

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

Özgür EMİNAĞAOĞLU

Kafkas University, Faculty of Forestry, Department of Forest Botany, 08000, Artvin - TURKEY
eminagaoglu@hotmail.com

Rahim ANŞIN

Black Sea Technical University, Faculty of Forestry, Department of Forest Botany, 61080, Trabzon - TURKEY
rahimansin@hotmail.com

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Abstract: This investigation was carried out between 1994 and 1997 in order to contribute to knowledge on Artvin's flora. The Artvin area reflects the eastern part of the Black Sea region's rich floristic composition. The research area under review is in the Colchic province of the Euro-Siberian floristic area in the Holarctic region and is found in the A8 square according to grid system of Davis. In the studied area, 769 taxa belonging to 374 genera and 95 families were determined. Of the 769 taxa, 26 *Pteridophytes* and 743 *Spermatophytes* were detected. *Spermatophytes* also contained 10 *Gymnospermae* and 733 *Angiospermae* taxa. The largest five families are *Compositae* with 73 taxa (9.5%), *Leguminosae* with 67 taxa (8.7%), *Rosaceae* with 50 taxa (6.5%), *Cruciferae* with 49 taxa (6.4%) and *Labiatae* with 42 taxa (5.5%). The largest genus is *Trifolium* L. (14 taxa) and the second is *Astragalus* L. (13 taxa). The distribution of the taxa according to the phytogeographical regions was as follows: 35.6% Euro-Siberian, 6.9% Irano-Turanian, 2.2% Mediterranean and 55.3% unknown. Endemism is 7.4% and included 57 endemic taxa.

Key Words: Flora, National Park, Hatila Valley, Artvin.

Hatila Vadisi Milli Parkı ve Yakın Çevresinin Florası (Artvin)

Özet: Bu çalışma, 1994-1997 yılları arasında, Doğu Karadeniz Bölgesinin kuzeyinde, oldukça zengin floristik içeriğe sahip Artvin'in florasına katkıda bulunmak amacıyla gerçekleştirilmiştir. Araştırma alanı, Davis tarafından uygulanan grid sistemine göre A8 karesinde yer almakta olup, Holarctik fitocoğrafik bölgenin, Avrupa-Sibirya flora alanının Kolşik kesiminde yer almaktadır. Araştırma sonuçlarına göre; 95 familya ve 374 cinse ilişkin toplam 769 takson kaydedilmiştir. Bu taksonların 26'sı *Pteridophyta*, 743'ü *Spermatophyta* bölümüne ilişkindir. *Spermatophyta* bölümünde, 10 takson *Gymnospermae* ve 733 takson *Angiospermae*'dir. Araştırma alanında en fazla türe sahip beş familya sırasıyla *Compositae* 73 takson (% 9.5), *Leguminosae* 67 takson (% 8.7), *Rosaceae* 50 takson (% 6.5), *Cruciferae* 49 takson (% 6.4) ve *Labiatae* 42 takson (% 5.5). En büyük cins *Trifolium* L. (14 takson), ikincisi ise *Astragalus* L. (13 takson)'tur. Taksonların, fitocoğrafik bölgelere göre dağılımları ise şöyledir: Avrupa-Sibirya % 35.6, İran-Turan % 6.9, Akdeniz % 2.2 ve orijini bilinmeyenler % 55.3'tür. Taksonların 57 adeti (% 7.4) endemiktir.

Anahtar Sözcükler: Flora, Milli Park, Hatila Vadisi, Artvin.

Introduction

The aim of this study was to contribute to knowledge about Artvin's flora, as this area reflects the eastern part of the Black Sea region's rich floristic composition.

In nearby areas, some floristic and vegetation studies were carried out by Anşin (1979, 1983, 1984), Düzenli (1988), Vural (1996), and Küçük (1998).

The study area is in the A8 square according to Davis (1971)'s grid system and within the Colchic province of

the Euro-Siberian floristic area in the Holarctic region (Zohary, 1973). The altitude of the area is between 170 and 3224 m. The area under review has a length of 24.4 km and extends from the Çoruh River (170 m) to Mount Kurt (3224 m) and has a width of 14.3 km from Alacadağ (2844 m) to Mount Keçi (2047 m). The study area includes a sharp valley water catchment area that has about 3000 m elevation differences. The area is situated between lat 41°3'-41°13'30" N and long 41°31'-41°48' E and is some 25 000 ha in area (Figure 1).

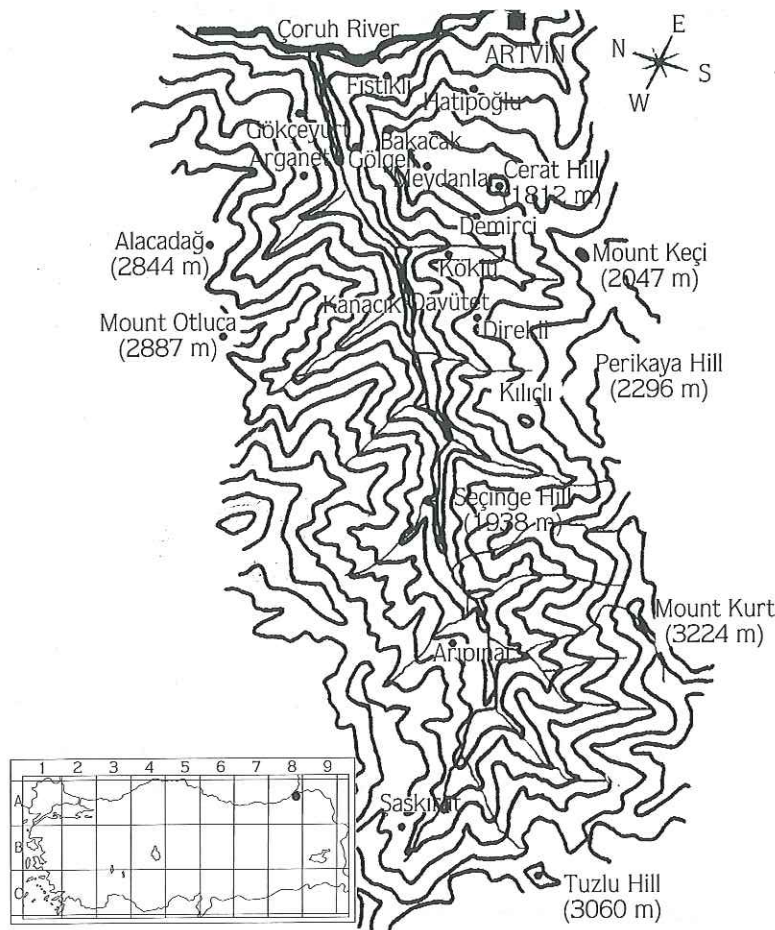


Figure 1. Topographical map of the study area.

Climatological data were obtained from Artvin Meteorological station. The annual average rainfall is 661.03 mm and the average warmth is 12.3 °C in the area (Meteoroloji Bülteni, 1995). The climate type of the area is semi-humid and the main vegetation type of the area is humid forest (Çepel, 1966). The rainfall regime of the study area is "winter-spring-autumn-summer" (Central Mediterranean) of Mediterranean origin. The region is in line with the rainfall-heat formula ($Q = 89.4$) and a low precipitation/cold bioclimate type is dominant (Akman, 1999).

Upper Cretaceous aged volcanic blocks (basalt, gabbro and peritoneum) form the main geologic structure. There are seven large soil groups in the study area, namely, brown forest soils, noncalcareous brown forest soils, chestnut soils, alluvial soils, colluvial soils, red-yellow podzolic soils and high mountain meadow soils. The most widespread is the brown forest soils type (Topraksu Genel Müdürlüğü, 1975).

Materials and Methods

The materials of this study included some 2000 plant samples collected from the research area between 1994 and 1997. Efforts were made to collect both flowering and fruiting specimens. The plant samples were prepared according to established herbarium techniques. The Flora of Turkey (Davis, 1965-85; Davis et al., 1988) and other sources (Komarov, 1934-60; Grosheim, 1939-1967) were utilised in the identification of the plant samples. This identification was carried out in the Herbarium of the Forestry Faculty, Black Sea Technical University, Trabzon (KATO) and ISTO (İstanbul) herbarium. All plant samples were kept in KATO.

The list of plants is presented according to the sequence given in the Flora of Turkey (Davis, 1965-85). The taxa we were unable to collect during this study but were cited in the Flora of Turkey were added to the floristic list. Since the research area was wholly situated within the A8 grid square, this information was not

repeated after the taxa names. After the name of every species in the floristic list, the geographical location, habitat of plant, altitude, collection date, collector name and number, endemism, IUCN threat categories, and phytogeographical region are given. Author abbreviations of plant names are given according to Brummitt and Powell (1992). Since 19 taxa defined as new records for the A8 square in this manuscript were published before (Anşin et al., 1997), only the names of these 19 taxa are given in this study. The endemic and rare non-endemic plants in the study area have been classified according to IUCN threat categories (Ekim et al., 2000).

Abbreviations

The abbreviations used in the text and in the floristic list are as follows: Cosm: Cosmopolitan, DD: Data Deficient, E.: East, EN: Endangered, Euro-Sib: Euro-Siberian element, Eux.: Euxine element, Hyr-Eux: Hyrcano-Euxine element, Ir-Tur: Irano-Turanian element, LR: Lower Risk, (lc: least concern, cd: conservation dependent, nt: near threatened), m: metre, Medit.: Mediterranean element, mt: mountain, ÖE: Özgür Eminağaoğlu, and VU: Vulnerable.

Results and Discussion

In this study, a total of 769 taxa from 87 families and 324 genera were identified. Twenty-six of them belonged to *Pteridophyta*, and the remaining 743 taxa were *Spermatophyta*, which included 10 taxa from the

Gymnospermae and 733 taxa from the *Angiospermae*. The *Angiospermae* also included 644 taxa from the *Magnoliopsida* and 89 taxa from the *Liliopsida*. The dispersion of the plant taxa that were defined in the study area according to the large taxonomical groups is shown in Table 1.

After the identification of all taxa, the phytogeographical distributions of 344 taxa were determined. The percentage of phytogeographical origins of 344 taxa was 274 (35.6%) Euro-Siberian, 53 (6.9%) Irano-Turanian, and 17 (2.2%) Mediterranean. Twenty-nine taxa are cosmopolitan (3.8%). The rest of the 396 taxa (51.5%) are either multi-area elements or single elements which have not yet been accepted as members of the phytogeographical area (Table 2).

Euro-Siberian elements were higher in ratio when the phytogeographical distribution of taxa was compared with the other elements in the study area. The abundance of Euro-Siberian elements (35.6%) and widespread presence of taxa such as *Picea orientalis* (L.) Link, *Abies nordmanniana* (Stev.) Spach. subsp. *nordmanniana*, *Pinus sylvestris* L. (*Pinaceae*), and *Alnus glutinosa* (L.) Gaertn subsp. *barbata* (C.A.Mey.) Yalt. (*Betulaceae*) can be attributed to the high influence of the Colchic province in the study area. However, the contribution of the Irano-Turanian (6.9%) and Mediterranean (2.2%) elements to the flora of the area cannot be overlooked. As seen in Table 2, the results of our study area were in agreement with those of neighboring areas because it is in the same phytogeographical region. The percentage of

Table 1. The dispersion of taxa according to the large taxonomical groups.

	Number of Families	Number of Genera	Number of Taxa
<i>Pteridophyta</i>	12	15	26
<i>Gymnospermae</i>	4	6	10
<i>Dicotyledones</i>	71	305	644
<i>Monocotyledones</i>	8	48	89
Total	95	374	769

Table 2. Distribution of species in phytogeographical regions and comparison with studies carried out in nearby areas.

	Number of taxa (%)				
	Euro-Sib.	Ir-Tur.	Medit.	Cosm.	Pluriregional
Present study	35.6	6.9	2.2	3.8	51.5
Küçük (1998)	34.4	7.9	1.1	1.6	55.0
Düzenli (1988)	50.5	7.5	5.0	1.0	36.0

Mediterranean elements in our study was higher than that stated by Küçük (1998). A possible explanation is that our study area is under the influence of the Mediterranean climate and a local Mediterranean climate occurs in some areas close to the Black Sea region. The flora of the study area mainly resembles Caucasian flora, but it also shares similarities with Japanese and North American flora.

A comparison of families in terms of the largest number of species found in this study and to previous studies carried out in nearby regions is given in Table 3. As seen in Table 3, the results of this article were also in agreement with the other similar studies. Differences in several taxa might be derived from the results of dissimilarities in climate and habitat.

The largest families in terms of number of genera are *Compositae* (39), *Cruciferae* (26), *Gramineae* (23), *Rosaceae* (22), *Leguminosae* (19), *Labiatae* (19), *Boraginaceae* (15), *Ranunculaceae* (14), *Umbelliferae* (12), *Liliaceae* (11), *Scrophulariaceae* (11), and *Caryophyllaceae* (11).

The richest families in terms of number of taxa are *Compositae* (73), *Leguminosae* (67), *Rosaceae* (50), *Cruciferae* (49), *Labiatae* (42), *Gramineae* (38), *Scrophulariaceae* (32), *Ranunculaceae* (32), *Caryophyllaceae* (28), *Boraginaceae* (25), and *Liliaceae* (21).

The richest genera in terms of the number of taxa are *Trifolium* L. (14), *Astragalus* L. (13), *Ranunculus* L. (10), *Veronica* L. (10), *Campanula* L. (10), *Geranium* L. (8) and *Vicia* L. (8).

Endemism was 7.4% and included 57 endemic taxa. The endemism ratio of the study area is very low compared with the average endemism ratio (34.5%) of the Flora of Turkey in volume 11 (Güner et al., 2000). The reasons for the low endemism ratio of the study area may lie in the similarities between Caucasian flora and the studied area.

Pseudomacchie, forest, subalpine, alpine and stream are the main vegetation types in the area (Anşin et al., 2000). Forest vegetation is the most common formation type in this area. In conclusion, the study area is mainly under the influence of a semi-humid climate, which is suitable for growing Euro-Siberian, Euxine, Hyrcano-Euxine and Colchic elements. Pseudomacchie vegetation was distributed throughout the area, especially at altitudes of 200-600 m. There are a few *Pinus pinea* L. (*Pinaceae*) stands distributed sporadically at the junction of the Hatila valley and the Çoruh River named Fıstıklı village (formerly Naşviye). On the other hand, it has been questioned whether *Pinus pinea* L. stands here are natural distribution or plantation. In the stands of *Pinus pinea* L. in Fıstıklı village, many herbaceous and woody plants specifically growing in the Mediterranean region are located in the transition zone between the Euro-Siberian and Mediterranean regions. Anşin et al. (1997) believed that the *Pinus pinea* L. stands had distributed indigenously because of the many other herbaceous and woody Mediterranean taxa. They are as follows: *Trachomitum venetum* (L.) Woodson subsp. *sarmatiense* (Woodson) Avet. (*Apocynaceae*), *Ostrya carpinifolia* Scop. (*Betulaceae*), *Cistus creticus* L., *C. salviifolius* L.

Table 3. Comparison of the 10 families containing the most species in studies conducted in nearby regions.

Families	Number of taxa (%)			
	Present study	Anşin (1979)	Düzenli (1988)	Küçük (1998)
<i>Compositae</i>	9.5	8.9	14.0	10.2
<i>Leguminosae</i>	8.7	8.1	8.1	4.5
<i>Rosaceae</i>	6.5	5.6	6.0	6.8
<i>Cruciferae</i>	6.4	3.6	3.8	2.7
<i>Labiatae</i>	5.5	4.7	4.7	6.0
<i>Gramineae</i>	4.9	4.0	4.9	3.9
<i>Scrophulariaceae</i>	4.2	3.9	3.4	3.7
<i>Caryophyllaceae</i>	3.7	2.9	5.2	2.7
<i>Boraginaceae</i>	3.3	1.9	2.5	2.1
<i>Liliaceae</i>	2.7	2.4	2.0	2.4
Others	44.6	54.1	45.4	55.0

(Cistaceae), *Olea europaea* L. var. *sylvestris* (Mill.) Lehr, *Jasminum fruticans* L. (Oleaceae), *Cotinus coggygria* Scop., *Rhus coriaria* L. (Anacardiaceae), *Silene italica* (L.) Pers. (Caryophyllaceae), *Trifolium campestre* Schreb (Leguminosae), *Euphorbia paralias* L., *E. peplis* L. (Euphorbiaceae), *Erodium malacoides* (L.) L'Hérit. (Geraniaceae), *Sideritis montana* L. subsp. *montana* (Labiatae). Botanists have been interested in Fıstıklı village because of its rich flora. This richness depends on the climatic variety and geographical structure of the area. Many botanists have studied the flora, vegetation and plant-geography of the surrounding area including, Mirov (1967) and Zohary (1973).

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APPENDIX

The sequence of families, genera and species in the following list follows the system adopted in the Flora of Turkey.

PTERIDOPHYTA

EQUISETACEAE

Equisetum hyemale L.

Karadağ hill, streamside, 1555 m, 14.04.1995, ÖE 1100.

E. ramossimum Desf.

Taşlıca village, Kılıçlı, moist meadow, 1750 m, 10.06.1997, ÖE 1831.

E. fluviatile L.

Taşlıca village, Köklü, streamside, 1800 m, 04.06.1997, ÖE 1832.

E. palustre L.

Taşlıca village, Köklü, roadside, moist soil, 1400 m, 13.09.1995, ÖE 1101.

