

# The Flora of Kelkit Valley

Fergan KARAER

Ondokuz Mayıs University Faculty of Education Department of Sciences, 05100, Amasya - TURKEY

Mahmut KILINÇ

Ondokuz Mayıs University Faculty of Arts and Sciences Department of Biology, 55139 Kurupelit, Samsun - TURKEY

Received: 16.01.1997

Accepted: 01.02.2001

**Abstract:** The flora of Kelkit Valley was investigated between 1990 and 1993. In the vegetation period, a total of 2800 plant specimens were collected. At the end of the study, 1316 species and subspecies and 519 genera belonging to 105 families were established. Of these, 132 taxa are endemic to Turkey and the ratio is 10.03%. The rates of taxa which are included in certain phytogeographical regions are as follows: Irano-Turanian 14.75%, Euro-Siberian 12.69% and Mediterranean 11.40%.

**Key Words:** Flora, Kelkit Valley, Tokat, Sivas, Turkey.

## Kelkit Vadisinin Florası

**Özet:** Bu çalışmada, Kelkit Vadisi'nin florası 1990-1993 yılları arasında araştırılmış ve yöreden 2800 bitki örneği toplanmıştır. Çalışmanın sonunda araştırma alanından 105 familyaya ait 519 cins ve 1316 tür ve türaltı takson tesbit edilmiştir. Bu taksonların 132'si endemik olup endemizm oranı % 10.03' dür. Fitocoğrafik bölgeleri bilinen taksonların % 14.75'i İnan-Turan, % 12.69'u Avrupa-Sibirya ve % 11.40'ı Akdeniz floristik bölge elementlerine aittir.

**Anahtar Sözcükler:** Flora, Kelkit Vadisi, Tokat, Sivas, Türkiye

## Introduction

Kelkit Valley is a transitional zone between Central Anatolia, and the Middle and East Black Sea regions geographically. Moreover, it is a transitional zone between the Euro-Siberian and Irano-Turanian phytogeographic regions. Such transition zones have interesting properties, due to the mixing zone of oceanic and continental climates. This situation is clearly reflected in the flora and vegetation of the study area. Local Mediterranean climates are seen in the region. Mediterranean enclaves are most widespread in the study area where they are dominant (Karaer et al., 1995). According to the grid square system that is used in the Flora of Turkey (Davis, 1965-1985), it is located in square A6. There has been no study so far on the flora of Kelkit Valley. For the reasons given above, Kelkit Valley was chosen as the study area.

Kelkit Valley is the most northern part and the longest valley of the Yeşilirmak Basin (246 km), which is situated

on the boundary of the Tokat and Sivas provinces (Figure 1). Kelkit Valley starts from the Giresun Mountains and lies in an east-west direction along the Yeşilirmak Mountains and Canik Mountains, which constitute the northern and southern slopes of the valley respectively. The mean altitudes of these mountains are 1400-1500m. At the bottom of the valley, there is a clear decrease in height in an east-west direction. The altitude is about 650 m in Koyulhisar, 450 m in Reşadiye, 350 m in Niksar and 280 m in Erbaa.

Kelkit Valley has a complex geological structure because it contains the Northern Anatolian Fault and it has a border between the Northern and Middle Anatolia tectonic units. The geological structure of the research area mostly contains limestone and volcanic rocks belonging to the Cretaceous and Tertiary flyschs. However, there are limestone and volcanic rocks in the southern slopes of the valley and flysch formation which causes erosion on the northern slopes of the valley. In

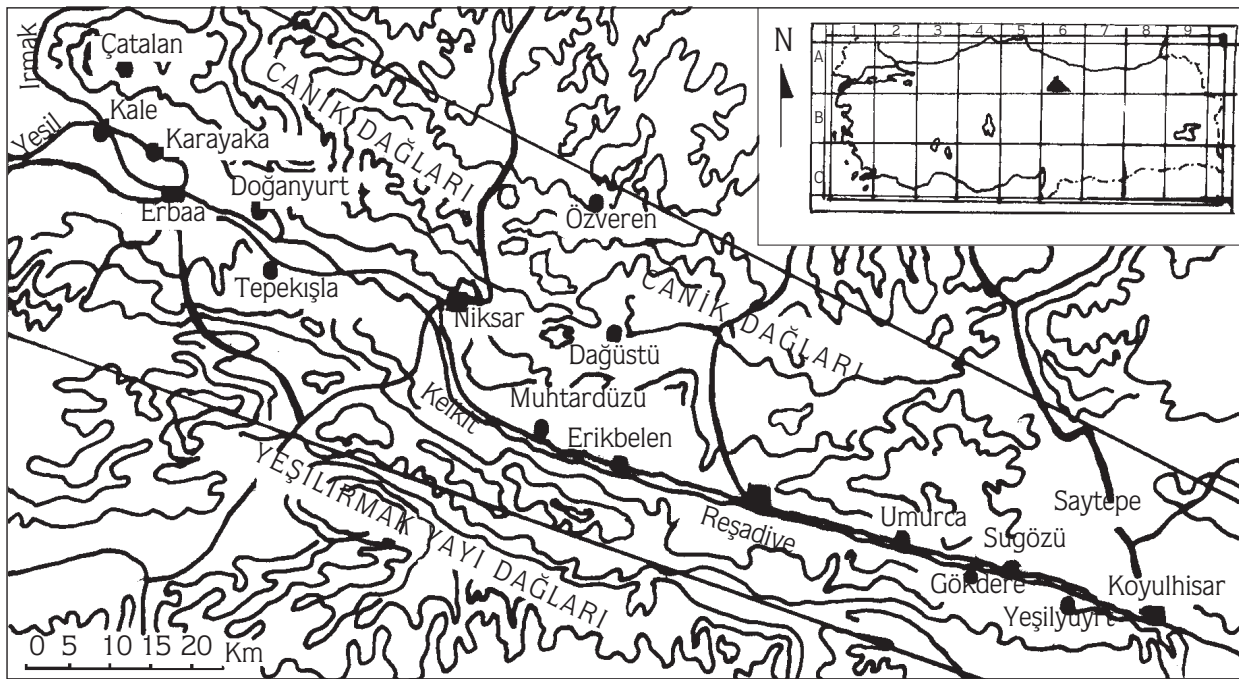


Figure 1. Map of study area.

addition, travertine and alluvial occur on the bottom of the valley (Göksu et al., 1974). There are six large soil groups in the study area, namely, brown forest soils, noncalcareous brown forest soils, chestnut soils, alluvial soils, colluvial soils and grey brown podzolic soils. The most widespread of these is brown forest soils (Anonymous, 1970).

The climatic characteristics of the area were estimated according to the data from Erbaa, Niksar, Reşadiye and Koyulhisar meteorological stations (Anonymous, 1984). Mediterranean climate is seen in the study area along the

valley between 300 and 900 m. But at the upper part of the valley, the effect of Mediterranean climate starts decreasing and oceanic climate becomes dominant. Semi-humid cool Mediterranean, semi-arid cool Mediterranean and semi-arid cold Mediterranean climates are seen in Erbaa, Niksar, and Reşadiye and Koyulhisar respectively according to the method of Emberger (1952). In addition, the effect of the climate decreases from west to east and the climate becomes continental (Table 1). The total annual rainfall is lower around Reşadiye and Koyulhisar. The precipitation regime in the study area is East Mediterranean Type 2 (SWAS).

Meteorological station	Alt. (m)	P (mm)	M	m	Q	PE	S	Pre. reg.	Bioclimatic
Erbaa	230	585.5	31.0	0.5	66.4	91.1	2.9	S'WAS	Semi-humid cool
Niksar	350	508.9	30.0	0.8	60.4	67.7	2.2	S'WAS	Semi-arid cool
Reşadiye	450	458.6	29.4	-0.5	52.2	65.0	2.2	S'WAS	Semi-arid cold
Koyulhisar	800	406.0	28.7	-2.0	46.1	52.2	1.5	S'WAS	Semi-arid cold

Table 1. Bioclimatic and Climatic data of the study area.

P(mm): Mean annual precipitation  
 M(°C): Mean maximum for the hottest month  
 m(°C): Mean minimum for the coldest month  
 S': Spring, W: Winter, A: Autumn, S: Summer.  
 Q: Pluviometric quotient  $Q=2000 \times P/M^2 - m^2$   
 PE: Summer rainfall  
 S: Emberger's index of xericity  $S=PE/M$   
 Pre.: Precipitation Reg.: regime

## Materials and Methods

The material consists of 2800 plant specimens collected from the area between 1990 and 1993. During the study, particular attention was paid to collecting plant specimens to represent all of the population. Efforts were made to collect both flowering and fruiting specimens. The specimens were prepared according to established herbarium techniques. The Flora of Turkey (Davis, 1965-1985; Davis et al., 1988) and other floras (Tutin et al., 1975-1980; Townsend, 1966-1985; Komorow, 1934-1963), and revisions, (Leblebici, 1990; Dalcı, 1986; Yıldırım, 1988) were utilized in the identification of the specimens. *Allium* L. specimens were determined by Koyuncu (Yüzüncüyıl Univ., Van) and some *Poaceae* members by Doğan (Middle East Technical Univ., Ankara). Some plant specimens were compared with the plant specimens at the GAZI, HUB and ANK herbaria. The flora list is given in the appendix. All of the plant specimens were kept at the herbarium of Ondokuz Mayıs University (OMUB).

## Conclusions and Comments

Two thousand eight hundred plant specimens were collected from the study area. As a result of taxonomical investigations, 1316 taxa consisting of 519 genera, 954 species, 247 subspecies and 117 varieties belonging to 105 families were established (see appendix: The floristic list of the Kelkit valley). Ten taxa are nonflowering vascular plants (three *Sphenophyta*, seven *Pteridophyta*). Nine taxa belong to *Gymnospermae*, while the other 1297 are *Angiospermae*, with *Dicotyledones* and *Monocotyledones* comprising 1151 and 146 taxa respectively. The study area is rather rich floristically. The main reasons for this floristic richness are habitat diversity, climate and the fact that this is a transitional belt between three phytogeographical regions, the Irano-Turanian, Euro-Siberian and Mediterranean enclaves.

Some large families in terms of number of genera are *Asteraceae* (60), *Poaceae* (41), *Apiaceae* (36), *Brassicaceae* (35), *Fabaceae* (30), *Lamiaceae* (28), *Rosaceae* (19), *Boraginaceae* (18), *Caryophyllaceae* (17), and *Scrophulariaceae* (16). The richest families in terms of number of taxa are *Asteraceae* 158 (12.00%), *Fabaceae* 148 (11.25%), *Lamiaceae* 89 (6.76%), *Poaceae* 73 (5.55%), *Brassicaceae* 65 (4.94%), *Caryophyllaceae* 60 (4.56%), *Scrophulariaceae* 56 (4.26%), *Apiaceae* 53 (4.02%) *Rosaceae* 50 (3.80%) and *Boraginaceae* 46 (3.50%). *Asteraceae*, *Fabaceae*, *Lamiaceae*, *Poaceae* and *Brassicaceae* consist of 798 (60.64%) of all the taxa. These families were compared with those described in studies carried out near the study area (Civelek, 1992; Kılınç, 1985; Kılınç, 1990; İlarslan, 1994; Özen, 1995; Yıldız, 1996). The *Asteraceae* and *Fabaceae* families are the richest families in terms of number of taxa and these results are very similar to those in our study (Table 2).

The richest genera in terms of the number of taxa are *Astragalus* L. (36), *Verbascum* L. (20), *Silene* L. (18), *Centaurea* L. (17), *Trifolium* L. (16), *Salvia* L. (15), *Geranium* L. (13), *Lathyrus* L. (13), *Veronica* L. (13), *Medicago* L. (12), *Vicia* L. (12), and *Hypericum* L. (12). *Astragalus* L. has a total of c. 2500 species in the world; it is one of the largest genera of flowering plants. When the Flora of Turkey was examined, *Astragalus* and *Verbascum* were found to be the richest genera in terms of the number of taxa also. As shown in Table 3, *Astragalus* is the richest genus in terms of the number of taxa in other studies too.

The relatively large group consists of Irano-Turanian taxa. The Irano-Turanian elements comprise about 14.75% (194) of the taxa. Euro-Siberian taxa constitute about 12.69% (167 taxa), 11.40% (150) of the taxa belong to the Mediterranean phytogeographic region and

	Kelkit Valley	Civelek (1992)	Kılınç (1985, 1990)	İlarslan (1994)	Özen (1995)	Yıldız (1996)
<i>Asteraceae</i>	158	140	92	77	72	144
<i>Fabaceae</i>	148	82	98	75	69	126
<i>Lamiaceae</i>	89	51	50	45	40	67
<i>Poaceae</i>	73	53	69	43	49	71
<i>Brassicaceae</i>	65	69	52	39	27	75
Others	864	578	459	349	437	714

Table 2. Species totals of the major families from six floristic studies carried out in Turkey.

	Kelkit Valley	Civelek (1992)	Kılınç (1985, 1990)	İlarslan (1994)	Özen (1995)	Yıldız (1996)
<i>Astragalus</i>	36	25	23	25	9	39
<i>Verbascum</i>	20	9	15	7	4	18
<i>Silene</i>	18	20	8	15	7	20
<i>Centaurea</i>	17	12	7	14	8	12
<i>Trifolium</i>	16	10	17	10	8	15
<i>Salvia</i>	15	13	8	11	7	16

Table 3. Species totals of the large genera from six floristic studies.

62.16% of taxa are pluriregionals. When the results were examined, it could be seen that the rates are quite similar to each other. This can be explained by the fact that our study area is a transition zone between different phytogeographical regions (Table 4). There are some differences between our study and other studies carried out near the study area. Our results are very similar to those of Yıldız (1996) in respect to floristic composition.

The number of endemic taxa in the study area is 132 and the endemism rate is 10.03%. Fifty-nine (45.4%) of these taxa belong to the Irano-Turanian phytogeographic region. Sixteen (12.3%) and eleven (8.46%) of these taxa belong to the Euro-Siberian (Euxine) and Mediterranean phytogeographical regions respectively. The number of pluriregional endemics is 56 (35.60%). The rate of endemism is low because wet areas are common and there are many cosmopolitan aquatic taxa in these areas.

*Silene manissadjianii* Freyn, *Minuartia anatolica* (Boiss.) Woron. var. *tetratricha* McNeill, *Reaumuria sivasica* Kit Tan & Yıldız, *Verbascum spectabile* M.Bieb.

var. *isandrum* Hub.-Mor., *Onosma bozakmanii* H.Riedl were collected from Turkey for the second time. Types localities of *Muscari aucheri* (Boiss.) Baker, *Cirsium poluninii* P.H.Davis & Parris and *Taraxacum bellidiforme* van Soest are in the Kelkit Valley and 133 taxa are new records for the square A6 (Karaer, 1995). In addition to these records, our results have confirmed that *Jurinea macrocalathia* K.Koch, *Epilobium alpestre* (Jacq.) Krockner and *Saponaria cerastioides* Fischer ex C.A.Mey. are found in Turkey. Some of the taxa in the study area have different taxonomic properties from those in the Flora of Turkey. These properties are given in Table 5. These differences may due to the morphological and ecological variations, because the study area is situated in a transitional area. In addition, the descriptions of some species in the Flora of Turkey were based on only a few specimens, type specimens or a few localities.

Consequently, as a result of this floristic research carried out on Kelkit Valley, five taxa were collected for the second time after the type material.

	Kelkit Valley	Civelek (1992)	Kılınç (1985, 1990)	İlarslan (1994)	Özen (1995)	Yıldız (1996)
Taxa	1316	976	850	507	696	1197
Irano-Turanian element	14.75% (194)	25.1% (245)	16.50% (202)	37.8% (238)	4.32% (30)	26.8% (305)
Euro-Siberian element	12.69% (167)	16.2% (159)	23.80% (305)	15.9% (100)	20.75% (144)	14.8% (163)
Mediterranean element	11.40% (150)	3.2% (32)	9.50% (100)	10.1% (63)	13.79% (88)	4.8% (557)
Pluriregional element	62.16% (791)	55.2% (540)	45.30% (243)	-	61.14% (436)	35%

Table 4. The phytogeographical regions were compared with those of similar studies.

Table 5. Some of the taxa in the Kelkit Valley have different taxonomic properties from those in the Flora of Turkey.

Taxa	Flora of Turkey	Kelkit Valley
<i>Arabis hirsuta</i>	Perennial Stem pilose Stem 20-40 cm	Biennial Stem glabrous Stem 80-90 cm
<i>Conringia perfoliata</i>	Stem 4-20 cm	Stem 30-35 cm
<i>Cerastium chlorifolium</i>	Annual	Perennial
<i>Chenopodium murale</i>	Perianth segments green	Perianth segments green
<i>Geranium purpureum</i>	Stem 15-45 cm Leaflets min. 4 mm	Stem 6-8 cm Leaflets min 3 mm
<i>Astragalus hirsutus</i>	Inflorescence c.2 cm in diameter Calyx black hairs	Inflorescence c.1-1.5 cm in diameter Calyx without black hairs
<i>Onobrychis caput-galli</i>	Ovarium glabrous	Ovarium pubescent
<i>Epilobium montanum</i>	Inflorescence sparsely glandular pubescent Stem 30-70 cm	Inflorescence not glandular - pubescent Stem 8-18 cm
<i>Anthriscus caucalis</i>	Petiole equal to or shorter than rachis Rays 3-6	Petiole longer than rachis Rays 2-3
<i>Conyza canadiensis</i>	Stem 30-100 cm	Stem 10-15 cm
<i>Senecio pseudo orientalis</i>	Capitula 2.5-3 cm broad	Capitula 1-1.5 cm broad
<i>Artemisia tournefortiana</i>	Corolla yellow	Corolla pink
<i>Tragopogon colaratus</i>	Stem 10-50 cm	Stem 8-10 cm
<i>Campanula glomerata</i>	Calyx lobes 4-6 (-10) mm	Calyx lobes 14-15 mm
<i>Lapsana communis</i> subsp. <i>alpina</i>	Stem 25(-30) cm	Stem 35-40 cm
<i>Arnebia densiflora</i>	Stem 25-40 cm	Stem 10-12 cm
<i>Verbascum blattari</i>	Bracts shorter than pedicels	Bracts longer than pedicels
<i>Scutellaria salviifolia</i>	Stem 10-15(-30) cm	Stem 5-8 cm
<i>Sideritis Perfoliata</i>	Stem 20-60 cm	Stem 110-120 cm
<i>Ziziphora capitata</i>	Stem 4-15 cm	Stem 25-30 cm
<i>Crucianella angustifolia</i>	Stem 25-50 cm	Stem 9-12 cm
<i>Ornithogalum narbonense</i>	Leaves shorter than scape	Leaves longer than scape

## References

- Anonymous (1970). *Yeşilirmak Havzası Toprakları*. Ankara:Toprak Su Genel. Müd. Yay.
- Anonymous (1984). *Ortalama Ekstrem Kıymetler ve yağış Bülteni*. Ankara: Meteoroloji İşleri Genel Müdürlüğü Yayını.
- Civelek Ş (1992). Çamlıbel Geçidi ve Yıldız Dağı (Sivas-Tokat) Florası. *Turk J Bot* 16: 21-53.
- Dalci M (1986). Morphological studies and new synonyms of some species in *Dianthus* L. *Turk J Bio* 10: 138-159.
- Davis PH (eds) (1965-1985). *Flora of Turkey and East Aegean Islands* vol.1-9. Edinburgh: University Press.
- Davis PH, Mil RR, Tan K (1988). *Flora of Turkey and East Aegean Islands* vol. 10. Edinburgh: University Press.
- Emberger L (1952). Sur le quotient pluviothermique. *CR Acad Sci* 2324: 2508-2510.
- Göksu E, Pamir NH, Erentöz C (1974). *Türkiye Jeoloji Haritası* (1/500.000 Samsun Paftası). Ankara: MTA. Ens. Yay.
- İlarslan R (1994). Deveci Dağlarının (Yozgat-Tokat) Florasına Katkı. *Turk J Bot* 18: 337-366.
- Karaer F, Kutbay HG, Kılınc M (1995). Phytosociological structure of Mediterranean enclaves occurring along the stream valleys in inner parts of Black Sea region. *iv. Plant Life of Southwest Asia Symposium* 2: 682-702. İzmir: Ege University Press.
- Karaer F, Kılınc M, Kutbay HG (1995). Kelkit Vadisinden Yeni Floristik Kayıtlar. *The Herb Journal of Systematic Botany* 2: 99-110.
- Kılınc M (1985). İç Anadolu, Batı Karadeniz geçiş bölgesinde Devrez Çayı ile Kızılırmak Nehri Arasında Kalan Bölgenin Florası I. *Doğa Bilim Dergisi* 9: 238-314.
- Kılınc M (1990). İç Anadolu, Batı Karadeniz geçiş bölgesinde Devrez Çayı ile Kızılırmak Nehri Arasında Kalan Bölgenin Florası II. Ondokuz Mayıs Üniv Yay. No 64. Samsun: Ondokuz Mayıs Üniversitesi Yay.
- Komorow VL (1934-1960). *Flora of USSR*. vol. 1-26. Jerusalem: Israel.
- Leblebici E (1990). The genus *Polygonum* L. in Turkey. *Turk J Bot* 14: 203-214.
- Özen F (1995). Alaçam-Gerze ve Boyabat-Durağan Arasında Kalan Bölgenin Florası. *Turk J Bot* 19: 241- 275.
- Tutin TG, Heywood VH (1975-1980) *Flora Europaea* vol. 1-V. Cambridge: Univ. Press.
- Townsend CC (eds) (1966-1985). *Flora of Iraq*. vol. 2 -8. Baghdad.
- Yıldırım Ş (1988). Türkiye'nin Batı Yarısı ve Kuzeyindeki *Isatis* L. (*Cruciferae*) Cinsinin Revizyonu. *Turk J Bot* 12: 332-400.
- Yıldız B (1996). Floristic Characteristics of Köse Dağı (Sivas). *Turk J Bot* 20: 417-456.

## Appendix

### The Floristic list of the Kelkit valley

The list of the vascular plant taxa found in Kelkit Valley. The sequence of families, genera and species in the following list follow the system adopted in the Flora of Turkey (Davis, 1965-1985; Davis et al. 1988). Because the study area is completely within the A6 grid square, it is not used in the list. Abbreviations used in the appendix are as follows:

FK: Fergan Karaer, ibid.: in the same place, km: Kilometer, mt.: Mountain, m: meter,

E.: East, W.: West, S.: South, N.: North.

#### SPHENOPSISIDA

#### EQUISETACEAE

##### *Equisetum palustre* L.

Tokat: Erbaa, Karınca Dağ, 400 m, 16 ix 1992, FK 2980a.

##### *E. sylvaticum* L.

Tokat: Erbaa, Karınca Dağ, 400 m, 16 ix 1992, FK 2980.

##### *E. arvense* L.

Sivas: Koyulhisar, around Batlaca, 800 m, 18 ix 1992, FK 2619.

#### PTERIDOPHYTA

#### ADIANTACEAE

##### *Adiantum capillus-veneris* L.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2971.

#### HYPOLEPIDACEAE

##### *Pteridium aquilinum* (L.) Kuhn

Tokat: Erbaa, Karayaka, banks of Karınca Stream, 400 m, 17 ix 1992, FK 2145.

#### ASPLENIACEAE

##### *Asplenium trichomanes* L.

Tokat: Niksar, Akıncı village, around Ortaburun, 680 m, 27 vii 1992, FK 2683.

#### *Ceterach officinarum* DC.

Tokat: Erbaa, vicinity of Tortepe, 1200 m, 21 vi 1992, FK 1670.

#### ATHYRIACEAE

##### *Matteucia struthiopteris* (L.) Tod.

Tokat: Niksar, Akıncı village, around Ortaburun, 680 m, 27 vii 1992, FK 2684.

#### ASPIDACEAE

##### *Dryopteris filix-mas* (L.) Schott

Tokat: Erbaa, Karayaka, around Kızılotlu, 1300 m, 27 ix 1991, FK 1291.

#### POLYPODIACEAE

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

Tokat: Erbaa, Çatalan village, 1100 m, 7 v 1993, FK 3114.

#### SPERMATOPHYTA

#### GYMNOSPERMAE

#### PINACEAE

##### *Cedrus libani* A.Rich.

Tokat: Erbaa, Tortepe, SE slopes, 1200 m, 27 ix 1991, FK 1303; Tokat: Niksar, Akıncı village, around Ortaburun, 680 m, 27 vii 1992, FK 2683.

Mediterranean (mt.) element.

##### *Pinus sylvestris* L.

Tokat: Erbaa, Tortepe, 1000 m, 27 ix 1991, FK 1302.

Euro-Siberian element.

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

Tokat: Erbaa, Kale village, 800 m, 27 ix 1991, FK1304a; Sivas: Koyulhisar, around Batlaca, 900 m, 18 ix 1992, FK 3098.

##### *P. brutia* Ten.

Tokat: Erbaa, above Kale village, 300 m, 27 ix 1992, FK 1298; Tokat: Niksar, Erikbelen village, 450m, 17 vii 1992, FK 4305a.

E. Mediterranean element.

#### CUPRESSACEAE

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

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2924.

##### *J. oxycedrus* L. subsp. *oxycedrus*

Tokat: Erbaa, Tepekışla village, 300 m, 13 vii 1990, FK 1076.

##### *J. foetidissima* Willd.

Sivas: Koyulhisar, around Batlaca, 750 m, 18 ix 1992, FK 3050.

##### *J. excelsa* Bieb.

Sivas: Koyulhisar, Gökdere village, 700 m, 13 vii 1990, FK 1141.

#### EPHEDRACEAE

##### *Ephedra major* Host

Sivas: Koyulhisar, around Kuşkuşlar, 800 m, 5 vii 1992, FK 2556a.

#### ANGIOSPERMAE

#### DICOTYLEDONEAE

#### RANUNCULACEAE

##### *Helleborus orientalis* Lam.

Tokat: Erbaa, vicinity of Kızılotlu, 1250 m, 27 ix 1991, FK 1286.

Euxine element.

##### *Nigella orientalis* L.

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 500 m, 18 vi 1992, FK 2235.

##### *N. segetalis* Bieb.

Sivas: Koyulhisar, around Batlaca, 800 m, 2 vii 1992, FK 2442.

