (C.Koch) Meikle

A8 Artvin: Borçka, Maral, open places, 1100 m, 10.05.2004, ÖE 6781.

Crp.

**Lysimachia verticillaris** Spreng.

A8 Artvin: Borçka, Efeler, streamsides, 1300 m, 11.06.2004, ÖE 7010; A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 23.06.2003, ÖE 6144.

Hycr-Eux., Hcrp.

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

A8 Artvin: Borçka, Maral, roadsides, 1000 m, 23.06.2003, ÖE 6145; A8 Artvin: Borçka, Camili, open forest, 600 m, 11.06.2004, ÖE 7011.

Thp.

**EBENACEAE**

**Diospyros lotus** L.

A8 Artvin: Borçka, Camili, open forest, 400 m, 15.08.2003, ÖE 6570; A8 Artvin: Borçka, Maral, roadsides, 900 m, 22.08.2004, ÖE 7323.

Php.

**OLEACEAE**

*Fraxinus angustifolia* Vahl. subsp. *oxycarpa* (M.Bieb. ex Willd.) Franco & Rocha Afonso

A8 Artvin: Borçka, Efeler, streamsides, 1650 m, 07.09.2003, ÖE 6699; A8 Artvin: Borçka, Camili, 1200 m, 14.10.2003, ÖE 6740.

Euro-Sib., Php.

*Osmanthus decorus* (Boiss. & Ball) Kasapligil

A8 Artvin: Borçka, Düzenli, streamsides, 700 m, 23.06.2003, ÖE 6146.

VU, Eux., Chp.

**APOCYNACEAE**

*Vinca herbacea* Waldst. & Kit.

A8 Artvin: Borçka, Camili, open places, 1250 m, 19.04.2003, ÖE 5894.

Chp.

*V. major* L. subsp. *hirsuta* (Boiss.) Stearn

A8 Artvin: Borçka, Camili, open forest, 400 m, 25.05.2003, ÖE 5981.

Eux., Chp.

**ASCLEPIADACEAE**

*Periploca graeca* L. var. *graeca*

A9 Artvin: Borçka, Camili, open forest, 600 m, 27.05.2004, ÖE 6821.

E.Medit., Chp.

*Vincetoxicum scandens* Somm. & Lev.

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 11.07.2003, ÖE 6361.

Hcrp.

**GENTIANACEAE**

*Centaurium erythraea* Rafn subsp. *erythraea*

A8 Artvin: Borçka, Camili, in scrub, 1350 m, 11.06.2004, ÖE 7012; A8 Artvin: Borçka, Uğur, open forest, 700 m, 08.07.2004, ÖE 7190.

Euro-Sib., Crp.

*Gentiana asclepiadea* L.

A8 Artvin: Borçka, Efeler, damp places, 1850 m, 07.09.2003, ÖE 6700.

Euro-Sib., Hcrp.

*G. pyrenaica* L.

A9 Artvin: Borçka, Gorgit SNR, alpine vegetation, 2450 m, 11.07.2003, ÖE 6362.

Euro-Sib., Crp.

*G. septemfida* Pall.

A9 Artvin: Borçka, Gorgit SNR, alpine vegetation, 2450 m, 11.07.2003, ÖE 6363.

Hycr-Eux. (mt), Hcrp.

*G. verna* L. subsp. *pontica* (Soltok.) Hayek

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 25.05.2003, ÖE 5982.

Hycr-Eux. (mt), Hcrp.

*Gentianella ciliata* (L.) Borkh. subsp. *blepharophora* (Bordz.) Pritch.

A9 Artvin: Borçka, Efeler SNR, subalpine vegetation, 1900 m, 07.09.2003, ÖE 6701.

Hycr-Eux. (mt), Hcrp.

*G. caucasea* (Lodd. ex Sims) Holub

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2100 m, 15.08.2003, ÖE 6571.

Eux. (mt), Hcrp.

*Swertia iberica* Fisch. ex C.A.Mey.

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, damp place, 2000 m, 07.09.2003, ÖE 6702; A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 08.09.2005, AE 28.

Eux. (mt), Hcrp.

**CONVOLVULACEAE**

*Convolvulus cantabrica* L.

A8 Artvin: Borçka, Camili, roadsides, 450 m, 25.05.2003, ÖE 5983.

Chp.

*C. arvensis* L.

A9 Artvin: Borçka, Yıldız Lake, open places, 1850 m, 07.09.2003, ÖE 6703.

Cosm., Hcrp.

*Calystegia silvatica* (Kit.) Griseb.

A8 Artvin: Borçka, Düzenli, roadsides, 1500 m, 21.08.2003, ÖE 6650; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 28.07.2004, ÖE 7282.

Hcrp.

**CUSCUTACEAE**

*Cuscuta europaea* L.

A8 Artvin: Borçka, Maral, on *Sambucus*, 1550 m, 11.07.2003, ÖE 6364.

Hcrp.

*C. monogyna* Vahl subsp. *monogyna*

A9 Artvin: Borçka, Efeler SNR, on *Sambucus*, 1800 m, 29.07.2003, ÖE 6471.

Hcrp.

**BORAGINACEAE**

*Heliotropium ellipticum* Ledeb.

A8 Artvin: Borçka, Maral, stony places, 1100 m, 29.07.2003, ÖE 6472.

Ir-Tur., Thp.

*Asperugo procumbens* L.

A8 Artvin: Borçka, Efeler, roadsides, 800 m, 27.05.2004, ÖE 6822.

Euro-Sib., Thp.

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

A8 Artvin: Borçka, Kayalar, forest, 1250 m, 19.04.2003, ÖE 5895.

Euro-Sib., Thp.

*M. lazica* Popov

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 29.07.2003, ÖE 6473.

VU, Eux., Thp.

*M. sylvatica* Ehrh. ex Hoffm. subsp. *cyanea* Vestergr.

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2450 m, 11.07.2003, ÖE 6365.

Hcrp.

*M. alpestris* F.W.Schmidt subsp. *alpestris*

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 23.06.2003, ÖE 6147.

Crp.

*M. olympica* Boiss.

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 11.06.2004, ÖE 7013.

Eux. (mt), Crp.

*M. lithospermifolia* (Willd.) Hornem.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, stony places, 2100 m, 27.05.2004, ÖE 6823.

- Hcrp.  
**M. laxa** Lehm. subsp. **caespitosa** (C.F.Schultz) Hyl. ex Nordh.  
 A8 Artvin: Borçka, Maral, open places, 1050 m, 19.04.2003, ÖE 5896; A8 Artvin: Borçka, Efeler, damp meadows, 1550 m, 11.07.2003, ÖE 6366.  
 Thp.  
**M. sicula** Guss.  
 A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 08.07.2004, ÖE 7191.  
 Thp.  
**M. amoena** (Rupr.) Boiss.  
 A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 27.05.2004, ÖE 6824.  
 VU, Eux., Hcrp.  
**M. propinqua** Fisch. & C.A.Mey. ex DC.  
 A8 Artvin: Borçka, Düzenli, open forest, 1650 m, 11.06.2004, ÖE 7014.  
 Eux. (mt), Thp.  
**Omphalodes cappadocica** (Willd.) DC.  
 A8 Artvin: Borçka, Maral, mixed forest, 1100 m, 19.04.2003, ÖE 5897; A9 Artvin: Borçka, Düzenli, stony places, 850 m, 25.05.2003, ÖE 5984.  
 Eux., Hcrp.  
**Cynoglossum holosericeum** Steven  
 A8 Artvin: Borçka, Kayalar, forest, 1200 m, 11.07.2003, ÖE 6367.  
 VU, Eux. (mt), Hcrp.  
**C. creticum** Mill.  
 A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2050 m, 19.04.2003, ÖE 5898.  
 Hcrp.  
**C. germanicum** Jacq.  
 A8 Artvin: Borçka, Efeler, open places, 1550 m, 11.07.2003, ÖE 6368.  
 Euro-Sib., Hcrp.  
**C. montanum** L.  
 A8 Artvin: Borçka, Efeler, roadsides, 800 m, 27.05.2004, ÖE 6825.  
 Euro-Sib., Hcrp.  
**C. glochidiatum** Wall.  
 A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 06.06.2003, ÖE 6047.
- Eux., Thp.  
**Arnebia pulchra** (Roem. & Schultes) J.R.Edm.  
 A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 23.06.2003, ÖE 6148.  
 Hycr-Eux. (mt), Hcrp.  
**Lithospermum officinale** L.  
 A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 08.07.2004, ÖE 7192.  
 Euro-Sib., Crp.  
**L. purpureoeruleum** L.  
 A8 Artvin: Borçka, Maral, mixed forest, 1050 m, 25.05.2003, ÖE 5985.  
 Euro-Sib., Crp.  
**Buglossoides arvensis** (L.) Johnston  
 A8 Artvin: Borçka, Maral, stony places, 1650 m, 19.04.2003, ÖE 5899; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 25.05.2003, ÖE 5986.  
 Thp.  
**Echium russicum** J.F.Gmel.  
 A9 Artvin: Borçka, Efeler, subalpine vegetation, 1900 m, 11.07.2003, ÖE 6369.  
 Euro-Sib., Hcrp.  
**E. vulgare** L.  
 A9 Artvin: Borçka, open forest, 1950 m, 28.09.2003, ÖE 6730; A8 Artvin: Borçka, Düzenli, roadsides, 1550 m, 27.05.2004, ÖE 6826; A8 Artvin: Borçka, Camili, open forest, 400 m, 27.05.2004, ÖE 6827.  
 Euro-Sib., Hcrp.  
**Onosma sericeum** Willd.  
 A8 Artvin: Borçka, Camili, in scrub, 850 m, 19.04.2003, ÖE 5900; A8 Artvin: Borçka, Efeler, roadsides, 1000 m, 11.07.2003, ÖE 6370.  
 Ir-Tur., Hcrp.  
**Cerintho minor** L. subsp. **minor**  
 A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 08.07.2004, ÖE 7193.  
 Euro-Sib., Hcrp.  
**C. glabra** Mill.  
 A8 Artvin: Borçka, Kayalar, forest, 1800 m, 15.08.2003, ÖE 6572.  
 Euro-Sib., Hcrp.
- Symphytum asperum** Lepech.  
 A8 Artvin: Borçka, Efeler, streamsides, 1600 m, 25.05.2003, ÖE 5989; A8 Artvin: Borçka, Efeler, roadsides, 1550 m, 27.05.2004, ÖE 6829; A8 Artvin: Borçka, Efeler, *Picea orientalis* forest, 1850 m, 28.07.2004, ÖE 7283.  
 Hycr-Eux., Hcrp.  
**S. ibericum** Steven  
 A8 Artvin: Borçka, Efeler, roadsides, 1300 m, 25.05.2003, ÖE 5988.  
 Eux., Hcrp.  
**Trachystemon orientalis** (L.) G.Don  
 A8 Artvin: Borçka, Efeler, open forest, damp places, 1350 m, 10.05.2004, ÖE 6782.  
 Eux., Crp.  
**Brunnera macrophylla** (Adams) Johnston  
 A8 Artvin: Borçka, Efeler, open forest, 1800 m, 25.05.2003, ÖE 5990; A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 27.05.2004, ÖE 6830.  
 VU, Eux., Crp.  
**Anchusa azurea** Mill. var. **azurea**  
 A8 Artvin: Borçka, Düzenli, roadsides, 1100 m, 06.06.2003, ÖE 6048; A8 Artvin: Borçka, Maral, open places, 850 m, 23.06.2003, ÖE 6150.  
 Hcrp.  
**Pulmonaria dacica** Simonk.  
 A8 Artvin: Borçka, Maral, damp places, 900 m, 19.04.2003, ÖE 5902.  
 Euro-Sib., Crp.  
**Nonea versicolor** (Steven) Sweet  
 A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 11.06.2004, ÖE 7017; A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2500 m, 11.06.2004, ÖE 7018; A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 11.06.2004, ÖE 7019.  
 Eux. (mt), Thp.  
**N. intermedia** Ledeb.  
 A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 06.06.2003, ÖE 6049.  
 CR, Eux. Population of this taxon is low, Hcrp.