E. arvense L.

Taşlıca village, Kanacık, waste place, 1750 m, 21.05.1997, ÖE 1833.

E. telmateia Ehrh.

Taşlıca village, Köklü, streamside, 1250 m, 10.06.1997, ÖE 1834.

LYCOPODIACEAE

Lycopodium selago L.

Taşlıca village, Bakacak, rocky place, 1200 m, 21.05.1997, ÖE 1835.

L. clavatum L.

Taşlıca village, Arıpınar, shady bank, 1900 m, 02.06.1997, ÖE 1836.

L. alpinum L.

Taşlıca village, Şaşkırat plateau, alpine slope, 2200 m, 10.06.1997, ÖE 1837.

OSMUNDACEAE

Osmunda regalis L.

Cerat hill, open *Picea* Dietr. forest, moist soil, 1250 m, 21.05.1995, ÖE 1102.

ADIANTHACEAE

Adiantum capillus-veneris L.

Taşlıca village, Direkli, stony slope, 1650 m, 12.06.1996, ÖE 1838.

PTERIDACEAE

Pteris cretica L.

Taşlıca village, Arganet, stony slope, 1200 m, 11.07.1996, ÖE 1839.

HYPOLEPIDACEAE

Pteridium aquilinum (L.) Kuhn

Saçinge hill, open forest, roadside, 1950 m, 13.05.1995, ÖE 1103.

Cosm.

THELYPTERIDACEAE

Thelypteris limbosperma (All.) Fuchs

Taşlıca village, Meydanlar, in the *Picea* Dietr. forest, 1400 m, 06.06.1995, ÖE 1104.

ASPLENIACEAE

Asplenium trichomanes L.

Taşlıca village, Gökçeyurt, rocky and stony slope, 970 m, 13.07.1995, ÖE 1106.

A. adiantum-nigrum L.

Hatipoğlu rocky and stony slope, 550 m, 13.07.1995, ÖE 1105.

A. septentrionale (L.) H.Hoffm.

Fıstıklı village, rocky and stony slope, 1930 m, 13.07.1995, ÖE 1107.

Ceterach officinarum DC.

Fıstıklı village, pathside, rocky and stony slope, 300 m, 06.04.1995, ÖE 1108.

Phyllitis scolopendrium (L.) Newman

Taşlıca village, Gölge, open area, stony and moist soil, shady area, 1300 m, 15.07.1995, ÖE 1109.

ATHYRIACEAE

Athrium filix-foemina (L.) Roth

Taşlıca village, Bakacak, along the water channel side, mixed forest, moist soil, 1150 m, 17.05.1995, ÖE 1110.

Cosm.

ASPIDIACEAE

Polystichum lonchitis (L.) Roth

Taşlıca village, Demirci, roadside, rocky and stony slope, 1700 m, 16.08.1995, ÖE 1112.

Dryopteris abbreviata (DC.) Newman

Taşlıca village, Arıpınar, rocky slope, 1800 m, 10.07.1997, ÖE 1840.

D. dilatata (Hoffm.) Gray

Saçinge hill, rocky slope, 1750 m, 08.07.1997, ÖE 1841.

D. liliana Golitsin

Taşlıca village, Direkli, open area, wet soil, 1600 m, 16.08.1995, ÖE 1111.

VU.

BLECHNACEAE

Blechnum spicant (L.) Roth

Taşlıca village, Demirci, shady bank, 1250 m, 12.07.1997, ÖE 1842.

POLYPODIACEAE

Polypodium vulgare L. subsp. *vulgare*

Taşlıca village, Arganet, roadside, rocky area, 1450 m, 16.05.1995, ÖE 1113.

Cosm.

SPERMATOPHYTA

GYMNOSPERMAE

PINACEAE

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

Saçinge hill, mixed forest, 1500 m, 13.07.1995, ÖE 1114, Mount Kurt, mixed forest, 1950 m, 10.06.1996, ÖE 1676.

Eux.

Picea orientalis (L.) Link

Taşlıca village, Gökçeyurt, mixed forest, 650 m, 16.05.1995, ÖE 1677, Taşlıca village, Meydanlar, as pure stand or mixed forest with *Pinus sylvestris* L., *Fagus orientalis* Lipsky, *Abies nordmanniana* (Stev.) Spach, 1300 m, 13.07.1995, ÖE 1115, Şaşkırat plateau, mixed forest, 2250 m, 10.06.1996, ÖE 1678.

Eux.

Pinus sylvestris L.

Taşlıca village, Meydanlar, as pure stand or mixed forest with *Picea orientalis* (L.) Link, *Fagus orientalis* Lipsky, *Abies nordmanniana* (Stev.) Spach, 850 m, 13.07.1995, ÖE 1116, Mount Kurt, mixed forest, 2200 m, 10.06.1996, ÖE 1679.

Eux-Sib.

P. pinea L.

Fıstıklı village, together with shrub species as follow: *Cistus creticus* L., *C. salviifolius* L., *Cotinus coggygria* Scop., *Carpinus orientalis* Miller, *Buxus sempervirens* L., 550 m, 13.07.1995, ÖE 1117.

Medit.

TAXACEAE

Taxus baccata L.

Saçinge hill, solitary in mixed forest, 1000 m, 13.07.1995, ÖE 1118.

CUPRESSACEAE

Juniperus communis L. subsp. *hemisphaerica* (Presl) Nyman

Taşlıca village, Alacadağ, stony slope, 1800 m, 13.07.1995, ÖE 1119.

J. communis L. subsp. *alpina* (Sm.) Celak.

Taşlıca village, Alacadağ, subalpine slope, 2300 m, 16.06.1996, ÖE 1522.

J. oxycedrus L. subsp. *oxycedrus*

Fıstıklı village, rocky and stony slope, 1450 m, macchie, 13.07.1995, ÖE 1120.

J. foetidissima Willd.

Taşlıca village, Gökçeyurt, rocky and stony slope, together with *Quercus* L. and *Carpinus* L., 1200 m, 13.07.1995, ÖE 1121.

EPHEDRACEAE

Ephedra major Host

Çoruh riverside, rocky slope, open area in the mixed forest, together with *Acer* L., *Rhus* L., *Ficus* L., *Paliurus* Mill., 400 m, 13.07.1995, ÖE 1123.

ANGIOSPERMAE

DICOTYLEDONAE

RANUNCULACEAE

Helleborus orientalis Lam.

Fıstıklı village, open forest, 470 m, 04.04.1995, ÖE 1132.

Eux.

Nigella latisepta P.H.Davis

Taşlıca village, Meydanlar, meadow, 1250 m, 12.07.1997, ÖE 1843.

Ir-Tur.

N. segetalis M.Bieb.

Fıstıklı village, roadside, 670 m, 13.06.1995, ÖE 1133.

Trollius ranunculinus (Smith) Stearn

Taşlıca village, Arıpınar, streamside, 1850 m, 17.06.1996, ÖE 1844.

Actaea spicata L.

Saçinge hill, *Picea* Dietr. forest, 1400 m, 13.07.1995, ÖE 1124.

Caltha polypetala Hochst. ex Lorent

Tuzlu hill, streamside, 2800 m, 07.04.1996, ÖE 1128.

Aconitum orientale Mill.

Taşlıca village, Arıpınar, meadow, 1700 m, 21.06.1997, ÖE 1845.

Eux.

A. nasutum Fisch. ex Rchb.

Saçinge hill, streamside, 1800 m, 10.06.1997, ÖE 1846.

Eux.

Delphinium flexuosum M.Bieb.

Taşlıca village, Arıpınar, slope, 1750 m, 13.07.1995, ÖE 1131.

Eux.

Consolida hohenerkeri (Boiss.) Grossh.

Fıstıklı village, dry slope, 400 m, 16.07.1997, ÖE 1847

Ir-Tur.

C. orientalis (Gay) Schröd.

Perikaya hill, rocky slope, 1900 m, 18.08.1997, ÖE 1848.

Ir-Tur.

C. regalis Gray subsp. *regalis*

Çoruh: above Artvin, 800 m, D. 29695.

Anemone narcissiflora L. subsp. *narcissiflora*

Mount Kurt, subalpine slope, 2400 m, 17.07.1997, ÖE 1849.

Euro-Sib.

A. blanda Schott & Kotschy

Taşlıca village, Konacık, moist rocky and stony slope, 1900 m, 12.04.1995, ÖE 1125.

A. caucasica Willd. ex Rupr.

Mount Keçi, roadside, moist soil, 1980 m, 12.04.1996, ÖE 1126.

VU, Eux.

A. albana Stev.

Mount Otluca, alpine slope, 2650 m, 10.06.1997, ÖE 1850.

Ir-Tur.

Clematis vitalba L.

Taşlıca village, Meydanlar, roadside, as climbing form on *Carpinus* L., 1350 m, 13.07.1995, ÖE 1129.

C. orientalis L.

Fıstıklı village, roadside, 400 m, 13.07.1995, ÖE 1130.

Adonis aestivalis L. subsp. *aestivalis*

Taşlıca village, Direkli, stony slope, 1450 m, 10.07.1997, ÖE 1851.

A. flammea Jacq.

Taşlıca village, Arıpınar, stony place, 1700 m, 16.06.1997, ÖE 1852.

Ranunculus cappadocicus Willd.

Taşlıca village, Meydanlar, *Picea* Dietr. forest, 1200 m, 21.05.1995, ÖE 1134.

Eux.

R. buhsei Boiss.

Mount Keçi, rocky slope, 1900 m, 10.07.1997, ÖE 1853.

Hyr-Eux (mt).

R. oreophilus M.Bieb.

Mount Otluca, stony slope, 2400 m, 06.08.1997, ÖE 1854.

Euro-Sib.

R. dissectus M.Bieb. subsp. *napellifolius* (DC.) P.H.Davis

Alacadağ, rocky slope, 2300 m, 10.07.1997, ÖE 1855.

R. repens L.

Taşlıca village, Meydanlar, moist meadows, 1450 m, 03.06.1995, ÖE 1590.

R. grandiflorus L.

Taşlıca village, Arıpınar, water meadow, 1750 m, 25.05.2007, ÖE 1856.

R. constantinopolitanus (DC.) d' Urv.

Taşlıca village, Meydanlar, meadow, 1150 m, 21.05.1995, ÖE 1135.

R. muricatus L.

Fıstıklı village, muddy roadside, 700 m, 21.05.1997, ÖE 1857.

R. arvensis L.

Taşlıca village, Konacık, waste place, 1650 m, 13.07.1995, ÖE 1591.

R. pinardii (Stev.) Boiss.

Taşlıca village, Meydanlar, *Picea* Dietr. forest, 1200 m, 21.05.1995, ÖE 1592.

Aquilegia olympica Boiss.

Taşlıca village, Şaşkırat plateau, streamside, open forest, 2100 m, 03.06.1995, ÖE 1127.

Thalictrum minus L. var. *minus*

Taşlıca village, Arıpınar, damp meadow, 1850 m, 10.07.1997, ÖE 1858.

BERBERIDACEAE

Berberis vulgaris L.

Hatipoğlu, open forest, 1970 m, 12.10.1995, ÖE 1136.

Eux.

PAPAVERACEAE

Chelidonium majus L.

Hatipoğlu, roadside, 435 m, 27.05.1995, ÖE 1137.

Euro-Sib.

Glaucium leiocarpum Boiss.

Taşlıca village, Bakacak, open forest, 950 m, 13.07.1995, ÖE 1139.

Papaver orientale L. var. *parviflora* Busch

Mount Otluca, stony slope, 2100 m, 15.08.1997, ÖE 1859.

Ir-Tur.

P. fugax Poirer var. *fugax*

Perikaya hill, dry slope, 2000 m, 10.06.1997, ÖE 1860.

P. dubium L.

Fıstıklı village, roadside, 670 m, 12.04.1996, ÖE 1140.

P. arenarium M.Bieb.

Fıstıklı village, stony slope, 550 m, 10.06.1997, ÖE 1861.

Corydalis conorhiza Ledeb.

Tuzlu hill, alpine vegetation, 2700 m, 10.07.1997, ÖE 2008.

Eux.

C. caucasica DC.

Taşlıca village, Direkli, moist soil, 1500 m, 28.02.1996, ÖE 1138.

Eux.

Fumaria officinalis L.

Fıstıklı village, open area, cultivated ground, 350 m, 1142, 13.04.1996, ÖE 1673.

F. microcarpa Boiss. ex Hausskn.

Mount Keçi, roadside, 1750 m, 12.07.1995, ÖE 1141.

F. asepalae Boiss.

Taşlıca village, Gökçeyurt, roadside, 1050 m, 10.07.1997, ÖE 2009.

CRUCIFERAE (BRASSICACEAE)

Brassica elongata Ehrh.

Taşlıca village, Meydanlar, cultivated field, 1350 m, 10.06.1997, ÖE 1862

Ir-Tur.

Hirschfeldia incana (L.) Lag.-Foss.

Çoruh: beside the river Çoruh, Koch.

Raphanus raphanistrum L.

Fıstıklı village, open forest, 350 m, 15.04.1995, ÖE 1229.

Rapistrum rugosum (L.) All.

Fıstıklı village, cultivated place, 450 m, 10.06.1997, ÖE 1863.

Conringia perfoliata (C.A.Mey.) Busch

Fıstıklı village, roadside, 650 m, 12.05.1997, ÖE 1864.

Lepidium campestre (L.) R.Br.

Taşlıca village, Meydanlar, waste place, 1250 m, 10.06.1997, ÖE 1865.

L. perfoliatum L.

Taşlıca village, Gökçeyurt, stony slope, 1150 m, 05.06.1997, ÖE 1866.

Cardaria draba (L.) Desv. subsp. *chalepensis* (L.) O.E.Schulz

Taşlıca village, Demirci, roadside, 1750 m, 14.04.1996, ÖE 1219.

Thlaspi arvense L.

Taşlıca village, Bakacak, slope, moist soil, 1000 m, 09.05.1995, ÖE 1232.

Cosm.

T. huetii Boiss.

Taşlıca village, Aripınar, waste place, 1700 m, 10.06.1997, ÖE 1867.

Pachyphragma macrophyllum (Hoffm.) Busch

Taşlıca village, Kılıçlı, roadside, 1850 m, 12.04.1996, ÖE 1228

Eux.

Capsella bursa-pastoris (L.) Medik.

Taşlıca village, Davütet, roadside, open forest, 1450 m, 13.07.1995, ÖE 1213.

Cosm.

Neslia paniculata (L.) Desv.

Taşlıca village, Aripınar, rocky slope, 1800 m, 21.07.1997, ÖE 1868.

Alysoides utriculata (L.) Munoz Med.

Taşlıca village, Gökçeyurt, roadside, 1250 m, 21.04.1995, ÖE 1207.

Fibigia clypeata (L.) Medik.

Fıstıklı village, rocky slope, 600 m, 21.04.1995, ÖE 1225.

F. eriocarpa (DC.) Boiss.

Fıstıklı village, roadside, rocky area, 470 m, 12.04.1996, ÖE 1223.

F. suffruticosa (Vent.) Sweet

Saçinge hill, roadside, stony slope, 1850 m, 21.04.1995, ÖE 1224.

Alyssum desertorum Stapf var. *Desertorum*

Fıstıklı village, fieldside, 360 m, 18.06.1995, ÖE 1211.

A. xanthocarpum Boiss.

Cerat hill, rocky slope, 1700 m, 10.06.1997, ÖE 1869.

A. pseudo-mouradicum Hausskn. & Bornm. ex Baumg.

Taşlıca village, Kılıçlı, open area, 2100 m, 18.06.1995, ÖE 1210.

Endemic, LR(lc).

A. peltaroides Boiss. subsp. *peltaroides*

Taşlıca village, Aripınar, roadside, 2200 m, 27.06.1995, ÖE 1209.

Endemic, LR(lc), Ir-Tur.

A. paphlagonicum (Hausskn.) Dudley

Taşlıca village, Konacık, open forest, 1450 m, 27.06.1995, ÖE 1208.

Endemic, LR(lc), Ir-Tur.

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

Tuzlu hill, subalpine slope, rocky place, 2200 m, 10.06.1997, ÖE 1870.

Draba bruniifolia Stev. subsp. *armeniaca* Coode & Cullen

Perikaya hill, slope, 1800 m, 16.06.1995, ÖE 1220.

Endemic, LR(lc).

D. hispida Willd.

Mount Keçi, alpine slope, 2000 m, 13.04.1996, ÖE 1221.

Eux (mt).

D. siliquosa M.Bieb.

Şaşkırat plateau, alpine slope, 2200 m, 26.07.1997, ÖE 1871.

Hyr-Eux (mt).

D. muralis L.

Taşlıca village, Kılıçlı, fieldside, 1550 m, 09.04.1996, ÖE 1222.

D. nemorosa L.

Tuzlu hill, alpine slope, 2400 m, 10.06.1997, ÖE 1872.

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

Taşlıca village, Aripınar, slope, 1800 m, 20.06.1997, ÖE 1873.

Arabis brachycarpa Rupr.

Tuzlu hill, alpine pasture, 2800 m, 10.06.1997, ÖE 1874.

Eux (mt).

A. caucasica Willd. subsp. *caucasica*
Fıstıklı village, roadside, stony slope, 540 m, 05.04.1996, ÖE 1212.

A. nova Vill.
Perikaya hill, stony slope, 2100 m, 20.06.1997, ÖE 1875.

Turritis glabra L.
Mount Otluca, slope, 2200 m, 12.07.1997, ÖE 1876.