##### *N. arvensis* L. var. *glauca* Boiss.

Tokat: Erbaa, Kale village, 400 m, 17 vi 1992, FK 2104; Sivas: Koyulhisar, 750 m, 3 vii 1992, FK 2473.

##### *N. nigellastrum* (L.) Willk. & Lange

Tokat: Erbaa, Evyaba village, 300 m, 17 vi 1992, FK 1029.

##### *Consolida thirkeana* (Boiss.) Schröd.

Sivas: Koyulhisar, 850 m, 18 ix 1992, FK 3032.

Endemic.

##### *C. hohenackeri* (Boiss.) Gross

Tokat: Erbaa, Karınca Dağ, S. slopes, 600 m, 16 ix 1992, FK 2967.

##### *C. orientalis* (Gay) Schröd.

Sivas: Koyulhisar, 850 m, 5 vii 1992, FK 2628.

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

Sivas: Koyulhisar, around Batlaca, 2 vii 1992, 800 m, FK 2450; Tokat: Erbaa, Karayaka, banks of Derefte Stream, 500 m, 17 ix 1992, FK 3020.

*C. glandulosa* (Boiss. & Huet) Bornm.

Sivas: Koyulhisar, 800 m, 26 vii 1992, FK 2793.

Endemic.

*C. hellespontica* (Boiss.) Chater

Sivas: Koyulhisar, Yeşiyurt village, around Samanlıkebeği, 1450 m, 28 vii 1992, FK 2941.

*Anemone blanda* Schott & Kotschy

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 23 v 1992, FK 2029.

*Clematis vitalba* L.

Tokat: Niksar, Akıncı village, around Ortaburun, 680 m, 27 vii 1992, FK 2706.

*C. flammula* L.

Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2815.

Mediterranean element.

*C. orientalis* L.

Sivas: Koyulhisar, 750 m, 27 vii 1992, FK 2508; Tokat: Erbaa, Karınca Dağ, S. slopes, 450 m, 16 ix 1992, FK 2972.

*Adonis aestivalis* subsp. *aestivalis*

Tokat: Erbaa, Bağpınar village, 400 m, 25 iv 1992, FK 1601.

*A. eriocalycina* Boiss.

Tokat: Niksar, vicinity of Ilıcak Stream, 350 m, 22 v 1992, FK 1810.

Irano-Turanian element.

*A. flammea* Jacq.

Sivas: Koyulhisar, around Batlaca, 800 m, 2 vii 1992, FK 2439.

*Ranunculus buhsei* Boiss.

Tokat: Niksar, Dağüstü village, vicinity of Hapan Boğazı, 1400 m, 18 vi 1993, FK 3468.

Hyrcono-Euxine (mt.) element.

*R. neopolitanus* Ten.

Tokat: Niksar, vicinity of Maduru, 450 m, 22 v 1992, FK 1840.

*R. repens* L.

Tokat: Erbaa, Karayaka, around Ayıbeği, 850 m, 17 vi 1992, FK 2163a.

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

Tokat: Erbaa, 250 m, 21 v 1992, FK 1412.

*R. damascenus* Boiss. & Gaill.

Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 840 m, 23 v 1992, FK 1936.

*R. marginatus* d'Urv. var. *trachycarpus* (Fisch. & Mey.) Azn.

Tokat: Niksar, vicinity of Maduru, 350 m, 22 v 1992, FK 1647.

*R. muricatus* L.

Tokat: Erbaa, vicinity of İmbat bridge, 400 m, 23 iv 1992, FK 1486.

*R. arvensis* L.

Tokat: Erbaa, Doğanyurt, 500 m, 25 iv 1992, FK 1636.

*R. ficaria* L. subsp. *calthifolius* (Reichb.) Arc.

Tokat: Erbaa, Karayaka, around Hodaypınarı, 1100 m, 24 iv 1992, FK 1556.

*R. sphaerospermus* Boiss. & Blanche

Tokat: Erbaa, above Kozlu village, 1000 m, 5 viii 1993, FK 4762.

#### PAEONIACEAE

*Paeonia mascula* (L.) Miller subsp. *mascula*

Tokat: Erbaa, Küplüce village, 450 m, 23 iv 1992, FK 1458; Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkebeği, 1450 m, 28 vii 1992, FK 2872.

*P. mascula* (L.) Miller subsp. *arietina* (Anders.) Cullen & Heywood

Tokat: Erbaa, Küplüce village, 450 m, 23 iv 1992, FK 1458a.

#### BERBERIDACEAE

*Berberis vulgaris* L.

Sivas: Koyulhisar, vicinity of prison, 900 m, 6 v 1992, FK 2643a.

*B. crataegina* DC.

Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2006, 2020.

*B. integerrima* Bunge

Sivas: Koyulhisar, vicinity of prison, 850 m, 6 v 1992, FK 2643.

*Epimedium pubigerum* (DC.) Morren & Decne.

Tokat: Niksar, Dağüstü village, vicinity of Hapan Boğazı, 1400 m, 18 vi 1993, FK 3468.

Euxine element.

#### PAPAVERACEAE

*Chelidonium majus* L.

Tokat: Niksar, Dalkaya village, 650 m, 8 v 1993, FK 3140.

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

Tokat: Reşadiye, 600 m, 23 v 1992, FK 1902; Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2530.

*G. corniculatum* (L.) Rudolph subsp. *refractum* (Nab.) Cullen

Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1985.

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

Sivas: Koyulhisar, vicinity of prison, 850 m, 6 v 1992, FK 2627.

Irano-Turanian element.

*G. leiocarpum* Boiss.

Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 5 vii 1992, FK 2575.

*Roemeria hybrida* (L.) DC. subsp. *hybrida*

Tokat: Reşadiye, 500 m, 23 v 1992, FK 1600a.

*Papaver armeniacum* (L.) DC.

Sivas: Koyulhisar, above Yeşilyurt village, 1000 m, 28 vii 1992, FK 2937.

Irano-Turanian element.

*P. somniferum* L. var. *pullatum* Vessel.

Tokat: Erbaa, between Karayaka and Kale village, 300 m, 17 ix 1992, FK 2084.

Endemic.

*P. rhoeas* L.

Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2023.

*P. commutatum* Fisch. & Mey.

Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 23 iv 1992, FK 1507.

- P. postii* Fedde  
Tokat: Niksar, vicinity of İlicak Stream, 400 m, 22 v 1992, FK 1876.
- P. dubium* L.  
Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1876; ibid. 2 vii 1992, FK 2411.
- P. hybridum* L.  
Tokat: Niksar, vicinity of İlicak Stream, 450 m, 22 v 1992, FK 1806.
- Hypecoum procumbens* L.  
Tokat: Niksar, vicinity of İlicak Stream, 450 m, 22 v 1992, FK 1808.  
Mediterranean element.
- Corydalis bulbosa* (L.) DC. subsp. *marschalliana* (Pall.) Chater  
Tokat: Erbaa, Karayaka, around Hodaypınarı, 1380 m, 24 iv 1992, FK 1550.  
Euro-Siberian element.
- Fumaria kralikii* Jord.  
Tokat: Erbaa, Küplüce village, 450 m, 23 iv 1992, FK 1458a.  
Mediterranean element.
- F. densiflora* DC.  
Tokat: Erbaa, Bağpınar village, 550 m, 17 vi 1992, FK 1612.
- F. officinalis* L.  
Tokat: Erbaa, 300 m, 22 iv 1992, FK 1391.
- F. cilicica* Hausskn.  
Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vi 1992, FK 2790.  
Irano-Turanian element.
- F. asepalae* Boiss.  
Tokat: Reşadiye, 600 m, 23 v 1992, FK 1894; Sivas: Koyulhisar, 800 m, 3 vii 1992, FK 2450a.  
Irano-Turanian element.
- CRUCIFERAE (Brassicaceae)**
- Brassica elongata* Ehrh.  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 700 m, 8 vi 1992, FK 2254.  
Irano-Turanian element.
- Sinapis arvensis* L.  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 500 m, 1 vii 1992, FK 2343.
- Hirschfeldia incana* (L.) Lagr. -Fos.  
Tokat: Erbaa, İverönü village, around Dilsiztekke, 350 m, 18 vi 1992, FK 2221.
- Eruca sativa* Miller  
Tokat: Erbaa, İverönü village, vicinity of İmbat bridge, 400 m, 8 vi 1992, FK 2066.
- Raphanus raphanistrum* L.  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1396.
- Calepina irregularis* (Asso) Thellung  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1389.
- Crambe tatarica* Sebeók var. *tatarica*  
Sivas: Koyulhisar, 800 m, 23 v 1992, FK 1919.
- C. orientalis* L. var. *orientalis*  
Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 4 ix 1992, FK 2455a,  
Irano-Turanian element.
- Rapistrum rugosum* (L.) All.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 27 vii 1992, FK 2510.
- Conringia orientalis* (L.) Andrz.  
Tokat: Erbaa to Niksar, vicinity of Salih Gelbal Forest, 350 m, 9 v 1993, FK 3174.
- C. perfoliata* (C.A.Mey.) Busch  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1971.
- Lepidium campestre* (L.) R.Br.  
Tokat: Erbaa, Ağcağaç village, 300 m, 16 v 1993, FK 3459.
- L. ruderale* L.  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1645.
- L. perfoliatum* L.  
Tokat: Niksar, 350 m, 22 v 1992, FK 1849.
- Cardaria draba* (L.) Desv. subsp. *draba*  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1394.
- Isatis glauca* Aucher ex Boiss. subsp. *glauca*  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 27 vii 1992, FK 2797.  
Irano-Turanian element
- I. glauca* Aucher & Boiss. subsp. *sivasica* (Davis) Yıldırımli  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1923.  
Endemic, Irano-Turanian element.
- Iberis taurica* DC.  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 23 iv 1992, FK 1529; Sivas Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2545.
- Aethionema arabicum* (L.) Andrz. ex DC.  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 650 m, 23 iv 1992, FK 1510;
- Ae. armenum* Boiss.  
Sivas: Koyulhisar, around Batlaca, 850 m, 13 vii 1990, FK 1154.  
Irano-Turanian element.
- Thlaspi arvense* L.  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1871.
- T. perfoliatum* L.  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1918.
- T. annuum* Koch  
Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1683.
- T. violascens* Boiss.  
Tokat: Niksar, around Maduru, 500 m, 22 v 1992, FK 1834.  
Endemic.
- Capsella bursa-pastoris* (L.) Medik.  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1410.  
Cosmopolitan.
- C. rubella* Reuter  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1407.  
Mediterranean element.
- Myagrum perfoliatum* L.  
Tokat: Niksar, around Maduru, 400 m, 2 vii 1992, FK 2392a.
- Peltaria angustifolia* DC.  
Tokat: Niksar, Erikbelen village, vicinity of Asmaköprü, 500 m, 17 vii 1993, FK 4317.



- Fibigia clypeata* (L.) Medik.  
Tokat: Erbaa, Karayaka, around Ayıbeleği, 900 m, 17 vi 1992, FK 2164.
- F. eriocarpa* (DC.) Boiss.  
Sivas: Koyulhisar, 900 m, 13 vii 1990, FK 1155; Tokat: Erbaa, Kozlu village, 700 m, 23 iv 1992, FK 1442.
- Alyssum stylare* (Boiss. & Bal.) Boiss.  
Sivas: near Koyulhisar, 1600 m, 1859, Tchich.  
Endemic, Irano-Turanian element.
- A. desertorum* Stapf. var. *desertorum*  
Tokat: Erbaa, Kozlu village, 700 m, 23 iv 1992, FK 1452.
- A. minutum* Schltld. ex DC.  
Tokat: Erbaa, Kozlu village, 650 m, 23 iv 1992, FK 1433.
- A. minus* (L.) Rothm. var. *micranthum* (Mey.) Dudley  
Tokat: Erbaa, Kozlu village, 500 m, 23 iv 1992, FK 1426.
- A. strigosum* Banks & Sol. subsp. *strigosum*  
Tokat: Erbaa, Doğanyurt, vicinity of Karaun Stream, 500 m, 9 x 1991, FK 1385.
- A. hirsutum* Bieb.  
Tokat: Erbaa, above Kale village, 800 m, 21 v 1992, FK 1720.
- A. erosulum* Genera & Pestal  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1768.  
Endemic.
- A. ochroleucum* Boiss. & Huet.  
Tokat: Erbaa, Kozlu village, 600 m, 23 iv 1992, FK 1622.  
Endemic.
- A. sibiricum* Willd.  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 12 vii 1990, FK 1052.
- Clypeola jonthlaspi* L.  
Tokat: Erbaa, Endekpınar village, 300 m, 17 vi 1992, FK 1468.
- Draba rigida* Willd. var. *rigida*  
Tokat: Erbaa, Kale village, 350 m, 10 ix 1993, FK 5541.  
Endemic.
- Erophila verna* (L.) Chevall. subsp. *praecox* (Stev.) Walters  
Tokat: Niksar, Şihlar village, 850 m, 9 v 1993, FK 3196.
- Arabis caucasica* Willd. subsp. *caucasica*  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1642.
- A. sagittata* (Bertol) DC.  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2736a.
- A. abietina* Bormm.  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2736.  
Endemic, Euxine (mt.) element.
- A. nova* Vill.  
Tokat: Erbaa, Tortepe, 1100 m, 21 v 1992, FK 1681; Sivas: Koyulhisar, vicinity of Say-tepe, S. slopes, 1100 m, 24 v 1992, FK 2004.
- Turritis glabra* L.  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2736b.
- Barbarea minor* C.Koch var. *eriopoda* Busch  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1100 m, 24 v 1992, FK 2031.
- Cardamine bulbifera* (L.) Crantz.  
Tokat: Erbaa, Çatalan village, 1100 m, 7 v 1993, FK 3116.  
Euro-Siberian element.
- C. quinquefolia* (Bieb.) Schmalh.  
Tokat: Erbaa, Kozlu village, 600 m, 23 iv 1992, FK 1446.
- C. hirsuta* L.  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1405.  
Cosmopolitan.
- Matthiola longipetala* (Vent.) DC. subsp. *bicornis* (Sibth. & Smith) P.W.Ball  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1981.
- Hesperis bicuspidata* (Willd.) Poiret  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 5 vii 1992, FK 2571a.
- H. matronalis* L. subsp. *matronalis*  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2748.
- Malcolmia africana* (L.) R.Br.  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1839.
- Erysimum thyrsoideum* Boiss. subsp. *ponticum* (Hausskn. & Bornm.) Cullen  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 550 m, 12 vii 1990, FK 1057; ibid. 23 iv 1992, FK 1528.  
Endemic.
- E. unsinatifolium* Boiss.  
Tokat: Erbaa, Tepekişla village, vicinity of Karakışla, 600 m, 18 vi 1992, FK 2251.  
Endemic.
- E. diffusum* Ehrh.  
Sivas: Koyulhisar, around Batlaca, 850 m, 3 vii 1992, FK 2446,  
Euro-Siberian element.
- E. crassipes* Fisch. & Mey.  
Tokat: Erbaa, Doğanyurt, 500 m, 26 ix 1992, FK 1144; ibid. 7 ix 1992, FK 2996a.
- Alliaria petiolata* (Bieb.) Cavara & Grande  
Tokat: Erbaa, Çatalan village, 1100 m, 7 v 1993, FK 3115.
- Sisymbrium altissimum* L.  
Tokat: Erbaa, vicinity of İmbat bridge, 350 m, 16 vi 1992, FK 2058.
- S. orientale* L.  
Tokat: Erbaa, Tortepe, 1100 m, 17 vi 1992, FK 1323.
- S. loeselii* L.  
Tokat: Niksar, vicinity of İlicak Stream, 350 m, 2 vii 1992, FK 2418; Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2798.
- Descurainia sophia* (L.) Webb ex Prantl  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1410a.
- Arabidopsis thaliana* (L.) Heynhold  
Tokat: Erbaa, Kozlu village, 600 m, 23 iv 1992, FK 1423.
- CAPPARACEAE**
- Capparis ovata* Desf. var. *herbacea* (Willd.) Zoh.  
Sivas: Koyulhisar, around Batlaca, 850 m, 18 ix 1992, FK 2456.

- Cleome ornithopodioides** L.  
Sivas: Koyulhisar, Gökdere village, 650 m, 18 vii 1993, FK 4355.
- RESEDACEAE**
- Reseda inodora** Reichb. var. **anatolica** Boiss.  
Tokat: Erbaa, Kale village, 350 m, 17 vi 1992, FK 2090.
- R. lutea** L. var. **lutea**  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1745.
- R. lutea** L. var. **nutans** Boiss.  
Tokat: Erbaa, Demirtaş village, 300 m, 26 ix 1991, FK 1201.
- R. luteola** L.  
Tokat: Erbaa, Ağcaalan village, Karadağ, around İmestepe, 650 m, 18 vi 1992, FK 2279.
- CISTACEAE**
- Cistus creticus** L.  
Tokat: Erbaa, Tortepe, 1100 m, 21 v 1992, FK 1753.  
Mediterranean element.
- C. laurifolius** L.  
Tokat: Erbaa, above Kale village, 800 m, 26 ix 1991, FK 1205.  
Mediterranean element.
- Helianthemum nummularium** (L.) Miller subsp. **nummularium**  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1000 m, 24 v 1992, FK 2005.
- H. nummularium** (L.) Miller subsp. **tomentosum** (Scop.) Schinz & Thell.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2896.
- H. nummularium** (L.) Miller subsp. **ovatum** (Viv) Schinz & Thell.  
Tokat: Erbaa, Doğanyurt, 500 m, 26 ix 1991, FK 1240.
- H. canum** (L.) Baumg. Group c  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1927.
- H. canum** (L.) Baumg. Group d  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1110 m, 24 v 1992, FK 2009.
- H. salicifolium** (L.) Miller  
Tokat: Erbaa, Ballıbağ village, 600 m, 25 iv 1992, FK 1580, 1592.
- Fumana arabica** (L.) Spach var. **arabica**  
Tokat: Erbaa, Tepekışla village, vicinity of Karakışla, 450 m, 1 vii 1992, FK 2339.
- F. procumbens** (Dun.) Gren. & Godr.  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 650 m, 2 vii 1990, FK 1033; Sivas: Koyulhisar, around Batlaca, 900 m, 23 v 1992, FK 1987.
- F. scoparia** Pomel  
Tokat: Erbaa, Üzümlü village, 550 m, 25 iv 1992, FK 1581.  
Mediterranean element.
- F. thymifolia** (L.) Verlot var. **thymifolia**  
Tokat: Niksar, around Maduru, 350 m, 22 v 1992, FK 1816.  
Mediterranean element.
- F. aciphylla** Boiss.  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 16 ix 1992, FK 2993.  
Irano-Turanian element.
- VIOLACEAE**
- Viola odorata** L.  
Tokat: Erbaa, around Sancar Plateau, 1380 m, 24 iv 1992, FK 1564.
- V. sieheana** Becker  
Tokat: Erbaa, Kozlu village, 600 m, 23 iv 1992, FK 1429, 1430.
- V. kitaibeliana** Roem. & Schult.  
Tokat: Erbaa, İverönü village, around Dilsiztekke, 400 m, 23 iv 1992, FK 1502.
- POLYGALACEAE**
- Polygala supina** Schreb.  
Tokat: Erbaa, around Hodaypınarı, 1300 m, 24 iv 1992 FK 1557.
- P. pruinosa** Boiss. subsp. **pruinosa**  
Tokat: Reşadiye, 500 m, 23 v 1992, FK 1794; Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1982.
- P. anatolica** Boiss. & Heldr.  
Tokat: Erbaa, Karayaka, around Ayıbeği, 900 m, 7 vi 1992, FK 2149.
- P. transcaucasica** Tamamsch.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2921.
- P. papilionacea** Boiss.  
Tokat: Erbaa, Tortepe, 1100 m, 21 v 1991, FK 1685.  
Irano-Turanian element.
- P. comosa** Schkuhr.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2921a.
- P. monspeliaca** L.  
Tokat: Erbaa, Tepekışla village, vicinity of Karakışla, 850 m, 18 vi 1992, FK 2226a.  
Mediterranean element.
- PORTULACACEAE**
- Portulaca oleracea** L.  
Tokat: Erbaa, between Yoldere village and Doğanyurt, 350 m, 2 vii 1992, FK 2386.
- CARYOPHYLLACEAE**
- Arenaria serpyllifolia** L.  
Sivas: Koyulhisar, around Batlaca, 950 m, 24 v 1992, FK 1952.
- A. leptoclada** (Reichb.) Guss.  
Tokat: Erbaa, Tortepe, 1100 m, 21 v 1992, FK 1675.
- A. scariosa** Boiss.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2873.  
Endemic, Irano-Turanian element.
- A. acutisepala** Hauskn. ex Williams  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2873a.  
Endemic, Irano-Turanian element.
- Minuartia montana** L. subsp. **weisneri** (Stapf) McNeill.  
Tokat: Niksar, Akıncı village, around Ortaburun, 600 m, 24 v 1992, FK 2686.  
Irano-Turanian element.
- M. intermedia** (Boiss.) Hand.-Mazz.  
Tokat: Erbaa, Kale village, 300 m, Tobey 688.

- M. hamata* (Haukskn.) Mattf.  
Tokat: Niksar, around Maduru, 350 m, 22 v 1992, FK 1823.
- M. anatolica* (Boiss.) Woron. var. *anatolica*  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1764.  
Endemic.
- M. anatolica* (Boiss.) Woron. var. *tetratricha* McNeill  
Tokat: Erbaa, Karayaka, Şahinepe, S. slopes, 600 m, 23 iv 1992, FK 1512.  
Endemic, Irano-Turanian element.
- M. anatolica* (Boiss.) Woron. var. *sclerantioides* (Boiss. & Noe) McNeill  
Tokat: Erbaa, Karayaka, 500 m, 12 vii 1990, FK 1032.  
Endemic, Irano-Turanian element.
- M. corymbulosa* (Boiss. & Bal.) McNeill var. *corymbulosa*  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2142.
- Moehringia trinervia* (L.) Clairv.  
Tokat: Erbaa, Kozlu village, 600 m, 23 iv 1992, FK 1424.
- Stellaria media* (L.) Vill. subsp. *media*  
Tokat: Erbaa, 250 m, 23 iv 1992, FK 1406.
- S. media* (L.) Vill. subsp. *pallida* (Dumort.) Aschers. & Graebn  
Tokat: Erbaa, Doşanyurt, 400 m, 25 iv 1992, FK 1633.
- S. holostea* L.  
Tokat: Erbaa, above Kozlu village, 700 m, 23 iv 1992, FK 1428.  
Euro-Siberian element.
- Cerastium chlorifolium* Fisch. & Mey.  
Sivas: Koyulhisar, around Batlaca, 800 m, 23 v 1992, FK 1938.
- C. dichotomum* L. subsp. *dichotomum*  
Sivas: Koyulhisar, around Batlaca, 800 m, 23 v 1992, FK 1945.
- C. glomeratum* Thuill.  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1404.  
Cosmopolitan.
- C. pumilum* Curtis  
Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1293, 1294.
- C. gracile* Duf.  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2153.
- Holosteum umbellatum* L. var. *umbellatum*  
Tokat: Niksar, Musapınar village, 850 m, 8 v 1993, FK 3179.
- Bufonia tenuifolia* L.  
Tokat: Erbaa, Demirtaş village, 350 m, 26 ix 1991, FK 1218.
- Spergularia media* (L.) C.Presl  
Sivas: Koyulhisar, Gökdere village, 700 m, 8 vii 1993, FK 4341a.
- Telephium imperati* L. subsp. *orientale* (Boiss.) Nyman  
Sivas: Koyulhisar, above Yeşilyurt village, 950m, 28 vii 1992, FK 2888.
- Dianthus pallens* Sibth. & Sm.  
Tokat: Erbaa, Tepekışla village, around Karakışla, 450 m, 1 vii 1992, FK 2342.
- D. floribundus* Boiss. & Tchihat.  
Sivas: Koyulhisar, around Kuşkuşlar, 950m, 27 vii 1992, FK 2789.  
Irano-Turanian element.
- D. orientalis* Adams. var. *orientalis*  
Tokat: Niksar, İlicak Dağ, 500 m, 26 ix 1992, FK 2991.
- D. carmelitarum* Boiss.  
Tokat: Erbaa, Kozlu village, 900 m, 5 viii 1993, FK 4782.  
Endemic, Euxine element.
- D. calocephalus* Boiss.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkeleşi, 1450 m, 28 vii 1992, FK 2899.
- Petrorhagia cretica* (L.) Ball & Heywood  
Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2803.
- P. alpina* (Habl.) Ball & Heywood subsp. *olympica* Ball & Heywood  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkeleşi, 1400 m, 28 vii 1992, FK 2905.
- P. saxifraga* (L.) Link.  
Tokat: Erbaa, Karınca Dağ, 900 m, 16 ix 1992, FK 2694.  
Euro-Siberian element.
- Velezia pseudorigida* Hub.-Mor.  
Sivas: Koyulhisar, 850 m, 13 vii 1990, FK 1161.  
Endemic, E. Mediterranean element.
- Saponaria glutinosa* Bieb.  
Tokat: Erbaa, Tepekışla village, vicinity of Karakışla, 600 m, 18 vi 1992, FK 2232.
- S. orientalis* L.  
Tokat: Erbaa, Tortepe, 1000 m, 13 vii 1992, FK 3000.
- S. viscosa* C.A.Mey.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkeleşi, 450 m, 28 vii 1992, FK 2883. Irano-Turanian element
- S. cerastioides* Fisch. ex C.A.Mey.  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2177.  
Hyrcano-Euxine element.
- S. prostrata* Willd. subsp. *prostrata*  
Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2544.  
Endemic, Irano-Turanian element.
- S. prostrata* Willd. subsp. *calvertii* (Boiss.) Hedge  
Tokat: Erbaa, above Kale village, 700 m, 21 v 1992, FK 1731.
- Gypsophila ericalyx* Boiss.  
Sivas: Koyulhisar, around Kuşkuşlar, 800 m, 4 vii 1992, FK 2483.  
Endemic, Irano-Turanian element.
- Vaccaria pyramidata* Medik. var. *grandiflora* (Fisch. ex DC.) Jaub. & Spach  
Sivas: Koyulhisar, 650 m, 27 vii 1992, FK 2815.
- Silene italica* (L.) Pers.  
Tokat: Erbaa, Karayaka, vicinity of Karakışla, 600 m, 17 vi 1992, FK 2112.
- S. lasiantha* Koch  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2735.