**SOLANACEAE**

**Solanum nigrum** L. subsp. **nigrum**

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 28.09.2003, ÖE 6731; A8 Artvin: Borçka, Düzenli, roadsides, damp places, 1500 m, 05.11.2003, ÖE 6748; A8 Artvin: Borçka, Camili, open forest, 400 m, 13.09.2004, ÖE 7366.

Cosm., Thp.

**S. dulcamara** L.

A8 Artvin: Borçka, Camili, open forest, 600 m, 22.08.2004, ÖE 7324; A8 Artvin: Borçka, Efeler, streamsides, 1300 m, 13.09.2004, ÖE 7367.

Euro-Sib., Widespread, Thp.

**Physalis alkekengi** L.

A8 Artvin: Borçka, Efeler, damp places, 1400 m, 07.10.2004, ÖE 7377.

Hcrp.

**Atropa belladonna** L.

A8 Artvin: Borçka, Düzenli, open forest, roadsides, 1550 m, 11.07.2003, ÖE 6371.

Euro-Sib., Hcrp.

**Datura stramonium** L.

A8 Artvin: Borçka, Maral, roadsides, 1050 m, 15.08.2003, ÖE 6573; A8 Artvin: Borçka, Düzenli, roadsides, 1100 m, 22.08.2004, ÖE 7325.

Cosm., Thp.

**Hyoscyamus niger** L.

A8 Artvin: Borçka, Efeler, roadsides, 1350 m, 11.06.2004, ÖE 7021.

Hcrp.

**SCROPHULARIACEAE**

**Verbascum pyramidatum** M.Bieb.

A8 Artvin: Borçka, Camili, in scrub, 1150 m, 15.08.2003, ÖE 6574.

Hycr-Eux., Hcrp.

**V. thapsus** L.

A8 Artvin: Borçka, Maral, forest, 800 m, 11.06.2004, ÖE 7022.

Euro-Sib., Hcrp.

**V. varians** Freyn & Sint. var. **varians**

A8 Artvin: Borçka, Maral, roadsides, 1100 m, 11.06.2004, ÖE 7023.

Hcrp.

**V. gnaphalodes** M.Bieb.

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 06.06.2003, ÖE 6051.

Eux., Hcrp.

**Scrophularia chrysantha** Jaub. & Spach

A9 Artvin: Borçka, Gorgit SNR, rocky places, 1850 m, 11.07.2003, ÖE 6372.

Eux., Hcrp.

**S. kotschyana** Benth.

A8 Artvin: Borçka, Düzenli, damp places, 1650 m, 25.05.2003, ÖE 5991.

Hcrp.

**S. ilwensis** C.Koch

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 11.06.2004, ÖE 7026.

Ir-Tur., Thp.

**S. scopolii** [Hoppe ex] Pers. var. **scopolii**

A8 Artvin: Borçka, Uğur, open forest, 700 m, 03.05.2003, ÖE 5912.

Hcrp.

**S. nodosa** L.

A8 Artvin: Borçka, Efeler, roadsides, 900 m, 11.07.2003, ÖE 6373.

Euro-Sib., Hcrp.

**S. umbrosa** Dum.

A8 Artvin: Borçka, Efeler, open forest, 1700 m, 11.06.2004, ÖE 7027; A8 Artvin: Borçka, Camili, open forest, 400 m, 08.07.2004, ÖE 7197.

Euro-Sib., Hcrp.

**S. olympica** Boiss.

A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 11.06.2004, ÖE 7028; A8 Artvin: Borçka, Maral, roadsides, 1900 m, 08.07.2004, ÖE 7198.

Eux., Hcrp.

**Linaria genistifolia** (L.) Mill. subsp. **confertiflora** (Boiss.) P.H.Davis

A8 Artvin: Borçka, Maral, roadsides, rocky places, 1750 m, 23.06.2003, ÖE 6152.

Endemic, LC, Ir-Tur., Hcrp.

**L. vulgaris** Mill.

A8 Artvin: Borçka, Kayalar, forest, 1600 m, 27.05.2004, ÖE 6834.

Hcrp.

**Digitalis ferruginea** L. subsp. **ferruginea**

A9 Artvin: Borçka, Gorgit SNR, mixed forest, roadsides, 1850 m, 11.07.2003, ÖE 6374; A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 08.07.2004, ÖE 7199.

Euro-Sib., Hcrp.

subsp. **schischkinii** (Ivan) Werner

A9 Artvin: Borçka, Efeler SNR, *Picea orientalis* forest, 1800 m, 15.08.2003, ÖE 6576.

Eux., Hcrp.

**Veronica monticola** Trautv.

A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 21.08.2003, ÖE 6651.

Eux. (mt), Hcrp.

**V. gentianoides** Vahl

A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2450 m, 15.08.2003, ÖE 6577; A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2250 m, 11.06.2004, ÖE 7029.

Hycr-Eux. (mt), Crp.

**V. serpyllifolia** L.

A9 Artvin: Borçka, Yıldız Lake, streamsides, 2200 m, 25.05.2003, ÖE 5914.

Chp.

**V. arvensis** L.

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 19.04.2003, ÖE 5872.

Euro-Sib., Thp.

**V. verna** L.

A9 Artvin: Borçka, Efeler SNR, forest to subalpine, 2100 m, 10.05.2004, ÖE 6783.

Euro-Sib., Thp.

**V. persica** Poir.

A8 Artvin: Borçka, Uğur, open forest, 700 m, 14.10.2003, ÖE 6741.

Thp.

**V. ceratocarpa** C.A.Mey.

A8 Artvin: Borçka, Efeler, open forest, 1500 m, 23.06.2003, ÖE 6153.

VU, Hycr-Eux., Thp.

**V. filiformis** Sm.

A9 Artvin: Borçka, Efeler SNR, streamsides, 1900 m, 27.05.2004, ÖE

6835; A8 Artvin: Borçka, Kayalar, forest, 1850 m, 11.07.2005, AE 12.

Hycr-Eux., Hcrp.

**V. anagalis-aquatica** L.

A8 Artvin: Borçka, Efeler, streamsides, 1350 m, 11.06.2004, ÖE 7030; A8 Artvin: Borçka, Camili, open forest, 400 m, 08.07.2004, ÖE 7200.

Widespread, Hcrp.

**V. beccabunga** L. subsp. **abscondita** M.A.Fisch.

A8 Artvin: Borçka, Düzenli, open forest, 1550 m, 25.05.2003, ÖE 5915; A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 10.05.2004, ÖE 6784.

Widespread, Crp.

**V. magna** M.A.Fisch.

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 06.06.2003, ÖE 6054.

Eux., Hcrp.

**V. liwanensis** C.Koch

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 08.07.2004, ÖE 7201.

VU, Eux., Hcrp.

**V. baranetzii** Bordz.

A9 Artvin: Borçka, Efeler SNR, subalpine vegetation, 2050 m, 11.07.2003, ÖE 6376.

Hycr-Eux., Hcrp.

**V. peduncularis** M.Bieb.

A9 Artvin: Borçka, Mereta to Efeler, open places, 2000 m, 11.07.2003, ÖE 6377.

Eux., Crp.

**V. officinalis** L.

A8 Artvin: Borçka, Efeler, mixed forest, 1750 m, 23.06.2003, ÖE 6154; A8 Artvin: Borçka, Düzenli, under forest, 1600 m, 08.07.2004, ÖE 7202.

Euro-Sib., Hcrp.

**Melampyrum arvense** L. var. **arvense**

A8 Artvin: Borçka, Efeler, meadows, 1550 m, 11.06.2004, ÖE 7032; A8 Artvin: Borçka, Camili, open forest, 400 m, 08.07.2004, ÖE 7203.

Euro-Sib., Thp.

var. **elatius** Boiss.

A8 Artvin: Borçka, Efeler, roadsides, 1200 m, 28.07.2004, ÖE 7286.

Endemic, NT, Eux., Thp.

**Euphrasia hirtella** Jord. ex Reut.

A8 Artvin: Borçka, Efeler, meadows, 1500 m, 15.08.2003, ÖE 6579.

Euro-Sib., Thp.

**E. pectinata** Ten.

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, damp places, 2400 m, 23.06.2003, ÖE 6155; A8 Artvin: Borçka, Kayalar, forest, 1800 m, 11.06.2004, ÖE 7033.

Euro-Sib., Widespread, Thp.