Nasturtium officinale R.Br.
Taşlıca village, Bakacak, open forest, streamside, wet soil, 950 m, 16.06.1995, ÖE 1127.

Rorippa austriaca (Crantz) Besser
Taşlıca village, Davütet, wet place, 1350 m, 10.06.1997, ÖE 1877.

R. sylvestre (L.) Bess.
Taşlıca village, Meydanlar, streamside, 1250 m, 12.09.1995, ÖE 1230.

Barbarea plantaginea DC.
Taşlıca village, Arıpınar, streamside, 1750 m, 10.07.1997, ÖE 1878.

Cardamine bulbifera (L.) Crantz
Taşlıca village, Direkli, *Picea* Dietr. forest, moist soil, 1600 m, 12.04.1996, ÖE 1214.

Euro-Sib.
C. quinquefolia (M.Bieb.) Schmalh.
Taşlıca village, Kılıçlı, roadside, open forest, 1680 m, 12.04.1996, ÖE 1216.

Euro-Sib.
C. raphanifolia Pourr. subsp. *acris* (Gris) O.E.Schulz
Cerat hill, open area, streamside, 1850 m, 20.06.1995, ÖE 1217.

Euro-Sib.
C. tenera Gmel.
Taşlıca village, Direkli, streamside, 1540 m, 16.06.1995, ÖE 1218.

Hyr-Eux.
C. impatiens L.var. *pectinata* (Palla) Trautv.
Taşlıca village, Demirci, mixed forest, wet soil, shady area, 1550 m, 12.04.1996, ÖE 1215.

Euro-Sib.
Hesperis bicuspidata (Willd.) Poiret
Taşlıca village, Arıpınar, rocky slope, 1750 m, 20.07.1997, ÖE 1879.

H. matronalis L. subsp. *adzharia* (Tzvelev) Cullen
Taşlıca village, Meydanlar, meadow, 1300 m, 23.06.1995, ÖE 1226.

H. transcaucasica Tzvelev
Çoruh: Artvin, 2100 m, Stn. & Hend. 5931.
Erysimum cuspidatum (M.Bieb) DC.
Taşlıca village, Direkli, stony slope, 1500 m, 10.06.1997, ÖE 1880.

Alliaria petiolata (M.Bieb.) Cavara & Grande
Taşlıca village, Meydanlar, open forest, 1150 m, 04.04.1995, ÖE 1206.

Sisymbrium officinale (L.) Scop.
Hatipoğlu, roadside, wet soil, 650 m, 11.03.1996, ÖE 1231.

S. loeselii L.
Taşlıca village, Meydanlar, roadside, 1250 m, 10.06.1997, ÖE 1881.

CAPPARACEAE
Capparis ovata Desf. var. *herbacea* (Willd.) Zohary
Taşlıca village, Çoruh riverside, roadside, 250 m, 16.05.1996, ÖE 1205.

CISTACEAE
Cistus creticus L.
Fıstıklı village, 350 m, 15.04.1996, ÖE 1195.

Omni-Medit.
C. salviifolius L.
Fıstıklı village, *Pinus pinea* L. forest, 370 m, 15.04.1996, ÖE 1196.

Medit.
Helianthemum nummularium (L.) Mill. subsp. *tomentosum* (Scop.) Schinz & Thell.
Fıstıklı village, stony and rocky slope, 700 m, 03.05.1995, ÖE 1197.

H. nummularium (L.) Mill. subsp. *ovatum* Viv.
Taşlıca village, Meydanlar, stony and rocky slope, 1300 m, 21.08.1995, ÖE 1198.

Fumana arabica (L.) Spach var. *arabica*
Taşlıca village, Direkli, mixed forest, 1450 m, 20.07.1997, ÖE 1882.

VIOLACEAE
Viola odorata L.
Taşlıca village, Meydanlar, moist soil, shady area, 1250 m, 15.04.1995, ÖE 1191.

Cosm.
V. suavis M.Bieb.
Fıstıklı village, open forest, 740 m, 15.04.1996, ÖE 1194.

V. alba Besser
Taşlıca village, Demirci, open forest, 1540 m, 13.04.1996, ÖE 1187.

V. sieheana Becker
Taşlıca village, Demirci, stony slope, 1350 m, 12.05.1995, ÖE 1193.

V. canina L.
Fıstıklı village, roadside, 470 m, 15.04.1996, ÖE 1192.

V. altaica Ker Gawl. subsp. *oreades* (M.Bieb.) Becker
Tuzlu hill, alpine slope, 2900 m, 14.05.1996, ÖE 1189.

V. kitaibeliana Roem. & Schult.
Fıstıklı village, fieldside, 550 m, 14.05.1996, ÖE 1190.

V. arvensis Murray
Taşlıca village, Demirci, meadow, 1400 m, 06.06.1997, ÖE 1883.

POLYGALACEAE
Polygala supina Schreb.
Saçinge hill, open area, stony slope, 1850 m, 17.05.1995, ÖE 1396.

P. pruinosa Boiss. subsp. *pruinosa*
Fıstıklı village, open area, slope, 570 m, 07.05.1995, ÖE 1395.

P. major Jacq.
Taşlıca village, Meydanlar, stony slope, 900-1350 m, 07.05.1995, ÖE 1394.

Euro-Sib.
P. anatolica Boiss. & Heldr.
Fıstıklı village, slope, 450 m, 17.05.1995, ÖE 1393.

P. vulgaris L.
Taşlıca village, Meydanlar, open forest, 1300 m, 07.05.1995, ÖE 1397.

Euro-Sib.

CARYOPHYLLACEAE

Arenaria rotundifolia M.Bieb. subsp. *rotundifolia*

Taşlıca village, Bakacak, meadow, 1350 m, 12.08.1995, ÖE 1593.

A. pseudacantholimon Bornm.

Tuzlu hill, alpine slope, 2600 m, 06.06.1997, ÖE 1884.

Endemic, LR (lc), Ir-Tur.

A. armeniaca Boiss.

Taşlıca village, Arıpınar, dry rocky slope, 1700 m, 16.06.1997, ÖE 1885.

Endemic, LR (lc), Ir-Tur.

Minuartia imbricata (M.Bieb.) Woronow

Tuzlu hill, rocky-stony slope, 2750 m, 10.06.1997, ÖE 1886.

Eux (mt).

M. aizoides (Boiss.) Bornm.

Taşlıca village, Gökçeyurt, roadside, damp places, 1200 m, 10.06.1994, ÖE 1674.

M. circassica (Albow) Woron.

Perikaya hill, alpine slope, 2050 m, 06.06.1997, ÖE 1887.

Eux (mt).

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

Fıstıklı village, Hatila streamside, 470 m, 14.04.1996, ÖE 1175.

S. holostea L.

Taşlıca village, Arıpınar, slope, 1850 m, 12.07.1997, ÖE 1888.

Euro-Sib.

Myosoton aquaticum (L.) Moench

Fıstıklı village, streamside, moist soil, 400 m, 15.05.1996, ÖE 1167.

Euro-Sib.

Cerastium cerastioides (L.) Britt.

Taşlıca village, Bakacak, meadow, 1250 m, 12.08.1995, ÖE 1595.

C. armeniacum Gren.

Saçinge hill, slope, 1750 m, 10.06.1997, ÖE 1889.

Endemic, LR (lc).

C. chlorifolium Fisch. & Mey.

Taşlıca village, Arıpınar, meadow, 1550 m, 10.07.1997, ÖE 1890.

C. gnaphalodes Fenzl

Tuzlu hill, slope, 2700 m, 24.08.1997, ÖE 1891.

Endemic, LR (lc).

C. glomeratum Thuill.

Fıstıklı village, slope, 600 m, 28.04.1997, ÖE 1892.

Cosm.

Sagina procumbens L.

Mount Otluca, waste place, 2200 m, 20.07.1997, ÖE 1893.

Dianthus floribundus Boiss.

Taşlıca village, Direkli, roadside, 1600 m, 16.08.1995, ÖE 1166.

Ir-Tur.

D. crinitus Sm. var. *crinitus*

Taşlıca village, Bakacak, rocky and dry soil, 800 m, 13.07.1995, ÖE 1165.

D. artwinensis Schischk.

Taşlıca village, Meydanlar, roadside, 950 m, 03.08.1995, ÖE 1163.

Endemic, LR(lc).

D. calocephalus Boiss.

Taşlıca village, Kılıçlı, roadside, rocky and stony slope, open forest, 1450 m, 21.07.1995, ÖE 1164.

Petrorhagia saxifraga (L.) Link

Taşlıca village, Meydanlar, dry soil, 1100 m, 03.08.1995, ÖE 1168.

Euro-Sib.

Saponaria orientalis L.

Taşlıca village, Bakacak, rocky and dry soil, 800 m, 13.07.1995, ÖE 1596.

Gypsophila tenuifolia M.Bieb.

Taşlıca village, Meydanlar, meadow, 1300 m, 06.08.1995, ÖE 1597.

Eux (mt).

Silene italica (L.) Pers.

Hatipoğlu, open forest, 745 m, 13.07.1995, ÖE 1169.

Medit.

S. spergulfolia (Desf.) M.Bieb.

Taşlıca village, Arıpınar, stony slope, 1700 m, 10.06.1997, ÖE 1894.

Ir-Tur.

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

Saçinge hill, roadside, open forest, 1800 m, 21.07.1995, ÖE 1174.

S. compacta Fisch.

Taşlıca village, Arıpınar, open forest, roadside, 1450 m, 17.07.1995, ÖE 1173.

S. alba (Mill.) Krause subsp. *divaricata* (Rchb.) Walters

Cerat hill, roadside, 1400 m, 13.07.1995, ÖE 1170, Arıpınar, roadside 2200 m, 21.07.1995, ÖE 1171.

S. alba (Mill.) Krause subsp. *ericalycina* (Boiss.) Walters

Taşlıca village, Gökçeyurt, roadside, 950 m, 21.07.1995, ÖE 1172.

ILLECEBRACEAE

Scleranthus uncinatus Schur

Çoruh: mountain above Artvin, D 29805.

POLYGONACEAE

Polygonum alpinum All.

Tuzlu hill, alpine slope, 2850 m, 12.08.1997, ÖE 1895.

Euro-Sib.

P. bistorta L. subsp. *carneum* (Koch) Coode & Cullen

Saçinge hill, moist slope, 1850 m, 13.07.1995, ÖE 1176.

Eux (mt).

Rumex acetocella L.

Taşlıca village, Arıpınar, streamside, open forest, 1500 m, 15.07.1995, ÖE 1177.

Cosm.

R. scutatus L.

Taşlıca village, Arıpınar, meadow, 1700 m, 10.06.1997, ÖE 1896.

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

Taşlıca village, Şaşkırat plateau, subalpine slope, 2100 m, 11.06.1995, ÖE 1178.

R. caucasicus Rech

Mount Keçi, slope, 1900 m, 12.08.1997, ÖE 1897.

R. crispus L.

Taşlıca village, Köklü, meadow, 1450 m, 10.06.1997, ÖE 1898.

CHENOPODIACEAE

Chenopodium foliosum (Moench) Asch.

Fıstıklı village, roadside, 450 m, 10.06.1997, ÖE 1899.

PHYTOLACCACEAE

Phytolacca americana L.

Fıstıklı village, roadside, 530 m, 13.07.1995, ÖE 1162.

Cosm.

TAMARICACEAE

Tamarix tetrandra Pall. ex M.Bieb.

Çoruh riverside, 350 m, 07.10.1995, ÖE 1199.

T. smyrnensis Bunge

Çoruh riverside, 170 m, 10.06.1997, ÖE 1900.

GUTTIFERAE

Hypericum androsaemum L.

Taşlıca village, Meydanlar, roadside, streamside, 1300 m, 13.07.1995, ÖE 1179, Fıstıklı village, streamside, 370 m, 15.06.1996, ÖE 1180.

Euro-Sib.

H. bupleuroides Gris.

Taşlıca village, Davütet, open area in mixed forest, moist soil, 1300 m, 11.08.1995, ÖE 1182.

Eux.

H. montanum L.

Tuzlu hill, stony slope, 2250 m, 20.07.1997, ÖE 1901.

Euro-Sib.

H. bithynicum Boiss.

Taşlıca village, Gölge, moist soil, 750 m, 21.08.1995, ÖE 1181.

Eux.

H. orientale L.

Taşlıca village, Şaşkırat plateau, subalpine slope, 2200 m, 17.06.1995, ÖE 1183, Arıpınar, roadside, 1650 m, 11.05.1996, ÖE 1675.

H. perforatum L.

Saçinge hill, open forest, wet soil, 1900 m, 03.08.1995, ÖE 1184.

MALVACEAE

Malva sylvestris L.

Taşlıca village, Bakacak, roadside, 1400 m, 17.06.1995, ÖE 1598.

Alcea hohenackeri (Boiss. & Huet) Boiss.

Taşlıca village, Direkli, roadside, open forest, 1450 m, 21.07.1995, ÖE 1186.

A. calvertii (Boiss.) Boiss.

Taşlıca village, Arıpınar, rocky slope, 1600 m, 20.07.1997, ÖE 1902.

Endemic, LR (lc), Ir-Tur.

A. excubita Iljin

Taşlıca village, Bakacak, roadside, 1450 m, 17.06.1995, ÖE 1599.

Althaea cannabina L.

Taşlıca village, Meydanlar, meadow, 1300 m, 16.07.1996, ÖE 1600.

TILIACEAE

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

Saçinge hill, roadside, mixed forest, 1320 m, 12.08.1995, 10549, ÖE 1185.

Eux.

LINACEAE

Linum aroanium Boiss. & Orph.

Taşlıca village, Meydanlar, stony slope, 1300 m, 07.05.1995, ÖE 1390.

L. bienne Mill.

Fıstıklı village, fieldside, 550 m, 07.05.1995, ÖE 1391.

Medit.

L. catharticum L.

Taşlıca village, Arıpınar, stony slope, 1750 m, 16.07.1995, ÖE 1392.

Euro-Sib.

GERANIACEAE

Geranium lucidum L.

Hatipoğlu, *Picea* Dietr. forest side, 450 m, 14.03.1996, ÖE 1381.

G. purpureum Vill.

Taşlıca village, Gölge, rocky and stony slope, 1000 m, 18.07.1995, ÖE 1386.

G. robertianum L.

Taşlıca village, Bakacak, open forest, 1025 m, 21.06.1995, ÖE 1387.

G. molle L. subsp. *molle*

Fıstıklı village, fieldside, 500 m, 13.03.1995, ÖE 1382.

G. psilostemon Ledeb.

Taşlıca village, Konacık, *Picea* Dietr. forest, 1950 m, 21.06.1995, ÖE 1385.

Eux.

G. sylvaticum L.

Taşlıca village, Arıpınar, mixed forest, 1950 m, 18.07.1995, ÖE 1388.

Euro-Sib.

G. pyrenaicum Burm.

Taşlıca village, Meydanlar, open forest, 970 m, 18.07.1995, ÖE 1384.

G. platypetalum Fisch. & Mey.

Mount Keçi, mixed forest, 2000 m, 18.07.1995, ÖE 1383.

Hyr-Eux (mt).

Erodium oxyrrhynchum M.Bieb.

Taşlıca village, Gölge, rocky slope, 850 m, 16.07.1996, ÖE 1601.

Ir-Tur.

E. malacoides (L.) L' Hér.

Fıstıklı village, open forest, 300 m, 14.03.1996, ÖE 1380.

Medit.

E. amanum Boiss. & Kotschy

Taşlıca village, Direkli, rocky area, 1450 m, 11.04.1996, ÖE 1379.

Endemic, LR(lc).

OXALIDACEAE

Oxalis acetosella L.

Taşlıca village, Meydanlar, *Picea* Dietr. forest, moist soil, 1070 m, 15.07.1995, ÖE 1378.

O. corniculata L.

Taşlıca village, Bakacak, mixed forest, 1500 m, 10.07.1996, ÖE 1602.

Cosm.

BALSAMINACEAE

Impatiens noli-tangere L.

Taşlıca village, Demirci, streamside, 1150 m, 19.07.1995, ÖE 1389.

Euro-Sib.

ACERACEAE

Acer trautvetteri Medw.

Taşlıca village, Şaşkırat plateau, mixed forest, 2550 m, 14.05.1996, ÖE 1375.

Eux.

A. cappadocicum Gled. var. *cappadocicum*

Taşlıca village, Direkli, mixed forest, 800-1850 m, 17.08.1995, ÖE 1370.

Hyr-Eux.

A. cappadocicum Gled. var. *stenocarpum* Yalt.

Taşlıca village, Konacık, mixed forest, 1370 m, 17.08.1995, ÖE 1371.

Endemic, VU, Eux.

A. platanoides L.

Fıstıklı village, roadside, 1300 m, 13.06.1995, ÖE 1374.

Euro-Sib.

A. divergens Pax var. *divergens*

Çoruh riverside, 350 m, 17.07.1995, ÖE 1372.

Endemic, VU.

A. campestre L. subsp. *campestre*

Taşlıca village, Arganet, mixed forest, 1300 m, 24.08.1995, ÖE 1368.

A. campestre L. subsp. *leiocarpum* (Opiz) Pax

Hatipoğlu, rocky and stony slope, 850 m, 24.08.1995, ÖE 1369.

Euro-Sib.

A. hyrcanum Fisch. & Mey. subsp. *hyrcanum*

Taşlıca village, Meydanlar, roadside, 1400 m, 13.06.1995, ÖE 1373.