- S. manissadjianii** Freyn  
Tokat: Erbaa, Karınca Dağ, 900 m, 16 ix 1992, FK 2976.  
Endemic.
- S. bupleuroides** L.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2914.
- S. chlorifolia** Sm.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2294.  
Irano-Turanian element.
- S. otites** (L.) Wibel  
Tokat: Erbaa, around Üçtepeler, 400 m, 18 vi 1992, FK 2294.
- S. stenobotrys** Boiss. & Hausskn.  
Tokat: Niksar, vicinity of İlicak Stream, 600 m, 19 ix 1992, FK 2676a.  
Irano-Turanian element.
- S. cappadocica** Boiss. & Heldr.  
Tokat: Erbaa, Fındıcak village, 750 m, 17 vi 1992, FK 2183.  
Irano-Turanian element.
- S. spergulifolia** (Desf.) Bieb.  
Tokat: Erbaa, Kale village, 400 m, 17 vi 1992, FK 2103.  
Irano-Turanian element.
- S. supina** Bieb. subsp. **pruinosa** (Boiss.) Chawdh.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2469; Tokat: Erbaa, Tepe-kışla village, around Karakışla, 600 m, 18 vi 1992, FK 2248.
- S. montbretiana** Boiss.  
Sivas: Koyulhisar, around Batlaca, 800 m, 3 vii 1992, FK 2453.  
Irano-Turanian element.
- S. vulgaris** (Moench) Garcke var. **vulgaris**  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2738.
- S. fabaria** (L.) Sibth. & Sm.  
Tokat: Erbaa, Bağpınar village, 500 m, 25 iv 1992, FK 1615.
- S. compacta** Fisch.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1400 m, 28 vii 1992, FK 2862.
- S. alba** (Miller) Krause subsp. **divaricata** (Reichb.) Walters  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2742a.
- S. alba** (Miller) Krause subsp. **ericalycina** (Boiss.) Walters  
Tokat: Niksar, 450 m, 22 v 1992, FK 1805.
- S. kotschyi** Boiss. var. **kotschyi**  
Sivas: Koyulhisar, Sugözü village, 600 m, 13 vii 1990, FK 1143.
- S. dichotoma** Ehrh. subsp. **sibthorpiana** (Reichb.) Rech.  
Tokat: Erbaa, Ağcağaç village, vicinity of İmbat bridge, 350 m, 16 ix 1992, FK 2056a.
- Agrostemma githago** L.  
Tokat: Niksar, 450 m, 22 v 1992, FK 1863.
- ILLECEBRACEAE**
- Herniaria glabra** L.  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1784.
- H. micrantha** A.K.Jack. & Turrill  
Tokat: Erbaa, Tortepe, 1100 m, 17 ix 1992, FK 3006a.
- H. hirsuta** L.  
Tokat: Erbaa, Karayaka, around Karakışla, 600 m, 17 vi 1992, FK 2110.
- H. incana** Lam.  
Tokat: Erbaa, Tortepe 1100 m, 21 v 1992, FK 1703.
- Paronychia kurdica** Boiss. subsp. **kurdica** var. **kurdica**  
Tokat: Erbaa, Karayaka, Şahintepe, 600 m, 12 vii 1990, FK 1050; Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2820.
- P. chionaea** Boiss.  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1961.  
Endemic.
- Scleranthus perennis** L. subsp. **dichotomus** (Schur) Stoj. & Stefanov  
Tokat: Reşadiye, 500 m, 23 v 1992, FK 1879a.
- S. annuus** L. subsp. **annuus**  
Tokat: Erbaa, Demirtaş village, 370 m, 26 ix 1991, FK 1207.
- S. uncinatus** Schur.  
Tokat: Erbaa, Ağcağaç village, İmbat bridge, 350 m, 23 iv 1992, FK 1482.
- POLYGONACEAE**
- Atraphaxis billardieri** Jaub. & Spach var. **billardieri**  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 5 vii 1992, FK 2571.  
Irano-Turanian element.
- Polygonum persicaria** L.  
Tokat: Erbaa, Karınca Dağ, 900 m, 16 ix 1992, FK 2967.
- P. hydropiper** L.  
Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1193.
- P. aviculare** L.  
Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1290.  
Cosmopolitan.
- P. arenarium** Walldst. & Kit.  
Tokat: Erbaa, vicinity of Kızılotlu, 200 m, 27 ix 1991, FK 1279.
- P. patulum** Bieb. subsp. **pulchellum** (Lois.) Leblebici  
Tokat: Erbaa, 250 m, 1 vii 1992, FK 2324.
- P. convolvulus** L.  
Tokat: Erbaa, Doğanıyurt, banks of Karaun Stream, 500 m, 9 x 1991, FK 1367.
- Rumex acetosella** L.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 450 m, 28 vii 1992, FK 2880.  
Cosmopolitan.
- R. scutatus** L.  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1000 m, 6 vii 1992, FK 2617.
- R. patientia** L.  
Tokat: Erbaa, 250 m, 1 vii 1992, FK 2311.

- R. crispus* L.  
Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1290.
- R. conglomeratus* Murray  
Tokat: Erbaa, Yoldere village, 300 m, 2 vii 1992, FK 2380, 2385.
- R. optusifolius* L. subsp. *subalpinus* (Schur) Celak.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2507.
- R. pulcher* L.  
Tokat: Erbaa, 250 m, 1 vii 1992, FK 2314.
- R. nepalensis* Sprengel  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1450 m, 28 vii 1992, FK 2915.
- CHENOPODIACEAE.**
- Beta trigyna* Waldst. & Kit  
Tokat: Niksar, Özveren village, Çakmak district, 1100 m, 25 vii 1992, FK 2759.
- Chenopodium botrys* L.  
Tokat: Erbaa, vicinity of Karayaka bridge, 250 m, 13 vii 1992, FK 1071.
- C. foliosum* (Moench) Aschers.  
Tokat: Niksar, around Maduru, 450 m, 2 vii 1992, FK 2405.
- C. murale* L.  
Tokat: Erbaa, 250 m, 25 ix 1991, FK 1177.  
Cosmopolitan.
- C. vulvaria* L.  
Tokat: Erbaa, 250 m, 25 ix 1991, FK 1183, 1189.
- C. sosnowskyi* Kap.  
Tokat: Erbaa, 250 m, 25 ix 1991, FK 1191.
- Atriplex nitens* Schkuhr  
Sivas: Koyulhisar, around Batlaca, 850 m, 18 ix 1992, FK 3033.
- A. rosea* L.  
Sivas: Koyulhisar, around Batlaca, 850 m, 18 ix 1992, FK 3028.
- Ceratocarpus arenarius* L.  
Sivas: Koyulhisar, around Sugözü village, 600 m, 18 vii 1993, FK 4336.
- Kochia prostrata* (L.) Schrad.  
Sivas: Koyulhisar, around Tuğladağ, 800 m, 4 vii 1992, FK 2549.
- Salsola kali* L.  
Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2811.
- Noaea mucronata* (Forssk.) Aschers. & Schweinf. subsp. *mucronata*  
Sivas: Koyulhisar, around Batlaca, 850 m, 18 ix 1992, FK 3030.
- AMARANTACEAE**
- Amaranthus retroflexus* L.  
Tokat: Niksar, 500 m, 26 vii 1992, FK 2773.
- A. deflexus* L.  
Tokat: Erbaa, 250 m, 21 v 1992, FK 1650.
- A. blitoides* S.Watson  
Tokat: Erbaa, around Dilsiztekke, 300 m, 16 ix 1992, FK 2950.
- A. albus* L.  
Tokat: Erbaa, 250 m, 25 ix 1991, FK 1171.
- TAMARICACEAE**
- Tamarix parviflora* DC.  
Tokat: Erbaa, Karayaka, Şahintepe S. slopes, 650 m, 23 iv 1992, FK 1537.
- T. smyrnensis* Bunge  
Tokat: Erbaa, Karayaka, banks of Kelkit Çay, 250 m, 13 vii 1990, FK 1068.
- Reaumuria sivasica* Kit Tan & Yıldız  
Sivas: Koyulhisar, Kesikbaş village, around Yuvaayağı, 650 m, 9 x 1993, FK 5818.  
Endemic, Irano-Turanian element.
- GUTTIFERAE (Hypericaceae)**
- Hypericum androsaemum* L.  
Tokat: Erbaa, above Kozlu village, 850 m, 16 v 1993, 3450.
- H. xylosteifolium* (Spach) Robson  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1450 m, 28 vii 1992, FK 2884. Euxine element.
- H. lydium* Boiss.  
Tokat: Erbaa, Ağcaalan village, Karadağ, around İmestepe, 650 m, 18 vi 1992, FK 2278.
- H. scabrum* L.  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1990.
- H. linaroides* Bosse  
Tokat: Erbaa, Karayaka, around Ayıbeği, 900 m, 17 vi 1992, FK 2154.
- H. montbretii* Spach  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1450 m, 28 vii 1992, FK 2870.
- H. orientale* L.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1450 m, 28 vii 1992, FK 2885.
- H. origanifolium* Willd.  
Tokat: Erbaa, Tepekışla village, 300 m, 13 vii 1990, FK 1087; Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1983.
- H. avicularifolium* Jaub. & Spach subsp. *avicularifolium* var. *avicularifolium*  
Tokat: Erbaa, Karınca Dağ, S. slopes, 600 m, 16 ix 1992, FK 2983.  
Endemic, E. Mediterranean element.
- H. avicularifolium* Jaub. & Spach subsp. *byzantinum* (Azn.) Robson  
Tokat: Niksar, around Maduru, 350 m, 22 v 1992, FK 1831.  
Endemic, E. Mediterranean element.
- H. perforatum* L.  
Tokat: 25km along Erbaa to Niksar road, vicinity of Salih Gelbal Forest, 500 m, 13 vii 1990, FK 1035.
- H. triquetrifolium* Turra  
Tokat: Erbaa, Doğanyurt, 450 m, 26 ix 1991, FK 1250.
- MALVACEAE**
- Hibiscus trionum* L.  
Tokat: Erbaa, Doğanyurt, 450 m, 26 ix 1991, FK 1251.
- Abutilon theophrastii* Medik.  
Tokat: Erbaa, 250 m, 25 ix 1991, FK 1168.
- Malva sylvestris* L.  
Tokat: Erbaa, 250 m, 1 vii 1992, FK 2317.

**M. nicaeensis** All.

Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 300 m, 16 vi 1992, FK 2035.

**M. neglecta** Wallr.

Tokat: Erbaa, Kale village, 350 m, 17 vi 1992, FK 2100.

**M. parviflora** L.

Tokat: Niksar, around Maduru, 350 m, 8 v 1992, FK 3136.

**Lavatera punctulata** All.

Tokat: Reşadiye, Çakmak village, 500 m, 13 vii 1990, FK 1117.

**Alcea apterocarpa** (Fenzl) Boiss.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 27 vii 1992, FK 2800.

Endemic, Irano-Turanian element.

**A. calvertii** (Boiss.) Boiss.

Tokat: Erbaa, Karınca Dağ, S. slopes, 600 m, 16 ix 1992, FK 2964.

Endemic, Irano-Turanian element.

**A. pallida** Wallst. & Kit.

Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 300 m, 16 vi 1992, FK 2040.

**Althaea cannabina** L.

Tokat: Niksar, around Maduru, 400 m, 24 vii 1992, FK 2730.

**A. hirsuta** L.

Tokat: Erbaa, Tepekışla village, around Karakışla, 500 m, 18 vi 1992, FK 2240.

**TILIACEAE**

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

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1200 m, 28 vii 1992, FK 2933.

**LINACEAE**

**Linum mucronatum** Bertol. subsp. *mucronatum*

Sivas: Koyulhisar, vicinity of Saytepe, 850 m, 6 vii 1992, FK 2632a.

Irano-Turanian element.

**L. mucronatum** Bertol. subsp. *armenum* (Bordz.) Davis

Sivas: Koyulhisar, Sugözü village, 600 m, 13 vii 1990, FK 1129.

Irano-Turanian element.

**L. nodiflorum** L.

Tokat: Reşadiye, Çakmak village, 500 m, 13 vii 1990, FK 1112.

Mediterranean element.

**L. corymbulosum** Reichb.

Tokat: Erbaa, Tepekışla village, vicinity of Karakışla, 400 m, 18 vi 1992, FK 2228.

Mediterranean element.

**L. hirsutum** L. subsp. *pseudoanatolicum* Davis

Tokat: Erbaa, Tepekışla village, vicinity of Karakışla, 400 m, 18 vi 1992, FK 2244.

Endemic, Irano-Turanian element.

**L. tenuiflorum** L.

Tokat: Erbaa, Tepekışla village, 300 m, 13 vii 1990, FK 1089.

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

Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1960.

**L. bienne** Miller

Tokat: Erbaa, vicinity of Karayaka bridge, 250 m, 16 ix 1990, FK 1067.

**GERANIACEAE**

**Geranium purpureum** Vill.

Tokat: Erbaa, between Bağpınar village and Yoldere village, 450 m, 25 iv 1992, FK 1611.

**G. robertianum** L.

Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2134.

**G. rotundifolium** L.

Tokat: Erbaa, between Ballıbağ village and Üzümlü village, 550 m, 25 iv 1992, FK 1572.

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

Tokat: Erbaa, between Ballıbağ village and Üzümlü village, 550 m, 25 iv 1992, FK 1571.

**G. pusillum** Burm.f.

Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1855.

**G. dissectum** L.

Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1921a.

**G. tuberosum** L. subsp. *tuberosum*

Sivas: Koyulhisar, 800 m, 23 v 1992, FK 1909.

**G. stepporum** Davis

Sivas: Koyulhisar, around Batlaca, 850 m, 18 ix 1992, FK 2540a.

**G. psilostemon** Ledeb.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1450 m, 28 vii 1992, FK 2912. Euxine (mt.) element.

**G. sylvaticum** L.

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2753.

Euro-Siberian element.

**G. asphodeloides** Burm.f. subsp. *asphodeloides*

Tokat: Erbaa, Küplüce village, 700 m, 23 iv 1992, FK 1457.

Euro-Siberian element.

**G. pyrenaicum** Burm.f.

Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1854.

**G. cinereum** Cavaro. subsp. *subcaulescens* (L'Herit. ex DC.) var. *subacutum* (Boiss.) Davis & Roberts

Tokat: Erbaa, around Kızılotlu, 300 m, 27 ix 1991, FK 1265.

Endemic, Irano-Turanian element

**Erodium gaillardotii** Boiss.

Tokat: Erbaa, Doğanyurt, 600 m, 25 iv 1992, FK 1624.

Irano-Turanian element.

**E. ciconium** (L.) L'Herit.

Tokat: Niksar, vicinity of İlicak Stream, 600 m, 22 v 1992, FK 1801.

**E. malacoides** (L.) L'Herit.

Tokat: Erbaa, between Bağpınar village and Yoldere village, 600 m, 25 iv 1992, FK 1586.

Mediterranean element.

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

Tokat: Erbaa, Kozlu village, 600 m, 23 iv 1992, FK 1441, 1452.

*E. moschatum* (L.) L'Herit.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2473.  
Mediterranean element.

*E. acaule* (L.) Bech. & Thell.  
Tokat: Erbaa, around Dilsiztekte, 400 m, 23 iv 1992, FK 1499; ibid, 16 ix 1992, FK 2951.  
Mediterranean element.

*Pelargonium endlicherianum* Fenzl.  
Sivas: Koyulhisar, Sugözü village, around Ağınbükü, 600 m, 18 vii 1993, FK 4359.

**OXALIDACEAE**

*Oxalis acetosella* L.  
Tokat: Erbaa, 250 m, 21 v 1992, FK 1644.  
Cosmopolitan.

**ZYGOPHYLLACEAE**

*Zygophyllum fabago* L.  
Sivas: Koyulhisar, 650 m, 3 vii 1992, FK 2449; Tokat: Niksar, Ilıcak Dağ, 450 m, 24 vii 1992, FK 2676.  
Irano-Turanian element.

*Tribulus terrestris* L.  
Tokat: Erbaa, vicinity of Karayaka bridge, 250 m, 13 vii 1990, FK 1070.

*Peganum harmala* L.  
Tokat: Erbaa, Evyaba village, 250 m, 13 vii 1990, FK 1010.

**RUTACEAE**

*Ruta montana* (L.) L.  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 500 m, 12 vii 1990, FK 1036.

*Haplophyllum telephioides* Boiss.  
Sivas: Koyulhisar, around Batlaca, 800 m, 3 vii 1992, FK 2447; Tokat: Erbaa, around Çamlık, 300 m, 2 vii 1992, FK 2374.  
Endemic, Irano-Turanian element.

*H. armenum* Spach  
Tokat: Erbaa, Tepekışla village, 300 m, 13 vii 1990, FK 1090.  
Endemic.

**SIMAROUBACEAE**

*Ailanthus altissima* (Miller) Swingle  
Tokat: Niksar, 400 m, 19 ix 1992, FK 3078.

**ACERACEAE**

*Acer platanoides* L.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1450 m, 28 vii 1992, FK 2858.  
Hyrcano-Euxine element.

*A. campestre* L. subsp. *campestre* (Opiz) Pax  
Tokat: Niksar, Akıncı village, around Ortaburun, 550 m, 24 vii 1992, FK 2687.  
Euro-Siberian element.

*A. hyrcanum* Fisch. & Mey. subsp. *hyrcanum*  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1200 m, 28 vii 1992, FK 2897.  
Euro-Siberian element.

*A. negundo* L.  
Tokat: Erbaa, 250 m, 16 vi 1992, FK 2034.

**VITACEAE**

*Vitis sylvestris* Gmelin  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 500 m, 12 vii 1992, FK 1059.

**RHAMNACEAE**

*Paliurus spina-cristi* Miller  
Tokat: Erbaa, Kale village, 300 m, 9 x 1991, FK 1333.

*Zizyphus jujuba* Miller  
Tokat: Erbaa, Karayaka, Derefte district, 450 m, 12 vii 1992, FK 3026.

**AQUIFOLIACEAE**

*Ilex colchica* Poj.  
Tokat: Erbaa, around Hodaypınarı, 1380 m, 24 iv 1992, FK 1551.  
Euro-Siberian element.

**ANACARDIACEAE**

*Cotinus coggyria* Scop.  
Tokat: 25km along Erbaa to Niksar road, vicinity of Salih Gelbal Forest, 450 m, 13 vii 1990, FK 1094.

*Rhus coriaria* L.  
Tokat: Reşadiye, Çakmak village, 550 m, 13 vii 1990, FK 1113.

**Pistacia lentiscus** L.

Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2788.  
Mediterranean element.

*P. terebinthus* L. subsp. *palaestina* (Boiss.) Engl.  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 650 m, 23 iv 1992, FK 1537.  
E. Mediterranean element.

**CELASTRACEAE**

*Euonymus verrucosus* Scop.  
Tokat: Erbaa, Yoldere village, near lime kiln, 450 m, 15 vi 1993, FK 3428.

*E. europaeus* L.  
Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 3476.  
Euro-Siberian element.

**LEGUMINOSAE (Fabaceae)**

*Gleditsia triacanthus* L.  
Tokat: Niksar, 350 m, 2 vii 1992, FK 2406, culture.

*Cercis siliquastrum* L. supsp. *siliquastrum*  
Tokat: Erbaa, around Çamlık, 250 m, 2 vii 1992, FK 2377.

*Albizia julibrissin* Durazz.  
Tokat: Niksar, 350 m, 2 vii 1992, FK 2667, culture.  
Hyrcano-Euxine element.

*Chamaecytisus supinus* (L.) Link  
Tokat: Niksar, around Maduru, 450 m, 2 vii 1992, FK 2399.  
Euro-Siberian element.

*C. pygmaeus* (Willd.) Rothm.  
Tokat: Erbaa, Karayaka, vicinity of Karakışla, 600 m, 17 vi 1992, FK 2108.  
Euro-Siberian element.

*Genista tinctoria* L.  
Tokat: Erbaa, above Kozlu village, 800 m, 5 viii 1993, FK 4810.

*G. albida* Willd.  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 1976.

*Argyrolobium biebersteinii* Ball  
Tokat: Erbaa, Karayaka, around Karakışla, 600 m, 17 vi 1992, FK 2115.

- Robinia pseudoacacia** L.  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1884, culture.
- Colutea cilicica** Boiss. & Bal.  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1762.
- Chesneya elegans** Fomin  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 5 vii 1992, FK 2543.  
Endemic, Irano-Turanian element.
- Astragalus sesameus** L.  
Tokat: Reşadiye, Çayırpınar village, around Aşağıdağ, 450 m, 19 vi 1992, FK 3562.  
Mediterranean element.
- A. stella** Gouan  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1958.  
Mediterranean element.
- A. commixtus** Bunge  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1954.  
Irano-Turanian element.
- A. hamosus** L.  
Tokat: Niksar, Ilıcak Dağ, 500 m, 22 v 1992, FK 1797.
- A. suberosus** Banks & Sol. subsp. **acyleus** (Boiss.) Matthews  
Tokat: Niksar, Ilıcak Dağ, 500 m, 22 v 1992, FK 1799a.  
Endemic.
- A. densifolius** Lam. subsp. **amasiensis** (Frey) Aytaç & Ekim  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2903.  
Endemic.
- A. vexillaris** Boiss.  
Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2632.  
Endemic, Irano-Turanian element.
- A. viciifolius** DC.  
Tokat: Erbaa, between Üzümlü village and Bağpınar village, 600 m, 24 v 1992, FK 1584.
- A. viridissimus** Freyn & Sint.  
Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1705, 1706.  
Endemic, Euxine element.
- A. glycyphyllos** L. subsp. **glycyphyllos**  
Tokat: Niksar, Akıncı village, around Ortaburun, 650 m, 22 v 1992, FK 2703.  
Euro-Siberian element.
- A. christianus** L.  
Tokat: Erbaa, Karınca Dağ, 900 m, 16.ix,1992, FK 2895.
- A. microcephalus** Willd.  
Sivas: Koyulhisar, Gökdere village, 600 m, 13 vii 1990, FK 1146.  
Irano-Turanian element.
- A. pycnocephalus** Fisch. var. **pycnocephalus**  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2935. Irano-Turanian element.
- A. tokatensis** Fisch.  
Sivas: Koyulhisar, around Tuğladağ, 750 m, 27 vii 1992, FK 2806; Tokat: Reşadiye, Tenara village, Irmak district, 450 m, 18 vii 1993, FK 4328.  
Endemic, Irano-Turanian element.
- A. barbo-jovis** DC. var. **barbo-jovis**  
Sivas: 10km along Koyulhisar to Mesudiye road, 1200 m, 5 viii 1993, FK 4836.
- A. plumosus** Willd. var. **nitens** (Frey) & Bornm.) Chamb. & Matthews  
Tokat: Erbaa, between Bağpınar village and Güveçli village, 500 m, 9 x 1991, FK 1344.
- A. compactus** Lam.  
Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2807.  
Endemic, Irano-Turanian element.
- A. kurdicus** Boiss. var. **kurdicus**  
Tokat: Erbaa, Doğanyurt, 500 m, 26 ix 1991, FK 1232.  
Irano-Turanian element.
- A. andrachneifolius** Fenzl  
Tokat: Erbaa, Bağpınar village to Güveçli village, 500 m, 9 x 1991, FK 1350, 1356.
- A. mitchelianus** Boiss.  
Tokat: Niksar, Ilıcak Dağ, 600 m, 24 vii 1992, FK 2660.  
Endemic.
- A. dictyophysus** Boiss.  
Tokat: Niksar, vicinity of Ilıcak Stream, 600 m, 24 vii 1992, FK 2660a.  
Endemic, Irano-Turanian element.
- A. ponticus** Pall.  
Tokat: Erbaa, above Kale village, 950m, 15 vi 1993, FK 3444.
- A. panduratus** Bunge.  
Sivas: Koyulhisar, around Batlaca, 900 m, 18 ix 1992, FK 3049.  
Endemic, Irano-Turanian element.
- A. lineatus** Lam. var. **lineatus**  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2014.
- A. ornithopodioides** Lam.  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1977.  
Irano-Turanian element.
- A. aduncus** Wild.  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 900 m, 5 vii 1992, FK 2574.  
Irano-Turanian element.
- A. cylindraceus** DC.  
Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1831; ibid, 2 vii 1992, FK 2392a.  
Endemic, Irano-Turanian element.
- A. hirsutus** Wahl.  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2007.  
Endemic.
- A. fragrans** Willd.  
Tokat: Niksar, Dağüstü village, around Hapan boğazi, 1400 m, 18 vi 1993, FK 3532.
- A. acmonotrichus** Fenzl  
Tokat: Erbaa, Kozlu village, S. slopes, 700 m, 23 iv 1992, FK 1431.  
Endemic, Mediterranean element.