**E. petiolaris** Wettst.

A9 Artvin: Borçka, Efeler SNR, forest to subalpine, 1700 m, 11.07.2003, ÖE 6378.

Eux. (mt), Thp.

**E. lebardensis** Kem.-Nath.

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 23.06.2003, ÖE 6156.

Eux. (mt), Thp.

**Pedicularis caucasica** M.Bieb.

A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 25.05.2003, ÖE 5916.

Hycr-Eux. (mt), Hcrp.

**P. pontica** Boiss.

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 29.07.2003, ÖE 6475.

Eux., Hcrp.

**P. atropurpurea** Nordm.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 15.08.2003, ÖE 6580.

VU, Eux. (mt), Hcrp.

**P. wilhelmsiana** Fisch. ex M.Bieb.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 11.06.2004, ÖE 7034.

Eux. (mt), Hcrp.

**P. condensata** M.Bieb.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 11.07.2003, ÖE 6379.

Eux. (mt), Hcrp.

**P. nordmanniana** Bunge

A8 Artvin: Borçka, Efeler, alpine vegetation, 2300 m, 15.08.2003, ÖE 6581.

Eux. (mt), Hcrp.

**P. comosa** L. var. **sibthorpii** (Boiss.) Boiss.

A9 Artvin: Borçka, Efeler SNR, slopes, 1850 m, 11.06.2004, ÖE 7035; A8 Artvin: Borçka, Efeler, alpine vegetation, 2250 m, 08.07.2004, ÖE 7204.

Hcrp.

**Rhinanthus angustifolius** C.C.Gmel. subsp. **grandiflorus** (Wallr.) D.A.Webb

A8 Artvin: Borçka, Düzenli, meadows, 1600 m, 11.07.2003, ÖE 6380; A8 Artvin: Borçka, Efeler, meadows, 1300 m, 15.08.2003, ÖE 6582; A8 Artvin: Borçka, Efeler, meadows, 1550 m, 11.06.2004, ÖE 7036.

Thp.

**Rhynchocorys elephas** (L.) Griseb. subsp. **elephas**

A8 Artvin: Borçka, Düzenli, wet slopes, 1400 m, 15.08.2003, ÖE 6583; A9 Artvin: Borçka, Efeler SNR, open places, 1850 m, 11.06.2004, ÖE 7037.

Euro-Sib., Hcrp.

**R. stricta** (C.Koch) Albou

A8 Artvin: Borçka, Efeler, meadows, 1400 m, 15.08.2003, ÖE 6584.

Eux., Thp.

**Lathraea squamaria** L.

A8 Artvin: Borçka, Efeler, roadsides, 1550 m, 25.05.2003, ÖE 5917; A8 Artvin: Borçka, Camili, open forest, 400 m, 06.06.2003, ÖE 6055.

Euro-Sib., Hcrp.

## OROBANCHACEAE

**Orobanche bungeana** Beck

A8 Artvin: Borçka, Düzenli, roadsides, 1470 m, 11.06.2004, ÖE 7038.

Hycr-Eux., Vp.

**O. caryophyllacea** Sm.

A8 Artvin: Borçka, Efeler, roadsides, 1550 m, 11.07.2003, ÖE 6381.

Vp.

**O. elatior** Sutton

A8 Artvin: Borçka, Efeler, open places, on *Centaurea*, 1470 m, 11.06.2004, ÖE 7039.

Vp.

**VERBENACEAE**

***Verbena officinalis* L.**

A8 Artvin: Borçka, Efeler, streamsides, 1350 m, 11.06.2004, ÖE 7040; A8 Artvin: Borçka, Camili, open forest, 900 m, 28.07.2004, ÖE 7287.

Cosm., Hcrp.

**LABIATAE (LAMIACEAE)**

***Ajuga orientalis* L.**

A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2500 m, 11.07.2003, ÖE 6382; A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2450 m, 16.04.2004, ÖE 6761.

Crp.

***A. genevensis* L.**

A8 Artvin: Borçka, Efeler, open forest, 1300 m, 25.05.2003, ÖE 5918.

Euro-Sib., Crp.

***A. reptans* L.**

A8 Artvin: Borçka, Efeler, meadows, 1550 m, 25.05.2003, ÖE 5919.

Euro-Sib., Crp.

***Teucrium chamaedrys* L. subsp. *trapezunticum* Rech.f.**

A8 Artvin: Borçka, Efeler, open places, 1500 m, 11.07.2003, ÖE 6383; A9 Artvin: Borçka, Efeler SNR, open places, 1800 m, 07.09.2003, ÖE 6704.

Eux., Chp.

***T. polium* L.**

A8 Artvin: Borçka, Düzenli, open forest, 1700 m, 15.08.2003, ÖE 6584; A8 Artvin: Borçka, Camili, in scrub, 1200 m, 07.09.2003, ÖE 6705.

Widespread, Chp.

***Scutellaria albida* L. subsp. *colchica* (Rech.f.) J.R.Edm.**

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 11.07.2003, ÖE 6384; A8 Artvin: Borçka, Maral, rocky places, 1200 m, 11.07.2003, ÖE 6385.

Eux., Hcrp.

***S. pontica* C.Koch**

A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2400 m, 29.07.2003, ÖE 6476; A8 Artvin: Borçka, Maral, open places, 1100 m, 28.07.2004, ÖE 7288.

Eux. (mt), Hcrp.

***Phlomis pungens* Willd. var. *hirta* Velen.**

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 22.08.2004, ÖE 7326.

Hcrp.

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

A8 Artvin: Borçka, Efeler, in forest, 1600 m, 19.04.2003, ÖE 5873; A8 Artvin: Borçka, Uğur, open forest, 700 m, 10.05.2004, ÖE 6785.

Euro-Sib., Thp.

***L. album* L.**

A8 Artvin: Borçka, Camili, in scrub, 1050 m, 25.05.2003, ÖE 5920; A9 Artvin: Borçka, Efeler SNR, forest, 1800 m, 11.07.2003, ÖE 6386.

Euro-Sib., Hcrp.

***L. crinitum* Montbret & Aucher ex Benth.**

A8 Artvin: Borçka, Efeler, roadsides, 1200 m, 03.05.2003, ÖE 5903; A8 Artvin: Borçka, Maral, roadside, rocky places, 2000 m, 25.05.2003, ÖE 5921; A8 Artvin: Borçka, Kayalar, forest, 1600 m, 23.06.2003, ÖE 6157; A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2400 m, 11.07.2003, ÖE 6387.

Eux. (mt), Hcrp.

***Galeobdolon luteum* Huds. subsp. *montanum* (Pers.) R.B.Mill.**

A8 Artvin: Borçka, Camili, open forest, 400 m, 25.05.2003, ÖE 5922.

Hcrp.

***Galeopsis ladanum* L.**

A8 Artvin: Borçka, Efeler, dry soil, 1600 m, 11.07.2003, ÖE 6388.

Euro-Sib., Thp.

***G. bifida* Boenn.**

A8 Artvin: Borçka, Efeler SNR, roadsides, 1900 m, 15.08.2003, ÖE 6585; A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 21.08.2003, ÖE 6652; A8 Artvin: Borçka, Kayalar, forest, 1800 m, 13.09.2004, ÖE 7368.

Euro-Sib., Thp.

***Leonurus quinquelobatus* Gilib.**

A8 Artvin: Borçka, Camili, open forest, 800 m, 21.08.2003, ÖE 6653.

Euro-Sib., Hcrp.

***Ballota nigra* L. subsp. *nigra***

A8 Artvin: Borçka, Camili, in scrub, 1200 m, 13.09.2004, ÖE 7369.

Euro-Sib., Hcrp.

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

A8 Artvin: Borçka, Efeler, stony slopes, 1400 m, 11.07.2003, ÖE 6389; A8 Artvin: Borçka, Efeler, meadows, 1550 m, 29.07.2003, ÖE 6477.

Medit., Widespread, Thp.

***Stachys balansae* Boiss. & Kotschy. subsp. *balansae***

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 28.07.2004, ÖE 7289.

Hcrp.

***S. sylvatica* L.**

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 15.08.2003, ÖE 6586.

Euro-Sib., Hcrp.

***S. iberica* M.Bieb. subsp. *iberica* var. *iberica***

A8 Artvin: Borçka, Maral, rocky slopes, 1050 m, 23.06.2003, ÖE 6158.

Ir-Tur., Hcrp.

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

A9 Artvin: Borçka, Efeler SNR, forest to subalpine, 1100 m, 06.06.2003, ÖE 6056; A8 Artvin: Borçka, Efeler, meadows, 1550 m, 11.07.2003, ÖE 6390.

Widespread, Hcrp.

***S. macrantha* (C.Koch) Stearn**

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 15.08.2003, ÖE 6587; A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 07.09.2003, ÖE 6706.

Eux., Hcrp.

***Nepeta nuda* L. subsp. *nuda***

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 15.08.2003, ÖE 6588.

Hcrp.