Euro-Sib.

RHAMNACEAE

Paliurus spina - christi Mill.

Fıstıklı village, roadside, stony slope, dry soil, 470 m, 12.09.1995, ÖE 1365.

Frangula alnus Mill. subsp. *alnus*

Taşlıca village, Gölge, streamside, 1700 m, 12.09.1995, ÖE 1366.

Euro-Sib.

Rhamnus imeretinus Booth

Taşlıca village, Demirci, mixed forest, 1500 m, 12.09.1995, ÖE 1367.

Eux.

R. microcarpus Boiss.

Taşlıca village, Meydanlar, open forest, 1200 m, 16.06.1996, ÖE 1603.

Eux (mt).

AQUIFOLIACEAE

Ilex colchica Pojark.

Taşlıca village, Davütet, mixed forest, moist soil, 970 m, 13.07.1995, ÖE 1359.

Eux.

ANACARDIACEAE

Cotinus coggygria Scop.

Çoruh riverside, roadside, 500 m, 21.06.1995, ÖE 1376.

Medit.

Rhus coriaria L.

Çoruh riverside, roadside, stony slope, 750 m, 18.08.1995, ÖE 1377.

Medit.

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

Taşlıca village, Gölge, mixed forest, 1100 m, 20.07.1997, ÖE 1903.

CELASTRACEAE

Euonymus latifolius (L.) Mill. subsp. *latifolius*

Taşlıca village, Köklü, mixed forest, 1300 m, 15.07.1995, ÖE 1358.

Euro-Sib.

E. latifolius (L.) Mill. subsp. *caucasicus* Coode & Cullen

Taşlıca village, Direkli, mixed forest, moist soil, 1450 m, 15.07.1995, ÖE 1357.

Endemic, LR(nt).

LEGUMINOSAE (FABACEAE)

Chamaecytisus hirsutus (L.) Link

Fıstıklı village, roadside, 650 m, 12.05.1996, ÖE 1303.

Genista tinctoria L.

Fıstıklı village, roadside, 460 m, 19.04.1995, ÖE 1309.

Euro-Sib.

G. albida Willd.

Taşlıca village, Gölge, rocky and stony slope, 950 m, 24.04.1996, ÖE 1310.

Argyrobolium biebersteinii Ball

Fıstıklı village, rocky place, 540 m, 15.05.1995, ÖE 1298.

Galega officinalis L.

Taşlıca village, Meydanlar, open forest, 1200 m, 13.07.1995, ÖE 1308.

Colutea armena Boiss. & Huet

Fıstıklı village, roadside, 750 m, 18.08.1995, ÖE 1304.

Astragalus oreades Mey.

Taşlıca village, Meydanlar, waste place, 1200 m, 10.06.1996, ÖE 1604.

A. flaccidus M.Bieb.

Taşlıca village, Bakacak, roadside, 1400 m, 22.08.1996, ÖE 1605.

A. glycyphyllos L. subsp. *glycyphyllos*

Taşlıca village, Bakacak, forestside, 1300 m, 17.05.1995, ÖE 1299.

Euro-Sib.

A. glycyphyllos L. subsp. *glycyphylloides* (DC.) Matthews

Taşlıca village, Arganet, open forest, 1350 m, 11.07.1995, ÖE 1300.

Euro-Sib.

A. fraxinifolius DC.

Taşlıca village, Arıpınar, mixed forest, 1850 m, 11.07.1995, ÖE 1301.

Ir-Tur.

A. aureus Willd.

Taşlıca village, Meydanlar, stony slope, 1350 m, 10.07.1997, ÖE 1904.

Ir-Tur.

A. sommieri Freyn

Cerat hill, open forest, 1600 m, 12.06.1996, ÖE 1606.

A. woronowii Bornm.

Taşlıca village, Şaşkırat plateau, alpine vegetation, 2500 m, 12.06.1996, ÖE 1607.

A. falcatus Lam.

Mount Keçi, *Pinus* L. forest, 1700 m, 10.06.1997, ÖE 1905.

Eux (mt).

A. adzharcicus Popov

Cerat hill, waste place, 1650 m, 16.07.1996, ÖE 1608.

A. sanguinolentus M.Bieb.

Taşlıca village, Arganet, dry soil, 1350 m, 20.07.1997, ÖE 1906.

A. frickii Bunge

Perikaya hill, mixed forest, 2100 m, 17.05.1995, ÖE 1302.

Eux (mt).

A. tauchius Woron.

Fıstıklı village, roadside, 600 m, 10.06.1997, ÖE 1907.

Psoralea acaulis Stev.

Taşlıca village, Direkli, slope, 1560 m, 06.06.1997, ÖE 1908.

Eux.

Vicia crocea (Desf.) B.Fedtsch.

Taşlıca village, Demirci, *Picea orientalis* (L.) Link forest, 1320 m, 17.09.1995, ÖE 1342.

Hyr-Eux.

V. dadianorum Sommer & Lév.

Taşlıca village, Meydanlar, slope, 1300 m, 21.07.1997, ÖE 1908.

Eux.

- V. cassubica* L.
Taşlıca village, Meydanlar, roadside, 1200 m, 22.05.1995, ÖE 1340.
Euro-Sib.
- V. cracca* L. subsp. *cracca*
Taşlıca village, Gölge, mixed forest, 1100 m, 22.05.1995, ÖE 1341.
Euro-Sib.
- V. villosa* Roth subsp. *villosa*
Taşlıca village, Davütet, roadside, stony slope, 1350 m, 12.07.1995, ÖE 1346.
- V. sepium* L.
Taşlıca village, Kılıçlı, mixed forest, wet soil, 1600 m, 25.06.1995, ÖE 1345.
Euro-Sib.
- V. grandiflora* Scop. var. *grandiflora*
Fıstıklı village, roadside, 600 m, 13.05.1995, ÖE 1343.
Euro-Sib.
- V. sativa* L. subsp. *nigra* (L.) Ehrh. var. *nigra*
Taşlıca village, Meydanlar, roadside, rocky slope, 1350 m, 28.06.1995, ÖE 1344.
Lathyrus aureus (Stev.) Brândză
Fıstıklı village, open forest, 450 m, 12.04.1995, ÖE 1311.
Eux.
- L. vernus* (L.) Bernh.
Fıstıklı village, roadside, 560 m, 16.07.1995, ÖE 1317.
Euro-Sib.
- L. laxiflorus* (Desf.) Kuntze subsp. *laxiflorus*
Taşlıca village, Demirci, *Picea* Dietr. forest, 1320 m, 13.07.1995, ÖE 1313.
L. roseus Stev.
Taşlıca village, Kanacık, *Pinus* L. forest, 1500 m, 10.06.1997, ÖE 1908.
Hyr-Eux.
- L. tuberosus* L.
Sağınge hill, open forest, moist soil, 1500 m, 16.07.1995, ÖE 1315.
Euro-Sib.
- L. rotundifolius* Willd. subsp. *miniatus* (M.Bieb. ex Stev.) P.H. Davis
Taşlıca village, Meydanlar, meadow pasture, 1350 m, 16.07.1995, ÖE 1316.
- L. cicera* L.
Taşlıca village, Meydanlar, *Pinus* L. forest, 1350 m, 17.03.1996, ÖE 1312.
- L. nissolia* L.
Fıstıklı village, roadside, fieldside, 340 m, 25.04.1995, ÖE 1314.
- Pisum sativum* L. subsp. *elatius* (M.Bieb.) Asch. & Graebn. var. *elatius*
Sağınge hill, open slope, 1700 m, 16.04.1996, ÖE 1325.
- Ononis arvensis* L.
Taşlıca village, Meydanlar, moist and dry slope, 1400 m, 21.07.1997, ÖE 1909.
Euro-Sib.
- Trifolium repens* L. var. *repens*
Mount Kurt, roadside, 1900 m, 23.05.1996, ÖE 1337.
Cosm.
- T. montanum* L. subsp. *humboldtianum* (A.Br. & Asch.) Hossain
Mount Keçi, open slope, 1850 m, 22.08.1995, ÖE 1334.
- T. ambiguum* M.Bieb.
Sağınge hill, open area, 1900 m, 12.07.1995, ÖE 1327.
Euro-Sib.
- T. hybridum* L. var. *hybridum*
Taşlıca village, Demirci, roadside, 1400 m, 21.08.1995, ÖE 1331.
Cosm.
- T. campestre* Schreb.
Fıstıklı village, open forest, 400 m, 22.08.1995, ÖE 1330.
- T. tumens* Stev. ex M.Bieb.
Taşlıca village, Arganet, roadside, 900 m, 23.05.1996, ÖE 1339.
Hyr-Eux.
- T. pratense* L. var. *pratense*
Taşlıca village, Bakacak, open forest, 1100 m, 22.08.1995, ÖE 1335.
Cosm.
- T. pratense* L. var. *sativum* Schreb.
Taşlıca village, Arganet, open area, 1300 m, 23.05.1996, ÖE 1336.
- T. medium* L. var. *medium*
Taşlıca village, Meydanlar, open forest, 1050 m, 22.08.1995, ÖE 1332.
Cosm.
- T. ochroleucum* Huds.
Taşlıca village, Demirci, roadside, 1370 m, 12.07.1995, ÖE 1333.
- T. canescens* Willd.
Taşlıca village, Arganet, roadside, 1400 m, 12.07.1995, ÖE 1329.
Hyr-Eux.
- T. trichocephalum* M.Bieb.
Taşlıca village, Aripınar, open forest, 1680 m, 12.07.1995, ÖE 1338.
- T. alpestre* L.
Taşlıca village, Aripınar, open forest, 1850 m, 12.07.1995, ÖE 1328.
- T. arvense* L. var. *arvense*
Taşlıca village, Meydanlar, meadow, 1250 m, 16.06.1995, ÖE 1607.
- Melilotus officinalis* (L.) Desr.
Taşlıca village, Gölge, open area, 750 m, 13.07.1995, ÖE 1323.
Cosm.
- Medicago lupulina* L.
Taşlıca village, Bakacak, open forest, wet soil, 1100 m, 07.03.1996, ÖE 1321.
- M. sativa* L. subsp. *sativa*
Mount Keçi, stony slope, 1850 m, 19.06.1995, ÖE 1322.
- M. arabica* (L.) Huds.
Fıstıklı village, open forest, 450 m, 07.03.1996, ÖE 1320.
Cosm.
- Dorycnium graecum* (L.) Ser.
Fıstıklı village, open slopes, 370 m, 15.07.1995, ÖE 1307.
Eux.
- D. pentaphyllum* Scop. subsp. *herbaceum* (Vill.) Rouy
Taşlıca village, Meydanlar, roadside, 1400 m, 20.07.1997, ÖE 1909.
- Lotus corniculatus* L. var. *corniculatus*
Hatipoğlu, roadside, 690 m, 13.07.1995, ÖE 1318.
- L. corniculatus* L. var. *tenuifolius* L.
Taşlıca village, Kılıçlı, streamside, 1500 m, 13.07.1995, ÖE 1319.
- Anthyllis vulneraria* L. subsp. *polyphylla* (DC.) Nyman
Taşlıca village, Meydanlar, open forest, 1350 m, 15.05.1995, ÖE 1297.
Euro-Sib.

- Coronilla coronata* L.
Alacadağ, alpine vegetation, 2750 m, 16.06.1996, ÖE 1608.
- C. orientalis* Mill. var. *orientalis*
Taşlıca village, Direkli, roadside, 1470 m, 13.06.1995, ÖE 1305.
- C. varia* L. subsp. *varia*
Taşlıca village, Bakacak, open forest, 750 m, 13.06.1995, ÖE 1306.
- Onobryhis armena* Boiss. & Huet
Taşlıca village, Arıpınar, meadow, 1650 m, 10.06.1997, ÖE 1910.
- Endemic, LR (lc).
- O. altissima* Grossh.
Taşlıca village, Meydanlar, open forest, 1230 m, 19.06.1995, ÖE 1324.
- O. huetiana* Boiss.
Taşlıca village, Direkli, meadow, 1700 m, 21.07.1997, ÖE 1911.
- Endemic, LR (nt), Ir-Tur.
- ROSACEAE
- Aruncus vulgaris* Raf.
Taşlıca village, Arıpınar, mixed forest, wet soil, 1575 m, 13.07.1995, ÖE 1270.
- Laurocerasus officinalis* Roem.
Taşlıca village, Davütet, Hatila streamside, mixed forest, 1350 m, 16.05.1996, ÖE 1280.
- Prunus spinosa* L. subsp. *dasyphylla* (Schur) Domin
Taşlıca village, Meydanlar, mixed forest, 1300 m, 16.06.1996, ÖE 1609.
- Cerasus avium* (L.) Moench
Taşlıca village, Davütet, mixed forest, 1650 m, 12.06.1996, ÖE 1610.
- Rubus saxatilis* L.
Cerat hill, open place, 1750 m, 30.06.1997, ÖE 1912.
- R. idaeus* L.
Taşlıca village, Köklü, roadside, stony slope, 1370 m, 21.08.1995, ÖE 1290.
- Cosm.
- R. caesius* L.
Taşlıca village, Bakacak, open forest, 1570 m, 22.07.1996, ÖE 1611.
- R. platyphyllos* C.Koch.
Taşlıca village, Meydanlar, slope, 1270 m, 21.08.1995, ÖE 1291.
- Eux.
- R. caucasicus* Focke
Mount Otluca, mixed forest, 1800 m, 10.06.1997, ÖE 1913.
- Eux.
- Potentilla rupestris* L.
Cerat hill, roadside, 1540 m, 23.07.1995, ÖE 1287.
- Euro-Sib.
- P. argentea* L.
Taşlıca village, Köklü, open forest, 1300 m, 23.07.1995, ÖE 1282.
- P. recta* L.
Taşlıca village, Demirci, open area, 1350 m, 23.07.1995, ÖE 1283.
- P. crantzii* (Crantzow) Beck ex Fritsch var. *crantzii*
Taşlıca village, Arıpınar, open area, 1970 m, 23.07.1995, ÖE 1284.
- Euro-Sib.
- P. reptans* L.
Fistiklı village, fieldside, 480 m, 08.08.1995, ÖE 1286.
- Eux.
- P. micrantha* Ramond ex DC.
Taşlıca village, Gökçeyurt, open forest, 970 m, 23.07.1995, ÖE 1285.
- Fragaria vesca* L.
Taşlıca village, Meydanlar, open forest, wet soil, 1200 m, 12.05.1995, ÖE 1279.
- Sibbaldia parviflora* Willd. var. *parviflora*
Alacadağ, alpine vegetation, 2600 m, 10.06.1995, ÖE 1612.
- Geum coccineum* Sm.
Tuzlu hill, marshy slope, 2500 m, 06.06.1997, ÖE 1914.
- Euro-Sib.
- G. urbanum* L.
Saçinge hill, in forest, 1600 m, 12.07.1996, ÖE 1613.
- Agrimonia eupatoria* L.
Taşlıca village, Direkli, open forest, wet soil, 1480 m, 12.09.1995, ÖE 1267.
- Aremonia agrimonoides* (L.) DC.
Taşlıca village, Meydanlar, meadow, 1350 m, 06.06.1997, ÖE 1915.
- Euro-Sib.
- Sanguisorba minor* Scop. subsp. *muricata* (Spach) Briq.
Taşlıca village, Bakacak, roadside, dry soil, 1550 m, 10.06.1996, ÖE 1613.
- Alchemilla sericea* Willd.
Taşlıca village, Şaşkırat plateau, alpine vegetation, 2600 m, 20.07.1996, ÖE 1614.
- Eux (mt).
- A. caucasica* Buser
Taşlıca village, Şaşkırat plateau, alpine vegetation, 2800 m, 20.07.1996, ÖE 1615.
- Eux (mt).
- A. sintenisii* Rothm.
Taşlıca village, Şaşkırat plateau, alpine slope, 1800 m, 05.05.1995, ÖE 1268.
- Endemic, LR(nt), Eux.
- A. retinervis* Buser
Tuzlu hill, alpine pasture, 3000 m, 10.06.1997, ÖE 1916.
- Eux (mt).
- Rosa pimpinellifolia* L.
Taşlıca village, Bakacak, open forest, 1550 m, 20.07.1996, ÖE 1616.
- R. elymaitica* Boiss. & Hausskn.
Taşlıca village, Kılıçlı, roadside, 1600 m, 28.06.1997, ÖE 1917.
- R. iberica* Stev.
Taşlıca village, Kanacık, open area, 1450 m, 10.06.1997, ÖE 1918.
- R. montana* Chaix subsp. *woronowii* (Lonacz.) O.Nilsson
Mount Keçi, open forest, 1800 m, 28.06.1997, ÖE 1919.
- R. canina* L.
Fistiklı village, open forest, 450 m, 08.06.1995, ÖE 1289.
- Cosm.
- Mespilus germanica* L.
Taşlıca village, Demirci, open forest, 1550 m, 18.07.1995, ÖE 1281.
- Hyr-Eux.
- Cotoneaster nummularia* Fisch. & Mey.
Taşlıca village, Meydanlar, open forest, rocky and stony slope, 1200 m, 18.08.1995, ÖE 1271.
- C. transcaucasicus* Pojark.
Taşlıca village, Demirci, stony slope, 1500 m, 12.09.1995, ÖE 1272.
- VU.