- A. sanguinolentus** Bieb.  
Tokat: Erbaa, Karayaka, vicinity of Şahintepe, S. slopes, 500 m, 23 iv 1992, FK 1523.
- A. campylosema** Boiss. subsp. **campylosema**  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1830, 1891.  
Endemic, Irano-Turanian element.
- A. campylosema** Boiss. subsp. **atropurpureus** (Boiss.) Chamb.  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 24 iii 1992, FK 1524.  
Endemic.
- A. spruneri** Boiss.  
Tokat: Erbaa, Ağcageçe village, around Dilsiztekte, 350 m, 23 iv 1992, FK 1493, 1503.
- A. sigmoideus** Bunge  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 23 iv 1992, FK 1532, 1542.  
Endemic.
- A. aucheri** Boiss.  
Sivas: Koyulhisar, around Batlaca, 1100 m, 3 vii 1992, FK 2441.  
Endemic, Irano-Turanian element.
- Oxytropis fominii** Gross  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 950m, 3 vii 1992, FK 2456.  
Endemic, Irano-Turanian element.
- Glycyrrhiza glabra** L. var. **glabra**  
Sivas: Koyulhisar, around Tuğladağ, 900 m, 4 vii 1992, FK 2564.
- G. glabra** L. var. **glandulifera** (Waldst. & Kit.) Boiss.  
Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 350 m, 16 vi 1 992, FK 2039.
- G. echinata** L.  
Tokat: Erbaa, Karayaka bridge, banks of Kelkit Çay, 250 m, 5 viii 1993, FK 4725.
- Psoralea bituminosa** L.  
Tokat: Erbaa, Tepekışla village, vicinity of Karakışla, 500 m, 18 vi 1992, FK 2250.
- P. acaulis** Stev.  
Tokat: Niksar, Tchich.
- Cicer pinnatifidum** Jaub. & Spach.  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1968.
- C. bijugum** Rech.  
Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2552.  
Irano-Turanian element.
- Vicia cracca** L. subsp. **cracca**  
Tokat: Erbaa, Kale village to Tortepe, 800 m, 21 v 1992, FK 1737.  
Euro-Siberian element.
- V. cracca** L. subsp. **gerardii** Gaudin  
Tokat: Erbaa, Karayaka, around Karakışla, 600 m, 7 vi 1992, FK 2114.
- V. cracca** L. subsp. **tenuifolia** (Roth) Gaudin  
Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1697a.
- V. villosa** Roth subsp. **villosa**  
Tokat: Erbaa, 250 m, 1 vii 1992, FK 2330.
- V. villosa** Roth subsp. **eriocarpa** (Hauskn.) P.W.Ball  
Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 300 m, 16 vi 1992, FK 2067.
- V. hirsuta** (L.) Gray  
Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1689.
- V. balansae** Boiss.  
Sivas: Koyulhisar, around Kuşkuşlar, 900 m, 27 vii 1992, FK 2791a.  
Euxine element.
- V. barbazitae** Ten. & Guss.  
Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 300 m, 23 iv 1992, FK 1473.  
Mediterranean element.
- V. sativa** L. subsp. **sativa**  
Tokat: Niksar, vicinity of İlicak Stream, 500 m, 22 v 1992, FK 1781.  
Cosmopolitan.
- V. sativa** subsp. **nigra** (L.) Ehrh. var. **segatilis** (Thuill.) Ser. ex DC.  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 1993a.
- V. bithynica** L.  
Sivas: Koyulhisar, around Batlaca, 900 m, 23 v 1992, FK 1942.
- V. narbonense** L. var. **narbonense**  
Tokat: Erbaa, banks of İmbat Çay, 300 m, 23 iv 1992, FK 1476.
- Lens ervoides** (Bring.) Grande  
Tokat: Niksar, Akıncı village, around Ortaburun, 650 m, 24 v 1992, FK 2698.  
Mediterranean element.
- L. orientalis** (Boiss) Hand.-Mazz.  
Tokat: Erbaa, between Bağpınar village and Yoldere village, 500 m, 25 iv 1992, FK 1596.
- Lathyrus aureus** (Stev.) Brandza  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 27 v 1992, FK 2470.  
Euxine element.
- L. vernus** (L.) Bernh.  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2470a.  
Euro-Siberian element.
- L. digitatus** (Bieb.) Fiori  
Tokat: Erbaa, banks of İmbat Çay, 300 m, 16 vi 1992, FK 2074a.  
Mediterranean element.
- L. tukhtensis** Czecc.  
Tokat: Erbaa, Karayaka, around Ayıbeleği, 900 m, 17 vi 1992, FK 2182a.  
Endemic.
- L. laxiflorus** (Desf.) O.Kuntze subsp. **laxiflorus**  
Tokat: Erbaa, Karayaka, around Karakışla, 700 m, 17 vi 1992, FK 2131.
- L. roseus** Stev.  
Tokat: Erbaa, Karayaka, Karınca Dağ, 900 m, 16 ix 1992, FK 2876.  
Hyrcano-Euxine element.
- L. phaericus** Retz.  
Tokat: Erbaa, between Bağpınar village and Yoldere village, 550 m, 25 iv 1992, FK 1602.
- L. annuus** L.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2486.  
Mediterranean element.

- L. cicera** L.  
Tokat: Erbaa, banks of İmbat Çay, 250 m, 23 iv 1992, FK 1475, 1487.
- L. sativus** L.  
Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1887.
- L. aphaca** L. var. **biflorus** Post  
Tokat: Erbaa, Doğanıyurt, 600 m, 25 iv 1992, FK 1638.
- L. aphaca** L. var. **floribundus** (Vel.) K.Maly  
Tokat: Erbaa, vicinity of Karaçeltik brick factory, 250 m, 16 vi 1992, FK 2071.
- L. aphaca** L. var. **pseudoaphaca** (Boiss.) Davis  
Tokat: Erbaa, Bağpınar village, 500 m, 25 iv 1992, FK 1608.  
E. Mediterranean element.
- Pisum sativum** L. subsp. **elatius** (Bieb.) Aschers. & Graebn. var. **elatius**  
Sivas: Koyulhisar, around Batlıca, 850 m, 23 v 1992, FK 1941.  
Mediterranean element.
- Ononis viscosa** L. subsp. **breviflora** (DC.) Nyman  
Tokat: Erbaa, Doğanıyurt, 450 m, 26 ix 1991, FK 1228.
- O. pusilla** L.  
Tokat: Niksar, Akıncı village, around Ortaburun, 650 m, 24 vii 1992, FK 2699.
- O. spinosa** L. subsp. **leiosperma** (Boiss.) Siry  
Tokat: Erbaa, vicinity of Karayaka bridge, 250 m, 13 vii 1990, FK 1063.
- Trifolium hybridum** L. var. **hybridum**  
Tokat: Erbaa, banks of İmbat Çay, 300 m, 16 vi 1992, FK 2069.
- T. barbulatum** (Freynt & Sint.) Zoh.  
Tokat: Niksar, Özveren village, Çakmak district, 1100 m, 25 vii 1992, FK 2760.  
Endemic.
- T. campestre** Schreb.  
Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1824.
- T. patens** Schreb.  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 27 v 1992, FK 2760a.
- T. spumosum** L.  
Tokat: Niksar, vicinity of İlicak Stream, 450 m, 22 v 1992, FK 1791.  
Mediterranean element.
- T. physodes** Stev. ex Bieb. var. **physodes**  
Tokat: Erbaa, 250 m, 21 v 1992, FK 1642; *ibid.*, 16 vi 1992, FK 2068.  
Mediterranean element.
- T. pratense** L. var. **pratense**  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1933.
- T. pratense** L. var. **sativum** Schreb.  
Tokat: Erbaa vicinity of Karaçeltik brick factory, 250 m, 16 vi 1992, FK 2073; *ibid.*, 1 vii 1992, FK 2315.
- T. medium** L. var. **medium**  
Tokat: Erbaa, Tortepe, 1200 m, 27 ix 1991, FK 1315.
- T. ochroleucum** Huds.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1450 m, 28 vii 1992, FK 2881.
- T. canescens** Willd.  
Tokat: Erbaa, Karakaya, around Karakışla, 600 m, 1 vii 1992, FK 2114.  
Hyrcano-Euxine element.
- T. lucanicum** Gasp.  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1770, 1749a.  
Mediterranean element.
- T. arvense** L. var. **arvense**  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1748.
- T. arvense** L. var. **gracile** (Thuill.) DC.  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2158a.
- T. angustifolium** L. var. **angustifolium**  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 650 m, 18 vi 1992, FK 2224.
- T. purpureum** Lois. var. **purpureum**  
Tokat: Erbaa, Evyaba village, vicinity of cemetery, 250 m, 12 vii 1990, FK 1014.
- Melilotus neapolitana** Ten.  
Tokat: Erbaa, around Üçtepeleler, 450 m, 18 vi 1992, FK 2306.
- M. officinalis** (L.) Desr.  
Tokat: Erbaa, 250 m, 25 ix 1991, FK 1188.
- M. alba** Desr.  
Tokat: Erbaa, vicinity of Karaçeltik brick factory, 250 m, 16 vi 1992, FK 2071.
- M. taurica** (Bieb.) Ser.  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2207.
- Trigonella plicata** (Boiss. & Bal.) Boiss.  
Sivas: Koyulhisar, around Batlıca, 950m, 23 v 1992, FK 1979.  
Endemic, E. Mediterranean element.
- T. brachycarpa** (Fish.) Moris  
Tokat: Reşadiye, Yolyatan village, around Aşağıdağ, 450 m, 19 vi 1993, FK 3564.  
Irano-Turanian element.
- T. lunata** Boiss.  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1752.  
Irano-Turanian element.
- T. velutina** Boiss.  
Sivas: Koyulhisar, around Batlıca, 800 m, 3 vii 1992, FK 2443a.  
Irano-Turanian element.
- T. aurantiaca** Boiss.  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1712.  
Irano-Turanian element.
- T. monantha** C.A.Mey. subsp. **monantha**  
Tokat: Reşadiye, Yolyatan village, around Aşağıdağ, 450 m, 19 vi 1993, FK 3664a.  
Irano-Turanian element.
- T. monspeliaca** L.  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1751.  
Mediterranean element.
- T. isthmocarpa** Boiss. & Bal.  
Sivas: Koyulhisar, above Yeşilyurt village, 1100 m, 28 vii 1992, FK 2700.  
Endemic, Irano-Turanian element.

- T. spicata* Sibth. & Sm.  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1816.  
E. Mediterranean element.
- T. coerulescens* (Bieb.) Hal.  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1972.  
Irano-Turanian element.
- Medicago orbicularis* (L.) Bart.  
Tokat: Niksar, vicinity of Ilıcak Stream, 450 m, 22 v 1992, FK 1812.
- M. lupulina* L.  
Tokat: Erbaa, 250 m, 21 v 1992, FK 1654.
- M. sativa* L. subsp. *sativa*  
Sivas: Koyulhisar, Sugözü village, 750 m, 13 vii 1992, FK 1131.
- M. x varia* Martyn  
Sivas: Koyulhisar, around Batlaca, 850 m, 3 vii 1992, FK 2443a.
- M. falcata* L.  
Sivas: Koyulhisar, around Batlaca, 750 m, 3 vii 1992, FK 2443.
- M. coronata* (L.) Bart.  
Sivas: Koyulhisar, vicinity of prison, 850 m, 27 vii 1992, FK 2623a.
- M. minima* (L.) Bart. var. *minima*  
Tokat: Erbaa, Kale village, 350 m, 21 v 1992, FK 1749.
- M. polymorpha* L. var. *polymorpha*  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1835.
- M. polymorpha* L. var. *vulgaris* (Benth.) Shinnars  
Tokat: Niksar, vicinity of Ilıcak Stream, 450 m, 22 v 1992, FK 1813.
- M. rigidula* (L.) All. var. *rigidula*  
Sivas: Koyulhisar, above Yeşilyurt village, 1000 m, 28 vii 1992, FK 2939.
- M. rigidula* (L.) All. var. *submitis* (Boiss.) Heyn.  
Sivas: Koyulhisar, vicinity of prison, 850 m, 6 vii 1992, FK 2622a.
- M. rigidula* (L.) All. var. *agrestis* Burniat  
Tokat: Niksar, 400 m, 22 v 1992, FK 1814, 1815.
- Dorycnium graecum* (L.) Ser.  
Tokat: Erbaa, Karayaka, around Karakışla, 600 m, 18 vi 1992, FK 2276.  
Euro-Siberian element.
- D. pentaphyllum* Scop. subsp. *herbaceum* (Vill.) Rouy  
Tokat: Erbaa, Tepekişla village, vicinity of Karakışla, 500 m, 18 vi 1992, FK 2230, 2231.
- D. pentaphyllum* Scop. subsp. *anatolicum* (Boiss.) Gams  
Tokat: Erbaa, Tepekişla village, vicinity of Karakışla, 500 m, 1 vii 1992, FK 2333a.
- Lotus corniculatus* L. var. *tenuifolius* L.  
Tokat: Erbaa, 250 m, 1 vii 1992, FK 2330a.
- Anthyllis vulneraria* L. subsp. *boissieri* (Sag.) Bornm.  
Tokat: Erbaa, Eryaba village, 650 m, 15 vi 1993, FK 3420.
- Securigera securidaca* (L.) Degen & Dörf.  
Tokat: Niksar, 450 m, 22 v 1992, FK 1775, 1789.
- Coronilla scorpiodes* (L.) Koch  
Tokat: Erbaa, Ağcageça village, around Dilsiztekke, 350 m, 23 iv 1992, FK 1501.
- C. coronata* L.  
Tokat: Erbaa, around Üçtepeler, 500 m, 18 vi 1992, FK 2305.
- C. orientalis* Miller var. *orientalis*  
Sivas: Koyulhisar, Sugözü village, 650, 13 vii 1990, FK 1044.
- C. varia* L. var. *varia*  
Tokat: Erbaa, Karakaya, around Karakışla, 600 m, 16 ix 1992, FK 2116.
- Hippocrepis unisiliquosa* L.  
Tokat: Erbaa, Ağcageçe village, vicinity of İmbat Stream, 450 m, 23 iv 1992, FK 1402a.
- H. multisiliquosa* L.  
Tokat: Niksar, 450 m, 22 v 1992, FK 1788.  
Mediterranean element.
- Hedysarum varium* Willd.  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1872.  
Irano-Turanian element.
- H. nitidum* Willd.  
Sivas: Koyulhisar, around Batlaca, 850 m, 3 vii 1992, FK 2436.  
Endemic, Irano-Turanian element.
- Onobrychis caput-galli* (L.) Lam.  
Tokat: Niksar, 450 m, 22 v 1992, FK 1832.  
Mediterranean element.
- O. stenostachya* Freyn subsp. *krausei* (Sirj.) Hedge  
Sivas: 8km along Koyulhisar to Mesudiye road, 1000 m, 13 vii 1992, FK 1161.  
Endemic, Irano-Turanian element.
- O. armena* Boiss. & Huet  
Sivas: between Koyulhisar and Mesudiye, 1000 m, 13 vii 1992, FK 1151.  
Endemic, Irano-Turanian element.
- O. bornmuelleri* Boiss.  
Tokat: Niksar, around Maduru, 350 m, 2 vii 1992, FK 2391.  
Endemic.
- O. huetiana* Boiss.  
Sivas: Koyulhisar, around Batlaca, 800 m, 3 vii 1992, FK 2433a.  
Endemic, Irano-Turanian element.
- O. tournefortii* (Willd.) Desv.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2499.  
Endemic.
- ROSACEAE**
- Prunus spinosa* L. subsp. *dasyphylla* (Schur) Domin  
Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1690.  
Euro-Siberian element.
- P. divaricata* Ledeb. subsp. *ursina* (Kotschy) Browicz  
Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2787.

*P. cocomilla* Ten. var. *puberula* (Schneider) Browicz

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2524.

Endemic.

*Cerasus angustifolia* (Spach) Browicz var. *angustifolia*

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2540.

Irano-Turanian element.

*C. angustifolia* (Spach) Browicz var. *sintensis* (Schneider) Browicz

Sivas: Koyulhisar, around Tuğladağ, 750 m, 4 vii 1992, FK 2540a.

Irano-Turanian element.

*C. microcarpa* (C.A.Mey.) Boiss. subsp. *microcarpa*

Sivas: Koyulhisar, around Kuşkuşlar, 800 m, 4 vii 1992, FK 2502.

*C. avium* (L.) Moench

Tokat: Erbaa, between Koçak village and Kozlu village, 750 m, 7 v 1993, FK 3124.

*C. mahaleb* (L.) Miller var. *mahaleb*

Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1885

*Filipendula vulgaris* Moench

Tokat: Niksar, Dağüstü village, 950m, 8 vi 1993, FK 3535a.

Euro-Siberian element.

*Rubus sanctus* Schreb.

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2565.

*R. canescens* DC.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkebeği, 1450 m, 28 vii 1992, FK 2907.

*R. canescens* DC. var. *glabratus* (Godron) Davis & Meikle

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 450 m, 6 vii 1992, FK 2360.

Euro-Siberian element.

*R. hirtus* Waldst & Kit.

Tokat: Erbaa, around Hodaypinarı, 1380 m, 24 iv 1992, FK 1548.

*Potentilla argentea* L.

Tokat: Erbaa, between Kale village and Tortepe, 750 m, 12 vi 1992, FK 2171.

*P. inclinata* Will.

Tokat: Erbaa, Tortepe, 1100 m, 17 ix 1992, FK 2999.

*P. armeniaca* Siegf. ex Th.

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 800 m, 18 vi 1992, FK 2257.

Endemic.

*P. recta* L. Group a

Sivas: Koyulhisar, above Yeşilyurt village, 1100 m, 28 vii 1992, FK 2936.

*P. recta* L. Group b

Tokat: Niksar, 450 m, 22 v 1992, FK 1785.

*P. umbrosa* Stev. ex Bieb.

Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2172a.

Euro-Siberian element.

*P. reptans* L.

Tokat: Erbaa, banks of İmbat Stream, 300 m, 16 vi 1992, FK 2056.

*P. speciosa* Willd. var. *speciosa*

Tokat: Erbaa, around Hodaypinarı, 1380 m, 24 iv 1992, FK 1552.

*Fragaria vesca* L.

Tokat: Erbaa, vicinity of Kızılotlu, 1380 m, 21 v 1992, FK 1668.

*Geum rivale* L.

Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1295.

*G. urbanum* L.

Tokat: Erbaa, 250 m, 21 v 1992, FK 1657.

*Agrimonia eupatoria* L.

Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1321.

*Sangiosorba minor* Scop. subsp. *magnolii* (Spoch) Brig.

Tokat: Niksar, 450 m, 22 v 1992, FK 1793.

*S. minor* Scop. subsp. *muricata* (Spoch) Brig.

Tokat: Erbaa, around Üçtepeler, 450 m, 18 vi 1993, FK 2299.

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

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 450 m, 1 vii 1992, FK 2359.

*Alchemilla heterophylla* Rothm.

Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 21 v 1992, FK 1666.

*Rosa horrida* Fisch.

Tokat: Erbaa, above Kozlu village, 950m, 5 viii 1993, FK 4764.

*R. montana* Chaix subsp. *woronowii* (Lonacz) O.Nilsson

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2744.

*R. canina* L.

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1993, FK 2529.

*Mespilus germanica* L.

Tokat: Erbaa, Çatalan village, 950m, 7 v 1992, FK 3104.

Hyrcano-Euxine element.

*Cotoneaster integerrimus* Medik.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkebeği, 1450 m, 28 vii 1992, FK 2875.

*C. nummularia* Fisch. & Mey.

Tokat: Niksar, around Maduru, 350 m, 22 v 1992, FK 1843.

*Pyracantha coccinea* Roemer.

Tokat: Erbaa, Doğanıyurt, banks of Karaun Stream, 550 m, 16 ix 1992, FK 1337.

*Crataegus tanacetifolia* (Lam.) Pers.

Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2636.

Endemic.

*C. orientalis* Pallas ex Bieb. var. *orientalis*

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2475.

*C. pseudoheterophylla* Pojark.

Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 650 m, 12 vii 1990, FK 1060.

Irano-Turanian element.

*C. monogyna* Jacq. subsp. *monogyna*

Tokat: Erbaa, Karayaka, Karıncadağ, S. slopes, 900 m, 16 ix 1992, FK 2960.

*C. monogyna* Jacq. subsp. *azarella* (Gris) Franco

Tokat: Niksar, 450 m, 22 v 1992, FK 1804.

**C. microphylla** C.Koch

Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 900 m, 23 iv 1992, FK 1521,

Hyrcano-Euxine element.

**Sorbus umbellata** (Desf.) Fritsch var. **taurica** (Zinserl.) Gabr.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1300 m, 28 vii 1992, FK 2930.

**S. umbellata** (Desf.) Fritsch var. **cretica** (Lindl.) Schn.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1100 m, 28 vii 1992, FK 2929.

**S. torminalis** (L.) Crantz var. **torminalis**

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2913.

Euro-Siberian element.

**Cydonia oblonga** Miller

Tokat: Erbaa, Koçak village to Kozlu village, 700 m, 23 iv 1992, FK 1419.

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

Tokat: Erbaa, Çatalan village, Kuzalan district, 1000 m, 17 ix 1992 FK 3008a.

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

Tokat: Niksar, vicinity of Ilıcak Stream, 600 m, 24 vii 1992, FK 2754.

**P. elaeagnifolia** Pallas subsp. **elaeagnifolia**

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2520.

**Amelanchier rotundifolia** (Lam.) Dum. Cours. subsp. **integrifolia** (Boiss. & Hohen.)

Browicz

Sivas: Koyulhisar, vicinity of prison, 950m, 6 vii 1992. FK 2631.

**PUNICACEAE**

**Punica granatum** L.

Tokat: Erbaa, around Çamlık, 250 m, 1 vii 1992, FK 2333.

**LYTHRACEAE**

**Lythrum salicaria** L.

Tokat: Erbaa, Bölücek village, banks of Avladun Stream, 500 m, 18 vi 1992, FK 2288.

Euro-Siberian element.

**ONAGRACEAE**

**Circaea lutetiana** L.

Tokat: Erbaa, above Kozlu village, 950m, 5 viii 1993, FK 4800.

**Epilobium angustifolium** L.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1400 m, 28 vii 1992, FK 2902.

**E. hirsutum** L.

Sivas: Koyulhisar, around Batlaca, 750 m, 18 ix 1992, FK 3069.

**E. parviflorum** Schreb.

Tokat: Niksar, vicinity of Ilıcak Stream, 500 m, 24 vii 1992, FK 2674.

**E. montanum** L.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2476.

Euro-Siberian element.

**E. alpestre** (Jacq.) Krockner

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2746.

**E. tetragonum** L. subsp. **lamiyi** (F.W.Schultz) Nyman.

Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1263.

Euro-Siberian element.

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

Tokat: Niksar, Çamiçi, Abdalkolu village, 1100 m, 24 vii 1992, FK 2712.

Euxine element.

**E. munitiflorum** Hausskn.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2476b.

Irano-Turanian element.

**CUCURBITACEAE**

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

Tokat: Niksar, 400 m, 22 v 1992, FK 1792.

Mediterranean element.

**Bryonia alba** L.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2522.

Euro-Siberian element.

**DATISCEAE**

**Datisca cannabiana** L.

Tokat: Niksar, banks of Ilıcak Stream, 400 m, 24 vii 1992, FK 2659.

**CRASSULACEAE**

**Sedum stoloniferum** S.G.Gmel.

Tokat: Erbaa, above Kozlu village, 900 m, 5 viii 1993, FK 4795.

Hyrcano-Euxine element.

**S. acre** L.

Tokat: Niksar, Akıncı village, around Ortaburun, 700 m, 24 vii 1992, FK 2688.

**S. album** L.

Tokat: Niksar, Akıncı village, around Ortaburun, 700 m, 24 vii 1992, FK 2689.

**S. caespitosum** (Cav.) DC.

Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge 400 m, 23 iv 1992, FK 1992.

Mediterranean element.

**S. hispanicum** L. var. **hispanicum**

Tokat: Erbaa, Çatalan village, S. slopes, 900 m, 7 v 1993, FK 3162a.

**S. pallidum** Bieb. var. **pallidum**

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2726.

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

Tokat: Niksar, Akıncı village, around Ortaburun, 600 m, 24 vii 1992, FK 2697.

Euxine element.

**SAXIFRAGACEAE**

**Saxifraga rotundifolia** L.

Tokat: Niksar, Akıncı village, around Ortaburun, 750 m, 19 vi 1992, FK 3554.

Euro-Siberian element.

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

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1400 m, 28 vii 1992, FK 2916.

**UMBELLIFERAE (Apiaceae)**

**Sanicula europaea** L.

Tokat: Erbaa, Karayaka, around Ayıbeği, 900 m, 17 vi 1992, FK 2161.

**Astrantia maxima** Pallas subsp. **haradjianii** (Grintz.) Rech.f.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1400 m, 28 vii 1992, FK 2926.

Endemic.

**Eryngium giganteum** Bieb.

Tokat: Niksar, Dağüstü village, around Hapan Boğazi, 1450 m, 18 vi 1993, FK 3528.

Euxine element.

**E. creticum** Lam.

Tokat: Erbaa, Evyaba village, vicinity of cemetery, 300 m, 12 vii 1992, FK 1008.

E. Mediterranean element.

**E. bithynicum** Boiss.

Tokat: Erbaa, Evyaba village, vicinity of cemetery, 300 m, 12 vii 1992, FK 1009.

Endemic, Irano-Turanian element.

**E. billardieri** Delar.

Sivas: Koyulhisar, around Batlaca, 850 m, 3 vii 1992, FK 2419.

Irano-Turanian element.

**Echinophora tournefortii** Jaub. & Spach.

Tokat: Erbaa, Doğanyurt, 400 m, 26 ix 1991, FK 1247.

Irano-Turanian element.

**E. tenuifolia** L. subsp. **sibthorpiana** (Guss.) Tutin

Sivas: Koyulhisar, around Batlaca, 800 m, 28 ix 1992, FK 3031.

Irano-Turanian element.

**Chaerophyllum aureum** L.

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2734.

**Anthriscus caucalis** Bieb.

Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 700 m, 23 iv 1992, FK 1545.

**Scandix stellata** Banks & Sol.

Tokat: Erbaa, Doğanyurt, 500 m, 25 iv 1992, FK 1628.

**S. pecten-veneris** L.

Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1858.

**Coriandrum sativum** L.

Sivas: Koyulhisar, around Kuşkuşlar, 700 m, 4 vii 1992, FK 2511.

**Fuernrohria setifolia** C.Koch

Tokat: Erbaa, above Kozlu village, 850 m, Tobey 2201.

**Bifora radians** Bieb.

Tokat: Erbaa, around Üçtepel, 500 m, 16 v 1992, FK 3466.

**Bunium microcarpum** (Boiss.) Freyn subsp. **microcarpum**

Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1845.

E. Mediterranean element.

**B. microcarpum** (Boiss.) Freyn subsp. **bourgaei** (Boiss.) Hedge & Lamond

Sivas: Koyulhisar, around Batlaca, vicinity of cemetery, 800 m, 23 v 1992, FK 1940.

Irano-Turanian element.

**Pimpinella cappodocica** Boiss. & Ball

Tokat: Niksar, vicinity of Ilıcak Stream, 600 m, 26 vii 1992, FK 2784a.

Endemic.

**Foeniculum vulgare** Miller

Tokat: Niksar, around Maduru, 400 m, 2 vii 1992, FK 2400.

**Physospermum cornubiense** (L.) DC.

Tokat: Niksar, vicinity of Ilıcak Stream, 600 m, 2 vii 1992, FK 2392.

**Conium maculatum** L.

Tokat: Erbaa, banks of İmbat Stream, 250 m, 16 vi 1992, FK 2048.

**Prangos pabularia** Lind.

Sivas: Koyulhisar, around Tuğladağ, 850 m, 16 vi 1992, FK 2536.

Irano-Turanian element.

**Hipomarathrum microcarpum** (Bieb.) Fedtsch.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1450 m, 28 vii 1992, FK 2918.

**Bupleurum rotundifolium** L.

Sivas: Koyulhisar, 800 m, 4 vii 1992, FK 2470.