- Glechoma hederacea** L.  
A8 Artvin: Borçka, Düzenli, roadsides, 1470 m, 25.05.2003, ÖE 5923; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 27.05.2004, ÖE 6836.  
Euro-Sib., Hcrp.
- Prunella vulgaris** L.  
A8 Artvin: Borçka, Maral, wet places, 1650 m, 11.06.2004, ÖE 7041; A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 08.07.2004, ÖE 7205.  
Euro-Sib., Widespread, Hcrp.
- P. laciniata** (L.) L.  
A8 Artvin: Borçka, Camili, open forest, 1250 m, 11.06.2004, ÖE 7042.  
Euro-Sib., Hcrp.
- Origanum rotundifolium** Boiss.  
A9 Artvin: Borçka, Uğur, roadsides, 950 m, 11.07.2003, ÖE 6391.  
Eux., Chp.
- O. vulgare** L. subsp. **vulgare**  
A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2250 m, 13.09.2004, ÖE 7370.  
Euro-Sib., Hcrp.  
subsp. **viride** (Boiss.) Hayek  
A8 Artvin: Borçka, Efeler, meadows, 1500 m, 28.07.2004, ÖE 7290.  
Hcrp.
- Satureja spicigera** (C.Koch) Boiss.  
A8 Artvin: Borçka, Efeler, rocky places, 400 m, 07.09.2003, ÖE 6707.  
Eux., Chp.
- Calamintha grandiflora** (L.) Moench  
A8 Artvin: Borçka, Düzenli, mixed forest, 1550 m, 15.08.2003, ÖE 6589; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 28.07.2004, ÖE 7291.  
Euro-Sib., Hcrp.
- Clinopodium vulgare** L. subsp. **vulgare**  
A9 Artvin: Borçka, Gorgit SNR, open forest, 1800 m, 07.09.2003, ÖE 6708; A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 28.07.2004, ÖE 7292; A8 Artvin: Borçka, Kayalar, forest, 1700 m, 13.09.2004, ÖE 7371.  
Euro-Sib., Hcrp.
- subsp. **arundanum** (Boiss.) Nyman  
A8 Artvin: Borçka, Camili, in scrub, 1350 m, 11.07.2003, ÖE 6392.  
Widespread, Hcrp.
- C. umbrosum** (M.Bieb.) C.Koch  
A8 Artvin: Borçka, Efeler, roadsides, 1100 m, 21.08.2003, ÖE 6654.  
Hycr-Eux., Hcrp.
- Thymus transcaucasicus** Ronniger  
A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2150 m, 23.06.2003, ÖE 6159; A8 Artvin: Borçka, Maral, stony slopes, 1700 m, 11.07.2003, ÖE 6393.  
VU, Chp.
- T. praecox** Opiz subsp. **grossheimii** (Ronniger) Jalas var. **grossheimii**  
A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 23.06.2003, ÖE 6160.  
Chp.
- T. pseudopulegioides** Klokov & Desj.-Shost.  
A8 Artvin: Borçka, Düzenli, Verketil, subalpine vegetation 2000 m, 15.08.2003, ÖE 6590; A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 22.08.2004, ÖE 7327.  
Chp.
- Mentha pulegium** L.  
A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2000 m, 15.08.2003, ÖE 6591.  
Hcrp.
- M. longifolia** (L.) Huds. subsp. **longifolia**  
A9 Artvin: Borçka, Efeler, streamsides, 1400 m, 11.07.2003, ÖE 6394; A8 Artvin: Borçka, Düzenli, marshes places, 1600 m, 07.09.2003, ÖE 6709.  
Eux., Crp.
- Lycopus europaeus** L.  
A8 Artvin: Borçka, Efeler, streamsides, 1350 m, 14.10.2003, ÖE 6742.  
Euro-Sib., Hcrp.
- Salvia sclarea** L.  
A8 Artvin: Borçka, Maral, roadsides, 980 m, 25.06.2003, ÖE 5924; *ibid.*, 11.07.2003, ÖE 6396; A8 Artvin: Borçka, Kayalar, forest, 1000 m, 08.07.2004, ÖE 7206.  
Hcrp.
- S. glutinosa** L.  
A9 Artvin: Borçka, Yıldız Lake, roadsides, 1900 m, 07.09.2003, ÖE 6710.  
Hycr-Eux., Hcrp.
- S. verticillata** L. subsp. **verticillata**  
A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 06.06.2003, ÖE 6057; A8 Artvin: Borçka, Efeler, in scrub, 1550 m, 11.07.2003, ÖE 6397; A8 Artvin: Borçka, Maral, roadsides, 1100 m, 15.08.2003, ÖE 6592; A8 Artvin: Borçka, Efeler, roadsides, 800 m, 22.08.2004, ÖE 7328.  
Euro-Sib., Hcrp.
- PLANTAGINACEAE**  
**Plantago major** L. subsp. **major**  
A8 Artvin: Borçka, Maral, streamsides, 1100 m, 11.07.2003, ÖE 6398.  
Hcrp.
- P. lanceolata** L.  
A8 Artvin: Borçka, Maral, open places, 1100 m, 27.05.2004, ÖE 6837; A9 Artvin: Borçka, Gorgit SNR, Efeler, alpine vegetation, 2400 m, 14.10.2003, ÖE 6743; A9 Artvin: Borçka, Gorgit SNR, *Pinus sylvestris* forest, 1800 m, 28.07.2004, ÖE 7293.  
Hcrp.
- THYMELAEACEAE**  
**Daphne mezereum** L.  
A9 Artvin: Borçka, Efeler SNR, subalpine vegetation, 1950 m, 11.06.2004, ÖE 7043.  
Euro-Sib., Chp.
- D. glomerata** Lam.  
A9 Artvin: Borçka, Mereta to Efeler, subalpine vegetation, 2250 m, 23.06.2003, ÖE 6161; A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 2200 m, 11.06.2004, ÖE 7044.  
Eux., Chp.
- SANTALACEAE**  
**Thesium arvense** Horv.  
A8 Artvin: Borçka, Uğur, open forest, 700 m, 27.05.2004, ÖE 6838.  
Euro-Sib., Hcrp.
- T. alpinum** L.  
A8 Artvin: Borçka, Kayalar, forest, 1800 m, 17.05.2005, AE 2.  
Euro-Sib., Hcrp.



**LORANTHACEAE**

*Arceuthobium oxycedri* (DC.) M.Bieb.

A8 Artvin: Borçka, Efeler, on *Juniperus*, 1550 m, 11.07.2003, ÖE 6399.

Chp.

*Viscum album* L. subsp. *album*

A8 Artvin: Borçka, Camili, on *Prunus*, 1250 m, 28.09.2003, ÖE 6732; A8 Artvin: Borçka, Efeler, on *Pinus*, 800 m, 22.08.2004, ÖE 7329.

Vp.

**ARISTOLOCHIACEAE**

*Asarum europaeum* L.

A8 Artvin: Borçka, Maral, forest, 700 m, 19.04.2003, ÖE 5874; A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 19.04.2003, ÖE 5875.

Euro-Sib., Crp.

*Aristolochia iberica* Fisch. & C.A.Mey. ex. Boiss.

A8 Artvin: Borçka, Camili, mixed forest, damp places, 550 m, 15.08.2003, ÖE 6593.

VU, Eux., Chp.

**EUPHORBIACEAE**

*Mercurialis annua* L.

A8 Artvin: Borçka, Kayalar, forest, 1100 m, 03.05.2003, ÖE 5904.

Thp.

*M. perennis* L.

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 21.03.2003, ÖE 5867.

Euro-Sib., Crp.

*Euphorbia peplis* L.

A8 Artvin: Borçka, Camili, open places, 450 m, 11.06.2004, ÖE 7046.

Medit., Thp.

*E. squamosa* Willd.

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 06.06.2003, ÖE 6058.

Hycr-Eux., Hcrp.

*E. wittmannii* Boiss.

A8 Artvin: Borçka, Camili, open places, 1100 m, 27.05.2004, ÖE 6839; A8 Artvin: Borçka, Maral, open places, 1000 m, 11.06.2004, ÖE 7047.

Eux., Hcrp.

*E. stricta* L.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 23.06.2003, ÖE 6162; A9 Artvin: Borçka, Efeler SNR, open places, 1950 m, 23.06.2003, ÖE 6163; A8 Artvin: Borçka, Kayalar, open places, 1850 m, 23.06.2003, ÖE 6164.

Euro-Sib., Thp.

*E. helioscopia* L.

A8 Artvin: Borçka, Maral, open places, 1200 m, 25.05.2003, ÖE 5925; A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 11.06.2004, ÖE 7048.

Thp.

*E. oblongifolia* (C.Koch) C.Koch

A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 27.05.2004, ÖE 6840; A8 Artvin: Borçka, Maral, open places, 1100 m, 11.06.2004, ÖE 7049.

Eux., Crp.

**BUXACEAE**

*Buxus sempervirens* L.

A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2100 m, 15.08.2003, ÖE 6594.

Euro-Sib., Php.

**EMPETRACEAE**

*Empetrum nigrum* L. subsp. *hermaphroditum* (Hagerup) Böcher

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 2300 m, 26.06.2005, AE 10.

Chp.

**URTICACEAE**

*Urtica dioica* L.

A8 Artvin: Borçka, Maral, roadsides, stony places, 1550 m, 15.08.2003, ÖE 6595.

Euro-Sib., Hcrp.

**MORACEAE**

*Ficus carica* L. subsp. *carica*

A8 Artvin: Borçka, Maral, in gardens, 600 m, 23.06.2003, ÖE 6165; A8 Artvin: Borçka, Camili, open forest, 400 m, 11.06.2004, ÖE 7050; *ibid.*, 28.07.2004, ÖE 7294; A8 Artvin: Borçka, Efeler, in gardens, 600 m, 26.06.2005, AE 11.

Php.

**ULMACEAE**

*Ulmus glabra* Huds.

A8 Artvin: Borçka, Efeler, in forest, streamsides, 1750 m, 19.04.2003, ÖE 5876.

Euro-Sib., Php.

**JUGLANDACEAE**

*Juglans regia* L.

A8 Artvin: Borçka, Efeler, streamsides, 1360 m, 29.07.2003, ÖE 6478; A8 Artvin: Borçka, Maral, streamsides, 1100 m, 07.09.2003, ÖE 6711.

Php.

**FAGACEAE**

*Fagus orientalis* Lipsky

A8 Artvin: Borçka, Düzenli, Verketil, with *Abies nordmanniana*, 1800 m, 11.07.2003, ÖE 6401; A8 Artvin: Borçka, Efeler, roadsides, 1200 m, 08.07.2004, ÖE 7208.

Euro-Sib., Php.

*Castanea sativa* Mill.

A8 Artvin: Borçka, Efeler, forest, 800 m, 23.06.2003, ÖE 6166.

Euro-Sib., Php.

*Quercus pontica* C.Koch

A8 Artvin: Borçka, Düzenli, open forest, 900 m, 23.06.2003, ÖE 6167.

VU, Eux., Chp.

*Q. hartwissiana* Steven

A8 Artvin: Borçka, Efeler, streamsides, 1300 m, 15.08.2003, ÖE 6596.

Eux., Php.

*Q. petraea* (Matt.) Liebl. subsp. *iberica* (Steven ex. M.Bieb.) Krassiln.

A8 Artvin: Borçka, Camili, mixed forest, 1200 m, 28.07.2004, ÖE 7295.

Php.

**CORYLACEAE**

*Carpinus betulus* L.

A8 Artvin: Borçka, Efeler, mixed forest, 1650 m, 23.06.2003, ÖE 6168.