- C. morulus* Pojark.
Fıstıklı village, rocky and stony slope, 750 m, 12.09.1995, ÖE 1273.
- Pyracantha coccinea* Roem.
Çoruh riverside, 550 m, 15.05.1996, ÖE 1288.
- Crataegus pentagyna* Waldst., Kit. ex Willd.
Taşlıca village, Meydanlar, stony slope, 1250 m, 20.07.1997, ÖE 1920.
- Euro-Sib.
- C. orientalis* Pall. ex M.Bieb. var. *orientalis*
Sağınge hill, open forest, 1870 m, 11.08.1995.
- C. curvcephala* Lindm.
Taşlıca village, Arıpınar, open forest, 1870 m, 23.09.1995, ÖE 1274.
- C. monogyna* Jacq. subsp. *monogyna*
Taşlıca village, Demirci, open forest, 1370 m, 11.08.1995, ÖE 1277.
- C. monogyna* Jacq. subsp. *azarella* (Gris.) Franco
Taşlıca village, Gökçeyurt, open forest, 720 m, 27.08.1995, ÖE 1276.
- C. microphylla* C.Koch
Taşlıca village, Demirci, open forest, 1325 m, 23.09.1995, ÖE 1275.
- Hyr.-Eux.
- Sorbus aucuparia* L.
Taşlıca village, Şaşkırat plateau, subalpine slope, 2400 m, 11.08.1995, ÖE 1293.
- Euro-Sib.
- S. umbellata* (Desf.) Fritsch var. *cretica* (Lindl.) Schneid.
Fıstıklı village, Quercus scrub, rocky area, 2250 m, 17.08.1995, ÖE 1294.
- S. umbellata* (Desf.) Fritsch var. *orbiculata* (Kárpáti) Gabr.
Taşlıca village, Meydanlar, mixed forest, 1450 m, 17.08.1995, ÖE 1295.
- S. torminalis* (L.) Crantz var. *torminalis*
Taşlıca village, Meydanlar, mixed forest, 1250 m, 11.07.1995, ÖE 1296.
- Euro-Sib.
- Malus sylvestris* Mill. subsp. *orientalis* (Uglitzk.) Browicz var. *orientalis*
Taşlıca village, Meydanlar, mixed forest, 1300 m, 10.06.1996, ÖE 1617.

- Pyrus communis* L. subsp. *communis*
Taşlıca village, Bakacak, open forest, 1400 m, 10.06.1996, ÖE 1618.
- P. elaeagnifolia* Pall. subsp. *elaeagnifolia*
Taşlıca village, Demirci, open forest, 1570 m, 11.09.1995, ÖE 1292.
- Amelanchier rotundifolia* (Lam.) Dum.Cours. subsp. *rotundifolia*
Fıstıklı village, open forest, 700 m, 10.08.1995, ÖE 1269.
- PUNICACEAE**
Punica granatum L.
Çoruh riverside, 260 m, 16.05.1996, ÖE 1349.
- LYTHRACEAE**
Lytrum salicaria L.
Fıstıklı village, open area, streamside, 450 m, 08.08.1995, ÖE 1347.
- Euro-Sib.
- ONAGRACEAE**
Circae lutetiana L.
Taşlıca village, Gölge, mixed forest, 750 m, 13.07.1995, ÖE 1352.
- C. alpina* L.
Taşlıca village, Kılıçlı, mixed forest, 1400 m, 20.07.1997, ÖE 1921.
- Epilobium angustifolium* L.
Sağınge hill, roadside, open forest, 1600 m, 13.07.1995, ÖE 1350.
- E. montanum* L.
Mount Keçi, open forest, 1850 m, 13.07.1995, ÖE 1351.
- Euro-Sib.
- DATISCEAE**
Datisca cannabina L.
Taşlıca village, Gölge, streamside, 1000 m, 10.06.1997, ÖE 1922.
- CRASSULACEAE**
Sedum telephium L. subsp. *maximum* (L.) Krock.
Taşlıca village, Bakacak, roadside, rocky slope, 1070 m, 16.08.1995, ÖE 1263.
- Euro-Sib.
- S. spurium* M.Bieb.
Taşlıca village, Kılıçlı, rocky area, 1800 m, 25.07.1995, ÖE 1261.
- Hyr.-Eux.

- S. stoloniferum* Gmel.
Sağınge hill, *Picea* Dietr. forest, 850-1850 m, 21.08.1995, ÖE 1262.
- Hyr.-Eux. (mt).
- S. alpestre* Vill.
Taşlıca village, Davütet, roadside, rocky place, 1400 m, 06.06.1997, ÖE 1923.
- S. album* L.
Cerat hill, roadside, stony slope, 1500 m, 13.05.1996, ÖE 1257.
- S. gracile* C.A.Mey.
Taşlıca village, Arıpınar, rocky area, 2400 m, 13.05.1996, ÖE 1258.
- Hyr.-Eux.
- S. pallidum* M.Bieb. var. *pallidum*
Taşlıca village, Kılıçlı, roadside, rocky slope, 1350 m, 21.08.1995, ÖE 1260.
- S. pallidum* M.Bieb. var. *bithynicum* (Boiss.) Chamb.
Taşlıca village, Demirci, roadside, *Picea* Dietr. forest, 1570 m, 18.07.1995, ÖE 1259.
- Eux.
- Sempervivum glabrifolium* Boriss.
Fıstıklı village, rocky and stony slope, 750 m, 16.08.1995, ÖE 1264.
- Endemic, LR (cd).
- S. davisii* Muirhead
Taşlıca village, Gökçeyurt, stony slope, 1050 m, 06.06.1997, ÖE 1926.
- SAXIFRAGACEAE**
Saxifraga paniculata Mill. subsp. *cartilaginea* (Willd.) D.A.Webb
Taşlıca village, Demirci, open forest, rocky area, 1470 m, 18.05.1995, ÖE 1265.
- Hyr.-Eux.
- S. artvinensis* Matthews
Perikaya hill, stony slope, 1800 m, 20.07.1997, ÖE 1927.
- Endemic, VU, Eux (mt).
- S. rotundifolia* L.
Taşlıca village, Meydanlar, stony slope, 1170 m, 12.06.1995, ÖE 1266.
- Euro-Sib.
- S. cymbalaria* L. var. *cymbalaria*
Taşlıca village, Köklü, streamside, 1500 m, 06.06.1997, ÖE 1928.

GROSSULARIACEAE

Ribes biebersteinii Berl. ex DC.

Taşlıca village, Şaşkırat plateau, subalpine slope, 2250 m, 18.07.1995, ÖE 1256.

Eux.

R. alpinum L.

Tuzlu hill, subalpine slope, 2300 m, 20.07.1997, ÖE 1929.

UMBELLIFERAE (APIACEAE)

Sanicula europaea L.

Taşlıca village, Arıpınar, *Picea* Dietr. forest, 1750 m, 29.06.1995, ÖE 1402.

Euro-Sib.

Astrantia maxima Pall. subsp. *maxima*

Taşlıca village, Meydanlar, meadow, 1130 m, 29.06.1995, ÖE 1400

Eux.

Eryngium caeruleum M.Bieb.

Saçinge hill, open forest, 1500 m, 26.08.1996, ÖE 1619.

Chaerophyllum bulbosum L.

Taşlıca village, Meydanlar, open area, 1350 m, 16.06.1996, ÖE 1620.

Carum carvi L.

Taşlıca village, Bakacak, open area, 1400 m, 22.06.1996, ÖE 1621.

C. caucasicum (M.Bieb.) Boiss.

Mount Kurt, alpine slope, 2400 m, 20.07.1997, ÖE 1930.

Pimpinella affinis Ledeb.

Taşlıca village, Arganet, open forest, 1350 m, 29.06.1995, ÖE 1401.

Foeniculum vulgare Mill.

Taşlıca village, Meydanlar, open forest, 1300 m, 10.08.1996, ÖE 1622.

Ferulago latiloba Schischkin

Hatipoğlu, open slope, 800 m, 06.06.1997, ÖE 1931.

Heracleum apiifolium Boiss.

Taşlıca village, Arganet, streamside, 1800 m, 08.09.1996, ÖE 1623.

Torilis japonica (Houtt.) DC.

Taşlıca village, Meydanlar, open forest, shady area, 1240 m, 19.07.1995, ÖE 1403.

Caucalis platycarpus L.

Taşlıca village, Meydanlar, meadow, 1200 m, 10.08.1996, ÖE 1624.

Daucus carota L.

Taşlıca village, Köklü, open area, 1500 m, 16.06.1996, ÖE 1625.

ARALIACEAE

Hedera helix L.

Taşlıca village, Arganet, on the ground mixed forest, 1370 m, 13.07.1995, ÖE 1398.

Cosm.

H. colchica (C.Koch) C.Koch

Taşlıca village, Meydanlar, mixed forest, 1400 m, ÖE 1399.

Eux.

CORNACEAE

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

Taşlıca village, Gölge, roadside, mixed forest, 960 m, 23.05.1995, ÖE 1354.

Euro-Sib.

C. sanguinea L. subsp. *cilicica* (Wangerin) Chamb.

Fistiklı village, mixed forest, 560 m, 23.05.1995, ÖE 1355.

E.Medit.

C. mas L.

Hatipoğlu, mixed forest, 760 m, 23.05.1995, ÖE 1353.

Euro-Sib.

CAPRIFOLIACEAE

Sambucus ebulus L.

Taşlıca village, Davütet, roadside, 1200 m, 06.07.1995, ÖE 1500.

Euro-Sib.

S. nigra L.

Taşlıca village, Arıpınar, roadside, 1900 m, 06.07.1995, ÖE 1501.

Euro-Sib.

Viburnum lantana L.

Mount Keçi, mixed forest, 1950 m, 09.06.1995, ÖE 1502.

Euro-Sib.

V. orientale Pall.

Saçinge hill, open forest, 1750 m, 12.07.1995, ÖE 1504.

Eux.

V. opulus L.

Taşlıca village, Meydanlar, roadside, 1400 m, 09.06.1995, ÖE 1503.

Euro-Sib.

Lonicera caucasica Pall. subsp. *caucasica*

Taşlıca village, Arıpınar, stony slope, 1950 m, 18.07.1995, ÖE 1498.

L. caucasica Pall. subsp. *orientalis* (Lam.) Chamb. & Long

Mount Kurt, open area, alpine slope, 2600 m, 10.9.1995, ÖE 1499.

Endemic, LR (lc).

VALERIANACEAE

Valeriana alliariifolia Adams

Saçinge hill, roadside, 1870 m, 23.06.1995, ÖE 1505.

Cosm.

Centranthus longiflorus Stev. subsp. *longiflorus*

Hatipoğlu, roadside, 600 m, 10.07.1996, ÖE 1626.

Ir-Tur.

Valerianella lasiocarpa (Stev.) Betcke

Taşlıca village, Meydanlar, meadow, 1300 m, 06.06.1997, ÖE 1932.

Ir-Tur.

DIPSACACEAE

Dipsacus pilosus L.

Taşlıca village, Davütet, roadside, 1450 m, 23.06.1995, ÖE 1507.

Cephalaria aristata C.Koch

Fistiklı village, fieldside, 770 m, 23.06.1995, ÖE 1506.

Scabiosa columbaria L. subsp. *columbaria* var. *columbaria*

Mount Keçi, stony slope, 1950 m, 23.06.1995, ÖE 1508.

S. caucasica M.Bieb.

Taşlıca village, Arıpınar, stony slope, 2300 m, 17.08.1995, ÖE 1509.

COMPOSITAE (ASTERACEAE)

Xanthium strumarium L. subsp. *strumarium*

Taşlıca village, Gökçeyurt, open place, 1100 m, 10.06.1996, ÖE 1627.

Telekia speciosa (Schreb.) Baumg.

Taşlıca village, Bakacak, *Picea* Dietr. forest, moist soil, 1170 m, 15.07.1995, ÖE 1551.

Euro-Sib.

- Pallenis spinosa* (L.) Cass.
Fıstıklı village, fieldside, 250 m, 08.04.1995, ÖE 1539.
Cosm.
- Inula helenium* L. subsp. *orgyalis* (Boiss.) Grierson
Mount Kurt, streamside, open area, 2650 m, 07.09.1995, ÖE 1534.
Endemic, LR(nt), Eux.
- Helichrysum artvinense* P.H.Davis & Kupicha
Taşlıca village, Şaşkırat plateau, open area, dry soil, 2650 m, 27.07.1995, ÖE 1531.
Endemic, EN.
- H. orientale* (L.) DC.
Taşlıca village, Arıpınar, open area, 2350 m, 27.07.1995, ÖE 1532.
- Solidago virgaurea* L. subsp. *virgaurea*
Taşlıca village, Köklü, streamside, 1500 m, 23.09.1995, ÖE 1547.
- Aster alpinus* L.
Tuzlu hill, alpine pasture, 2800 m, 10.06.1997, ÖE 1933.
- A. caucasicus* Willd.
Taşlıca village, Arıpınar, open area, 1900 m, 24.08.1995, ÖE 1514.
Eux.
- Bellis perennis* L.
Taşlıca village, Bakacak, open area, 750 m, 12.03.1996, ÖE 1515.
Euro-Sib.
- Doronicum orientale* Hoffm.
Fıstıklı village, 370 m, 12.03.1996, ÖE 1530.
- Senecio pandurifolius* C.Koch
Fıstıklı village, stony slope, 350 m, 14.04.1996, ÖE 1544.
Eux.
- S. taraxacifolius* (M.Bieb.) DC. var. *taraxacifolius*
Tuzlu hill, rocky area, 2980 m, 09.09.1995, ÖE 1545.
- S. vernalis* Waldst. & Kit.
Taşlıca village, Gölge, moist soil, shady area, 800 m, 04.06.1995, ÖE 1546.
- S. viscosus* L.
Taşlıca village, Direkli, rocky slope, 1600 m, 20.07.1997, ÖE 1934.
- Tussilago farfara* L.
Taşlıca village, Gölge, roadside, moist soil, 1300 m, 02.03.1996, ÖE 1556.
Euro-Sib.
- Petasites hybridus* (L.) Gaertn.
Taşlıca village, Gökçeyurt, streamside, 1300 m, 12.06.1996, ÖE 1628.
Eur-Sib.
- P. albus* (L.) Gaertn.
Taşlıca village, Gölge, streamside, open forest, 1250 m, 04.04.1995, ÖE 1540.
Euro-Sib.
- Eupatorium cannabinum* L.
Taşlıca village, Gökçeyurt, open area, wet soil, 1000 m, 06.08.1995, ÖE 1529.
Euro-Sib.
- Anthemis calcarea* Sosn. var. *calcarea*
Mount Kurt, slope, 2400 m, 10.06.1997, ÖE 1935.
Endemic, CR.
- A. marschalliana* Willd. subsp. *pectinata* (Boiss.) Grierson
Taşlıca village, Şaşkırat plateau, alpine vegetation, 2800 m, 22.06.1996, ÖE 1629.
Eux.
- A. cotula* L.
Tuzlu hill, alpine pasture, 2750 m, 20.07.1997, ÖE 1936.
- A. tinctoria* L. var. *tinctoria*
Taşlıca village, Bakacak, roadside, 1100 m, 05.07.1995, ÖE 1511.
- A. tinctoria* L. var. *pallida* DC.
Saçinge hill, roadside, 1700 m, 05.07.1995, ÖE 1512.
- Achillea biserrata* M.Bieb.
Taşlıca village, Arıpınar, wet place, 1800 m, 11.07.1995, ÖE 1510.
Eux.
- Leucanthemum vulgare* Lam.
Hatipoğlu, roadside, 760 m, 19.07.1995, ÖE 1537.
Euro-Sib.
- Tanacetum macrophyllum* (Waldst. & Kit.) Schultz
Taşlıca village, Demirci, roadside, 1450 m, 11.08.1995, ÖE 1548.
Euro-Sib.
- T. parthenium* (L.) Sch.Bip.
Taşlıca village, Konacık, roadside, waste place, 1560 m, 11.08.1995, ÖE 1549.
- Tripleurospermum oreades* (Boiss.) Rech. var. *oreades*
Taşlıca village, Köklü, open forest, 1200 m, 12.03.1996, ÖE 1554.
- T. fissurale* (Sosn.) E.Hossain
Fıstıklı village, roadside, rocky slope, 380 m, 14.04.1996, ÖE 1555.
Endemic, LR(cd).
- Artemisia vulgaris* L.
Fıstıklı village, rocky slope, 650 m, 10.06.1996, ÖE 1630.
- Cousinia woronowii* Bornm.
Alacadağ, rocky slope, 1900 m, 20.07.1997, ÖE 1937.
Endemic, LR (nt), Ir-Tur.
- Arctium minus* (hill) Bernh. subsp. *pubens* (Bab.) Arènes
Taşlıca village, Mount Keçi, open area, 1950 m, 12.07.1995, ÖE 1513.
Euro-Sib.
- Onopordum acanthium* L.
Taşlıca village, Arıpınar, slope, 1700 m, 10.06.1997, ÖE 1938.
- Circium caucasicum* (Adams) Petr.
Mount Otluca, alpine vegetation, 2400 m, 04.08.1996, ÖE 1631.
Eux (mt).
- C. pseudopersonata* Boiss. & Bal. subsp. *pseudopersonata*
Mount Keçi, open stony slope, 1800 m, 20.06.1997, ÖE 1939.
Endemic, LR (lc), Eux.
- C. obvalatum* (M.Bieb.) Fisch.
Perikaya hill, roadside, 2250 m, 13.08.1995, ÖE 1524.
VU, Hyr-Eux.
- C. arvense* (L.) Scop. subsp. *arvense*
Taşlıca village, Kanacık, roadside, streamside, 1230 m, 14.10.1995, ÖE 1525.
- Carduus hamulosus* Ehrh. subsp. *hamulosus*
Taşlıca village, Demirci, roadside, 1450 m, 02.06.1995, ÖE 1516.