**B. croceum** Fenz.

Tokat: Erbaa to Taşova, edge of road, 250 m, 16 vi 1992, FK 2074.

Irano-Turanian element.

**B. boissieri** Post.

Tokat: Erbaa, Açcağçeçe village, around Dilsiztekke, 400 m, 16 ix 1992, FK 2948.

**B. setaceum** Fenzl.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1400 m, 28 vii 1992, FK 2920a.

Endemic, E. Mediterranean element.

**B. gerardii** All.

Tokat: Erbaa, Karayaka, around Karakışla, 600 m, 17 vi 1992, FK 2121.

**Ridolfia segetum** (Guss.) Moris

Tokat: Erbaa, vicinity of Karayaka bridge, 250 m, 16 vi 1992, FK 2040.

Mediterranean element.

**Falcaria vulgaris** Bernh.

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 400 m, 1 vii 1992, FK 2334.

**Johrenia tortuosa** (Fisch. & Mey.) Chamb.

Tokat: Erbaa, Doğanyurt, vicinity of Karaun Stream, 250 m, 16 vi 1992, FK 1361.

**J. polyscias** Bornm.

Tokat: Niksar, vicinity of Ilıcak Stream, 600 m, 24 vii 1992, FK 2654,

Endemic.

**Ferulago setifolia** C.Koch

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1450 m, 28 vii 1992, FK 2931.

Irano-Turanian element.

**Peucedanum palimbioides** Boiss.

Tokat: 28 km E. of Reşadiye, M.Zohary 97162.

Endemic, Irano-Turanian element.

**Pastinaca sativa** L. subsp. **urens** (Req. ex Godron) Celak.

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2732.

**Malabaila secacul** Banks. & Sol. Group b

Sivas: Koyulhisar, Sugözü village, 650 m, 13 vii 1990, FK 1142.

- Heracleum platytaenium* Boiss.  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2150.  
Endemic, Euxine element.
- Zozima absinthifolia* (Vent.) Link.  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2012.
- Tordylium maximum* L.  
Tokat: Niksar, 500 m, 22 v 1992, FK 1783,
- T. syriacum* L.  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 650 m, 1 vii 1992, FK 2336.  
E. Mediterranean element.
- Laser trilobum* (L.) Borkh.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkleleşi, 1450 m, 28 vii 1992, FK 2858.
- Torilis nodosa* (L.) Gertner  
Tokat: Niksar, vicinity of İlicak Stream, 450 m, 17 vi 1993, FK 3498.
- T. arvensis* (Huds.) Link subsp. *arvensis*  
Tokat: Niksar, vicinity of İlicak Stream, 500 m, 26 vii 1992, FK 2784a.
- T. arvensis* (Huds.) Link subsp. *neglecta* (Sprengel) Thell.  
Tokat: Erbaa, banks of İmbat Stream, 250 m, 16 vi 1992, FK 2050.
- T. arvensis* (Huds.) Link subsp. *purpurea* (Ten.) Hayek  
Tokat: Erbaa, Karayaka, Karınca Dağ, 900 m, 16 ix 1992, FK 2984a.  
Mediterranean element.
- T. leptophylla* (L.) Reichb.  
Tokat: Erbaa, Karakaya village, around Karakışla, 600 m, 17 vi 1992, FK 2113.
- Astrodaucus orientalis* (L.) Drude  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 5 vii 1992, FK 2567.
- Caucalis platycarpus* L.  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1763.
- Turgenia latifolia* (L.) Hoffm.  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1999.
- Orlaya daucooides* (L.) Greuter  
Tokat: between Erbaa and Koçak village, 450 m, Tobey 2182.  
Mediterranean element.
- Daucus carota* L.  
Tokat: Erbaa, Kozlu village, 900 m, 21 vi 1992, FK 1763a
- D. guttatus* Sm.  
Tokat: Erbaa, İverönü village, around Dilsiztekke, 400 m, 16 ix 1992, FK 2949a.
- Artemisia squamata* L.  
Sivas: Koyulhisar, Sugözü village, 650 m, 13 vii 1992, FK 1132.
- ARALIACEAE**
- Hedera helix* L.  
Tokat: Niksar, Akıncı village, around Ortaburun, 700 m, 24 vii 1992, FK 2709.
- CORNACEAE**
- Cornus sanguinea* L. subsp. *australis* (C.A. Mey.) Jav.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkleleşi, 1400 m, 28 vii 1992, FK 2573.  
Euro-Siberian element.
- C. sanguinea* L. subsp. *cilicica* (Wangerin) Chamb.  
Tokat: Erbaa, İverönü village, around Dilsiztekke, 400 m, 16 ix 1992, FK 2956.  
Mediterranean element.
- C. mas* L.  
Tokat: Niksar, Akıncı village, around Ortaburun, 700 m, 24 vii 1992, FK 2680.  
Euro-Siberian element.
- CAPRIFOLIACEAE**
- Sambucus ebulus* L.  
Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1300.  
Euro-Siberian element.
- S. nigra* L.  
Tokat: Erbaa, vicinity of Kızılotlu, 1400 m, 16 vi 1993, FK 3471.  
Euro-Siberian element.
- Viburnum lantana* L.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkleleşi, 1450 m, 28 vii 1992, FK 2906.
- Lonicera caucasica* Pallas subsp. *orientalis* (Lam.) Chamb. & Long  
Tokat: Erbaa to Boğallı village, 850 m, Tobey 2210.  
Endemic.
- VALERIANACEAE**
- Valeriana alliarifolia* Adams  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkleleşi, 1450 m, 28 vii 1992, FK 2909.
- V. officinalis* L.  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 650 m, 18 vi 1992, FK 2228a.
- V. dioscoridis* Sm.  
Tokat: Niksar, vicinity of İlicak Stream, 450 m, 22 v 1992, FK 1790.  
E. Mediterranean element.
- Centranthus longiflorus* (L.) DC. subsp. *longiflorus*  
Sivas: Koyulhisar, around Batlaca, 800 m, 3 vii 1992, FK 2454.  
Irano-Turanian element.
- C. calcitrapa* (L.) Dufur.  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1761.  
Mediterranean element.
- Valerianella carinata* Lois.  
Tokat: Erbaa, Küplüce village, 450 m, 23 iv 1992, FK 1460.
- V. coronata* (L.) DC.  
Tokat: Erbaa, İverönü village, around Dilsiztekke, 350 m, 23 iv 1992, FK 1508.
- V. chlorostephana* Boiss. & Ball  
Tokat: Erbaa, Ağcağece village, vicinity of İmbat bridge, 400 m, 23 iv 1992, FK 1473a.  
Irano-Turanian element.
- V. discoidea* (L.) Lois.  
Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1850.  
Mediterranean element.
- MORINACEAE**
- Morina persica* L.  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1462; Tokat: Erbaa, around Üçtepeler, 450 m, 18 vi 1992, FK 2305a.  
Irano-Turanian element.

**DIPSACACEAE**

**Dipsacus laciniatus** L.

Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2641.

**Cephalaria syriaca** (L.) Schrad.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2494.

**C. procera** Fisch. & Lall.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1450 m, 28 vii 1992, FK 2861.

Irano-Turanian element.

**Knautia byzantina** Fritsch

Tokat: Niksar, around Maduru, 350 m, 2 vii 1992, FK 2376.

Endemic.

**K. involucrata** Somm. & Lev.

Tokat: Niksar, Bereketli, 1912 Siehe.

Euxine element.

**Succisa pratensis** Moench.

Tokat: between Niksar and Karakuş, 1100 m, Davis 24930.

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

Tokat: Niksar, around Maduru, 350 m, 22 v 1992, FK 1820.

**S. columbaria** L. subsp. **columbaria** var. **intermedia** (Post) Matthews

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 450 m, 1 vii 1992, FK 2358.

**S. crinata** Kotschy & Boiss.

Tokat: Erbaa, Tortepe, 1200 m, 27 ix 1991, FK 1320.

Irano-Turanian element.

**S. argentea** L.

Tokat: Niksar, around Maduru, 400 m, 2 vii 1992, FK 2397.

**S. micrantha** Desf.

Sivas: 10 km N. of Koyulhisar, 1000 m, 13 vii 1990, FK 1152.

**S. sicula** L.

Tokat: Erbaa, Kale village, 300 m, 17 vi 1992, FK 2086.

Mediterranean element.

**S. calocephala** Boiss.

Tokat: Niksar, around Maduru, 350 m, 2 vii 1992, FK 2401a.

Irano-Turanian element.

**Pteroccephalus plumosus** (L.) Coulter

Tokat: Erbaa, Evyaba village, vicinity of cemetery, 250 m, 12 vii 1990, FK 1004,

**COMPOSITAE (Asteraceae)**

**Sigesbeckia orientalis** L.

Tokat: Niksar, banks of İlicak Stream, 400 m, 19 ix 1992, FK 3074.

**Bidens tripartita** L.

Tokat: Niksar, banks of İlicak Stream, 350 m, 19 ix 1992, FK 3053.

**Xanthium spinosum** L.

Tokat: Erbaa to Evyaba village, 250 m, 25 v 1991, FK 1169.

**X. strumarium** L. subsp. **cavanillesi** (Schouw) D.Löve & Dans.

Tokat: Erbaa to Evyaba village, 250 m, 25 v 1991, FK 1165.

**Asteriscus aquaticus** (L.) Less.

Tokat: Erbaa, Evyaba village, vicinity of cemetery, 250 m, 12 vii 1990, FK 1006.

Mediterranean element.

**Inula helenium** L. subsp. **orgyalis** (Boiss.) Grierson

Tokat: Erbaa, above Kozlu village, 750 m, 4 viii 1993, FK 4690.

Endemic.

**I. ensifolia** L.

Tokat: Erbaa, Ağcaalan village, Karadağ, around İmestepe, 650 m, 18 vi 1992, FK 2282.

Euro-Siberian element.

**I. oculus-christi** L.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1450 m, 28 vii 1992, FK 2758.

Euro-Siberian element.

**I. montbretiana** DC.

Sivas: Koyulhisar, around Batlaca, 850 m, 3 vii 1992, FK 2455.

Irano-Turanian element.

**I. vulgaris** (Lam.) Trevisan

Tokat: Niksar, 350 m, 19 ix 1992, FK 3072.

Euro- Siberian element.

**I. aschersoniana** Janka

Tokat: Erbaa, Karayaka, Derefte district, 400 m, 17 ix 1992, FK 3017.

**Pulicaria dysenterica** (L.) Bernh.

Tokat: Erbaa, 300m 17 vi 1992, FK 1164

**Helichrysum plicatum** DC. subsp. **plicatum**

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1450 m, 28 vii 1992, FK 2894.

**H. armenum** DC. subsp. **armenum**

Sivas: Koyulhisar, around Batlaca, vicinity of cemetery, 850 m, 18 ix 1992, FK 3052.

Irano-Turanian element.

**H. arenarium** (L.) Moench subsp. **aucheri** (Boiss.) Davis & Kupicha

Tokat: Niksar, Özveren village, Çakmak district, 1100 m, 27 v 1992, FK 2756.

Endemic, Irano-Turanian element.

**Filago pyramidata** L.

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 400 m, 1 vii 1992, FK 2338.

**Logfia arvensis** (L.) Holub.

Tokat: Erbaa, Kale village, 350 m, 21 v 1992, FK 1758.

**L. gallica** (L.) Cosson & Germ.

Tokat: Erbaa, Doğanyurt, 450 m, 26 ix 1991, FK 1227;1237.

**Psychrogeton nitromontanus** (Boiss. & Busche) Grierson

Tokat: Erbaa, İverönü village, around Dilsiztekke, 400 m, 16 ix 1992, FK 2958, 2961a.

Irano-Turanian element.

**Conyza canadiensis** (L.) Cronquist

Tokat: Erbaa, 250 m, 25 vi 1992, FK 1180, 1186, culture.

**C. bonariensis** (L.) Cronquist

Tokat: Niksar, 450 m, 26 vii 1992, FK 2780, culture.



- Bellis perennis** L.  
Tokat: Erbaa, vicinity of Kızılotlu, 300 m, 27 ix 1991, FK 1276.  
Euro-Siberian element.
- Doronicum tobeyi** J.R.Edmondson  
Tokat: Erbaa, between Kızılotlu and Tortepe, 1200 m, 16 v 1993, FK 3467.  
Endemic, Euxine element.
- D. orientale** Hoffm.  
Tokat: Erbaa, above Kozlu village, 900 m, 23 iv 1992, FK 1451.
- Senecio aquaticus** Hill. subsp. *erraticus* (Bertol.) Matthews  
Tokat: Niksar, vicinity of Ilıcak Stream, 550 m, 19 ix 1992, FK 3077.  
Euro-Siberian element.
- S. vernalis** Waldts. & Kit.  
Tokat: Erbaa, Kozlu village, 300 m, 17 vi 1992, FK 2094.
- Tussilago farfara** L.  
Tokat: Erbaa, 5 km from Koçak village, 750 m, 23 iv 1992, FK 1449.  
Euro-Siberian element.
- Petasites hybridus** (L.) Gaertner  
Tokat: Erbaa, 5 km from Koçak village, 700 m, 7 v 1993, FK 3122.
- Calendula arvensis** L.  
Tokat: Erbaa, Doğanıyurt, 450 m, 25 iv 1992, FK 1630.
- Eupatorium cannabinum** L.  
Tokat: Erbaa, Karayaka, Karınca Dağ, 650 m, 16 ix 1992, FK 2987.  
Anthemis cotula L.  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2727.
- A. tinctoria** L. var. *tinctoria*  
Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2526.
- A. triumfetti** (L.) All.  
Tokat: Niksar, Akıncı village, around Ortaburun, 700 m, 24 vii 1992, FK 2526.
- A. austriaca** Jacq.  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1973.
- Achillea gypsicola** Hub.-Mor.  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1922.  
Endemic, Irano-Turanian element.
- A. millefolium** L. subsp. *millefolium*  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 500 m, 12 vii 1992, FK 1126.  
Euro-Siberian element.
- A. biebersteinii** Afan.  
Sivas: Koyulhisar, Sugözü village, 650 m, 13 vii 1990, FK 1138.  
Irano-Turanian element.
- Tanacetum macrophyllum** (Waldst. & Kit) Sch. Bip.  
Tokat: Erbaa, Karayaka, around Ayıbeği, 900 m, 17 vi 1992, FK 2141.  
Euro-Siberian element.
- T. cilicicum** (Boiss.) Grierson  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkleği, 1400 m, 28 vii 1992, FK 2891.  
E. Mediterranean element.
- T. poteriifolium** (Ledeb.) Grierson  
Tokat: Erbaa, around Üçtepeleler, 500 m, 18 vi 1992, FK 2304.  
Euxine element.
- T. parthenium** (L.) Sch. Bip.  
Tokat: Niksar, vicinity of Ilıcak Stream, 500 m, 24 vii 1992, FK 2655.
- T. parthenifolium** (Willd.) Sch. Bip.  
Tokat: Erbaa, between Kızılotlu and Tortepe, 1250 m, 27 ix 1991, FK 1287, 1289.  
Irano-Turanian element.
- Matricaria chamomilla** L. var. *recutita* (L.) Grierson  
Tokat: Erbaa, Doğanıyurt, 450 m, 25 iv 1992, FK 1631.
- Tripleuspermum oreades** (Boiss.) Rech. f. var. *oreades*  
Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1696.
- Artemisia tournefortiana** Reichb.  
Tokat: Erbaa, 250 m, 25 ix 1992, FK 1196.  
Irano-Turanian element.
- A. absinthium** L.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkleği, 450 m, 28 vii 1993, FK 2856.
- A. scoparia** Woldst. & Kit.  
Tokat: Erbaa, Karayaka, Derefte district, 450 m, 9 x 1991, FK 1340.
- A. spicigera** C.Koch  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 800 m, 5 vii 1992, FK 2570.  
Irano-Turanian element.
- Arctium minus** (Hill) Bernh subsp. *pubens* (Babington) Arénés  
Tokat: Erbaa, 300 m, 1 vii 1992, FK 2331.  
Euro-Siberian element.
- Onopordum candidum** Nab.  
Sivas: 10km along Koyulhisar to Mesudiye road, 850 m, 27 vii 1992, FK 2818.  
Irano-Turanian element.
- O. carduchorum** Bornm. & Beauverd  
Tokat: Erbaa, İverönü village, around Dilsiztekke, 350 m, 18 vi 1992, FK 2218.  
Irano-Turanian element.
- O. tauricum** Willd.  
Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2643.  
Euro-Siberian element.
- Circium poluninii** Davis & Parris  
Tokat: Niksar to Karakuş 1100 m, 5 ix 1954, Davis & Polunin 24925.  
Endemic.
- C. vulgare** (Savi) Ten.  
Tokat: Erbaa, 250 m, 25 v 1991, FK 1166.
- C. canum** (L.) All.  
Tokat: Niksar, 350 m, Davis & Polunin 24845.  
Euro-Siberian element.
- C. pseudopersonata** Boiss. & Ball subsp. *pseudopersonata*  
Tokat: Erbaa, above Kozlu village, 900 m, 4 viii 1993, FK 4771.  
Endemic, Euxine element.

- C. simplex* C.A.Mey. subsp. *simplex*  
Tokat: Erbaa, Karayaka around Ayıbeleşi, 900 m, 17 vi 1992, FK 2165.  
Euxine (mt.) element.
- C. arvense* (L.) Scop. subsp. *vestitum* (Wimmer & Grab.) Petrak  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 600 m, 18 vi 1992, FK 2237.  
*Picnomon acarna* (L.) Cass.  
Tokat: Erbaa, between Demirtaş village and Çakır village, 350 m, 26 ix 1992, FK 1221.  
Mediterranean element.
- Ptilestomon afer* (Jacq.) Greuter subsp. *eberneus* Greuter  
Tokat: Niksar, Akıncı village, around Ortaburun, 550 m, 24 vii 1992, FK 2690.  
Endemic.
- Carduus acanthoides* L. subsp. *sintensisii* Kazmi  
Tokat: Erbaa, Karayaka, vicinity of Ayıbeleşi, 900 m, 16 ix 1992, FK 2972.  
Endemic, Irano-Turanian element.
- C. pycnocephalatus* L. subsp. *albidus* (Bieb.) Kazmi  
Tokat: Erbaa, İverönü village, around Dilsiztekke, 400 m, 18 vi 1992, FK 2197.  
*Jurinea consanguinea* DC.  
Sivas: Koyulhisar, around Batlaca, 800 m, 3 vii 1992, FK 2444.
- J. macrocalathia* C.Koch  
Tokat: Erbaa, Karakaya, vicinity of Karakışla, 600 m, 17 vi 1992, FK 2130.
- J. pontica* Hausskn. & Freyn ex Hausskn.  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1757.  
Endemic.
- Acroptilon repens* (L.) DC.  
Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2492.  
Irano-Turanian element.
- Centaurea consanguinea* DC.  
Tokat: between Erbaa and Evyaba village, 650 m, 15 vi 1993, FK 3422.  
Endemic, Irano-Turanian element.
- C. aggregata* Fisch. & Mey. ex DC. subsp. *aggregata*  
Tokat: Erbaa, Karayaka, 400 m, 9 x 1991, FK 1365.
- C. virgata* Lam. Group a  
Tokat: Erbaa, Doğanıyurt, vicinity of Karaun Stream, 500 m, 9 x 1991, FK 1162.
- C. virgata* Lam. Group c  
Sivas: Koyulhisar, Gökdere village, 750 m, 13 vii 1990, FK 1135.
- C. patula* DC.  
Sivas: Koyulhisar, around Kuşkuşlar, 800 m, 4 vii 1992, FK 2474.  
Irano-Turanian element.
- C. polypodifolia* Boiss. var. *polypodifolia*  
Sivas: Koyulhisar, around Kuşkuşlar, 800 m, 4 vii 1992, FK 2482.
- C. solstitialis* L. subsp. *solstitialis*  
Sivas: Koyulhisar, around Kuşkuşlar, 800 m, 4 vii 1992, FK 2378, 2373a.
- C. iberica* Trev. ex Sprengel  
Tokat: Erbaa, 250 m, 25 ix 1991, FK 1175.
- C. urvillei* DC. subsp. *urvillei*  
Tokat: Erbaa, 2 km along road from Bağpınar village to Güveçli village, 600 m, 9 x 1991, FK 1352.
- C. urvillei* DC. subsp. *stepposa* Wagenitz  
Tokat: Erbaa, Kale village, 400 m, 17 vi 1992, FK 2102.  
Irano-Turanian element.
- C. urvillei* DC. subsp. *armata* Wagenitz  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 5 vii 1992, FK 2568.  
E. Mediterranean element.
- C. carduiformis* DC. subsp. *orientalis* Wagenitz  
Sivas: Koyulhisar, around Kuşkuşlar, 800 m, 4 vii 1992, FK 2491.  
Irano-Turanian element
- C. pseudoscabiosa* Boiss. & Busche subsp. *pseudoscabiosa*  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 500 m, 18 vi 1992, FK 2258, 2268.
- C. pseudoscabiosa* Boiss. & Busche subsp. *glehnii* (Trautv.) Wagenitz  
Tokat: Niksar, vicinity of İlicak Stream, 650 m, 26 vii 1992, FK 2769.
- C. reuterana* Boiss. var. *phrygia* Bornm.  
Sivas: Koyulhisar, Tchich. 817  
Endemic, E. Mediterranean element.
- C. pichleri* Boiss. subsp. *pichleri*  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2023.
- C. triumfetti* All. Group a  
Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2532a.
- C. depressa* Bieb.  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1930.  
*Crupina vulgaris* Grass.  
Tokat: Niksar, around Maduru, 500 m, 22 v 1992, FK 1884.
- C. crupinastrum* (Moris) Vis.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 9 vii 1992, FK 2497a.
- Cnicus benedictus* L. var. *kotschy* Boiss.  
Sivas: Koyulhisar, vicinity of Saytepe, 1200 m, 24 v 1992, FK 2200.
- Cartamus lanatus* L.  
Tokat: Erbaa, Tortepe, 1100 m, 17 ix 1992, FK 3002.
- C. glaucus* Bieb. subsp. *glaucus*  
Tokat: Erbaa, Karayaka, 350 m, 9 x 1991, FK 1338.
- Carlina corymbosa* L.  
Tokat: Erbaa, Kale village, 350 m, 9 x 1991, FK 1339.  
Mediterranean element
- C. oligocephala* Boiss. & Kotschy subsp. *oligocephala*  
Tokat: Erbaa, Kale village, 1100 m, 27 ix 1991, FK 1316.
- C. biebersteinii* Bernh. ex Hornem  
Sivas: 10km along Koyulhisar to Mesudiye road, 900 m, 27 vii 1992, FK 2815a.

- Xeranthemum annuum* L.  
Tokat: Erbaa, Evyaba village, vicinity of cemetery, 300 m, 12 vii 1990, FK 1018.
- X. cylindraceum* Sm.  
Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 500 m, 18 vi 1992, FK 2229a.
- Echinops microcephalus* Sm.  
Sivas: Koyulhisar, around Kuşkuşlar, 900 m, 27 vii 1992, FK 2810.  
Mediterranean element.
- E. galaticus* Freyn  
Sivas: Koyulhisar, around Kuşkuşlar, 800 m, 27 vii 1992, FK 2809.  
Euxine element.
- E. viscosus* DC. subsp. *bithynicus* (Boiss.) Rech. f.  
Tokat: Erbaa, Karayaka, 400 m, 9 x 1991, FK 1330  
Irano-Turanian element.
- Scolymus maculatus* L.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2498.  
Mediterranean element.
- S. hispanicus* L.  
Tokat: Erbaa, Doğanıyurt, banks of Karaun Stream, 500 m, 9 x 1991, FK 1386.  
Mediterranean element.
- Cichorium intybus* L.  
Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1317.
- Scorzonera laciniata* L. subsp. *laciniata*  
Sivas: Koyulhisar, around Batlaca, 900 m, 23 v 1992, FK 1959.
- S. laciniata* L. subsp. *calcitrapifolia* (Vahl.) Moire  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2560.
- S. cana* (C.A.Mey.) Hoffm. var. *jacquiniana* (W.Koch) Chamb.  
Sivas: Koyulhisar, vicinity of prison, 850 m, 6 vii 1992, FK 2645.
- S. cana* (C.A.Mey.) Hoffm. var. *radicosa* (Boiss.) Chamb.  
Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1693.
- S. suberosa* C.Koch subsp. *suberosa*  
Sivas: Koyulhisar, vicinity of Saytepe, 1100 m, 24 v 1992, FK 2022.  
Irano-Turanian element
- S. parviflora* Jacq.  
Tokat: between Erbaa, Bağpınar village and Yoldere village, 600 m, 24 v 1992, FK 1618.
- S. tomentosa* L.  
Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2538,  
Endemic, Irano-Turanian element.
- Tragopogon porrifolius* L.  
Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2353a.
- T. coloratus* C.A.Mey.  
Tokat: Erbaa, above Kale village, 350 m, 17 vi 1992, FK 2091.  
Irano-Turanian element
- T. pterodes* Panc.  
Tokat: Erbaa, Tortepe, 1100 m, 21 v 1992, FK 1694.
- T. dubius* Scop.  
Tokat: Niksar, vicinity of Ilıcak Stream, 500 m, 22 v 1992, FK 1789.
- T. buphthalmoides* (DC.) Boiss. var. *latifolius* Boiss.  
Tokat: Erbaa, Findıcak district, 800 m, 21 v 1992, FK 1741.
- Leontodon asperrimus* (Wild.) J.J.Ball.  
Tokat: Erbaa, around Üçtepeleler, 500 m, 18 vi 1992, FK 2302.  
Irano-Turanian element
- L. crispus* Vill. subsp. *asper* (Waldst. & Kit) Rohl. var. *asper*  
Tokat: Erbaa, İverönü village, around Dilsiztekke, 350 m, 18 vi 1992, FK 2120.
- L. crispus* Vill. subsp. *asper* (Waldst. & Kit) Rohl. var. *setulosus* (Hall) Kupicha  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1450 m, 28 vii 1992, FK 2900.
- Picris hieracioides* L.  
Tokat: Erbaa, Doğanıyurt, 450 m, 26 ix 1991, FK 1234, 1235.  
Euro-Siberian element.
- P. strigosa* Bieb.  
Sivas: Koyulhisar, around Kuşkuşlar, 950m, 18 ix 1992, FK 3056.  
Irano-Turanian element.
- P. pauciflora* Willd.  
Tokat: Erbaa, Kale village, 400 m, 21 v 1992, FK 1762.  
Mediterranean element.
- P. campylocarpa* Boiss. & Heldr.  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 900 m, 5 vii 1992, FK 2577.  
Endemic, E. Mediterranean element.
- Urospermum picroides* (L.) F.W. Schmidt  
Tokat: Niksar, 350 m, 22 v 1992, FK 1787, 1805a.  
Mediterranean element.
- Hedypnois cretica* (L.) Dum.Cours.  
Tokat: between Erbaa, Bağpınar village and Yoldere village, 500 m, 25 iv 1992, FK 1017.  
Mediterranean element.
- Rhagadiolus stellatus* (L.) Gaertner var. *stellatus*  
Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 500 m, 1 vii 1992, FK 2362.
- Sonchus asper* (L.) Hill. subsp. *glaucescens* (Jord.) Ball  
Tokat: Erbaa, Karayaka, banks of Derefte stream, 600 m, 17 ix 1992, FK 3018.
- S. oleraceus* L.  
Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 600 m, 18 vi 1992, FK 2274.
- Reichardia glauca* Matthews  
Sivas: Koyulhisar, around Batlaca, 850 m, 3 vii 1992, FK 2433.  
Irano-Turanian element.
- Hieracium oblongum* Jord.  
Tokat: Erbaa, above Kozlu village, 800 m, Tobey 2223.  
Euro-Siberian element.
- H. patentissimum* Freyn & Sint.  
Tokat: Erbaa, Karayaka, Karınca Dağ, 900 m, 16 ix 1992, FK 2938.  
Endemic.