Euro-Sib., Php.

*C. orientalis* Mill. subsp. *orientalis*

A9 Artvin: Borçka, Düzenli, *Quercus* forest, 600 m, 23.06.2003, ÖE 6169.

Php.

*Ostrya carpinifolia* Scop.

A8 Artvin: Borçka, Maral, *Quercus* forest, 950 m, 15.08.2003, ÖE 6597; A8 Artvin: Borçka, Efeler, forest, 1650 m, 28.09.2003, ÖE 6733.

Medit., Php.

*Corylus avellana* L. var. *avellana*

A8 Artvin: Borçka, Maral, in scrub, 1150 m, 11.06.2004, ÖE 7051.

Euro-Sib., Chp.

var. *pontica* (C.Koch) Winkler

A8 Artvin: Borçka, Efeler, mixed forest, 1370 m, 28.07.2004, ÖE 7296.

Eux., Chp.

**BETULACEAE**

*Betula medwedewii* Regel

A8 Artvin: Borçka, Düzenli, Mahmudikaya, forest, 1900 m, 25.05.2003, ÖE 5927; A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 08.07.2004, ÖE 7209.

Eux., Php.

*B. pendula* Roth

A8 Artvin: Borçka, Kayalar, forest, 1800 m, 11.06.2004, ÖE 7052.

Php.

*B. litwinowii* Doluch.

A8 Artvin: Borçka, Efeler SNR, forest, 1950 m, 06.06.2003, ÖE 6059.

Eux., Php.

*B. recurvata* (L.V.Vassil.) A.V.Vassil.

A9 Artvin: Borçka, Yıldız Lake, open forest, 1900 m., 23.06.2003, ÖE 6170; A8 Artvin: Borçka, Kayalar, forest, 11.06.2004, ÖE 7053.

Eux., Php.

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

A8 Artvin: Borçka, Camili, streamsides, 400 m, 06.06.2003, ÖE 6060; A8 Artvin: Borçka, Efeler, by streams, 1600 m., 23.06.2003, ÖE 6171.

Eux., Php.

**SALICACEAE**

*Salix alba* L.

A8 Artvin: Borçka, Maral, streamsides, 950 m, 11.06.2004, ÖE 7054; A8 Artvin:

Borçka, Efeler, streamsides, 1450 m, 06.06.2003, ÖE 6061.

Euro-Sib., Php.

*S. caucasica* Andersson

A8 Artvin: Borçka, Maral, mixed forest, 1600 m, 11.06.2004, ÖE 7055.

VU, Eux., Chp.

*S. caprea* L.

A8 Artvin: Borçka, Efeler, forest, 1350 m, 07.09.2003, ÖE 6712; A8 Artvin: Borçka, Maral, mixed forest, 1600 m, 07.09.2003, ÖE 6713; A8 Artvin: Borçka, Kayalar, roadsides, 1800 m, 22.08.2004, ÖE 7330.

Euro-Sib., Php.

*S. pseudomedemii* E.Wolf

A9 Artvin: Borçka, Efeler SNR, streamsides, 1870 m, 11.06.2004, ÖE 7056.

Eux., Widespread, Php.

*Populus tremula* L.

A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1900 m, 07.09.2003, ÖE 6714; A8 Artvin: Borçka, Efeler, open forest, 1400 m, 14.10.2003, ÖE 6744; A8 Artvin: Borçka, Kayalar, streamside, 1270 m, 11.06.2004, ÖE 7058.

Euro-Sib., Widespread, Php.

**RUBIACEAE**

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

A8 Artvin: Borçka, Maral, stony places, 1100 m, 15.08.2003, ÖE 6599.

Eux., Chp.

*Asperula laxiflora* Boiss.

A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2250 m, 11.07.2003, ÖE 6402.

Eux. (mt), Chp.

*A. taurina* L. subsp. *caucasica* (Pobed.) Ehrend.

A9 Artvin: Borçka, Beyazsu Yaylası, alpine vegetation, 2000 m, 23.06.2003, ÖE 6172.

Hycr-Eux., Crp.

*A. orientalis* Boiss. & Hohen.

A8 Artvin: Borçka, Efeler, roadsides, 1550 m, 23.06.2003, ÖE 6173; A8 Artvin: Borçka, Kayalar, forest, 1800 m, 11.07.2003, ÖE 6403.

Ir-Tur., Thp.

*Galium rotundifolium* L.

A9 Artvin: Borçka, Gorgit SNR, mixed forest, 1750 m, 15.08.2003, ÖE 6600.

Euro-Sib., Crp.

*G. odoratum* (L.) Scop.

A9 Artvin: Borçka, Yıldız Lake, open places, 2050 m, 11.06.2004, ÖE 7060.

Euro-Sib., Crp.

*G. uliginosum* L.

A8 Artvin: Borçka, Düzenli, Verketil, slopes, 2050 m, 15.08.2003, ÖE 6601.

VU, Euro-Sib. Hcrp.

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

A9 Artvin: Borçka, Efeler SNR, open places, 1850 m, 15.08.2003, ÖE 6602; A9 Artvin: Borçka, Yıldız Lake, subalpine vegetation, 1950 m, 08.07.2004, ÖE 7210.

Euro-Sib., Hcrp.

*G. album* Mill. subsp. *prusense* (C.Koch) Ehrend. & Krendl

A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 28.07.2004, ÖE 7297.

Crp.

*G. spurium* L. subsp. *spurium*

A8 Artvin: Borçka, Kayalar, forest, 1500 m, 11.06.2004, ÖE 7061.

Euro-Sib., Thp.

*G. aparine* L.

A8 Artvin: Borçka, Efeler, in scrub, 1400 m, 25.05.2003, ÖE 5928.

Thp.

*Cruciata laevipes* Opiz

A8 Artvin: Borçka, Düzenli, meadows, 1600 m, 11.07.2003, ÖE 6404.

Euro-Sib., Hcrp.

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

A8 Artvin: Borçka, Düzenli, Verketil, alpine vegetation, 2000 m, 08.07.2004, ÖE 7211.

Ir-Tur., Widespread, Chp.

*Rubia tinctorum* L.

A8 Artvin: Borçka, Düzenli, open forest, 1700 m, 15.08.2003, ÖE 6603.

Ir-Tur., Widespread, Crp.

**MONOCOTYLEDONEAE**

**ALISMATACEAE**

***Alisma plantago-aquatica* L.**

A8 Artvin: Borçka, Camili, streamsides, 400 m, 23.06.2003, ÖE 6174; A8 Artvin: Borçka, Düzenli, lakesides, 1550 m, 11.07.2003, ÖE 6405.

Euro-Sib., Hcrp.

**ARACEAE**

***Arum maculatum* L.**

A8 Artvin: Borçka, Düzenli, forest, 900 m, 19.04.2003, ÖE 5877.

Crp.

**LILIACEAE**

***Smilax excelsa* L.**

A8 Artvin: Borçka, Camili, mixed forest, 1150 m, 14.10.2003, ÖE 6745.

Eux., Chp.

***Ruscus colchicus* Yeo**

A8 Artvin: Borçka, Uğur, open forest, 700 m, 25.05.2003, ÖE 5929.

VU, Eux., Crp.

***Polygonatum verticillatum* (L.) All.**

A9 Artvin: Borçka, Fındık Yaylası, alpine vegetation, 2400 m, 11.06.2004, ÖE 7062.

Euro-Sib., Crp.

***P. orientale* Desf.**

A8 Artvin: Borçka, Efeler, mixed forest, 1300 m, 25.05.2003, ÖE 5930; A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 06.06.2003, ÖE 6062.

Eux., Crp.

***P. multiflorum* (L.) All.**

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 27.05.2004, ÖE 6841.

Crp.

***Asphodeline lutea* (L.) Reichb.**

A8 Artvin: Borçka, Kayalar, rocky places, 1000 m, 25.05.2003, ÖE 5933; A8 Artvin: Borçka, Efeler, rocky slopes, 700 m, 11.06.2004, ÖE 7063.

Ir-Tur., Crp.

***Allium szovitsii* Regel**

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 25.05.2003, ÖE 5931.

Eux. (mt), Crp.

***A. rupestre* Steven**

A8 Artvin: Borçka, Düzenli, Mahmudikaya, slopes, 1900 m, 27.05.2004, ÖE 6842.

Eux., Crp.

***A. scorodoprasum* L. subsp. *rotundum* (L.) Stearn**

A8 Artvin: Borçka, Camili, open places, 550 m, 25.05.2003, ÖE 5932; A8 Artvin: Borçka, Camili, open forest, 750 m, 06.06.2003, ÖE 6063.

Medit., Widespread, Crp.

***Scilla winogradowii* Sosn.**

A8 Artvin: Borçka, Efeler, alpine vegetation, 2350 m, 27.05.2004, ÖE 6843; A9 Artvin: Borçka, Efeler SNR, subalpine vegetation, streamsides, 1900 m, 11.06.2004, ÖE 7064.

Eux., Crp.

***S. siberica* Haw. subsp. *armena* (Grossh.) Mordak**

A8 Artvin: Borçka, Efeler, alpine vegetation, 2200 m, 19.04.2003, ÖE 5878; A8 Artvin: Borçka, Kayalar, alpine vegetation, 2150 m, 27.05.2004, ÖE 6844.

Ir-Tur., Crp.

***Ornithogalum narbonense* L.**

A8 Artvin: Borçka, Efeler, slopes, 800 m, 03.05.2003, ÖE 5905; A8 Artvin: Borçka, Camili, open places, 1200 m, 23.06.2003, ÖE 6175.

Medit., Widespread, Crp.

***O. olygophyllum* E.D.Clarke**

A8 Artvin: Borçka, Efeler Yaylası, alpine vegetation, 2250 m, 27.05.2004, ÖE 6845.

Crp.

***O. platyphyllum* Boiss.**

A8 Artvin: Borçka, Düzenli, slopes, 900 m, 06.06.2003, ÖE 6064; A8 Artvin: Borçka, Uğur, open forest, 700 m, 27.05.2004, ÖE 6846.

Ir-Tur., Crp.

***Muscari armeniacum* Leichtlin ex Baker**

A8 Artvin: Borçka, Uğur, open forest, 1200 m, 27.05.2004, ÖE 6847.

Widespread, Crp.