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

Taşlıca village, Davütet, rocky and stony slope, 1370 m, 07.08.1995, ÖE 1519.

Eux.

C. simplicicaulis Boiss. & Huet

Taşlıca village, Kılıçlı, open forest, 1860 m, 13.08.1995, ÖE 1520.

Eux.

C. pecho Albov

Fıstıklı village, roadside, 650 m, 21.07.1995, ÖE 1518.

Endemic, VU, Eux.

C. hedgei Wagenitz

Tuzlu hill, alpine slope, 2850 m, 06.06.1997, ÖE 1940.

Endemic, VU.

C. nigrifimbria (C.Koch) Sosn.

Mount Otluca, subalpine slope, 2060 m, 21.08.1995, ÖE 1517.

Eux (mt).

C. woronowi Bornm.

Taşlıca village, Meydanlar, stony slope, 1100 m, 14.04.1996, ÖE 1521.

Endemic, LR(cd).

Xeranthemum annuum L.

Fıstıklı village, open area, dry soil, 300 m, 17.07.1995, ÖE 1557.

Ir-Tur.

X. cylindraceum Sm.

Alacadağ, stony slope, dry soil, 1600 m, 10.06.1997, ÖE 1941.

Echinops galaticus Freyn

Taşlıca village, Demirci, roadside, 1450 m, 09.08.1995, ÖE 1528.

Eux.

E. pungens Trautv. var. *pungens*

Hatipoğlu, open forest, 750 m, 09.08.1995, ÖE 1527.

Ir-Tur.

Cichorium intybus L.

Hatipoğlu, cultivated fields, moist soil, 250 m, 16.04.1996, ÖE 1523.

Cosm.

Scorzonera inaequiscapa Boiss.

Fıstıklı village, dry soil, open area, 340 m, 07.06.1995, ÖE 1543.

Endemic, LR(nt).

S. seidlitzii Boiss.

Saçinge hill, rocky slope, 1750 m, 09.08.1995, ÖE 1632.

S. tomentosa L.

Mount Otluca, rocky slope, 2050 m, 18.07.1997, ÖE 1942.

Endemic, LR (lc), Ir-Tur.

Tragopogon reticulatus Boiss. & Huet

Fıstıklı village, open area, stony slope, 560 m, 15.06.1995, ÖE 1552.

T. aureus Boiss.

Taşlıca village, Arıpınar, open area, subalpine slope, 2100 m, 17.06.1995, ÖE 1553

Endemic, LR(lc).

Leontodon asperimus (Willd.) Ball.

Fıstıklı village, grassy slope, 560 m, 17.07.1995, ÖE 1536.

L. crispus Vill. subsp. *asper* (Waldst. & Kit.) Röhl. var. *asper*

Taşlıca village, Gökçeyurt, rocky slope, 1200 m, 10.08.1996, ÖE 1633.

Sonchus asper (L.) hill subsp. *glaucescens* (Jord.) Ball.

Cerat hill, open woods, 1600 m, 17.04.1996, ÖE 1634.

Hieracium variegatisquamum (Zahn) Juxip

Taşlıca village, Demirci, mixed forest, 1600 m, 28.06.1997, ÖE 1943.

Endemic, DD, Eux.

H. subhastulatum (Zahn) Juxip

Tuzlu hill, alpine pasture, 2800 m, 20.07.1997, ÖE 1944.

Endemic, DD, Eux.

H. diaphanoidiceps (Woronow & Zahn) Juxip

Artvin:inter Selalet et Chinzart ad margines sylvae, Woronow.

Endemic, EN, Eux.

H. bornmuelleri Freyn

Mount Otluca, rocky place, 2000 m, 10.08.1997, ÖE 1945.

Endemic, LR (lc).

H. subrosulatum Freyn & Sint.

Taşlıca village, Meydanlar, roadside, 1230 m, 08.08.1995, ÖE 1533.

Endemic, DD.

H. artvinense (Woronow & Zahn) Juxip

Artvin, in pineto supra Ghurdzan, Woronow.

Endemic, DD, Eux.

H. subartvinense Juxip

Artvin, prope stationem Gurdshani, 26.07.1911, Woronow.

Endemic, DD, Eux.

Pilosella x ruprechtii (Boiss.) Sell & West

Taşlıca village, Gölgeci, rocky slope, 1600 m, 12.08.1996, ÖE 1635.

P. piloselloides (Vill.) Soják subsp. *megalomastix* (NP.) Sell & West

Taşlıca village, Demirci, open area, slope, 1560 m, 13.07.1995, ÖE 1541.

Prenanthes abietina (Boiss. & Ball.) Kirp.

Taşlıca village, Direkli, mixed forest, 1850 m, 17.09.1995, ÖE 1542.

Eux.

P. cacaliifolia (M.Bieb.) Beauverd

Cerat hill, mixed forest, 1780 m, 10.10.1997, ÖE 1946.

Eux.

Mycelis muralis (L.) Dum.

Taşlıca village, Bakacak, open forest, 1230 m, 13.07.1995, ÖE 1538.

Euro-Sib.

Lapsana communis L. subsp. *intermedia* (M.Bieb.) Hayek

Taşlıca village, Meydanlar, mixed forest, 1370 m, 17.07.1995, ÖE 1535.

Taraxacum buttleri Soest

Taşlıca village, Meydanlar, rocky and stony slope, 1100 m, 12.06.1995, ÖE 1550.

Crepis paludosa (L.) Moench

Taşlıca village, Kılıçlı, open forest, 1700 m, 05.07.1995, ÖE 1526.

Euro-Sib.

CAMPANULACEAE

Campanula latifolia L.

Perikaya hill, slope, 1800 m, 10.06.1997, ÖE 1947.

Euro-Sib.

C. rapunculoides L. subsp. *rapunculoides*

Taşlıca village, Gökçeyurt, open area, wet soil, 850 m, 14.06.1995, ÖE 1488.

Euro-Sib.

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

Taşlıca village, Bakacak, *Picea* Dietr. forest, stony slope, 920 m, 14.06.1996, ÖE 1489.

C. alliariifolia Willd.

Taşlıca village, Direkli, roadside, 1830 m, 11.07.1995, ÖE 1484.

Eux.

C. collina Sims

Mount Keçi, open slope, 1650 m, 10.06.1997, ÖE 1948.

Eux.

C. aucheri A.DC.

Mount Kurt, alpine vegetation, 2700 m, 12.06.1996, ÖE 1636.

Eux (mt).

C. lactiflora M.Bieb.

Taşlıca village, Şaşkırat plateau, mixed forest, 2400 m, 10.08.1995, ÖE 1485.

Eux.

C. stevenii M.Bieb. subsp. *stevenii*

Taşlıca village, Şaşkırat plateau, open area, stony slope, 2200 m, 14.06.1996, ÖE 1490.

Hyr-Eux.

C. pontica Albov

Taşlıca village, Aripınar, subalpine slope, 1970 m, 14.04.1996, ÖE 1487.

Eux.

C. olympica Boiss.

Perikaya hill, subalpine slope, 1950 m, 19.07.1995, ÖE 1486.

Eux.

ERICACEAE

Rhododendron luteum Sweet

Taşlıca village, Meydanlar, mixed forest, 1200 m, 16.05.1996, ÖE 1237.

Eux.

R. ungerianii Trautv.

Taşlıca village, Şaşkırat plateau, subalpine slope, 2550 m, 21.06.1995, ÖE 1240.

VU, Eux.

R. smirnovii Trautv.

Taşlıca village, Şaşkırat plateau, subalpine slope, 2400 m, 16.05.1996, ÖE 1239.

Endemic, EN, Eux.

R. caucasicum Pall.

Taşlıca village, Şaşkırat plateau, subalpine slope, 2200 m, 16.05.1996, ÖE 1236.

Eux.

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

Taşlıca village, Meydanlar, mixed forest, 1700 m, ÖE 1238.

Eux.

R. x sochadzeae Kharadze & Davlian.

Taşlıca village, Meydanlar, open forest, 1400 m, 12.03.1996, ÖE 1241.

Epigaea gaultherioides (Boiss. & Ball.) Takht.

Taşlıca village, Şaşkırat plateau, subalpine slope, moist soil, 2230 m, 17.05.1996, ÖE 1234.

VU, Eux.

Arbutus andrachne L.

Çoruh riverside, slope, 500 m, 14.05.1996, ÖE 1233.

Medit.

Vaccinium myrtillus L.

Taşlıca village, Şaşkırat plateau, subalpine slope, 2170 m, 16.08.1996, ÖE 1243.

Euro-Sib.

V. arctostaphylos L.

Taşlıca village, Meydanlar, mixed forest, 1350 m, 19.07.1995, ÖE 1242.

Eux.

Pyrola media Sw.

Cerat hill, *Picea* Dietr. forest, 1570 m, 13.07.1995, ÖE 1235.

Euro-Sib.

Orthilia secunda (L.) House

Taşlıca village, Meydanlar, rocky area, acid soil, 1450 m, 17.07.1995, ÖE 1244.

Monotropa hypopithys L.

Cerat hill, mixed forest, 1370 m, 13.07.1995, ÖE 1245.

PRIMULACEAE

Primula vulgaris Huds. subsp. *vulgaris*

Taşlıca village, Meydanlar, wet soil, *Picea* Dietr. forest, 1400 m, 13.07.1995, ÖE 1254.

Euro-Sib.

P. vulgaris Huds. subsp. *sibthorpii* (Hoffmanns.) W.W.Sm. & Forrest

Taşlıca village, Meydanlar, roadside, 1300 m, 13.03.1996, ÖE 1255.

Eux.

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

Taşlıca village, Şaşkırat plateau, subalpine slope, 2370 m, 12.04.1996, ÖE 1252.

Euro-Sib.

P. elatior (L.) hill subsp. *pseudoelatior* (Kusn.) W.W.Sm. & Forrest

Mount Kurt, subalpine slope, 2400 m, 14.05.1996, ÖE 1253.

VU, Eux (mt).

P. auriculata Lam.

Tuzlu hill, streamside, alpine slope, 2700 m, 14.05.1996, ÖE 1251.

Ir-Tur.

P. algida Adams

Tuzlu hill, alpine vegetation, wet pasture, 2700 m, 10.07.1996, ÖE 1637.

Cyclamen coum Mill. var. *coum*

Fıstıklı village, *Pinus pinea* L. forest, 480 m, 13.03.1996, ÖE 1248.

C. coum Miller var. *caucasicum* (C.Koch) Medik.

Fıstıklı village, rocky and stony slope, 370 m, 13.03.1996, ÖE 1249.

Lysimachia verticillaris Spreng.

Taşlıca village, Aripınar, moist soil, 1750 m, 19.07.1995, ÖE 1250.

Hyr-Eux.

Anagallis arvensis L. var. *arvensis*

Çoruh riverside, 350 m, 12.07.1995, ÖE 1247.

EBENACEAE

Diospyros lotus L.

Hatipoğlu, roadside, mixed forest, wet soil, 580 m, 17.08.1995, ÖE 1246.

OLEACEAE

Jasminum fruticans L.

Fıstıklı village, open area, 350 m, 16.05.1996, ÖE 1462.

Medit.

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

Taşlıca village, Gökçeyurt, roadside, 900 m, 19.09.1995, ÖE 1461.

Euro-Sib.

- Olea europaea* L. var. *sylvestris* (Mill.)
Lehr
Fıstıklı village, open area, 350 m,
06.06.1996, ÖE 1638.
Medit.
Osmanthus decorus (Boiss. & Ball.)
Kasapgil
Taşlıca village, Davütet, streamside,
mixed forest, 1230 m, 16.03.1996, ÖE
1463.
VU, Eux.
APOCYNACEAE
Trachomitum venetum (L.) Woodson
subsp. *sarmatiense* (Woodson) Avet.
Çoruh riverside, 260 m, 17.08.1996, ÖE
1408.
E. Medit.
Vinca herbacea Waldst. & Kit.
Fıstıklı village, sunny stony slope, 470 m,
12.03.1996, ÖE 1409.
GENTIANACEAE
Centaurium erythraea Rafn subsp.
erythraea
Taşlıca village, Meydanlar, stony slope,
dry soil, 900 m, 27.07.1995, ÖE 1404.
Euro-Sib.
Gentiana asclepiadea L.
Taşlıca village, Demirci, roadside, mixed
forest, 1500 m, 14.09.1995, ÖE 1405.
Euro-Sib.
G. pyrenaica L.
Saçinge hill, open forest, 1650 m,
18.07.1997, ÖE 1949.
Euro-Sib.
G. septenifida Pall.
Taşlıca village, Arıpınar, open area in the
Abies Mill. forest, 2150 m, 11.08.1995, ÖE
1406.
Hyr-Eux (mt).
G. verna L. subsp. *pontica* (Soltok)
Hayek
Tuzlu hill, alpine slope, 3000 m,
20.06.1997, ÖE 1950.
Hyr-Eux (mt).
Gentianella ciliata (L.) Borkh. subsp.
blepharophora (Bordz.) Pritch.
Saçinge hill, open area, 1450 m,
12.09.1995, ÖE 1407.
Hyr-Eux (mt).
G. caucasea (G.Lodd. ex Sims) Holub
Tuzlu hill, subalpine pasture, 2300 m,
10.06.1997, ÖE 1951.
Eux (mt).
Swertia iberica Fisch. ex C.A.Mey.
Tuzlu hill, alpine vegetation, wet place,
2750 m, 10.07.1996, ÖE 1639.
CONVOLVULACEAE
Convolvulus cantabrica L.
Fıstıklı village, *Pinus pinea* L. stand, 350
m, 12.04.1995, ÖE 1414.
C. arvensis L.
Fıstıklı village, roadside, dry soil, 500 m,
06.06.1996, ÖE 1640.
Cosm.
Calystegia silvatica (Kit.) Griseb.
Taşlıca village, Davütet, roadside, 1450
m, 14.07.1995, ÖE 1413.
CUSCUTACEAE
Cuscuta epithymum (L.) L. var.
epithymum
Taşlıca village, Gölge, roadside, on the
Sambucus ebulus L., 1450 m, 14.07.1995,
ÖE 1415.
BORAGINACEAE
Heliotropium ellipticum Ledeb.
Taşlıca village, Bakacak, roadside, dry
soil, 950 m, 13.06.1995, ÖE 1420.
Ir-Tur.
Myosotis lazica Popov
Taşlıca village, Köklü, roadside, moist
soil, 1100 m, 17.07.1995, ÖE 1423.
VU, Eux.
M. sylvatica Ehrh. ex Hoffm. subsp.
cyanea Vestergr.
Perikaya hill, open area, dry soil, 2200
m, 17.07.1995, ÖE 1424.
M. laxa Lehm. subsp. *caespitosa*
(Schultz) Hyl. ex Nordh.
Taşlıca village, Arıpınar, roadside, wet
soil, 1800 m, 13.06.1995, ÖE 1422.
Omphalodes cappadocica (Willd.) DC.
Fıstıklı village, roadside, 750 m,
12.03.1996, ÖE 1425.
Eux.
Cynoglossum creticum Mill.
Taşlıca village, Arıpınar, subalpine
vegetation, 2300 m, 26.07.1996, ÖE 1641.
C. montanum L.
Perikaya hill, alpine slope, 2200 m,
18.06.1997, ÖE 1952.
Euro-Sib.
Lithospermum officinale L.
Taşlıca village, Şaşkırat plateau, slope,
2200 m, 10.07.1997, ÖE 1954.
Euro-Sib.
L. purpureocaeruleum L.
Taşlıca village, Gökçeyurt, roadside,
1100 m, 12.03.1996, ÖE 1421.
Euro-Sib.
Buglossoides arvensis (L.) Johnston
Mount Kurt, slope, 2700 m,
18.07.1997, ÖE 1953.
Echium vulgare L.
Fıstıklı village, roadside, 750 m,
13.06.1995, ÖE 1419.
Euro-Sib.
Onosma sericeum Willd.
Cerat hill, open forest, 1700 m,
18.07.1997, ÖE 1955.
Ir-Tur.
O. circinatum Riedl
Fıstıklı village, roadside, 900 m,
17.06.1995, ÖE 1426.
Endemic, EN, Eux.
O. microcarpum Steven ex DC.
Fıstıklı village, open forest, 470 m,
13.04.1996, ÖE 1427.
Ir-Tur.
Cerinth minor L. subsp. *minor*
Taşlıca village, Konaklı, *Picea* Dietr.
forest, 1450 m, 15.07.1995, ÖE 1418.
Euro-Sib.
C. glabra Mill.
Taşlıca village, Kılıçlı, open area, 1900 m,
17.07.1995, ÖE 1417.
Euro-Sib.
Symphytum asperum Lepech.
Taşlıca village, Arıpınar, slope, 1550 m,
10.07.1997, ÖE 1956.
Hyr-Eux.
S. armeniacum Buckn.
Saçinge hill, stony slope, 1800 m,
15.07.1997, ÖE 1956.
Endemic, DD, Eux.