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

Tokat: Erbaa, Karayaka, around Ayı beleği, 900 m, 17 vi 1992, FK 2176a.

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

Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2633.

*P. piloselloides* (Vill.) Sojak subsp. *megalomastik* (NP.) Sell & West

Tokat: Erbaa, above Kozlu village, 800 m, Tobey 2224.

*P. cymosa* (L.) C.H. & F.W.Schultz

Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1846.

*P. echioides* (Lumn.) C.H. & F.W.Schultz subsp. *procera* (Fries) Sell & West

Tokat: Erbaa, Tepekışla village, 600 m, 18 vi 1992, FK 2228a.

*P. xauriculoides* (A.F.Lang) Sell & West.

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2749.

*Cephalorrhynchus tuberosus* (Stev.) Schchan

Tokat: Niksar, Akıncı village, around Ortaburun, 650 m, 18 vi 1993, FK 3542.

*Steptorhamphus tuberosus* (Jacq.) Grossh.

Tokat: Niksar, Akıncı village, around Ortaburun, 500 m, 1 vii 1992, FK 2353.

*Lactuca saligna* L.

Tokat: Erbaa, between Demirtaş village and Çakır village, 400 m, 26 ix 1991, FK 1225.

*L. georgica* Grossh.

Tokat: Erbaa, around Çamlık, 300 m, 25 ix 1991, FK 1178.

Hyrcano-Euxine element.

*L. undulata* Ledeb.

Tokat: Erbaa, İverönü village, 350 m, 16 ix 1992, FK 2958a.

Irano-Turanian element.

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

Tokat: Erbaa, Karayaka, Derefte district, 850 m, 17 ix 1992, FK 3023.

*S. orientalis* (Boiss.) Sojak

Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2799.

Irano-Turanian element.

*Lapsana communis* L. subsp. *alpina* (Boiss. & Bal.) Sell

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1450 m, 28 vii 1992, FK 2912a.

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

Tokat: Erbaa, Fındıcak district, 900 m, 21 v 1992, FK 1735.

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

Tokat: Erbaa, Çatalan village, Kuzalan district, 1000 m, 17 ix 1992, FK 3011.

*T. bellidiforme* Soest

Tokat: Erbaa, Çatalan village, 900 m, 7 v 1993, FK 3111.

Endemic, Irano-Turanian element.

*T. crepidiforme* DC. subsp. *crepidiforme*

Tokat: Erbaa, 250 m, 22 iv 1992, FK 1411a.

Irano-Turanian element.

*T. rechingeri* Soest

Tokat: Erbaa, above Kozlu village, 900 m, 23 iv 1992, FK 1437.

*T. scaturiginosum* G.Hagl.

Tokat: Erbaa, Tortepe, 1100 m, 21 v 1992, FK 1688.

*T. revertens* G.Hagl.

Tokat: Erbaa, 250 m, 22 iv 1992, FK 1411.

Endemic, Irano-Turanian element.

*T. macrolepium* Schischk.

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 450 m, 1 vii 1992, FK 2238.

*T. waltheri* Doll.

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 400 m, 1 vii 1992, FK 2236.

*Chondrilla juncea* L. var. *juncea*

Tokat: Niksar, Akıncı village, around Ortaburun, 700 m, 24 vii 1992, FK 2705.

*Crepis pulchra* L. subsp. *pulchra*

Tokat: Erbaa, around Üçtepeleler, 450 m, 18 vi 1992, FK 2309.

*C. foetida* L. subsp. *rhoedifolia* (Bieb.) Celak.

Tokat: Erbaa, Kale village, 350 m, 9 x 1991, FK 1328.

*C. foetida* L. subsp. *commutata* (Spreng) Babc.

Tokat: Niksar, vicinity of Ilıcak Stream, 450 m, 22 v 1992, FK 1777.

*C. sancta* (L.) Babc.

Tokat: Niksar, Yakınca village, 500 m, 8 v 1993, FK 3148.

*C. zacintha* (L.) Babc.

Tokat: Erbaa, İverönü village, around Dilsiztekkke, 450 m, 18 vi 1992, FK 2227.

Mediterranean element.

*C. micrantha* Czec.

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 600 m, 18 vi 1992, FK 2227a.

*C. vesicaria* L.

Tokat: Erbaa to Karayaka, vicinity of İmbat bridge, 300 m, 16 vi 1992, FK 1038.

Mediterranean element.

#### CAMPANULACEAE

*Campanula latifolia* L.

Tokat: Niksar, Özveren village, around Yaylayolu, 1100 m, 25 vii 1992, FK 2743.

Euro-Siberian element.

*C. rapunculoides* L. subsp. *rapunculoides*

Tokat: Niksar, Akıncı village, around Ortaburun, 650 m, 24 vii 1992, FK 2681.

Euro-Siberian element.

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

Tokat: Niksar, Özveren village, Yaylayolu around, 1000 m, 25 vii 1992, FK 2729.

*C. glomerata* L. subsp. *hispida* (Witasek) Hayek

Tokat: Erbaa, Karayaka, around Ayıbeleği, 900 m, 17 vi 1992, FK 2151.

Euro-Siberian element.

*C. involucrata* Aucher ex A.DC.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1450 m, 28 vii 1992, FK 2910.

- C. alliarifolia* Willd.  
Tokat: Erbaa, Tortepe, 850 m, 16 vii 1993, FK 4253.  
Euxine element.
- C. collina* Sims  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2955.  
Euxine element.
- C. scoparia* (Boiss. & Hausskn.) Damboldt  
Tokat: Niksar, Özveren village, around Yaylayolu, 1100 m, 25 vii 1992, FK 2624.  
Endemic, Irano-Turanian element.
- C. saxonorum* Gand.  
Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2650.  
Endemic, Irano-Turanian element.
- C. persicifolia* L.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1500 m, 28 vii 1992, FK 2855. Euro-Siberian element.
- C. olympica* Boiss.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2857.  
Euxine element.
- Asyneuma limonifolium* (L.) Janchen subsp. *limonifolium*  
Tokat: Erbaa, Kale village, 300 m, 17 vi 1992, FK 2092.
- A. limonifolium* (L.) Janchen subsp. *pestalozzae* (Boiss.) Damboldt  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 600 m, 18 vi 1992, FK 2227.  
Endemic.
- A. rigidum* (Willd.) Grossh. subsp. *rigidum*  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2854, 2917.  
Irano-Turanian element.
- A. virgatum* (Labill.) Bornm. subsp. *virgatum*  
Sivas: Koyulhisar, around Batlaca, 900 m, 3 vii 1992, FK 2437.
- Legousia falcata* (Ten.) Fritsch  
Tokat: Erbaa, Demirtaş village, 350 m, 26 ix 1991, FK 1220.  
Mediterranean element.
- L. pentagonia* (L.) Thell.  
Tokat: Niksar, around Maduru, 350 m, 22 v 1992, FK 1867.  
Mediterranean element.
- ERICACEAE**
- Rhododendron luteum* Sweet  
Tokat: Erbaa, Kozlu village, 700 m, 23 iv 1992, FK 1428a.  
Euxine element.
- Arbutus unedo* L.  
Tokat: Erbaa, Karayaka, vicinity of Şahintepe, S. slopes, 600 m, 12 vii 1990, FK 1048.
- A. andrachne* L.  
Tokat: Erbaa, Çatalan village, Fındıcak district, 650 m, 12 vii 1990, FK 1381.
- Pyrola media* Sw.  
Tokat: Niksar, Dağüstü village, Hapan boğazi pass, around Ambartepe, 1450 m, 18 vi 1993, FK 3528.  
Euro-Siberian element.
- Orthilia secunda* (L.) House  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1500 m, 28 vii 1992, FK 2934.
- PRIMULACEAE**
- Primula vulgaris* L. subsp. *vulgaris*  
Tokat: Erbaa, above Kozlu village, 700 m, 23 iv 1992, FK 1445.  
Euro-Siberian element.
- P. vulgaris* L. subsp. *sibthorpii* (Hoffmans) W.W.Sm.-Forrest.  
Tokat: Erbaa, İkizce village, 1380 m, 24 iv 1992, FK 1146.  
Euxine element.
- P. auriculata* Lam.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeği, 1450 m, 28 vii 1992, FK 2830.  
Irano-Turanian element.
- Androsace maxima* L.  
Tokat: Erbaa, İverönü village, around Dilsiztekke, 400 m, 23 iv 1992, FK 1498.
- Cyclamen coum* Miller var. *caucasicum* (C.Koch) Meikle  
Tokat: Erbaa, around Hodaypınarı, 1380 m, 24 iv 1992, FK 1547.
- Lysimachia verticillaris* Sprengel  
Tokat: Niksar, Akıncı village, 500 m, 19 vi 1993, FK 3559.
- L. dubia* Sol.  
Tokat: Niksar, around Maduru, 400 m, 2 vii 1992, FK 2396a.  
E. Mediterranean element.
- L. linum-stellatum* L.  
Tokat: Erbaa, Karayaka, Bağpınar village, 600 m, 25 iv 1992, FK 1607a.  
Mediterranean element
- Anagallis arvensis* L. var. *arvensis*  
Tokat: Erbaa, Güveçli village, 600 m, 9 x 1991, FK 1342.
- A. arvensis* L. var. *caerulea* (L.) Gouan  
Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1272.
- Samolus valerandi* L.  
Tokat: Erbaa, Karayaka, Şahintepe, 700 m, 12 vii 1990, FK 1030.  
Cosmopolitan.
- EBENACEAE**
- Diospyros lotus* L.  
Sivas: Koyulhisar, around Kuşkuşlar, 700 m, 4 vii 1992, FK 2495; Tokat: Erbaa, Karınca Dağ, 400 m, 16 ix 1992, FK 2978.
- STYRAXACEAE**
- Styrax officinalis* L.  
Tokat: Reşadiye, Çakmak village, 500 m, 13 vii 1992, FK 1120.
- OLEACEAE**
- Jasminum fruticans* L.  
Tokat: Reşadiye, Çakmak village, 500 m, 13 vii 1992, FK 1118.  
Mediterranean element.
- Fontanesia philliraeoides* Labill. subsp. *philliraeoides*  
Tokat: Erbaa, Açgaceçe village, 350 m, 23 iv 1992, FK 1488.  
E. Mediterranean element.

*Fraxinus angustifolia* Vahl. subsp. *angustifolia*

Tokat: Erbaa, between Yoldere village and Doğanyurt, 600 m, 2 vii 1992, FK 2384.

*Ligustrum vulgare* L.

Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1882.

Euro-Siberian element.

*Olea europaea* L. var. *sylvestris* (Miller) Lehr.

Tokat: Erbaa, above Kale village, 350 m, 9 x 1991, FK 1388.

Mediterranean element.

*Phillyrea latifolia* L.

Tokat: Erbaa, Doğanyurt, 500 m, 26 ix 1992, FK 1237.

Mediterranean element.

#### APOCYNACEAE

*Vinca herbacea* Waldst. & Kit.

Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1669.

#### ASCLEPIADACEAE

*Periploca graeca* L. var. *graeca*

Sivas: Koyulhisar, Sugözü village, around Ağınbükü, 600 m, 18 vii 1993, FK 4369.

E. Mediterranean element.

*Cynanchum acutum* L. subsp. *acutum*

Sivas: Koyulhisar, Sugözü village, around Ağınbükü, 600 m, 18 vii 1993, FK 4375.

*Vincetoxicum canescens* (Willd.) Decne. subsp. *pedunculata* Browicz

Sivas: Koyulhisar, above Yeşilyurt village, 1000 m, 28 vii 1992, FK 2940.

Endemic, E. Mediterranean element.

*V. fuscatum* (Hornem.) Reichb.f. subsp. *boissieri* (Kusn.) Browicz

Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1851.

Endemic, Irano-Turanian element.

*Cionura erecta* (L.) Griseb.

Tokat: Erbaa, Karayaka, Şahinepe S. slopes, 600 m, 12 ix 1990, FK 1049.

E. Mediterranean element.

#### GENTIANACEAE

*Blackstonia perfoliata* (L.) Hudson subsp. *perfoliata*

Tokat: Erbaa, Karınca Dağ, 900 m, 17 ix 1992, FK 2975.

*Centaurium erythraea* Rafn. subsp. *turcicum* (Velen.) Melderis

Tokat: Niksar, 400 m, 19 ix 1992, FK 3072.

*C. pulchellum* (Swartz) Druce

Tokat: Erbaa, Karınca Dağ, 900 m, 17 ix 1992, FK 2974.

*Gentiana asclepiadea* L.

Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1299.

#### CONVOLVULACEAE

*Convolvulus calvertii* Boiss.

Sivas: Koyulhisar, Saytepe, S. slopes, 1100 m, 24 v 1992, FK 2016.

Irano-Turanian element

*C. cantabrica* L.

Tokat: Niksar, 450 m, 26 vii 1992, FK 2777.

*C. lineatus* L.

Tokat: Erbaa, İverönü village, around Dilsiztekke, 350 m, 18 vi 1992, FK 2222.

*C. holosericeus* Bieb. subsp. *holosericeus*

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2451.

*C. arvensis* L.

Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 450 m, 1 vii 1992, FK 2354.

Cosmopolitan.

*C. betonicifolius* Miller subsp. *betonicifolius*

Tokat: Erbaa, around Üçtepeler, 600 m, 18 vi 1992, FK 2298.

*C. scammonia* L.

Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 450 m, 1 vii 1992, FK 2356.

E. Mediterranean element.

*C. pseudoscammonia* C.Koch

Sivas: Koyulhisar, around Batlaca, 850 m, 3 vii 1992, FK 2448,

Endemic, Irano-Turanian element.

*Calystegia sepium* (L.) R.Br. subsp. *sepium*

Tokat: Erbaa, Bölücek village, banks of Avladun Stream, 500 m, 18 vi 1992, FK 2287.

*C. silvatica* (Kit) Griseb.

Tokat: Niksar, Özveren village, Çakmak district, 1100 m, 25 vii 1992, FK 2764

#### CUSCUTACEAE

*Cuscuta campestris* Yuncker

Tokat: Erbaa, Karayaka, banks of Kelkit Çay, 250 m, 13 vii 1990, FK 1072.

Cosmopolitan.

*Cuscuta australis* R.Br. subsp. *tinei* (Insenga) Feinbrun

Tokat: Erbaa, on *Xantium strumarium*, 250 m, 1 vii 1992, FK 2332a.

*C. epithymum* (L.) var. *epithymum*

Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 400 m, 1 vii 1992, FK 2351.

*C. planiflora* Ten.

Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2634.

*C. monogyna* Vahl. subsp. *monogyna*

Sivas: Koyulhisar, around Batlaca, on *Quercus pubescens*, 700 m, 18 vi 1992, FK 3051.

#### BORAGINACEAE

*Heliotropium bovei* Boiss.

Tokat: Niksar, 450 m, 24 vii 1992, FK 2675.

E. Mediterranean element.

*H. europaeum* L.

Tokat: Erbaa, 250 m, 25 ix 1991, FK 1184.

Mediterranean element.

*H. ellipticum* Ledeb.

Tokat: Erbaa, Karınca Dağ, S. slopes, 850 m, 16 ix 1992, FK 2983.

*H. lasiocarpum* Fisch. & Mey.

Tokat: Erbaa, Kale village, 350 m, 9 x 1991, FK 1327.

Irano-Turanian element.

*H. suaveolens* Bieb.

Tokat: Erbaa, vicinity of Karayaka bridge, 250 m, 13 vii 1990, FK 1062.

E. Mediterranean element.

- Lappula barbata** (Bieb.) Gurke  
Tokat: Erbaa, Doğanıyurt, 500 m, 25 iv 1992, FK 1357.
- L. squarrosa** (Retz) Dumort  
Tokat: Reşadiye, banks of Kelkit Çay , 600 m, 23 v 1992, FK 1901a.
- Asperugo procumbens** L.  
Tokat: Erbaa, Doğanıyurt, 500 m, 25 iv 1992, FK 1029.  
Euro-Siberian element.
- Myosotis ramosissima** Rockel ex Schultes subsp. *ramosissima*  
Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 400 m, 23 iv 1992, FK 1477.
- M. sylvatica** Ehrh. ex Schultes subsp. *rivularis* Vestergren  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2179.  
Hyrcano-Euxine element.
- M. lithospermifolia** (Willd.) Hornem.  
Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1697.
- Paracaryum paphlagonicum** (Bornm.) R.Mill  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 800 m, 5 vii 1992, FK 2573.  
Endemic, Irano-Turanian element.
- Solenanthes stamineus** (Desf.) Wettst.  
Tokat: Erbaa, Çatalan village, 1100 m, 7 v 1993, FK 3106.
- Cynoglossum officinale** L.  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2140.
- C. creticum** Miller  
Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1848.
- C. montanum** L.  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1100 m, 24 v 1992, FK 2025.  
Euro-Siberian element.
- Arnebia densiflora** (Nordm.) Ledeb.  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 1994.  
Irano-Turanian element.
- Lithospermum officinale** L.  
Tokat: Kelkit valley, 10 km W. of Reşadiye, 10 viii 1955, Çetik.  
Euro-Siberian element.
- L. purpurocaeruleum** L.  
Tokat: Erbaa, 250 m, 21 v 1992, FK 1466.  
Euro-Siberian element.
- Buglossoides arvensis** (L.) Johnston  
Tokat: Erbaa, Doğanıyurt, 600 m, 25 iv 1992, FK 1627, 1639.
- Echium orientale** L.  
Tokat: Erbaa, above Kozlu village, 850 m, Tobey 2199.  
Endemic, Euxine element.
- E. italicum** L.  
Tokat: Erbaa, İverönü village, vicinity of İmbat bridge, 400 m, 16 vi 1992, FK 2069.  
Mediterranean element.
- E. vulgare** L.  
Tokat: Erbaa, İverönü village, 400 m, 16 vi 1992, FK 2047.  
Euro-Siberian element.
- E. plantagineum** L.  
Tokat: Erbaa, Karayaka, Derefte district, 350 m, 17 vi 1993, FK 3485a.
- Moltkia coerulea** (Willd.) Lehem.  
Sivas: Koyulhisar, 800 m, 23 v 1992, FK 1096.  
Irano-Turanian element.
- Onosma sericeum** Willd.  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1450 m, 28 vii 1992, FK 2854, 2931a.  
Irano-Turanian element.
- O. trachytrichum** Boiss.  
Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1100 m, 6 vii 1992, FK 2621.  
Irano-Turanian element.
- O. bracteosum** Hausskn. & Bornm.  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1991, FK 1937; Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 600 m, 18 vi 1992, FK 2261.  
Irano-Turanian element.
- O. bozakmanii** H.Riedl  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1964.  
Endemic, Euxine element.
- O. bourgaei** Boiss.  
Tokat: Erbaa, Tepekişla village, vicinity of Karakışla, 650 m, 17 vi 1992, FK 2068.  
Irano-Turanian element.
- O. erectum** Sm.  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1755.  
E. Mediterranean element.
- O. heterophyllum** Griseb.  
Tokat: Erbaa, between Kale village and Fındıcak district, 650 m, 21 v 1992, FK 1725.  
Euro-Siberian element.
- O. roussaei** DC.  
Sivas: Koyulhisar, around Batlaca, 900 m, 3 vii 1992, FK 2466.  
Irano-Turanian element.
- O. armenum** DC.  
Sivas: Koyulhisar, Sugözü village, 700 m, 13 vii 1990, FK 1124; Tokat: Erbaa, Çatalan village, Fındıcak district, 900 m, 21 v 1992, FK 1738.  
Endemic.
- Cerintho minor** L. subsp. *auriculata* (Ten.) Domac  
Sivas: Koyulhisar, around Kuşkuşlar, 900 m, 4 vii 1992, FK 2487.
- C. glabra** Miller  
Sivas: Koyulhisar, 850 m, 23 v 1992, FK 1908.  
Euro-Siberian element.
- Symphytum bornmuelleri** Bucknall  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 1000 m, 17 vi 1992, FK 2181.  
Endemic, Euxine element.
- Trachystemon orientalis** (L.) G.Don.  
Tokat: Erbaa, vicinity of Sancar Plateau, 1380 m, 24 iv 192, FK 1562.  
Euxine element.

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

Sivas: Koyulhisar, around Batlaca, 850 m, 13 vii 1992, FK 1139.

**A. leptophylla** Roemer & Schultes subsp. **incana** (Ledeb.) Chamb.

Tokat: Erbaa, Doğanyurt, vicinity of Karaun Stream, 500 m, 9 x 1992, FK 1380.

Endemic, Irano-Turanian element.

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

Tokat: Reşadiye, Çakmak village, 600 m, 13 vii 1990, FK 1121.

**A. pusilla** Guşul.

Tokat: Niksar, around Maduru, 600 m, 22 v 1992, FK 1865.

*Nonea obtusifolia* (Willd.) DC.

Tokat: Erbaa, İverönü village, İmbat bridge, 400 m, 23 iv 1922, FK 1471a.

E. Mediterranean element.

**N. melanocarpa** Boiss.

Sivas: Koyulhisar, Saytepe, S. slopes, 1100 m, 24 v 1992, FK 1997a.

Irano-Turanian element.

**N. stenosolen** Boiss. & Bal.

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 1997.

Endemic, Irano-Turanian element.

**N. ventricosa** (Sm.) Griseb.

Tokat: Erbaa, Doğanyurt 500 m, 24 v 1992, FK 1626.

Mediterranean element.

#### SOLANACEAE

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

Tokat: Erbaa, 250 m, 25 ix 1991, FK 1163,

Cosmopolitan.

**S. nigrum** L. subsp. **schultesii** (Opiz) Wessely

Tokat: Erbaa, 250 m, 25 ix 1991, FK 1163a.

**S. dulcamara** L.

Tokat: Erbaa, Karınca Dağ, 900 m, 16 ix 1992, FK 2973.

Euro-Siberian element.

**Physalis alkekengi** L.

Tokat: Niksar, banks of Ilıcak Stream, 600 m, 19 ix 1992, FK 3071.

**Datura stramonium** L.

Tokat: Erbaa, around Dilsiztekte, 400 m, 16 ix 1992, FK 2957.

Cosmopolitan.

**Hyoscyamus niger** L.

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 1996.

#### SCROPHULARIACEAE

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

Tokat: Reşadiye, vicinity of bridge, 550 m, 23 v 1992, FK 1896.

E. Mediterranean element.

**V. freynii** (Sint.) Murb.

Sivas: Koyulhisar, Yeşilyurt village, Samanlıkbeleşi, 1500 m, 28 vii 1992, FK 2927.

Endemic, Euxine element.

**V. blattaria** L.

Tokat: Niksar, 500 m, 24 vii 1992, FK 2239.

**V. wiedemannianum** Fisch. & Mey.

Tokat: Erbaa, Tortepe S. slopes, 900 m, 21 v 1992, FK 2239.

Endemic, Irano-Turanian element.

**V. spectabile** Bieb. var. **spectabile**

Tokat: Erbaa, Tepekışla village, vicinity of Karakışla, 600 m, 17 vi 1992, FK 2119.

Euxine element.

**V. spectabile** Bieb. var. **isandrum** Hub.-Mor.

Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2180.

Endemic, Euxine element.

**V. biscutellifolium** Benth.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2500.

Endemic, Irano-Turanian element.

**V. oocarpum** Murb.

Tokat: Erbaa, Karayaka, vicinity of Şahintepe, S. slopes, 650 m, 12 vii 1990, FK 1150.

**V. oreodoxum** Hub.-Mor.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2518a.

Endemic, Irano-Turanian element.

**V. sinuatum** L. var. **sinuatum**

Tokat: Erbaa, between Findıcak district and Tortepe, 900 m, 12 vii 1992, FK 2190.

Mediterranean element.

**V. sinuatum** L. var. **adenosepalum** Murb.

Tokat: Erbaa, Evyaba village, vicinity of cemetery, 250 m, 12 vii 1990, FK 1114.

**V. krauseanum** Murb.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1450 m, 28 vii 1992, FK 2860.

**V. pallidiflorum** Hub.-Mor.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1500 m, 28 vii 1992, FK 2834.

Endemic, Irano-Turanian element.

**V. gnaphalodes** Bieb.

Sivas: Koyulhisar, vicinity of Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2607.

Euxine element.

**V. eriorrhodon** Boiss.

Tokat: Erbaa, around Çamlık, 350 m, 2 vii 1992, FK 2369, 2373a.

Endemic, Euxine element.

**V. sphenandroides** C.Koch

Sivas: Koyulhisar, around Kuşkuşlar, 900 m, 4 vii 1992, FK 2518.

Endemic, Irano-Turanian element.

**V. mucronatum** Lam.

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2563.

E. Mediterranean element.

**V. glomeratum** Boiss.

Tokat: Erbaa, around Dilsiztekte, 400 m, 18 vi 1992, FK 2217.

Irano-Turanian element.

**V. cherianthifolium** Boiss. var. **cherianthifolium**

Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2819.