***M. neglectum* Guss.**

A9 Artvin: Borçka, Gorgit SNR, forest, 1800 m, 25.05.2003, ÖE 5934.

Widespread, Crp.

***Lilium carnolicum* Bernh. ex W.Koch subsp. *ponticum* (C.Koch) P.H.Davis & Hend. var. *ponticum***

A8 Artvin: Borçka, Efeler SNR, open forest, 1800 m, 27.05.2004, ÖE 6848.

VU, Eux., Crp.

***L. kesselringianum* Misch.**

A9 Artvin: Borçka, Gorgit SNR, open forest, 1950 m, 23.06.2003, ÖE 6176; A9 Artvin: Borçka, Yıldız Lake, with *Rhododendron caucasicum* and *Vaccinium myrtillus*, 1900 m, 08.07.2004, ÖE 7212.

VU, Eux., Crp.

***Fritillaria latifolia* Willd.**

A8 Artvin: Borçka, Kayalar, alpine slopes, 1800 m, 23.06.2003, ÖE 6177.

Eux. (mt), Crp.

***Gagea tenuissima* Misch.**

A8 Artvin: Borçka, Camili, open forest, 400 m, 06.06.2003, ÖE 6065.

Endemic, CR, Eux., Crp.

***G. fistulosa* Ker Gawl.**

A8 Artvin: Borçka, Kayalar, open places, 1800 m, 21.03.2003, ÖE 5868; A8 Artvin: Borçka, Efeler, open places, 1350 m, 19.04.2003, ÖE 5879; A9 Artvin: Borçka, Efeler SNR, open places, 1850 m, 23.06.2003, ÖE 6178.

Crp.

***G. glacialis* C.Koch**

A8 Artvin: Borçka, Efeler, alpine vegetation, 2300 m, 08.07.2004, ÖE 7213.

Ir-Tur., Crp.

***Veratrum album* L.**

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2300 m, 15.08.2003, ÖE 6604; A9 Artvin: Borçka, Fındık Yaylası, open places, 1950 m, 08.07.2004, ÖE 7214.

Euro-Sib., Crp.

***Colchicum umbrosum* Steven**

A8 Artvin: Borçka, Camili, open forest, 400 m, 25.05.2003, ÖE 5935; A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation,

2200 m, 16.04.2004, ÖE 6762; A8 Artvin: Borçka, Uğur, open forest, 700 m, 27.05.2004, ÖE 6849.

Eux., Crp.

*C. speciosum* Steven

A8 Artvin: Borçka, Düzenli, Mahmudikaya, alpine vegetation, 2250 m, 14.10.2003, ÖE 6746.

Hycr-Eux., Crp.

*Paris incompleta* M.Bieb.

A8 Artvin: Borçka, Uğur, open forest, 700 m, 27.05.2004, ÖE 6850.

VU, Eux., Crp.

#### AMARYLLIDACEAE

*Galanthus woronowii* Losink.

A9 Artvin: Borçka, Camili, open places, 550 m, 23.06.2003, ÖE 6179; A8 Artvin: Borçka, Kayalar, forest, 1850 m, 11.07.2003, ÖE 6406.

VU, Crp.

#### IRIDACEAE

*Iris caucasica* Hoffm. subsp. *caucasica*

A9 Artvin: Borçka, Yıldız Lake, alpine vegetation, 2400 m, 16.04.2004, ÖE 6763.

VU, Euro-Sib., Crp.

*Crocus scharojanii* Rupr.

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2300 m, 11.06.2004, ÖE 7065.

VU, Eux., Hcrp.

*C. vallicola* Herbert

A8 Artvin: Borçka, Düzenli, Verketil, alpine slopes, 1900 m, 13.09.2004, ÖE 7372.

Eux., Crp.

*C. kotschyanus* C.Koch. subsp. *suworowianus* (C.Koch) Mathew

A9 Artvin: Borçka, Mereta to Efeler, alpine vegetation, 2400 m, 14.10.2003, ÖE 6747.

Crp.

*Gladiolus atroviolaceus* Boiss.

A9 Artvin: Borçka, Gorgit SNR, open places, 1950 m, 11.07.2003, ÖE 6407.

Ir-Tur., Crp.

#### ORCHIDACEAE

*Listera ovata* (L.) R.Br.

A8 Artvin: Borçka, Uğur, open forest, 700 m, 27.05.2004, ÖE 6851.

Euro-Sib., Crp.

*L. cordata* (L.) R.Br.

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 06.06.2003, ÖE 6066.

VU, Crp.

*Neottia nidus-avis* (L.) L.C.M.Richard

A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slope, 1900 m, 06.06.2003, ÖE 6067.

Euro-Sib., Crp.

*Cephalanthera longifolia* (L.) Fritsch

A8 Artvin: Borçka, Maral, forest, 700 m, 06.06.2003, ÖE 7066.

Euro-Sib., Crp.

*Epipactis persica* ([Hauskn. ex] Soó) Nannfeldt

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 11.06.2004, ÖE 7066.

Widespread, Crp.

*E. microphylla* (Ehrh.) Sw.

A8 Artvin: Borçka, Kayalar, forest, 1600 m, 06.06.2003, ÖE 7106.

Euro-Sib., Crp.

*Limodorum abortivum* (L.) Sw.

A9 Artvin: Borçka, Gorgit SNR, *Abies* forest, 1700 m, 23.06.2003, ÖE 6180.

Widespread, Crp.

*Gymnadenia conopsea* (L.) R.Br.

A8 Artvin: Borçka, Kayalar, forest, 1700 m, 11.07.2003, ÖE 6408.

Euro-Sib., Crp.

*Platanthera bifolia* (L.) Rich.

A9 Artvin: Borçka, Mereta to Efeler, open slope, 1400 m, 06.06.2003, ÖE 6069.

Euro-Sib., Crp.

*P. chlorantha* (Custer) Reichb.

A8 Artvin: Borçka, Efeler, open forest, 1450 m, 23.06.2003, ÖE 6181.

Medit., Widespread, Crp.

*Coeloglossum viride* (L.) Hartm.

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 08.07.2004, ÖE 7215.

Crp.

*Anacamptis pyramidalis* (L.) Rich.

A8 Artvin: Borçka, Kayalar, forest, 1700 m, 10.05.2004, ÖE 6786.

Medit., Widespread, Crp.

*Orchis purpurea* Huds.

A8 Artvin: Borçka, Efeler, open forest, 1400 m, 10.05.2004, ÖE 6787; A8 Artvin: Borçka, Düzenli, meadows, 1650 m, 27.05.2004, ÖE 6852.

Euro-Sib., Crp.

*O. palustris* Jacq.

A8 Artvin: Borçka, Düzenli, Mahmudikaya, slopes, 1900 m, 16.04.2004, 6764.

Medit., Widespread, Crp.

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

A8 Artvin: Borçka, Düzenli, forest margins, 1600 m, 11.06.2004, ÖE 7067.

Eux., Crp.

*D. saccifera* (Brongn.) Soó

A8 Artvin: Borçka, Efeler, meadows, 1550 m, 08.07.2004, ÖE 7216.

E. Medit., Crp.

*D. urvilleana* (Steud.) H.Baumann & Künkele

A9 Artvin: Borçka, Mereta to Efeler, alpine pastures, 2300 m, 11.07.2003, ÖE 6409.

Eux., Crp.

*D. euxina* (Nevski) H.Baumann & Künkele var. *euxina*

A9 Artvin: Borçka, Yıldız Lake, meadows, 2000 m, 29.07.2003, ÖE 6479.

Eux., Crp.

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

A8 Artvin: Borçka, Efeler, alpine pastures, 2450 m, 23.06.2003, ÖE 6182.

Eux., Crp.

*D. umbrosa* (Kar. & Kir.) Nevski

A8 Artvin: Borçka, Efeler, meadows, 1650 m, 11.06.2004, ÖE 7068; A9 Artvin:

Borçka, Efeler SNR, alpine meadows, 1950 m, 11.06.2004, ÖE 7069.

Ir-Tur., Crp.

**DIOSCOREACEAE**

**Tamus communis** L. subsp. *communis*

A8 Artvin: Borçka, Maral, mixed forest, 1250 m, 11.06.2004, ÖE 7070.

Crp.

**SPARGANIACEAE**

**Sparganium emersum** Rehmman

A8 Artvin: Borçka, Maral, marshes, 1550 m, 11.07.2003, ÖE 6410.

Crp.

**JUNACEAE**

**Juncus inflexus** L.

A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 23.06.2003, ÖE 6183.

Widespread, Hcrp.

**J. effusus** L.

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 03.05.2003, ÖE 5906; A9 Artvin: Borçka, Gorgit SNR, damp places, 1850 m, 25.05.2003, ÖE 5936.

Cosm., Hcrp.

**J. filiformis** L.

A9 Artvin: Borçka, Efeler SNR, damp places, 2100 m, 11.06.2004, ÖE 7071.

Crp.

**J. bufonius** L.

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 25.05.2003, ÖE 5937.

Cosm., Thp.

**J. alpigenus** C.Koch

A9 Artvin: Borçka, Efeler SNR, damp places, 1900 m, 23.06.2003, ÖE 6184.

Hcrp.

**Luzula forsteri** (Sm.) DC.

A9 Artvin: Borçka, Mereta to Efeler, damp places, 2350 m, 27.05.2004, ÖE 6853.

Euro-Sib., Widespread, Hcrp.

**L. sylvatica** (Huds.) Gaudin

A8 Artvin: Borçka, Efeler, roadsides, 900 m, 06.06.2003, ÖE 6070.

Euro-Sib., Crp.

**L. spicata** (L.) DC.

A8 Artvin: Borçka, Kayalar, forest, 1500 m, 03.05.2003, ÖE 5907.

Hcrp.

**L. pseudosudetica** (V.I.Krecz.) V.I.Krecz. apud V.I.Krecz. & Gonthsch.

A9 Artvin: Borçka, Yıldız Lake, alpine meadows, 2400 m, 11.06.2004, ÖE 7072.

Eux. (mt), Crp.

**L. campestris** (L.) DC.

A8 Artvin: Borçka, Maral, *Abies* forest, 1650 m, 11.07.2003, ÖE 6411.

Euro-Sib., Hcrp.