S. tauricum Willd.
Taşlıca village, Kanacık, mixed forest, 1450 m, 12.05.1995, ÖE 1428.
Euro-Sib.
Trachystemon orientalis (L.) G.Don
Hatipoğlu, open slope, 750 m, 07.03.1996, ÖE 1429.
Eux.
Brunnera macrophylla (Adams) Johnston.
Taşlıca village, Meydanlar, open area in the *Picea* Dietr. forest, 1350 m, 12.03.1996, ÖE 1416.
VU, Eux.
Anchusa azurea Mill. var. *azurea*
Taşlıca village, Arıpınar, waste place, 2200 m, 28.06.1996, ÖE 1642.
Nonea versicolor (Steven) Sweet
Saçinge hill, stony slope, 1750 m, 06.06.1996, ÖE 1643.
N. intermedia Ledeb.
Mount Keçi, alpine slope, 1950 m, 10.06.1997, ÖE 1957.
Alkanna cordifolia C.Koch
Çoruh: Artvin, 500 m, Stainton 8184.
Endemic, LR (lc), Ir-Tur.
SOLANACEAE
Solanum dulcamara L.
Taşlıca village, Arıpınar, streamside, 1550 m, 20.07.1997, ÖE 1958.
Physalis alkekengi L.
Taşlıca village, Bakacak, roadside, wet soil, 1450 m, 16.10.1995, ÖE 1412.
Atropa belladonna L.
Taşlıca village, Kılıçlı, roadside, 1700 m, 13.07.1995, ÖE 1410.
Euro-Sib.
Datura stramonium L.
Fıstıklı village, open area, 600 m, 06.06.1996, ÖE 1644.
Cosm.
Hyoscyamus niger L.
Hatipoğlu, roadside, open area, 850 m, 13.04.1996, ÖE 1411.
SCROPHULARIACEAE
Verbascum gracilescens Hub.-Mor.
Taşlıca village, Meydanlar, roadside, 1050 m, 17.07.1995, ÖE 1475.
Endemic, EN, Ir-Tur.

V. thapsus L.
Taşlıca village, Arıpınar, stony slope, dry soil, 12.07.1999, ÖE 1645.
V. saccatum C.Koch
Taşlıca village, Demirci, roadside, 1300 m, 01.07.1995, ÖE 1476.
Ir-Tur.
V. artvinense Wulf
Artvin, Lomaşen, Machljuse, 09.06.1909, Nesterow (holo. LE)
Endemic, DD, Eux.
Scrophularia chrysantha Jaub. & Spach
Taşlıca village, Davütet, on rocks, 1600 m, 06.04.1996, ÖE 1473.
Eux.
S. kotschyana Benth.
Taşlıca village, Gölge, open area, 800 m, 06.04.1996, ÖE 1474.
S. umbrosa Dum.
Taşlıca village, Meydanlar, streamside, 1400 m, 20.07.1997, ÖE 1959.
Linaria genistifolia (L.) Mill. subsp. *artvinensis* P.H.Davis
Çoruh: Artvin, 400 m, Stainton 8290.
Endemic, VU, Eux.
L. vulgaris Mill.
Taşlıca village, Meydanlar, meadow, 1300 m, 20.08.1997, ÖE 1960.
Digitalis ferruginea L. subsp. *ferruginea*
Taşlıca village, Meydanlar, open forest, 1150 m, 21.06.1995, ÖE 1464.
Euro-Sib.
Veronica gentianoides Vahl.
Tuzlu hill, alpine pasture, 2850 m, 10.06.1997, ÖE 1961.
Hyr-Eux (mt).
V. verna L.
Tuzlu hill, alpine pasture, 2900 m, 10.06.1997, ÖE 1962.
Euro-Sib.
V. persica Poir.
Fıstıklı village, open area, 450 m, 12.03.1996, ÖE 1483.
V. ceratocarpa C.A.Mey.
Taşlıca village, Meydanlar, meadow, 1300 m, 08.06.1995, ÖE 1477.
VU, Hyr-Eux.

V. anagallis-aquatica L.
Taşlıca village, Arıpınar, streamside, 1500 m, 18.07.1997, ÖE 1963.
Cosm.
V. jacquinii Baumg.
Fıstıklı village, open forest, 350 m, 06.04.1996, ÖE 1478.
Euro-Sib.
V. liwanensis C.Koch
Çoruh riverside, on the rocks, 250 m, 03.03.1995, ÖE 1479.
VU, Eux.
V. orientalis Mill. subsp. *orientalis*
Taşlıca village, Arıpınar, roadside, 1660 m, 06.06.1995, ÖE 1481.
V. peduncularis M.Bieb.
Taşlıca village, Şaşkırat plateau, alpine slope, 2450 m, 01.04.1996, ÖE 1482.
Eux.
V. officinalis L.
Taşlıca village, Demirci, open forest, 1350 m, 06.06.1995, ÖE 1480.
Melampyrum arvense L. var. *arvense*
Taşlıca village, Direkli, open forest, 1400 m, 16.05.1996, ÖE 1467.
Euro-Sib.
M. arvense L. var. *elatius* Boiss.
Taşlıca village, Arıpınar, open area, 1750 m, 08.07.1995, ÖE 1468.
Endemic, LR(nt).
Euphrasia hirtella Jordan ex Reuter
Alacadağ, slope, 1900 m, 12.07.1997, ÖE 1964.
Euro-Sib.
E. pectinata Ten.
Taşlıca village, Şaşkırat plateau, subalpine slope, 2100 m, 13.05.1996, ÖE 1465.
Euro-Sib.
Pedicularis caucasica M.Bieb.
Mount Kurt, alpine slope, 2700 m, 10.06.1997, ÖE 1965.
Hyr-Eux (mt)
P. atropurpurea Nordm.
Taşlıca village, Şaşkırat plateau, subalpine slope, 2300 m, 16.08.1995, ÖE 1469.
VU, Eux (mt).

P. condensata M.Bieb.
Taşlıca village, Demirci, slope, 1700 m,
08.07.1995, ÖE 1470.

Eux.

P. nordmanniana Bunge
Perikaya hill, subpine slope, 1900 m,
20.07.1997, ÖE 1966.

Eux (mt).

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

Taşlıca village, Meydanlar, meadow, wet
soil, 1250 m, 05.06.1995, ÖE 1471.

Rhynchocorys orientalis (L.) Benth.

Taşlıca village, Şaşkırat plateau, meadow,
2000 m, 08.07.1997, ÖE 1967.

Eux.

R. stricta (C.Koch) Albov

Taşlıca village, Gökçeyurt, open area,
meadow, 950 m, 05.06.1995, ÖE 1472.

Eux.

Lathraea squamaria L.

Taşlıca village, Köklü, stony slope, 1230
m, 14.04.1996, ÖE 1466.

OROBANCHACEAE

Orobanche bungeana Beck

Taşlıca village, Arıpınar, roadside, 1550
m, 10.06.1997, ÖE 1968.

Hyr-Eux.

VERBENACEAE

Verbena officinalis L.

Taşlıca village, Arıpınar, roadside, 1800
m, 19.08.1995, ÖE 1430.

Cosm.

LABIATAE (LAMIACEAE)

Ajuga orientalis L.

Tuzlu hill, alpine slope, 2900 m,
16.06.1996, ÖE 1431.

A. genevensis L.

Mount Kurt, alpine slope, 2700 m,
10.06.1997, ÖE 1969.

Euro-Sib.

A. reptans L.

Taşlıca village, Meydanlar, meadow,
1350 m, 20.06.1997, ÖE 1970.

Euro-Sib.

Teucrium chamaedrys L. subsp.
trapezuntinus Rech.

Taşlıca village, Demirci, rocky slope,
1350 m, 04.06.1995, ÖE 1455.

Eux.

T. orientale L.

Taşlıca village, Gökçeyurt, roadside,
1050 m, 07.09.1995, ÖE 1456.

Ir-Tur.

T. polium L.

Taşlıca village, Gölge, stony slope, rocky
area, 850 m, 20.09.1995, ÖE 1457.

Scutellaria albida L. subsp. *colchica*
(Rech.) Edm.

Fıstıklı village, stony slope, 600 m,
18.06.1997, ÖE 1971.

Eux.

S. orientalis L. subsp. *orientalis*

Tuzlu hill, alpine slope, 2780 m,
12.08.1995, ÖE 1449.

Ir-Tur.

Lamium purpureum L. var.
purpureum

Taşlıca village, Direkli, mixed forest,
moist soil, 1480 m, 14.06.1995, ÖE 1437.

Euro-Sib.

L. album L.

Taşlıca village, Arıpınar, rocky slope,
1670 m, 12.04.1996, ÖE 1434.

Euro-Sib.

L. crinitum Montbret & Aucher ex
Benth.

Mount Otluca, *Picea* Dietr. forest, 1850
m, 12.09.1995, ÖE 1435.

Eux.

L. tomentosum Willd. var.
tomentosum

Fıstıklı village, stony slope, 450 m,
24.08.1995, ÖE 1439.

Ir-Tur.

L. sulfureum Hausskn. & Sint ex
R.B.Mill.

Mount Kurt, in crevices on rocks, 2880
m, 16.07.1995, ÖE 1438.

Endemic, DD, Ir-Tur.

L. galactophyllum Boiss. & Reut.

Taşlıca village, Arıpınar, roadside, 1670
m, 18.07.1996, ÖE 1436.

Endemic, LR(Ic), Ir-Tur.

Galeobdolon luteum Hudson subsp.
montanum (Pers.) R.Mill

Taşlıca village, Köklü, meadow, 1500 m,
28.06.1997, ÖE 1972.

Galeopsis bifida Boem.

Taşlıca village, Kanacık, slope, 1500 m,
20.06.1997, ÖE 1973.

Leonurus quinquelobatus Gilib.

Taşlıca village, Arıpınar, meadow, 1600
m, 10.06.1997, ÖE 1973.

Euro-Sib.

Ballota nigra L. subsp. *nigra*

Taşlıca village, Köklü, open forest,
28.06.1997, ÖE 1974.

Sideritis armeniaca Bornm.

Taşlıca village, Demirci, stony slope,
1350 m, 03.09.1995, ÖE 1450.

Endemic, LR(cd), Ir-Tur.

S. montana L. subsp. *montana*

Fıstıklı village, open area, 330 m,
12.05.1995, ÖE 1451.

Medit.

Stachys sylvatica L.

Taşlıca village, Meydanlar, mixed forest,
1350 m, 07.09.1995, ÖE 1454.

Euro-Sib.

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

Hatipoğlu, open forest, 550 m,
12.05.1995, ÖE 1452.

Ir-Tur.

S. macrantha (C.Koch) Stearn

Mount Kurt, mixed forest, 2350 m,
07.09.1995, ÖE 1453.

Eux.

Prunella vulgaris L.

Taşlıca village, Arıpınar, fieldside, 1920
m, 12.08.1995, ÖE 1445.

Euro-Sib.

P. laciniata (L.) L.

Taşlıca village, Arganet, *Pinus* L. forest,
1200 m, 06.06.1997, ÖE 1975.

Origanum rotundifolium Boiss.

Taşlıca village, Meydanlar, roadside,
1350 m, 14.06.1995, ÖE 1442.

Eux.

- O. vulgare* L. subsp. *vulgare*
Taşlıca village, Demirci, slope, dry soil, 1280 m, 14.06.1995, ÖE 1444.
Euro-Sib.
- O. vulgare* L. subsp. *viride* (Boiss.) Hayek
Taşlıca village, Meydanlar, roadside, 1270 m, 14.06.1995, ÖE 1443.
Satureja spicigera (C.Koch) Boiss.
Taşlıca village, Gölge, moist soil, 1250 m, 03.09.1995, ÖE 1448.
Eux.
- Calamintha grandiflora* (L.) Moench
Taşlıca village, Demirci, roadside, moist soil, 1350 m, 15.07.1995, ÖE 1432.
Euro-Sib.
- Clinopodium vulgare* L. subsp. *vulgare*
Taşlıca village, Argane, stony slope, 1760 m, 13.06.1995, ÖE 1433.
Euro-Sib.
- Micromeria elliptica* C.Koch
Çoruh riverside, 350 m, 18.07.1997, ÖE 1976.
Thymus fallax Fisch. & Mey.
Taşlıca village, Köklü, stony slope, dry soil, 1450 m, 20.09.1995, ÖE 1458.
Ir-Tur.
- T. praecox* Opiz subsp. *grossheimii* (Ronniger) Jalas var. *grossheimii*
Taşlıca village, Arıpınar, roadside, open area, 1900 m, 17.08.1995, ÖE 1460.
- T. longicaulis* C.Presl subsp. *longicaulis* var. *subisophyllus* (Borbás) Jalas
Taşlıca village, Demirci, roadside, open area, 1350 m, 17.08.1995, ÖE 1459.
- Mentha pulegium* L.
Taşlıca village, Meydanlar, streamside, wet soil, 1030 m, 14.06.1995, ÖE 1441.
- M. longifolia* (L.) Huds. subsp. *longifolia*
Taşlıca village, Demirci, streamside, 1470 m, 14.06.1995, ÖE 1440.
Eux.
- Salvia rosfolia* Sm.
Taşlıca village, Meydanlar, mixed forest, 1300 m, 12.07.1995, ÖE 1446.
Endemic, (LR) (lc), Ir-Tur.
- S. huberi* Hedge
Alacadağ, stony slope, 1700 m, 20.06.1997, ÖE 1977.
Endemic, LR (cd), Ir-Tur.
- S. pachystachys* Trautv.
Taşlıca village, Şaşkırat plateau, subalpine vegetation, 2000 m, 06.07.1997, ÖE 1978.
Ir-Tur.
- S. sclarea* L.
Saçinge hill, roadside, 1350 m, 06.06.1997, ÖE 1979.
- S. verticillata* L. subsp. *verticillata*
Taşlıca village, Demirci, mixed forest, 1450 m, 14.07.1995, ÖE 1447.
- PLANTAGINACEAE
Plantago major L. subsp. *major*
Taşlıca village, Arıpınar, open area, waste place, 1800 m, 28.06.1996, ÖE 1646.
- P. lanceolata* L.
Taşlıca village, Gökçeyurt, roadside, 890 m, 13.05.1995, ÖE 1460.
- THYMELAEACEAE
Daphne glomerata Lam.
Tuzlu hill, subalpine slope, 2000 m, 13.07.1995, ÖE 1348.
- LORANTHACEAE
Viscum album L. subsp. *album*
Taşlıca village, Meydanlar, *Pinus* L. forest, 1300 m, 13.05.1996, ÖE 1356.
- EUPHORBIACEAE
Mercurialis perennis L.
Taşlıca village, Meydanlar, meadow, 1200 m, 10.07.1996, ÖE 1647.
Euro-Sib.
- Euphorbia peplis* L.
Taşlıca village, Gölge, stony slope, 900 m, 16.08.1995, ÖE 1363.
Medit.
- E. stricta* L.
Taşlıca village, Direkli, *Picea* Dietr. forest, 1650 m, 12.07.1995, ÖE 1364.
Euro-Sib.
- E. paralias* L.
Fıstıklı village, open area, dry soil, 350 m, 16.08.1995, ÖE 1362.
Medit.
- E. amygdaloides* L. var. *amygdaloides*
Perikaya hill, mixed forest, dry soil, 1950 m, 12.07.1995, ÖE 1361.
Euro-Sib.
- BUXACEAE
Buxus sempervirens L.
Fıstıklı village, mixed forest, stony slope, 350 m, 12.03.1996, ÖE 1360.
Euro-Sib.
- URTICACEAE
Urtica dioica L.
Taşlıca village, Gölge, roadside, open forest, 1050 m, 13.07.1995, ÖE 1149.
Euro-Sib.
- MORACEAE
Morus alba L.
Taşlıca village, Köklü, fieldside, 1360 m, 14.07.1995, ÖE 1148.
- Ficus carica* L. subsp. *carica*
Fıstıklı village, open area in the *Pinus pinea* L. stand, 570 m, 13.07.1995, ÖE 1146, Çoruh riverside, 250 m, 16.05.1996, ÖE 1147.
- ULMACEAE
Ulmus glabra Huds.
Taşlıca village, Meydanlar, mixed forest, moist soil, 1250 m, 13.07.1995, ÖE 1144.
Euro-Sib.
- U. minor* Mill. subsp. *minor*
Hatipoğlu, roadside, 800 m, 15.07.1995, ÖE 1145.
- JUGLANDACEAE
Juglans regia L.
Taşlıca village, Meydanlar, mixed forest, streamside, 1370 m, 13.07.1995, ÖE 1150.
- PLATANACEAE
Platanus orientalis L.
Çoruh riverside, 300 m, 16.07.1996, ÖE 1143.
- FAGACEAE
Fagus orientalis Lipsky
Taşlıca village, Şaşkırat plateau, subalpine slope, moist soil, 2250 m, 13.07.1995, ÖE 1152.
Euro-Sib.
- Castanea sativa* Mill.
Taşlıca village, Arıpınar, mixed forest, 1650 m, 05.05.1996, ÖE 1151.
Euro-Sib.

Quercus hartwissiana Steven

Taşlıca village, Meydanlar, mixed forest, 1550 m, 13.07.1995, ÖE 1491.

Eux.

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

Fıstıklı village, roadside, mixed forest, 350 m, 13.07.1995, ÖE 1153.

BETULACEAE

Carpinus betulus L.

Hatipoğlu, mixed forest, 850 m, 13.07.1995, ÖE 1158.

Euro-Sib.