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

Sivas: Koyulhisar, around Kuşkuşlar, 900 m, 4 vii 1992, FK 2501.

Endemic.

*Scrophularia umbrosa* Dum.

Tokat: Niksar to Karakuş 1100 m, Davis 24933.

Euro-Siberian element.

*S. catariifolia* Boiss. & Heldr.

Tokat: Niksar, vicinity of Ilıcak Stream, 450 m, 22 v 1992, FK 1782.

Mediterranean element.

*S. lucida* L.

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2525.

Mediterranean element.

*S. canina* L. subsp. *bicolor* (Sm.) Greuter

Tokat: Niksar, Çamiçi, 1100 m, 24 vii 1992, FK 2714.

E. Mediterranean element.

*Anarrhinum orientale* Benth.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2480.

Irano-Turanian element.

*Antrrhinum majus* L. subsp. *majus*

Tokat: Erbaa, 250 m, 1 vii 1992, FK 2318.

*Linaria genistifolia* (L.) Miller subsp. *genistifolia* (Boiss.) Davis

Tokat: Erbaa, Tepekışla village, vicinity of Karakışla, 600 m, 17 vi 1992, FK 2106.

Euro-Siberian element.

*L. genistifolia* (L.) Miller subsp. *linifolia* (Boiss.) Davis

Tokat: Erbaa, Karayaka, vicinity of Derefte Stream, 700 m, 17 ix 1992, FK 3019.

*L. corifolia* Desf.

Sivas: Koyulhisar, Saytepe, S. slopes, 1000 m, 24 v 1992, FK 2029; Tokat: Erbaa, Tepe-kışla village, vicinity of Karatepe, 600 m, 18 vi 1992, FK 2257.

Endemic, Irano-Turanian element.

*L. kurdica* Boiss. & Hohen. subsp. *kurdica*

Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2650.

Irano-Turanian element.

*L. simplex* (Willd.) DC.

Tokat: Erbaa, Karayaka Şahintepe, S. slopes, 650 m, 23 iv 1992, FK 1506.

Mediterranean element.

*Kickxia elatine* (L.) Dumort. subsp. *crinata* (Mabille) Greuter

Tokat: Erbaa, around Dilsiztekke, 350 m, 16 ix 1992, FK 2946.

Mediterranean element.

*K. spuria* (L.) Dumort subsp. *integrifolia* (Brot.) R.Fernandes

Tokat: Niksar, 350 m, 19 ix 1992, FK 3064.

*Digitalis ferruginea* L. subsp. *schischkinii* (Ivan.) Werner

Tokat: Erbaa, vicinity of Kızılotlu, 300 m, 27 ix 1991, FK 1264.

Euxine element.

*Veronica bozakmanii* M.A.Fisch.

Tokat: Erbaa, Tortepe, 1100 m, 21 v 1992, FK 1673.

Irano-Turanian element.

*V. acinifolia* L.

Tokat: Erbaa, above Kozlu village, 600 m, 23 iv 1992, FK 1453.

*V. triphylos* L.

Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1673a.

*V. polita* Fries

Tokat: Erbaa, Tepekışla village, 300 m, 13 vii 1990, FK1084; Sivas: Koyulhisar, around Batlaca, 23 v 1992, FK 1945.

*V. persica* Poiret

Tokat: Erbaa, 250 m, 22 iv 1992, FK 1392,1402; ibid, 21 v 1992, FK 1664.

*V. filiformis* Sm.

Tokat: Erbaa, Endeşpınarı village, 600 m, 23 iv 1992, FK 1467.

Hyrcano-Euxine element.

*V. cymbalaria* Bodard

Tokat: Erbaa, Köplüce village, 700 m, 23 iv 1992, FK 1459a.

Mediterranean element.

*V. anagallis-aquatica* subsp. *michauxii* (Lam.) Elenevsky

Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 350 m, 16 vi 1992, FK 2042a.

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

Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1275.

*V. chamaedrys* L.

Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1256, 1262.

Euro-Siberian element.

*V. magna* M.A.Fisch.

Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1259; Niksar, around Maduru, 400 m, 22 v 1992, FK 1821.

Euxine element.

*V. orientalis* Miller subsp. *orientalis*

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2008.

*V. multifida* L.

Tokat: Erbaa, around Üçtepeler, 600 m, 18 vi 1992, FK 2297.

Endemic, Irano-Turanian element.

*Melanpyrum arvense* L. var. *arvense*

Sivas: Koyulhisar, vicinity of prison, 900 m, 18 vii 1992, FK 2639.

Euro-Siberian element.

*M. arvense* L. var. *elatius* Boiss.

Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2639a.

*Euphrasia pectinata* Ten.

Tokat: Niksar, Özveren village, around Yaylayolu, 1100 m, 25 vii 1992, FK 2730.

Euro-Siberian element.

*Parentucellia latifolia* (L.) Caruel subsp. *latifolia*

Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 400 m, 23 iv 1990, FK 1484.

Mediterranean element.

**Bellardia trixago** (L.) All.

Tokat: Erbaa, around Üçtepeleler, 450 m, 18 vi 1992, FK 2296.

**Pedicularis condensata** Bieb.

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2752a.

Euxine (mt.) element.

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

Tokat: Niksar, Çamiçi, 1100 m, 24 vii 1992, FK 2710.

**Lesquereuxia syriaca** Boiss. & Reuter

Tokat: 25km along Erbaa to Niksar from road, Salih Gelbal Forest, 400 m, 13 vii 1990, FK 1092.

E. Mediterranean element.

**Bungea trifida** (Wahl) C.A.Mey.

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 1995.

Irano-Turanian element.

**OROBANCHACEAE**

**Orobanche ramosa** L.

Tokat: Niksar, vicinity of Ilıcak Stream, 450 m, 22 v 1992, FK 1786.

**O. minor** Sm.

Sivas: Koyulhisar, Saytepe, S. slopes, 1100 m, 24 v 1992, FK 2028.

**O. elatior** Sutton

Tokat: Erbaa, Kale village, 350 m, 17 vi 1992, FK 2291.

**ACANTHACEAE**

**Acanthus dioscoridis** L. var. *perringii* (Siehe) E.Hossain

Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2622.

Endemic.

**A. hirsutus** Boiss.

Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2623.

Endemic.

**GLOBULARIACEAE**

**Globularia trichosantha** Fisch. & Mey.

Tokat: Erbaa, Doğanıyurt, 500 m, 9 x 1991, FK 1359.

**VERBENACEAE**

**Verbena officinalis** L.

Tokat: Erbaa, Karayaka, 400 m, 9 x 1991, FK 1335.

**Vitex agnus-castus** L.

Tokat: Erbaa, vicinity of Karayaka bridge, 250 m, 13 vii 1990, FK 1061.

Mediterranean element.

**LABIATAE (Lamiaceae)**

**Ajuga reptans** L.

Tokat: Erbaa, vicinity of Kızılolu, 1300 m, 21 v 1992, FK 1667.

Euro-Siberian element.

**A. chamaepitys** (L.) Schreb. subsp. *chia* (Schreb.) Arcangeli

Tokat: Erbaa, Karayaka, Şahintepe S. slopes, 650 m, 23 iv 1992, FK 1543.

**A. chamaepitys** (L.) Schreb. subsp. *chia* (Schreb.) Arcangeli var. *ciliata* Brig.

Sivas: Koyulhisar, vicinity of prison, 900 m, 23 v 1992, FK 1914.

**A. chamaepitys** (L.) Schreb. subsp. *laevigata* (Banks & Sol.) P.H.Davis

Tokat: Erbaa, around Çamlık, 300 m, 1 vii 1992, FK 2531.

Irano-Turanian element.

**A. chamaepitys** (L.) Schreb. subsp. *mesogitana* (Boiss.) Bornm.

Tokat: Erbaa, Karayaka, vicinity of Şahintepe, S. slopes, 500 m, 12 vii 1990, FK 1056; *ibid.*, 23 iv 1992, FK 1543a.

E. Mediterranean element.

**Teucrium orientale** L. var. *orientale*

Sivas: Koyulhisar, Gökdere village, 600 m, 13 vii 1990, FK 1128.

Irano-Turanian element.

**T. orientale** L. var. *puberulens* T.Ekim

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkebeği, 1450 m, 28 vii 1992, FK 2864. Irano-Turanian element.

**T. parviflorum** Schreb.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2471.

Irano-Turanian element.

**T. scordium** L. subsp. *scordioides* (Schreb.) Maire & Petitm.

Tokat: Niksar, vicinity of Ilıcak Stream, 450 m, 19 ix 1992, FK 3061.

Euro-Siberian element.

**T. chamaedrys** L. subsp. *chamaedrys*

Tokat: 25km along Erbaa and Niksar 25 km, vicinity of Salih Gelbal Forest, 400 m, 13 vii 1990, FK 1100.

Euro-Siberian element.

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

Tokat: Erbaa, Tepekişla village, 250 m, 13 vii 1990, FK 1085.

Euxine element.

**T. chamaedrys** L. subsp. *sypshirensis* (C.Koch) Rech.f.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkebeği, 1450 m, 28 vii 1992, FK 2863.

Irano-Turanian element.

**T. polium** L.

Tokat: 25km along Erbaa and Niksar from 25 km, vicinity of Salih Gelbal Forest, 450 m, 13 vii 1990, FK 1110.

**Scutellaria velenovsky** Rech.f.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkebeği, 1450 m, 28 vii 1992, FK 2853. E. Mediterranean element.

**S. rubicunda** Hornem. subsp. *subvelutina* (Rech.f.) Edmonson

Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 2396.

E. Mediterranean element.

**S. salviifolia** Benth.

Tokat: Erbaa, Doğanıyurt, 25 iv 1992, FK 1620; Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1916.

Endemic.

**S. orientalis** L. subsp. *sosnowskyi* (Takht.) Fed.

Tokat: Niksar, vicinity of Ilıcak Stream, 450 m, 22 v 1992, FK 1793; Tokat: Erbaa, Tepe-kışla village, vicinity of Karatepe, 650 m, 17 vi 1992, FK 2260.

Irano-Turanian element.

*Phlomis pungens* Willd. var. *hirta* Velen  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2488.

*P. russeliana* (Sims) Benth.

Tokat: Erbaa, between Koçak village and Kozlu village, 800 m, 16 v 1993, FK 3486.

Endemic, Euxine element.

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

Tokat: Erbaa, 250 m, 2 iv 1992, FK 1409.

*L. amplexicaule* L.

Tokat: Erbaa, between Bağpınar village and Yoldere village, 500 m, 25 iv 1992, FK 1603.

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

Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 23 iv 1992, FK 1540.

Euro-Siberian element.

*L. ponticum* Boiss. & Ball ex Boiss.

Tokat: Erbaa, Karayaka Şahintepe S. slopes 650 m, 23 v 1992, FK 1530; Sivas: Koyul-hisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1928.

Endemic, Irano-Turanian element.

*Wiedemannia orientalis* Fisch. & Mey.

Tokat: Niksar, Yakınca village, 500 m, 8 v 1992, FK 3147.

Endemic, Irano-Turanian element.

*Galeopsis bifida* Boenn.

Tokat: Niksar, Akçabel village, 1200 m, 24 vii 1992, FK 2719.

Euro-Siberian element.

*Molucella laevis* L.

Sivas: Koyulhisar, 800 m, 5 viii 1993, FK 4735.

Irano-Turanian element.

*Ballota nigra* L. subsp. *nigra*

Tokat: Erbaa, 250 m, 1 vii 1992, FK 2315.

Euro-Siberian element.

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

Tokat: Erbaa, Doğanıyurt, vicinity of Karaun Stream, 500 m, 9 x 1991, FK 1357; Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2662.

Endemic, Irano-Turanian element.

*Marrubium vulgare* L.

Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1888.

*M. anisodon* C.Koch

Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2794.

*M. parviflorum* Fisch. & Mey. subsp. *parviflorum*

Tokat: Erbaa, Evyaba village, vicinity of cemetery, 250 m, 12 vii 1990, FK 1015.

Irano-Turanian element.

*M. parviflorum* Fisch. & Mey. subsp. *oligodon* (Boiss.) Seybold

Sivas: Koyulhisar, around Batlaca, 750 m, 23 v 1992, FK 1996; ibid, 3 vii 1992, FK 2448.

Endemic.

*Sideritis lanata* L.

Tokat: Erbaa, Kozlu village, 900 m, 23 iv 1992, FK 1454.

E. Mediterranean element.

*S. montana* L. subsp. *montana*

Tokat: Erbaa, Evyaba village, 250 m, 12 vii 1990, FK 1001.

*S. montana* L. subsp. *remota* (d'Urv.) P.W. Ball ex Heywood

Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 12 vii 1992, FK 1047.

E. Mediterranean element.

*S. dichotoma* Huter

Tokat: Erbaa, Yoldere village, 350 m, 17 vi 1993, FK 3436.

Endemic.

*S. taurica* Stephan ex Willd.

Tokat: Erbaa, Doğanıyurt, banks of Karaun Stream, 400 m, 9 vii 1991, FK 1373.

*S. galatica* Bornm.

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2531.

Endemic.

*S. perfoliata* L.

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 500 m, 18 vi 1992, FK 2269.

Mediterranean element.

*Stachys byzantina* C.Koch

Tokat: Reşadiye, Çakmak village, 550 m, 13 vii 1990, FK 1122.

*S. sylvatica* L.

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 3763.

Euro-Siberian element.

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

Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 23 iv 1992, FK 1525.

Irano-Turanian element.

*S. annua* L. subsp. *annua* var. *annua*

Tokat: Erbaa, 250 m, 21 v 1992, FK 1653.

*Melissa officinalis* subsp. *officinalis*

Tokat: Erbaa, Karayaka, banks of Derefte Stream, 600 m, 17 ix 1992, FK 2785.

E. Mediterranean element.

*M. officinalis* subsp. *altissima* (Sm.) Arcangeli

Tokat: Niksar, vicinity of Ilıcak Stream, 450 m, 26 vii 1992, FK 2785.

E. Mediterranean element.

*Nepeta italica* L.

Tokat: Niksar, around Maduru, 350 m, 2 vii 1992, FK 2398.

*N. nuda* L. subsp. *albiflora* (Boiss.) Gams.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 7 vii 1992, FK 2606.

*N. fissa* C.A.Mey.

Tokat: Erbaa, Karayaka, Karıncadağ, 900 m, 16 ix 1992, FK 2963.

Irano-Turanian element.

*Glechoma hederacea* L.

Tokat: Erbaa, Çatalan village, 1000 m, 7 v 1993, FK 3105.

Euro-Siberian element.

*Lallemantia peltata* (L.) Fisch. & Mey.

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2731.

*Prunella vulgaris* L.

Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1283.

Euro-Siberian element.

- P. orientalis* Bornm.  
Tokat: Erbaa, around Üçtepeleler, 450 m, 18 vi 1992, FK 2305.
- P. laciniata* (L.) L.  
Tokat: Erbaa to Niksar, vicinity of Salih Gelbal Forest, 400 m, 13 vii 1990, FK 1095.  
Euro-Siberian element.
- Origanum vulgare* L. subsp. *gracile* (C.Koch) Ietsw.  
Tokat: Niksar, Akıncı village, around Ortaburun, 650 m, 24 vii 1992, FK 2074,  
Irano-Turanian element.
- O. vulgare* L. subsp. *viride* (Boiss.) Hayek  
Tokat: Erbaa to Niksar, vicinity of Salih Gelbal Forest, 400 m, 13 vii 1990, FK 1104.
- Satureja spicigera* (C.Koch) Boiss.  
Tokat: Niksar to Karakuş 1000 m, Davis 24899.  
Euxine element.
- S. hortensis* L.  
Tokat: Erbaa, Karayaka, Derefte district, 400 m, 17 ix 1992, FK 3022.
- Calamintha nepeta* (L.) Savi subsp. *nepeta*  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 650 m, 16 ix 1992, FK 2981.  
Mediterranean element.
- Clinopodium vulgare* L. subsp. *vulgare*  
Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1313.
- C. vulgare* L. subsp. *arundanum* (Boiss.) Nyman  
Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 650 m, 18 vi 1992, FK 2241.
- Acinos rotundifolius* Pers.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2515.
- Micromeria myrtifolia* Boiss. & Hohen.  
Tokat: Erbaa, Kale village, 400 m, 9 x 1992, FK 1329.  
E. Mediterranean element.
- Thymus parnasicus* Hal.  
Sivas: Koyulhisar, around Batlaca, 900 m, 3 vii 1992, FK 2433.
- T. praecox* Opiz subsp. *jankae* (Celak.) Jalas var. *jankae*  
Tokat: Erbaa, Karayaka, around Ayıbeleği, 1000 m, 17 vi 1992, FK 2146, 2173.
- T. praecox* Opiz subsp. *caucasicus* (Ronniger) Jalas var. *caucasicus*  
Tokat: Erbaa, Karayaka, around Ayıbeleği, 800 m, 17 vi 1992, FK 2147.
- T. pseudopulegioides* Klokov & Des.-Shost  
Sivas: Koyulhisar, around Kuşkuşlar, 800 m, 4 vii 1992, FK 2465, 2484.
- Thymbra spicata* var. *spicata*  
Tokat: Erbaa, Evyaba village, 250 m, 12 vii 1990, FK 1007.  
E. Mediterranean element.
- Mentha pulegium* L.  
Tokat: Erbaa, Karayaka, banks of Kelkit Çay, 250 m, 13 vii 1990, FK 1064.
- M. longifolia* (L.) Hudson subsp. *longifolia*  
Tokat: Niksar, Ilıcak Dağ, 450 m, 26 vii 1992, FK 2774.  
Euxine element.
- M. longifolia* (L.) Hudson subsp. *thyphoides* (Brig.) Harley var. *thyphoides*  
Tokat: Erbaa, 250 m, 22 v 1991, FK 1167.
- Lycopus europaeus* L.  
Sivas: Koyulhisar, 900 m, 6 vii 1992, FK 2651.  
Euro-Siberian element.
- Ziziphora capitata* L.  
Tokat: 25km along Erbaa to Niksar from road, Salih Gelbal Forest, 350 m, 13 vii 1990, FK 1101.  
Irano-Turanian element.
- Z. tenuior* L.  
Tokat: Erbaa, above Kale village, 300 m, 21 v 1992, FK 1759.  
Irano-Turanian element.
- Z. taurica* Bieb. subsp. *taurica*  
Tokat: Erbaa, above Kale village, 400 m, 21 v 1992, FK 1760.  
Irano-Turanian element.
- Salvia tomentosa* Miller  
Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 550 m, 18 vi 1992, FK 2226.  
Mediterranean element.
- S. bracteata* Banks & Sol.  
Sivas: Koyulhisar, around Batlaca, 850 m, 3 vii 1992, FK 2426.  
Irano-Turanian element.
- S. multicaulis* Vahl.  
Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2003.  
Irano-Turanian element.
- S. cryptantha* Montbret & Aucher ex Benth.  
Sivas: Koyulhisar, 800 m, 13 vii 1990, FK 1147; *ibid.*, 23 v 1992, FK 1911.  
Endemic, Irano-Turanian element.
- S. syriaca* L.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2490.  
Irano-Turanian element.
- S. viridis* L.  
Tokat: Niksar, 450 m, 22 v 1992, FK 1796.  
Mediterranean element.
- S. aethiopsis* L.  
Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 650 m, 18 vi 1992, FK 2272.
- S. ceratophylla* L.  
Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2514.  
Irano-Turanian element.
- S. microstegia* Boiss.  
Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2560.  
Irano-Turanian element.
- S. pocolata* Nab.  
Tokat: Niksar, around Maduru, 400 m, 2 vii 1992, FK 2412.
- S. forskahlei* L.  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2725.
- S. glutinosa* L.  
Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1255.  
Hyrcano-Euxine element.

*S. virgata* Jack

Tokat: Reşadiye Çakmak village, 550 m, 13 vii 1990, FK1123; Sivas: Koyulhisar, around Batlaca, 850 m, 18 ix 1992, FK 3042.

Irano-Turanian element.

*S. verbenaca* L.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2493.

Mediterranean element.

*S. verticillata* L. subsp. *amasiaca* (Freynt & Bornm.) Bornm.

Tokat: Reşadiye, Çakmak village, 550 m, 13 vii 1990, FK 1119.

Irano-Turanian element.

## PLUMBAGINACEAE

*Plumbago europaea* L.

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2551.

Euro-Siberian element.

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

Sivas: Koyulhisar, around Kuşkuşlar, 850 m, 27 vii 1992, FK 2805.

Irano-Turanian element.

*A. armenum* Boiss. & Hvet var. *armenum*

Tokat: Erbaa, Tepekışla village, 550 m, 13 vii 1990, FK1074.

Irano-Turanian element.

## PLANTAGINACEAE

*Plantago major* L. subsp. *major*

Tokat: Niksar, Ilıcak Dağ, 400 m, 19 ix 1992, FK 3076.

*P. major* L. subsp. *intermedia* (Gilib.) Lange

Tokat: Erbaa, 250 m, 25 ix 1991, FK 1185.

*P. lanceolata* L.

Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1292.

*P. lagopus* L.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2503.

Mediterranean element.

## THYMELACEAE

*Daphne pontica* L.

Tokat: Erbaa, Tortepe, 1100 m, 21 v 1992, FK 1679.

Euxine element.

*D. oloides* Schreb. subsp. *oloides*

Sivas: Koyulhisar, above Yeşilyurt village, 1000 m, 28 vii 1992, FK 2944.

## ELAEGNACEAE

*Hippophae rhamnoides* L. subsp. *caucasica* Rousi

Tokat: Niksar, around Maduru, 450 m, 19 ix 1992, FK 3079.

*Elaeagnus angustifolia* L.

Sivas: Koyulhisar, Sugözü village, around Ağınbükü, 600 m, 4 vii 1993, FK 3554.

## SANTALACEAE

*Thesium stellerioides* Joub. & Spach.

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 600 m, 1 vii 1992, FK 2355, 2364; Sivas: Koyulhisar, Sugözü village, around Ağınbükü, 600 m, 18 vii 1993, FK 4360.

Endemic.

*T. bergeri* Zucc.

Tokat: Erbaa, Tortepe, 1100 m, 17 ix 1992, FK 2997.

E. Mediterranean element.

*T. divaricatum* Jan. ex Mert & Koch

Tokat: Erbaa, Karayaka, Karınca Dağ, 900 m, 16 ix 1992, FK 2983.

Euro-Siberian element.

*T. procumbens* C.A.Mey.

Tokat: Niksar, around Maduru, 400 m, 22 v 1992, FK 1779.

*T. billardieri* Boiss.

Tokat: Erbaa, Karayaka, vicinity of Karakışla, 600 m, 17 vi 1992, FK 2118.

## LORANTHACEAE

*Viscum album* L. subsp. *austriacum* (Wiesb.) Wollman

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1450 m, 28 vii 1992, FK 2877.

## ARISTOLOCHIACEAE

*Aristolochia clematitis* L.

Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 350 m, 16 vi 1992, FK 2032. Euro-Siberian element.

*A. maurorum* L.

Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1920.

## EUPHORBACEAE

*Andrachne telephioides* L.

Tokat: Erbaa, Evyaba village, vicinity of cemetery, 250 m, 12 vii 1990, FK 1002; Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1970.

*Chrozophora tinctoria* (L.) Rafin.

Tokat: Niksar, around Maduru, 450 m, 26 vii 1992, FK 2778.

*Mercurialis annua* L.

Tokat: Erbaa, between Üzümlü village and Bağpınar village, 600 m, 25 iv 1992, FK 1594.

*Euphorbia cordiophylla* Boiss. & Heldr.

Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1687; Niksar, Kümbetli village, vicinity of Çama Stream, 450 m, 8 v 1993, FK 3162.

Endemic.

*E. orientalis* L.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2477.

Irano-Turanian element.

*E. microsphaera* Boiss.

Tokat: Niksar, 350 m, Davis 24848.

Irano-Turanian element.

*E. helioscopia* L.

Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 850 m, 23 v 1992, FK 1926; Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1809.

*E. aleppica* L.

Tokat: Erbaa, Karayaka, Karınca Dağ, 900 m, 16 ix 1992, FK 2970.

*E. ledebourii* Boiss.

Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 23 iv 1992, FK 1509; Sivas: Koyulhisar, Saytepe, S. slopes, 1100 m, 24 v 1992, FK 2017.

*E. falcata* L. subsp. *falcata* var. *falcata*

Tokat: Erbaa, above Kale village, 300 m, 17 vi 1992, FK 2089.

*E. herniariifolia* Willd.

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2018.

*E. denticulata* Lam.

Tokat: Erbaa, Karayaka, around Karakışla, 600 m, 17 vi 1992, FK 2111.

Irano-Turanian element.

*E. rigida* Bieb.

Tokat: Erbaa, Doğanyurt, vicinity of Karaun Stream, 500 m, 9 x 1992, FK 1378.

Mediterranean element.

*E. virgata* Waldst. & Kit.

Sivas: Koyulhisar, around Batlaca, vicinity of cemetery, 700 m, 23 v 1992, FK 1943.

*E. amygdaloides* L. var. *amygdaloides*

Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1284.

#### URTICACEAE

*Urtica pilulifera* L.

Tokat: Niksar, around Maduru, 450 m, 22 viii 1992, FK 1781.

Mediterranean element.

*U. dioica* L.

Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1297.

*Parietaria lusitanica* L.

Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1875.

Mediterranean element.

#### MORACEAE

*Morus alba* L.

Tokat: Niksar, Erikbelen village, 400 m, 17 vii 1993, FK 4284a, culture.

*M. nigra* L.

Sivas: Koyulhisar, around Kuşkuşlar, 800 m, 4 vii 1992, FK 2496, culture.

*Ficus carica* L. subsp. *carica*

Tokat: Erbaa, Karayaka, Karınca Dağ, 500 m, 27 v 1991, FK 1352.

#### ULMACEAE

*Ulmus minor* Miller subsp. *minor*

Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1753; Sivas: Koyulhisar, Tuğladağ,

850 m, 5 vii 1992, FK 2556.

*Celtis caucasica* Willd.

Tokat: Erbaa, Karayaka, Karınca Dağ, 900 m, 16 ix 1992, FK 2966.

*C. tournefortii* Lam.

Tokat: Erbaa, Karayaka, banks of Derefte Stream, 600 m, 17 ix 1992, FK 3023.

*C. glabrata* Steven ex Planch.

Sivas: Koyulhisar, around Tuğladağ, 850 m, 5 vii 1992, FK 2523.