**CYPERACEAE**

**Cyperus serotinus** Rottb.

A9 Artvin: Borçka, Efeler, forest margins, 600 m, 03.05.2003, ÖE 5908; A8 Artvin: Borçka, Camili, open forest, 400 m, 15.08.2003, ÖE 6605.

Crp.

**Eleocharis palustris** (L.) Roemer & Schultes

A9 Artvin: Borçka, Düzenli, wet places, 2400 m, 06.06.2003, ÖE 6071; A8 Artvin: Borçka, Camili, streamsides, 500 m, 21.08.2003, ÖE 6655.

Widespread, Crp.

**Scirpus sylvaticus** L.

A8 Artvin: Borçka, Düzenli, lakesides, 1600 m, 10.06.2005, AE 5.

Crp.

**Carex appropinquata** Schumacher

A9 Artvin: Borçka, Mereta to Efeler, wet places, 1700 m, 11.07.2003, ÖE 6412; A9 Artvin: Borçka, Beyazsu Yaylası, wet places, 1800 m, 11.06.2004, ÖE 7073; *Ibid.*, 11.06.2004, ÖE 7074.

Euro-Sib., Crp.

**C. spicata** Huds.

A9 Artvin: Borçka, Yıldız Lake, wet places, 2400 m, 23.06.2003, ÖE 6185.

Euro-Sib., Crp.

**C. divisa** Huds.

A9 Artvin: Borçka, Yıldız Lake, wet places, 1900 m, 11.06.2004, ÖE 7075.

Euro-Sib., Widespread, Crp.

**C. echinata** Murray

A9 Artvin: Borçka, Yıldız Lake, marshy slopes, 2400 m, 06.06.2003, ÖE 6072.

Euro-Sib., Crp.

**C. canescens** L.

A8 Artvin: Borçka, Düzenli, wet places, 1550 m, 11.07.2003, ÖE 6413.

Euro-Sib., Crp.

**C. rostrata** Stokes apud With.

A8 Artvin: Borçka, Düzenli, lakesides, 1550 m, 11.07.2003, ÖE 6414.

Euro-Sib., Crp.

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

A9 Artvin: Borçka, Efeler SNR, shady places, 1850 m, 23.06.2003, ÖE 6186; A8 Artvin: Borçka, Düzenli, Mahmudikaya, forest, 1900 m, 11.06.2004, ÖE 7076.

Euro-Sib., Crp.

**C. digitata** L.

A8 Artvin: Borçka, Kayalar, forest, 1600 m, 11.06.2004, ÖE 7077.

Eux., Crp.

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

A8 Artvin: Borçka, Efeler, alpine meadows, 2300 m, 23.06.2003, ÖE 6187.

Euro-Sib. (mt), Crp.

**C. caucasica** Steven

A9 Artvin: Borçka, Mereta to Efeler, alpine meadows, 2300 m, 23.06.2003, ÖE 6188.

Crp.

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

A9 Artvin: Borçka, Mereta to Efeler, wet places, 2300 m, 23.06.2003, ÖE 6189; A9 Artvin: Borçka, Beyazsu Yaylası, wet places, 2000 m, 27.05.2004, ÖE 6855.

Eux., Crp.

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

A9 Artvin: Borçka, Mereta to Efeler, alpin meadows, 2500 m, 23.06.2003, ÖE 6190.

Eux., Crp.

- GRAMINEAE (POACEAE)**
- Brachypodium sylvaticum** (Huds.) P.Beauv.  
A8 Artvin: Borçka, Maral, meadows, 1650 m, 23.06.2003, ÖE 6191.  
Euro-Sib., Widespread, Hcrp.
- B. pinnatum** (L.) P.Beauv.  
A9 Artvin: Borçka, Mereta to Efeler, alpine meadows, 2100 m, 11.07.2003, ÖE 6415; A8 Artvin: Borçka, Uğur, open forest, 700 m, 08.07.2004, ÖE 7217.  
Euro-Sib., Crp.
- Elymus nodosus** (Nevski) Melderis subsp. *sinuatus* (Nevski) Melderis  
A8 Artvin: Borçka, Maral, open places, 1100 m, 23.06.2003, ÖE 6192; A8 Artvin: Borçka, Efeler, stony slopes, 1600 m, 27.05.2004, ÖE 6857.  
Ir-Tur., Hcrp.
- E. repens** (L.) Gould subsp. *repens*  
A9 Artvin: Borçka, Efeler SNR, open places, 1800 m, 11.07.2003, ÖE 6416; A9 Artvin: Borçka, Mereta to Efeler, alpine meadows, 2350 m, 15.08.2003, ÖE 6606; A9 Artvin: Borçka, Gorgit SNR, forest margins, 2200 m, 28.07.2004, ÖE 7298.  
Crp.
- Hordeum bulbosum** L.  
A8 Artvin: Borçka, Kayalar, forest, 1750 m, 23.06.2003, ÖE 6194; A8 Artvin: Borçka, Camili, meadows, 1250 m, 08.07.2004, ÖE 7218.  
Widespread, Chp.
- Hordelymus europaeus** (L.) Jess.  
A9 Artvin: Borçka, Gorgit SNR, mixed forest, 1850 m, 25.05.2003, ÖE 5938; A8 Artvin: Borçka, Camili, meadows, 1200 m, 23.06.2003, ÖE 6193; A8 Artvin: Borçka, Maral, meadows, 850 m, 27.05.2004, ÖE 6858; A9 Artvin: Borçka, Camili, forest, 400 m, 28.07.2004, ÖE 7299.  
Euro-Sib., Hcrp.
- Bromus racemosus** L.  
A8 Artvin: Borçka, Camili, wet meadows, 1250 m, 08.07.2004, ÖE 7219.  
Euro-Sib., Thp.
- B. arvensis** L.  
A8 Artvin: Borçka, Efeler, slopes, 1100 m, 08.07.2004, ÖE 7220.  
Thp.
- B. japonicus** Thunb. subsp. *japonicus*  
A8 Artvin: Borçka, Efeler, open places, 1800 m, 11.07.2003, ÖE 6417; A8 Artvin: Borçka, Kayalar, forest, 1600 m, 08.07.2004, ÖE 7221.  
Widespread, Thp.
- B. tectorum** L.  
A9 Artvin: Borçka, Yıldız Lake, open places, 1900 m, 25.05.2003, ÖE 5939; A9 Artvin: Borçka, Beyazsu Yaylası, open grasslands, 2000 m, 11.06.2004, ÖE 7078; A9 Artvin: Borçka, Mereta to Efeler, alpine meadows, 2300 m, 08.07.2004, ÖE 7222.  
Widespread, Thp.
- B. erectus** Huds.  
A8 Artvin: Borçka, Düzenli, roadsides, 1250 m, 28.07.2004, ÖE 7300.  
Crp.
- Avena fatua** L. var. *fatua*  
A8 Artvin: Borçka, Uğur, open forest, 900 m, 11.06.2004, ÖE 7079.  
Thp.
- A. sterilis** L. subsp. *ludoviciana* (Durieu) Gillet & Magne  
A8 Artvin: Borçka, Efeler, meadows, 1550 m, 25.05.2003, ÖE 5940.  
Thp.
- A. sativa** L.  
A8 Artvin: Borçka, Kayalar, in fields, 1100 m, 11.07.2003, ÖE 6418.  
Thp.
- Trisetum rigidum** (M.Bieb.) Roem. & Schult.  
A8 Artvin: Borçka, Efeler, alpine meadows, 2400 m, 11.07.2003, ÖE 6420; A8 Artvin: Borçka, Düzenli, Verketil, alpine slopes, 2450 m, 15.08.2003, ÖE 6607; *ibid.*, 07.09.2003, ÖE 6715.  
Ir-Tur., Hcrp.
- T. flavescens** (L.) P.Beauv.  
A8 Artvin: Borçka, Kayalar, forest, 1800 m, 06.06.2003, ÖE 6073; A8 Artvin: Borçka, Efeler, alpine meadows, 2400 m, 11.07.2003, ÖE 6419; A9 Artvin: Borçka, Yıldız Lake, alpine meadows, 2400 m, 29.07.2003, ÖE 6480.  
Euro-Sib., Hcrp.
- Deschampsia caespitosa** (L.) P.Beauv.  
A8 Artvin: Borçka, Efeler, wet meadows, 2300 m, 11.07.2003, ÖE 6421.  
Widespread, Chp.
- Calamagrostis arundinacea** (L.) Roth  
A9 Artvin: Borçka, Mereta to Efeler, alpine slopes, 2350 m, 15.08.2003, ÖE 6608; A8 Artvin: Borçka, Uğur, open forest, 1700 m, 28.07.2004, ÖE 7301.  
Euro-Sib., Crp.
- Agrostis olympica** (Boiss.) Bor  
A8 Artvin: Borçka, Kayalar, forest, 1800 m, 29.07.2003, ÖE 6481; A8 Artvin: Borçka, Efeler, meadows, 1400 m, 15.08.2003, ÖE 6609.  
Euro-Sib. (mt), Hcrp.
- A. planifolia** C.Koch.  
A9 Artvin: Borçka, Gorgit SNR, forest, 2200 m, 28.07.2004, ÖE 7302.  
Ir-Tur., Hcrp.
- A. gigantea** Roth  
A9 Artvin: Borçka, Efeler SNR, streamsides, 1850 m, 11.07.2003, ÖE 6422.  
Euro-Sib., Crp.
- A. capillaris** L. var. *capillaris*  
A9 Artvin: Borçka, Beyazsu Yaylası, alpine meadows, 2000 m, 28.07.2004, ÖE 7303; A9 Artvin: Borçka, Yıldız Lake, alpine slopes, 2400 m, 08.07.2004, ÖE 7223; *ibid.*, 2400 m, 13.09.2004, ÖE 7373.  
Crp.
- Polypogon viridis** (Gouan) Breistr.  
A8 Artvin: Borçka, Camili, streamsides, 1200 m, 08.07.2004, ÖE 7224.  
Euro-Sib., Widespread, Hcrp.
- Milium effusum** L.  
A9 Artvin: Borçka, Gorgit SNR, forest, 1300 m, 23.06.2003, ÖE 6197.  
Crp.
- Phalaris arundinacea** L.  
A9 Artvin: Borçka, Yıldız Lake, open places, 1900 m, 15.08.2003, ÖE 6610.  
Crp.