C. orientalis Mill.

Fıstıklı village, mixed forest, 590 m, 13.07.1995, ÖE 1159.

Ostrya carpinifolia Scop.

Taşlıca village, Gökçeyurt, mixed forest, roadside, 1300 m, 16.06.1995, ÖE 1161.

Medit.

Corylus avellana L. var. *avellana*

Taşlıca village, Bakacak, roadside, 350 m, 16.08.1995, ÖE 1160.

Betula pendula Roth

Taşlıca village, Şaşkırat plateau, roadside, 1950 m, 14.05.1995, ÖE 1156.

B. litwinowii Doluch.

Taşlıca village, Şaşkırat plateau, with shrubs in the mixed forest as follows: *Rhododendron caucasicum* Pallas, *Sorbus aucuparia* L., 2200 m, 14.04.1996, ÖE 1155.

Eux.

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

Taşlıca village, Şaşkırat plateau, with shrubs in the mixed forest as follows: *Rhododendron* L., *Lonicera* L., *Sorbus aucuparia* L., 1350 m, 21.05.1996, ÖE 1157.

Eux.

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

Taşlıca village, Gölge, moist soil, along the Hatila streamside, 1100 m, 14.04.1996, ÖE 1154.

Eux.

SALICACEAE

Salix alba L.

Taşlıca village, Gölge, streamside, 850 m, 12.10.1995, ÖE 1201.

Euro-Sib.

S. caucasica Andersson

Taşlıca village, Arıpınar, roadside, 1600 m, 12.05.1996, ÖE 1202.

Eux.

S. caprea L.

Saçinge hill, open forest, 1800 m, 12.04.1996, ÖE 1203.

Euro-Sib.

S. pseudomedemii E.Wolf

Taşlıca village, Arıpınar, roadside, streamside, 1890 m, 21.04.1996, ÖE 1204.

Eux.

Populus tremula L.

Taşlıca village, Şaşkırat plateau, subalpine slope, 2450 m, 12.06.1995, ÖE 1200.

RUBIACEAE

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

Taşlıca village, Bakacak, stony slope, 1075 m, 23.06.1995, ÖE 1492.

Eux.

Asperula orientalis Boiss. & Hohen.

Taşlıca village, Gölge, roadside, 900 m, 13.05.1995, ÖE 1491.

Ir-Tur.

Galium rotundifolium L.

Taşlıca village, Meydanlar, open forest, 1270 m, 18.07.1995, ÖE 1494.

Euro-Sib.

G. odoratum (L.) Scop.

Taşlıca village, Bakacak, mixed forest, 950 m, 16.05.1995, ÖE 1493.

Euro-Sib.

G. uliginosum L.

Fıstıklı village, moist soil, 760 m, 25.06.1995, ÖE 1495.

VU, Euro-Sib.

G. verum L. subsp. *verum*

Taşlıca village, Köklü, riverside, 1430 m, 07.07.1995, ÖE 1496.

Euro-Sib.

Cruciata taurica (Pall. ex Willd.) Ehrend.

Taşlıca village, Arıpınar, stony slope, 1500 m, 20.06.1997, ÖE 1980.

Ir-Tur.

Rubia tinctorum L.

Taşlıca village, Bakacak, roadside, 970 m, 16.05.1996, ÖE 1497.

Ir-Tur.

MONOCOTYLEDONAE

ALISMATACEAE

Alisma plantago-aquatica L.

Hatila streamside, 1500 m, 06.06.1996, ÖE 1648.

Euro-Sib.

LILIACEAE

Smilax excelsa L.

Hatipoğlu, mixed forest, 750 m, 08.05.1995, ÖE 1586.

Eux.

Ruscus aculeatus L. var. *angustifolius* Boiss.

Fıstıklı village, open area, 250 m, 03.03.1996, ÖE 1581.

Polygonatum verticillatum (L.) All.

Taşlıca village, Meydanlar, mixed forest, wet soil, 1300 m, 08.06.1996, ÖE 1649.

Euro-Sib.

Allium gramineum C.Koch

Taşlıca village, Arıpınar, subalpine slope, stony slope, 2200 m, 10.07.1996, ÖE 1650.

A. rollovii Grossh.

Perikaya hill, stony slope, 2000 m, 20.06.1997, ÖE 1981.

Scilla monanthos C.Koch

Taşlıca village, Şaşkırat plateau, subalpine slope, 1900 m, 03.03.1996, ÖE 1583.

Eux.

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

Tuzlu hill, alpine slope, 2500 m, 07.03.1996, ÖE 1584.

Ir-Tur.

S. leepi Speta

Fıstıklı village, rocky slope, 650 m, 03.03.1996, ÖE 1582.

Endemic, LR(nt), Ir-Tur.

Ornithogalum oligophyllum E.D.Clarke

Tuzlu hill, alpine pasture, 3000 m, 20.06.1997, ÖE 1982.

O. platyphyllum Boiss.

Taşlıca village, Köklü, open area, 1500 m, 09.05.1996, ÖE 1580.

Ir-Tur.

O. umbellatum L.

Fıstıklı village, dry soil, 350 m, 14.04.1995, ÖE 1579.

Muscari coeleste Fomin

Taşlıca village, Şaşkırat plateau, open area, 2200 m, 12.03.1996, ÖE 1577.

Endemic, LR(Ic), Ir-Tur.

M. armeniacum Leichtlin ex Baker

Hatipoğlu, rocky slope, 650 m, 12.03.1996, ÖE 1576.

M. neglectum Guss.

Taşlıca village, Gölge, roadside, 450 m, 12.03.1996, ÖE 1578.

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

Taşlıca village, Arıpınar, open *Picea* Dietr. forest, 1750 m, 15.05.1995, ÖE 1574.

VU.

L. carniolicum Bernh. ex W.Koch subsp. *ponticum* (C.Koch) P.H.Davis & Hend. var. *artvinense* (Misch.) P.H.Davis & Hend.

Taşlıca village, Arıpınar, open *Picea* Dietr. forest, 2000 m, 14.07.1995, ÖE 1575.

Endemic, EN, Eux.

Gagea reticulata (Pall.) Schult.

Fıstıklı village, open area, 750 m, 12.03.1996, ÖE 1572

Ir-Tur.

G. bulbifera (Pall.) Schult.

Saçinge hill, open area, 1870 m, 04.04.1996, ÖE 1571

Euro-Sib.

G. tenuissima Misch.

Fıstıklı village, stony slope, 370 m, 12.03.1996, ÖE 1573.

Endemic, DD, Eux.

Veratrum album L.

Taşlıca village, Şaşkırat plateau, alpine vegetation, 2700 m, 10.07.1996, ÖE 1651.

Euro-Sib.

Colchicum umbrosum Steven

Taşlıca village, Şaşkırat plateau, subalpine slope, 2270 m, 12.10.1995, ÖE 1570.

Eux.

IRIDACEAE

Crocus biflorus Mill. subsp. *artvinensis* (J.Phil.) Mathew

Tuzlu hill, alpine vegetation, 3000 m, 10.04.1996, ÖE 1652.

Endemic, EN, Euro-Sib.

Gladiolus atrovioleaceus Boiss.

Taşlıca village, Meydanlar, open *Picea* Dietr. forest, 1350 m, 02.05.1996, ÖE 1585.

Ir-Tur.

ORCHIDACEAE

Cephalanthera rubra (L.) Rich.

Taşlıca village, Arıpınar, mixed forest, 1650 m, 10.06.1997, ÖE 1983.

C. longifolia (L.) Fritsch

Taşlıca village, Arıpınar, open forest, 1700 m, 10.06.1996, ÖE 1653.

Euro-Sib.

Epipactis helleborine (L.) Crantz

Taşlıca village, Gökçeyurt, open forest, 900 m, 01.07.1997, ÖE 1984.

E. microphylla (Ehrh.) Sw.

Taşlıca village, Direkli, open area, wet soil, 1470 m, 18.07.1995, ÖE 1588.

Limodorum abortivum (L.) Sw.

Taşlıca village, Arıpınar, mixed forest, 1600 m, 01.07.1997, ÖE 1985.

Goodyera repens (L.) R.Br.

Saçinge hill, mixed forest, 1750 m, 10.06.1997, ÖE 1986.

Platanthera bifolia (L.) Rich.

Çoruh: above Artvin, 2000 m, D 29705.

Euro-Sib.

P. chlorantha (Custer) Rchb.

Taşlıca village, Meydanlar, open *Picea* Dietr. forest, 1200 m, 17.07.1995, ÖE 1589.

Orchis purpurea Huds.

Taşlıca village, Gölge, open forest, 1560 m, 10.06.1996, ÖE 1654.

Euro-Sib.

Dactylorhiza urvilleana (Steud.) Baumann & Künkele

Taşlıca village, Demirci, slope, 1450 m, 12.03.1995, ÖE 1587.

Eux.

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

Taşlıca village, Arıpınar, wet meadow, 1600 m, 01.07.1997, ÖE 1987.

Eux.

DIOSCOREACEAE

Tamus communis L. subsp. *communis*

Taşlıca village, Meydanlar, mixed forest, 1200 m, 28.06.1996, ÖE 1655.

JUNCACEAE

Juncus inflexus L.

Çoruh: Tütüncüler, 35 km from Artvin-Çoruh River junction, 1700 m, Kit-Tan 1290.

J. effusus L.

Taşlıca village, Arıpınar, streamside, wet soil, 1950 m, 13.07.1995, ÖE 1558.

Cosm.

J. filiformis L.

Taşlıca village, Bakacak, wet grassland, 1500 m, 22.08.1996, ÖE 1656.

J. bufonius L.

Taşlıca village, Şaşkırat plateau, wet place, 2200 m, 01.07.1997, ÖE 1988.

Cosm.

Luzula forsteri (Sm.) DC.

Taşlıca village, Meydanlar, open area, wet place, 1250 m, 1150 m, 20.08.1996, ÖE 1657.

Euro-Sib.

L. sylvatica (Huds.) Gaudin

Taşlıca village, Arıpınar, damp slope, 1600 m, 01.07.1997, ÖE 1989.

Euro-Sib.

L. pseudosudetica (V.I.Krecz.) V.I.Krecz.

Tuzlu hill, alpine pasture, 3000 m, 06.06.1997, ÖE 1990.

Eux (mt).

L. campestris (L.) DC.

Taşlıca village, Arıpınar, roadside, 1800 m, 03.05.1996, ÖE 1559.

Euro-Sib.

CYPERACEAE

Carex spicata Huds.

Saçinge hill, roadside, 1500 m, 01.07.1997, ÖE 1991.

Euro-Sib.

C. echinata Murray

Çoruh: Artvin to Atila, 1600-2000 m, Kit-Tan 1068.

Euro-Sib.

C. rostrata Stokes

Taşlıca village, Şaşkırat plateau, 2000 m, marshy place, 10.08.1997, ÖE 1992.

Euro-Sib.

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Eux.

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Eux.

C. atrata L. subsp. *atrata*

Saçinge hill, meadow, wet place, 1700 m, 02.08.1996, ÖE 1658.

Euro-Sib (mt).

C. nigra (L.) Reichard subsp. *nigra*

Perikaya hill, waste place, 1900 m, 02.08.1996, ÖE 1659.

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Brachypodium pinnatum (L.) P.Beauv.

Taşlıca village, Meydanlar, meadow, 1200 m, 22.07.1996, ÖE 1659.

Euro-Sib.

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

Taşlıca village, Arıpınar, stony slope, 1600 m, 18.07.1997, ÖE 1994.

Ir-Tur.

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Euro-Sib.

B. japonicus Thunb. subsp. *japonicus*

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B. erectus Hudson

Mount Keçi, dry soil, 1700 m, 20.07.1997, ÖE 1996.

Avena sterilis L. subsp. *ludoviciana* (Durieu) Gillet

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Ir-Tur.

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Euro-Sib.

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Euro-Sib.

Agrostis planifolia C.Koch

Tuzlu hill, alpine pasture, 2750 m, 10.08.1997, ÖE 1998.

Ir-Tur.

A. stolonifera L.

Taşlıca village, Meydanlar, wet place, 1300 m, 01.07.1997, ÖE 1999.

Alopecurus arundinaceus Poir.

Perikaya hill, wet meadow, 2100 m, 10.06.1997, ÖE 2000.

Phleum alpinum L.

Tuzlu hill, wet alpine meadow, 2700 m, 20.07.1997, ÖE 2001.

Euro-Sib.

P. pratense L.

Taşlıca village, Bakacak, open area, wet place, 1500 m, 07.07.1995, ÖE 1665.

Euro-Sib.

Festuca gigantea (L.) Vill.

Taşlıca village, Meydanlar, wet meadow, 1200 m, 01.07.1997, ÖE 2002.

Euro-Sib.

F. drymeja Mert. & Koch

Taşlıca village, Bakacak, mixed forest, 1000 m, 15.07.1995, ÖE 1564.

Euro-Sib.

F. djimilensis Boiss. & Bal.

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Euro-Sib (mt).

Lolium rigidum Gaudin var. *rigidum*

Taşlıca village, Gökçeyurt, meadow, wet soil, 800 m, 19.07.1995, ÖE 1566.

Poa annua L.

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Cosm.

P. trivialis L.

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Euro-Sib.

C. echinatus L.

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Taşlıca village, Meydanlar, meadow, 1230 m, 10.07.1996, ÖE 1669.

Melica uniflora Retz.

Saçinge hill, open forest, 1600 m, 18.08.1997, ÖE 2006.

Euro-Sib.

Nardus stricta L.

Tuzlu hill, alpine pasture, 2900 m,
22.08.1996, ÖE 1670.

Stipa arabica Trin. & Rupr.

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Cynodon dactylon (L.) Pers. var.
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Saçinge hill, slope, 1400 m, 22.08.1996,
ÖE 1672.

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place, 1200 m, 10.08.1997, ÖE 2007.

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EDITOR

Adil GÜNER

Abant İzzet Baysal Üniversitesi,
Fen-Edebiyat Fakültesi, Biyoloji Bölümü,
14280, Bolu-TURKEY
adil@ibu.edu.tr
aguner@tubitak.gov.tr

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(Plant Genetics)

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Harald KÜRSCHNER

(Bryophytes)

Freie Universität Berlin
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Systematische Botanik und
Pflanzengeographie, Altensteinstr. 6
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(Fungi)

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s.helfer@rbge.org.uk

Gerald PAROLLY

(Plant Sociology & Vegetation)

Freie Universität Berlin
Institut für Biologie
Systematische Botanik und
Pflanzengeographie, Altensteinstr. 6
D-14195 Berlin, GERMANY
gparolly@zedat.fu-berlin.de

John A. RAVEN

(Algology)

Division of Environmental and
Applied Biology,
School of Life Sciences
University of Dundee
Dundee DD1 4HN U.K.
j.a.raven@dundee.ac.uk

İsmail TÜRKAN

(Plant Physiology)

Ege Üniversitesi,
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Bornova, İzmir, 35100
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turkan@sci.ege.edu.tr

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Correspondence Address

(Yazışma Adresi):

TÜBİTAK Bilimsel Dergiler
Yayı İşleri Müdürlüğü
Atatürk Bulvarı, No: 221,
Kavaklıdere, 06100 Ankara-TURKEY
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The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations (1) and (2) for arbitrary values of the parameters α and β . It is shown that the system has solutions for all values of the parameters α and β if the function $f(x)$ is continuous and the function $g(x)$ is piecewise continuous. The second part of the paper is devoted to a detailed study of the properties of the solutions of the system of equations (1) and (2) for arbitrary values of the parameters α and β . It is shown that the solutions of the system of equations (1) and (2) are unique and depend continuously on the parameters α and β . The third part of the paper is devoted to a study of the asymptotic properties of the solutions of the system of equations (1) and (2) for arbitrary values of the parameters α and β . It is shown that the solutions of the system of equations (1) and (2) tend to zero as $x \rightarrow \infty$ for all values of the parameters α and β . The fourth part of the paper is devoted to a study of the stability properties of the solutions of the system of equations (1) and (2) for arbitrary values of the parameters α and β . It is shown that the solutions of the system of equations (1) and (2) are stable for all values of the parameters α and β . The fifth part of the paper is devoted to a study of the periodic properties of the solutions of the system of equations (1) and (2) for arbitrary values of the parameters α and β . It is shown that the solutions of the system of equations (1) and (2) are periodic for all values of the parameters α and β . The sixth part of the paper is devoted to a study of the boundedness properties of the solutions of the system of equations (1) and (2) for arbitrary values of the parameters α and β . It is shown that the solutions of the system of equations (1) and (2) are bounded for all values of the parameters α and β . The seventh part of the paper is devoted to a study of the smoothness properties of the solutions of the system of equations (1) and (2) for arbitrary values of the parameters α and β . It is shown that the solutions of the system of equations (1) and (2) are smooth for all values of the parameters α and β . The eighth part of the paper is devoted to a study of the regularity properties of the solutions of the system of equations (1) and (2) for arbitrary values of the parameters α and β . It is shown that the solutions of the system of equations (1) and (2) are regular for all values of the parameters α and β . The ninth part of the paper is devoted to a study of the integrability properties of the solutions of the system of equations (1) and (2) for arbitrary values of the parameters α and β . It is shown that the solutions of the system of equations (1) and (2) are integrable for all values of the parameters α and β . The tenth part of the paper is devoted to a study of the solvability properties of the system of equations (1) and (2) for arbitrary values of the parameters α and β . It is shown that the system of equations (1) and (2) is solvable for all values of the parameters α and β .

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