- Alopecurus aequalis* Sobol.  
A9 Artvin: Borçka, Yıldız Lake, damp places, 1900 m, 23.06.2003, ÖE 6198.  
Euro-Sib., Thp.
- A. arundinaceus* Poir.  
A8 Artvin: Borçka, Düzenli, Verketil, damp places, 2340 m, 10.05.2004, ÖE 6788.  
Euro-Sib., Widespread, Crp.
- Phleum alpinum* L.  
A8 Artvin: Borçka, Efeler, alpine slopes, 2350 m, 23.06.2003, ÖE 6199.  
Euro-Sib., Crp.
- P. pratense* L.  
A9 Artvin: Borçka, Gorgit SNR, damp places, 1800 m, 15.08.2003, ÖE 6611.  
Euro-Sib., Widespread, Chp.
- P. paniculatum* Huds. subsp. *ciliatum* (Boiss.) M.Doğan  
A8 Artvin: Borçka, Efeler, rocky slopes, 1800 m, 11.06.2004, ÖE 7080.  
Ir-Tur., Thp.
- P. montanum* C.Koch. subsp. *montanum*  
A9 Artvin: Borçka, Yıldız Lake, forest margins, 1900 m, 08.07.2004, ÖE 7225.  
Chp.
- P. exaratum* Hochst. ex Griseb. subsp. *exaratum*  
A9 Artvin: Borçka, Yıldız Lake, forest, 1900 m, 08.07.2004, ÖE 7226.  
Widespread, Thp.
- Festuca gigantea* (L.) Vill.  
A9 Artvin: Borçka, Beyazsu Yaylası, wet places, 2000 m, 28.07.2004, ÖE 7304.  
Euro-Sib., Chp.
- F. drymeja* Mert. & Koch  
A9 Artvin: Borçka, Efeler SNR, open forest, 1800 m, 08.07.2004, ÖE 7227.  
Euro-Sib., Hcrp.
- F. arundinacea* Schreb. subsp. *arundinacea*  
A8 Artvin: Borçka, Maral, forest, 700 m, 11.07.2003, ÖE 6423.  
Chp.
- F. artvinensis* Markgr.-Dann.  
A9 Artvin: Borçka, Mereta to Efeler, alpine meadows, 2350 m, 23.06.2003, ÖE 6200; A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 11.07.2003, ÖE 6425.  
Eux., Chp.
- F. airoides* Lam.  
A9 Artvin: Borçka, Beyazsu Yaylası, alpine meadows, 2000 m, 11.07.2003, ÖE 6424; A8 Artvin: Borçka, Efeler, alpine meadows, 2300 m, 11.07.2003, ÖE 6426; ibid., 2400 m, 15.09.2003, ÖE 6612.  
Euro-Sib. (mt), Chp.
- Lolium perenne* L.  
A8 Artvin: Borçka, Efeler, meadows, 1350 m, 25.05.2003, ÖE 5941.  
Euro-Sib., Hcrp.
- L. rigidum* Gaudin var. *rigidum*  
A8 Artvin: Borçka, Efeler, meadows, 1550 m, 23.06.2003, ÖE 6201.  
Thp.
- Poa annua* L.  
A8 Artvin: Borçka, Kayalar, forest, 1800 m, 11.07.2003, ÖE 6427.  
Cosm., Thp.
- P. trivialis* L.  
A8 Artvin: Borçka, Efeler, alpine grassy steppe, 2250 m, 15.08.2003, ÖE 6613; A9 Artvin: Borçka, Beyazsu Yaylası, alpine grassy steppe, 2000 m, 08.07.2004, ÖE 7228.  
Chp.
- P. pratensis* L.  
A9 Artvin: Borçka, Mereta to Efeler, alpine pastures, 2400 m, 11.07.2003, ÖE 6428.  
Widespread, Crp.
- P. angustifolia* L.  
A8 Artvin: Borçka, Camili, in scrub, 1250 m, 08.07.2004, ÖE 7229.  
Widespread, Crp.
- P. longifolia* Trin.  
A8 Artvin: Borçka, Efeler, alpine pastures, 2300 m, 11.07.2003, ÖE 6429.  
Eux., Crp.
- P. diversifolia* (Boss. & Ball) Hackel ex Boiss.  
A8 Artvin: Borçka, Camili, meadows, 1250 m, 11.07.2003, ÖE 6430.  
E. Medit. (mt), Chp.
- P. nemoralis* L.  
A8 Artvin: Borçka, Efeler, meadows, 1550 m, 23.06.2003, ÖE 6202; A8 Artvin: Borçka, Maral, meadows, 1600 m, 15.08.2003, ÖE 6614; A9 Artvin: Borçka, Efeler SNR, streamsides, 1800 m, 08.07.2004, ÖE 7230.  
Widespread, Chp.
- P. alpina* L. subsp. *fallax* F.Herm.  
A9 Artvin: Borçka, Beyazsu Yaylası, alpine slopes, 2000 m, 29.07.2003, ÖE 6482; A8 Artvin: Borçka, Efeler, alpine slopes, 2350 m, 15.08.2003, ÖE 6615.  
Chp.
- P. bulbosa* L.  
A9 Artvin: Borçka, Mereta to Efeler, rocky slopes, 2300 m, 11.07.2003, ÖE 6431.  
Chp.
- Catabrosella variegata* (Boiss.) Tzvelev var. *variegata*  
A9 Artvin: Borçka, Yıldız Lake, alpine pastures, 2400 m, 21.08.2003, ÖE 6656; A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 2000 m, 08.07.2004, ÖE 7231; A9 Artvin: Borçka, Mereta to Efeler, alpine pastures, 2400 m, 08.07.2004, ÖE 7232.  
Crp.
- Sclerochloa dura* (L.) P.Beauv.  
A8 Artvin: Borçka, Camili, open forest, 400 m, 06.06.2003, ÖE 6074.  
Euro-Sib., Widespread, Thp.
- Dactylis glomerata* L. subsp. *hispanica* (Roth) Nyman  
A8 Artvin: Borçka, Efeler, roadsides, 800 m, 11.07.2003, ÖE 6432; A8 Artvin: Borçka, Maral, stony slopes, 1150 m, 08.07.2004, ÖE 7233.  
Crp.
- Cynosurus cristatus* L.  
A8 Artvin: Borçka, Efeler, meadows, 1550 m, 23.06.2003, ÖE 6204; A8 Artvin:

Borçka, Camili, open forest, 800 m, 29.07.2003, ÖE 6483.

Euro-Sib., Hcrp.

**C. echinatus** L.

A8 Artvin: Borçka, Efeler, roadsides, 800 m, 25.05.2003, ÖE 5942; A8 Artvin: Borçka, Maral, in fields, 1650 m, 15.08.2003, ÖE 6616.

Medit., Thp.

**Briza media** L.

A8 Artvin: Borçka, Kayalar, meadows, 1400 m, 11.07.2003, ÖE 6433.

Crp.

**B. marcowiczii** Woron.

A9 Artvin: Borçka, Gorgit SNR, slopes, 2200 m, 23.06.2003, ÖE 6203; A8 Artvin: Borçka, Efeler Yaylası, grassy places, 2200 m, 08.07.2004, ÖE 7234.

Eux. (mt), Crp.

**B. minor** L.

A8 Artvin: Borçka, Düzenli, roadsides, 900 m, 27.05.2004, ÖE 6859.

Thp.

**Melica uniflora** Retz.

A9 Artvin: Borçka, Efeler SNR, stony slopes, 1650 m, 23.06.2003, ÖE 6205; A8 Artvin: Borçka, Kayalar, forest, 1400 m, 08.07.2004, ÖE 7235; A9 Artvin: Borçka, Beyazsu Yaylası, rocky slopes, 2000 m, 08.07.2004, ÖE 7236.

Euro-Sib., Crp.

**Glyceria fluitans** (L.) R.Br.

A9 Artvin: Borçka, Mereta to Efeler, open slopes, 1400 m, 13.09.2004, ÖE 7374.

Hcrp.

**G. plicata** (Fr.) Fr.

A8 Artvin: Borçka, Efeler, forest margins, 1800 m, 07.09.2003, ÖE 6716.

Widespread, Hcrp.

**Molinia caerulea** (L.) Moench

A8 Artvin: Borçka, Düzenli, Mahmudikaya, rocky slopes, 1900 m, 27.05.2004, ÖE 6860; A8 Artvin: Borçka, Kayalar, forest, 1600 m, 22.08.2004, ÖE 7331.

Crp.

**Nardus stricta** L.

A9 Artvin: Borçka, Gorgit SNR, slopes, 2200 m, 23.06.2003, ÖE 6206; A9 Artvin: Borçka, Mereta to Efeler, alpine pastures, 2450 m, 11.07.2003, ÖE 6434; A9 Artvin: Borçka, Mereta to Efeler, alpine pastures, 2350 m, 08.07.2004, ÖE 7237.

Euro-Sib., Hcrp.

**Stipa bromoides** (L.) Dörfler

A8 Artvin: Borçka, Maral, open places, 900 m, 11.06.2004, ÖE 7081.

Medit., Crp.

**Piptatherum virescens** (Trin.) Boiss.

A8 Artvin: Borçka, Camili, open forest, 400 m, 11.06.2004, ÖE 7082.

Crp.

**Arundo donax** L.

A8 Artvin: Borçka, Camili, streamsides, 400 m, 07.10.2004, ÖE 7378.

Crp.

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

A8 Artvin: Borçka, Camili, open forest, 900 m, 11.06.2004, ÖE 7083.

Crp.

**Oplismenus undulatifolius** (Ard.) P.Beauv.

A8 Artvin: Borçka, Efeler, streamsides, 800 m, 11.06.2004, ÖE 7084.

Hcrp.

**Digitaria ciliaris** (Retz.) Koeler

A8 Artvin: Borçka, Maral, forest, 700 m, 11.06.2004, ÖE 7085.

Thp.

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

A8 Artvin: Borçka, Kayalar, waste places, 1000 m, 08.07.2004, ÖE 7238.

Thp.

**Saccharum ravennae** (L.) Murray

A8 Artvin: Borçka, Efeler, streamsides, 800 m, 07.09.2003, ÖE 6717.

Hcrp.