#### JUGLANDACEAE

*Juglans regia* L.

Sivas: Koyulhisar, around Batlaca, 650 m, 23 v 1992, FK 1980.

#### PLATANACEAE

*Platanus orientalis* L.

Tokat: Erbaa, Doğanyurt, banks of Kelkit Çay, 350 m, 26 ix 1991, FK 1238.

#### FAGACEAE

*Fagus orientalis* Lipsky

Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1285.

Euro-Siberian element.

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

Tokat: Erbaa, Karayaka, Karınca Dağ, 900 m, 16 ix 1992, FK 2988; Tokat: Niksar, Akıncı village, around Ortaburun, 600 m, 24 vii 1992, FK 2685.

*Q. petraea* (Matt.) Liebl. subsp. *pinnatifida* (C.Koch) Menitsky

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıktepe, 1300 m, 28 vii 1992, FK 2928.

*Q. infectoria* Olivier subsp. *infectoria*

Tokat: Erbaa, Doğanyurt, 600 m, 9 x 1992, FK 1376.

*Q. infectoria* Olivier subsp. *boissieri* (Reuter) O.Schwarz

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 400 m, 1 vii 1992, FK 2341; Niksar, Ilıcak Dağ, 600 m, 19 ix 1992, FK 3062a.

*Q. pubescens* Willd.

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2521.

*Q. cerris* L. var. *cerris*

Tokat: Erbaa, around Üçtepe, 400 m, 18 vi 1992, FK 2303.

Mediterranean element.

*Q. cerris* L. var. *austriaca* (Willd.) Loudon

Tokat: Niksar, Akıncı village, around Ortaburun, 650 m, 24 vii 1992, FK 2685.

Euro-Siberian element.

*Q. coccifera* L.

Tokat: Erbaa, Tepekışla village, 300 m, 13 vii 1990, FK 1073; Niksar, Ilıcak Dağ, 400-700 m, 26 vii 1992, FK 2786.

Mediterranean element.

#### CORYLACEAE

*Carpinus betulus* L.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıktepe, 1300 m, 28 vii 1992, FK 2874.

Euro-Siberian element.

*C. orientalis* Miller subsp. *orientalis*

Tokat: Erbaa, around Üçtepe, 400 m, 18 vi 1992, FK 2302a; Sivas: Koyulhisar, Saytepe, 850 m, 6 vii 1992, FK 2621a.

*Ostrya carpinifolia* Scop.

Tokat: Niksar, Akıncı village, around Ortaburun, 650 m, Odabaş (ISTO 2135).

Mediterranean element.

*Corylus colurna* L.

Sivas: Koyulhisar, Yeşilyurt village, around Samanlıktepe, 1450 m, 28 vii 1992, FK 2878.

Euro-Siberian element.

*C. maxima* Miller

Tokat: Niksar, Özveren village, Çakmak mezrası, 1100 m, 25 vii 1992, FK 2765.

Euro-Siberian element.

#### SALICACEAE

*Salix alba* L.

Tokat: Erbaa, Doğanyurt, banks of Karaun Stream, 600 m, 25 iv 1993, FK 1629.

- S. pedicellata** Desf. subsp. *pedicellata*  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıklebeği, 1300 m, 28 vii 1992, FK 2869.
- S. elaeagnos** Scop.  
Tokat: Erbaa, above Kozlu village, 1000 m, 7 v 1993, FK 3125.  
Euro-Siberian element.
- Populus tremula** L.  
Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1304.  
Euro-Siberian element.
- RUBIACEAE**
- Putoria calabrica** (L.f.) DC.  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 650 m, 12 vii 1990, FK 1041; Niksar, around Maduru, 350 m, 2 vii 1992, FK 2389a.  
Mediterranean element.
- Sherardia arvensis** L.  
Tokat: Erbaa, between Üzümlü village and Bağpınar village, 600 m, 25 iv 1992, FK 1590.  
Mediterranean element.
- Crucianella latifolia** L.  
Tokat: Niksar, around Maduru, 350 m, 2 vii 1992, FK 2402a.  
E. Mediterranean element.
- C. exasperata** Fisch. & Mey.  
Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 350 m, 1 vii 1992, FK 2339.  
Irano-Turanian element.
- C. angustifolia** L.  
Tokat: Erbaa, around Dilsiztekke, 300 m, 18 vi 1992, FK 2195.  
Mediterranean element.
- Asperula glomerata** (Bieb.) Griseb. subsp. *glomerata*  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 800 m, 5 vii 1992, FK 2572.
- A. pestalozzae** Boiss.  
Tokat: Erbaa, Tepekişla village, vicinity of Karatepe, 450 m, 1 vii 1992, FK 2345.  
Endemic, Euxine element.
- A. involucrata** Wahlenb.  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1892.  
Euxine element.
- A. arvensis** L.  
Tokat: Erbaa, between Bağpınar and Yoldere village, 500 m, 25 iv 1992, FK 1605.  
Mediterranean element.
- Galium rotundifolium** L.  
Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2752.  
Euro-Siberian element.
- G. odoratum** (L.) Scop.  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1390, 1399; Niksar, around Maduru, 450 m, 22 v 1992, FK 1935.  
Euro-Siberian element.
- G. humifusum** Bieb.  
Sivas: Koyulhisar, Sugözü village, 600 m, 13 vii 1990, FK 1134; Tokat: Erbaa, Tepekişla village, Karatepe, 350 m, 1 vii 1992, FK 2352.
- G. verum** L. subsp. *verum*  
Tokat: Erbaa, Karayaka, around Ayıbeği, 900 m, 17 vi 1992, FK 2149, 2160.  
Euro-Siberian element.
- G. margaceum** Ehrend. & Schönb.-Tem.  
Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1305.  
Endemic.
- G. tenuissimum** Bieb. subsp. *tenuissimum*  
Tokat: Niksar, around Maduru, 350 m, 2 vii 1992, FK 2415.
- G. tenuissimum** Bieb. subsp. *trichophorum* (Kar. & Kir.) Ehrend.  
Sivas: Koyulhisar, around Batlaca, 850 m, 3 vii 1992, FK 2422.
- G. brevifolium** Sm. subsp. *insulare* Ehrend. & Schönb.-Tem.  
Tokat: Erbaa, between Bağpınar village and Yoldere village, 500 m, 25 iv 1992, FK 1605a.  
E. Mediterranean element.
- Crucianella cucullaria** (L.) Steven  
Tokat: Niksar, around Maduru, 350 m, 2 vii 1992, FK 1822, 2395a.  
Irano-Turanian element.
- Cruciata taurica** (Pallos ex Willd.) Ehrend.  
Tokat: Erbaa, Karayaka, around Ayıbeği, 950m, 17 vi 1992, FK 2152.  
Irano-Turanian element.
- C. pedemontana** (Bellardi) Ehrend.  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 800 m, 23 v 1992, FK 1917.
- Valantia muralis** L.  
Sivas: Koyulhisar, around Batlaca, 850 m, 23 v 1992, FK 1953.  
Mediterranean element.
- Rubia tenuifolia** d'Urv. subsp. *brachypoda* (Boiss.) Ehrend. & Schönb.-Tem.  
Tokat: Niksar, 400 m, 22 v 1992, FK 1789.  
E. Mediterranean element.
- R. tinctorum** L.  
Sivas: Koyulhisar, 800 m, 8 ix 1992, FK 3036.  
Irano-Turanian element.
- MONOCOTYLEDONAE**
- ARACEAE**
- Arum euxinum** R. Miller  
Tokat: Reşadiye, banks of Kelkit Çay, 550 m, 23 v 1992, FK 1893; Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 16 viii 1993, FK 3479.  
Endemic, Euxine element.
- Eminium rauwolfii** (Blume) Schott var. *rauwolfii*  
Sivas: Koyulhisar, around Batlaca, 800 m, 23 v 1992, FK 1998, 1999.  
Irano-Turanian element.
- LEMNACEAE**
- Lemna minor** L.  
Tokat: Erbaa, above Kozlu village, 1000 m, 5 viii 1993, FK 4763.
- LILIACEAE**
- Smilax exalsa** L.  
Tokat: Niksar, 450 m, 26 vii 1992, FK 2768.  
Euxine element.

- Ruscus aculeatus** L. var. **aculeatus**  
Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 400 m, 23 iv 1992, FK 1487a.
- Asparagus verticillatus** L.  
Tokat: Erbaa, Doğanyurt, 400 m, 26 ix 1992, FK 1253; Sivas: Koyulhisar, around Batlaca, 800 m, 18 ix 1992, FK 3035.
- Polygonatum multiflorum** (L.) All.  
Tokat: Erbaa, vicinity of Kızılotlu, 1300 m, 21 v 1992, FK 1664.
- Asphodeline damascena** (Boiss.) Baker subsp. **damascena**  
Sivas: Koyulhisar, Sugözü village, around Ağınbükü, 600 m, 18 vii 1993, FK 4376.  
Irano-Turanian element.
- Allium paniculatum** L. subsp. **fuscum** (Waldst. & Kit.) Arc.  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 400 m, 1 vii 1992, FK 2365.  
E. Mediterranean element.
- A. flavum** L. subsp. **tauricum** (Besser ex Reichb.) Stearn. var. **tauricum**  
Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 900 m, 5 vii 1992, FK 2576; Tokat: Niksar, Erikbelen village, 650 m, 17 vii 1993, FK 4288.  
Mediterranean element.
- A. pseudoflavum** Vved.  
Tokat: Erbaa, Yoldere village, vicinity of lime mine, 350 m, 16 vii 1993, FK 4236.  
Irano-Turanian element.
- A. atroviolaceum** Boiss.  
Tokat: Erbaa, around Çamlık, 300 m, 2 vii 1992, FK 2379;  
Irano-Turanian element.
- A. scorodoprassum** L. subsp. **rotundum** (L.) Stearn  
Tokat: Erbaa, between Kale village and Tortepe 800 m, 17 vi 1992; Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2563.
- A. scorodoprassum** L. subsp. **jajlae** (Vved.) Stearn  
Sivas: Koyulhisar, above Yeşilyurt village, 1200 m, 28 vii 1992, FK 2942a.  
Euxine element.
- A. erubescens** C.Koch  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2179.
- A. ponticum** Misch. ex Grossh.  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 400 m, 1 vii 1992, FK 2359.  
Euxine element.
- A. decipiens** Fisch. ex Schult. & Schult. f.  
Tokat: Erbaa, Kozlu village, 800 m, 5 viii 1993, FK 4798.
- Scilla bifolia** L.  
Tokat: Erbaa, Çatalan village, around Hodaypınarı, 1380 m, 24 iv 1992, FK 1549a.  
Mediterranean element.
- Ornithogalum pyrenaicum** L.  
Sivas: Koyulhisar, around Batlaca, vicinity of cemetery, 750 m, 23 v 1992, FK 1957.
- O. sphaerocarpon** Kerner  
Sivas: Koyulhisar, Saytepe, S. slopes 950m, 6 vii 1992, FK 2616.
- O. narbonense** L.  
Tokat: Niksar, 450 m, 22 v 1992, FK 1784, 1786.  
Mediterranean element.
- O. shelkovnikovii** Gross  
Sivas: Koyulhisar, Yeşilyurt village, around Samanlıkbeleşi, 1450 m, 28 vii 1992, FK 2911.  
Irano-Turanian element.
- O. sigmoideum** Freyn & Sint.  
Tokat: Erbaa, around Kızılotlu, 1300 m, 21 v 1992, FK 1660.
- O. umbellatum** L.  
Tokat: Erbaa, Fındıcak district to Tortepe, 800 m, 21 v 1992, FK 1719.
- O. orthophyllum** Ten.  
Tokat: Erbaa, Ballıbağ village to Üzümlü village, 600 m, 25 iv 1992, FK 1578.
- O. alpigenum** Stapf.  
Tokat: Erbaa, around Dilsiztekke, 400 m, 23 iv 1992, FK 1492.  
Endemic, E. Mediterranean element.
- O. nivale** Boiss.  
Tokat: Erbaa, vicinity of Sancar Plateau, 1380 m, 24 iv 1992, FK 1560.  
Endemic, E. Mediterranean element.
- O. armeniacum** Baker  
Tokat: Erbaa, Ağcageçe village, vicinity of İmbat bridge, 400 m, 23 iv 1992, FK 1470.  
E. Mediterranean element.
- Muscari aucheri** (Boiss.) Baker  
Tokat: Erbaa, between Ballıbağ village and Üzümlü village, 600 m, 25 iv 1992, FK 1579; Tokat: Niksar, vicinity of İlicak steam, 550 m, 17 vi 1993, FK 3503a.  
Endemic.
- M. armeniacum** Lerchtlin ex Baker  
Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2024.
- Bellevalia gracialis** Feinbrun  
Sivas: Koyulhisar, Saytepe, S. slopes, 1100 m, 24 v 1992, FK 2027.  
Endemic, Irano-Turanian element.
- Gagea fistulosa** Ker Gawl.  
Tokat: Erbaa, Çatalan village, around Hodaypınarı, 1380 m, 24 v 1992, FK 1553.
- G. granatellii** (Parl.) Parl.  
Tokat: Erbaa, Çatalan village, vicinity of Sancar Plateau, 1400 m, 24 iv 1992, FK 1559a.  
Mediterranean element.
- G. villosa** (Bieb.) Duby var. **villosa**  
Tokat: Erbaa, vicinity of Sancar plateau, 1400 m, 24 iv 1992, FK 1559.  
Mediterranean element.
- Colchicum speciosum** Steven  
Tokat: Erbaa, Tortepe, 1200 m, 17 ix 1992, FK 2994.  
Hyrcano-Euxine element.
- IRIDACEAE**
- Iris orientalis** Miller  
Tokat: between Erbaa and Taşova, 300 m, Mathew & Tomlinson
- I. caucasica** Hoffm. subsp. **caucasica**  
Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 23 iv 1992, FK 1511.  
Euro-Siberian element.
- Gladiolus italicus** Miller  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 350 m, 1 vii 1992, FK 2334.



**G. atroviolaceus** Boiss.

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 1984.

**ORCHIDACEAE****Neottia nidus-avis** (L.) Rich.

Tokat: Erbaa, Çatalan village, vicinity of Kızılotlu, 1300 m, 16 vi 1993, FK 3478.

Euro-Siberian element.

**Cephalanthera epipactoides** Fisch. & Mey.

Tokat: 25km along Erbaa and Niksar 25 km, vicinity of Salih Gelbal Forest, 350 m, 8 v 1993, FK 3169.

**C. kurdica** Bornm. ex Kranzlin

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2751.

Irano-Turanian element.

**C. rubra** (L.) Rich.

Tokat: Erbaa, between Kale village and Findıcak district, 850 m, 17 vi 1992, FK 2149a.

**C. longifolia** (L.) Fritsch

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2023a.

Euro-Siberian element.

**Epipactis veratrifolia** Boiss. & Hohen.

Tokat: Erbaa, between Kale village and Findıcak district, 850 m, 17 vi 1992, FK 2194.

Irano-Turanian element.

**E. helleborine** (L.) Crantz

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 23 v 1992, FK 2026; Tokat: Erbaa, Tortepe 1100 m, 17 ix 1992, FK 2997a.

**Limodorum abortivum** (L.) Swartz

Tokat: Erbaa, Tortepe, 1000 m, 11 ix 1992, FK 3001a.

**Platanthera chlorantha** (Custer) Reichb.

Tokat: Erbaa, above Kozlu village, 900 m, 16 v 1993, FK 3447; Niksar, Dağüstü village, around Hapan boğazı pass, 1300 m, 18 vi 1993, FK 3530,

**Ophrys mammosa** Desf.

Sivas: Koyulhisar, vicinity of prison, 900 m, 6 vii 1992, FK 2642.

E. Mediterranean element.

**O. oestifera** Bieb. subsp. *oestifera*

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 2001.

**Comperia comperiana** (Steven) Aschers. & Graebn.

Tokat: Niksar, Akıncı village, around Ortaburun, 700 m, 19 vi 1993, FK 3538.

Irano-Turanian element.

**Orchis tridentata** Scop.

Tokat: Erbaa, Tortepe, 1100 m, 21 v 1992, FK 1702,

**O. punctulata** Steven ex Lindley

Sivas: Koyulhisar, Saytepe, S. slopes, 1200 m, 24 v 1992, FK 1702.

Mediterranean element.

**O. purpurea** Hudson

Tokat: Erbaa, between Kale village and Tortepe, 800 m, 21 v 1992, FK 1728.

Euro-Siberian element.

**O. simia** Lam.

Tokat: 25km along Erbaa to Niksar road, Salih Gelbal Forest, 350 m, 8 v 1993, FK 3178.

Mediterranean element.

**O. mascula** (L.) L. subsp. *pinetorum* (Boiss. & Kotschy) G.Gamus

Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1698,1699.

E. Mediterranean element.

**O. pallens** L.

Tokat: Erbaa, Çatalan village, 1250 m, 7 v 1993, FK 3121.

**Dactylorhiza romana** (Seb.) Soó subsp. *romana*

Tokat: Erbaa, Tortepe, 1200 m, 21 v 1992, FK 1702.

Mediterranean element.

**D. romana** (Seb.) Soó subsp. *georgica* (Klinge) Soó ex Penz. & Taub.

Tokat: Erbaa, Tortepe, 1100 m, 21 v 1992, FK 1700.

Euxine element.

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

Tokat: Niksar, Köklüce village, banks of Kelpeten Stream, 300 m, 17 vii 1993, FK 4274.

**THPHACEAE****Thpha domingensis** Pers.

Tokat: Erbaa, vicinity of Karaçeltik brick factory, 250 m, 16 vi 1992, FK 2082.

**JUNCACEAE****Juncus inflexus** L.

Sivas: Koyulhisar, around Batlaca, 700 m, 18 ix 1992, FK 3058.

**J. effusus** L.

Tokat: Niksar, banks of Ilıcak Stream, 400 m, 19 ix 1992, FK 3075.

Cosmopolitan.

**J. compressus** Jacq.

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2739.

**J. articulatus** L.

Tokat: Erbaa, Karayaka, Şahintepe, S. slopes, 600 m, 16 ix 1992, FK 2993.

Euro-Siberian element.

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

Tokat: Erbaa, around Hodaypınarı, 1380 m, 24 iv 1992, FK 1549.

Euro-Siberian element.

**CYPERACEAE****Cyperus longus** L.

Tokat: Erbaa, Bölücek village, banks of Avladun Stream, 350 m, 18 vi 1992, FK 2286.

**C. rotundus** L.

Tokat: Niksar, banks of Ilıcak Stream, 400 m, 19 ix 1992, FK 3067.

**C. fuscus** L.

Tokat: Niksar, banks of Ilıcak Stream, 400 m, 19 ix 1992, FK 3068.

Euro-Siberian element.

**Schoenoplectus lacustris** (L.) Palla subsp. *tabernaemontani* (C.C.Gmel.) A. & D.Löve

Tokat: Niksar, Erikbelen village, 450 m, 17 vii 1993, FK 4286.

**Carex otrubae** Podp.

Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2163.

**C. flacca** Schreb. subsp. **serrulata** (Biv.) Greuter

Tokat: Erbaa, Tepekışla village, Karatepe, 450 m, 1 vii 1992, FK 2363.

**C. depressa** Link subsp. **transsilvaniaca** (Schur) Egorova

Tokat: Erbaa, Ballıbağ village to Üzümlü village, 600 m, 25 iv 1992, FK 2013.

**GRAMINEAE (Poaceae)**

**Brachypodium sylvaticum** (Hudson) P.Beauv.

Tokat: Niksar, Akıncı village, around Ortaburun, 600 m, 24 vii 1992, FK 2701.

Euro-Siberian element.

**B. pinnatum** (L.) P.Beauv.

Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 500 m, 18 vi 1992, FK 2265, 2275.

Euro-Siberian element.

**Trachynia distachya** (L.) Link

Tokat: Erbaa, around Dilsiztekte, 450 m, 18 vi 1992, FK 2202.

Mediterranean element.

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

Sivas: Koyulhisar, around Kuşkuşlar, 750 m, 4 vii 1992, FK 2512.

**A. cristatum** (L.) Gaertn. subsp. **incanum** (Nab.) Melderis

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2561.

Irano-Turanian element.

**Elymus elongatus** (Host.) Runemark subsp. **turcicus** (McGuire) Melderis

Tokat: Erbaa, around Dilsiztekte, 350 m, 18 vi 1992, FK 2213.

**Eromopyrum orientale** Jaub. & Spach.

Tokat: Niksar, 350 m, 24 vii 1992, FK 2653a.

Irano-Turanian element.

**Amblyopyrum muticum** (Boiss.) Eig var. **muticum**

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2554a.

**A. muticum** (Boiss.) Eig var. **loliaceum** (Jaub. & Spach.) Eig.

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2554.

Endemic.

**Aegilops cylindrica** Host.

Tokat: Niksar, 450 m, 22 v 1992, FK 1795, 2395a.

Irano-Turanian element.

**A. triuncialis** L. subsp. **triuncialis**

Tokat: Niksar, Akçabel village, 1200 m, 24 vii 1992, FK 2716.

**A. geniculata** Roth

Tokat: Niksar, Akçabel village, 300 m, 17 vi 1992, FK 2097.

Mediterranean element.

**Hordeum murinum** L. subsp. **glaucum** (Steud.) Tzvelev

Tokat: Erbaa, 250 m, 1 vii 1992, FK 2326a.

**H. murinum** L. subsp. **leporinum** (Link) Arc.

Tokat: Erbaa, 300 m, 22 iv 1992, FK 1398.

**Taeniatherum caput-medusae** (L.) Nevski subsp. **crinitum** (Schreb.) Melderis

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2553.

Irano-Turanian element.

**Bromus secalinus** L.

Tokat: Niksar, Akçabel village, 1200 m, 24 vii 1992, FK 2751a.

Euro-Siberian element.

**B. racemosus** L.

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2723a.

Euro-Siberian element.

**B. commutatus** Schrad.

Tokat: Erbaa, around Karaçeltik brick factory, 250 m, 16 vi 1992, FK 2081.

**B. hordeaceus** L. subsp. **hordeaceus**

Tokat: Reşadiye, 550 m, 23 v 1992, FK 1897.

**B. arvensis** L.

Tokat: Niksar, Özveren village, around Yaylayolu, 1200 m, 25 vii 1992, FK 2722.

**B. intermedius** Guss.

Tokat: Erbaa, Tepekışla village, Karatepe, 600 m, 18 vi 1992, FK 2275.

**B. japonicus** Thunb. subsp. **japonicus**

Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1862a; *ibid.*, 2 vii 1992, FK 2407

**B. japonicus** Thunb. subsp. **anatolicus** (Boiss & Heldr.) Penzes

Sivas: Koyulhisar, Yukarıkale village, around Elvesi, 800 m, 5 vii 1992, FK 2535.

**B. squarrosus** L.

Sivas: Koyulhisar, vicinity of prison, 950m, 6 vii 1992, FK 2648a.

**B. tectorum** L.

Tokat: Erbaa, above Kozlu village, 800 m, Tobey 2215.

**B. diandrus** Roth

Tokat: Erbaa, around Dilsiztekte, 300 m, 18 vi 1992, FK 2222a.

**Avena fatua** L. var. **fatua**

Tokat: Niksar, vicinity of Ilıcak Stream, 450 m, 24 vii 1992, FK 2076.

**A. sativa** L.

Tokat: Niksar, 350 m, 22 v 1991, FK 1791.

**Rostraria cristata** (L.) Tzvelev. var. **cristata**

Tokat: Niksar, around Maduru, 350 m, 22 v 1992, FK 1890.

**Koeleria cristata** (L.) Pers.

Sivas: Koyulhisar, around Batlaca, vicinity of cemetery, 750 m, 3 vii 1992, FK 2457a.

**Aira elegantissima** Schur. subsp. **elegantissima**

Tokat: Erbaa, between Karayaka and Kale village, 250 m, 15 vi 1993, FK 3433.

Mediterranean element.

**Calamagrostis pseudophragmites** (Haller f.) Koeler

Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2048.

Euro-Siberian element.

**Apera spica-venti** (L.) Beauv.

Tokat: Niksar, Akçabel village, 1200 m, 24 vii 1992, FK 2715.

Euro-Siberian element.

**A. intermedia** Hackel in Zederb.

Tokat: Niksar, Akçabel village, 1200 m, 24 vii 1992, FK 2715a.

**Gastridium ventricosum** (Gouan) Schinz & Thell.

Tokat: Erbaa, around Karaçeltik brick factory, 250 m, 16 vi 1992, FK 2080.

- Mediterranean element.
- Phleum pratense** L.  
Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1992, FK 1311.
- P. paniculatum** Hudson  
Tokat: Erbaa, around Üçtepeler, 500 m, 18 vi 1992, FK 2301, 2305a.  
Irano-Turanian element.
- P. exaratum** Hochst. ex Griseb. subsp. exaratum  
Sivas: Koyulhisar, Tuğladağ, 850 m, 4 vii 1992, FK 2535.
- Festuca arundinacea** Schreb. subsp. arundinacea  
Sivas: Koyulhisar, Tuğladağ, 850 m, 4 vii 1992, FK 2535a.
- Lolium perenne** L.  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1417.
- L. rigidum** Gaudin var. rigidum  
Tokat: Erbaa, 250 m, 1 vii 1992, FK 2325.
- Vulpia ciliata** Dumort subsp. ciliata  
Sivas: Koyulhisar, around Batlaca, vicinity of cemetery, 700 m, 3 vii 1992, FK 2459.
- Catapodium rigidum** (L.) C.E.Hubb. ex Dony subsp. rigidum var. rigidum  
Tokat: Erbaa, above Kale village, 350 m, 17 vi 1992, FK 2083.
- Poa annua** L.  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1418.  
Cosmopolitan.
- P. trivialis** L.  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2157a.
- P. pratensis** L.  
Tokat: Erbaa, Karayaka, around Ayıbeleşi, 900 m, 17 vi 1992, FK 2157a.
- P. compressa** L.  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 800 m, 18 vi 1992, FK 2266a; Tokat: Niksar, 300 m, 26 vii 1992, FK 2767a.
- P. nemoralis** L.  
Tokat: Erbaa, 250 m, 22 iv 1992, FK 1399.
- P. timoleontis** Heldr. ex Boiss.  
Tokat: Erbaa, Ağcağaç village, vicinity of İmbat bridge, 350 m, 23 iv 1992, FK 1447.  
E. Mediterranean element.
- P. bulbosa** L.  
Tokat: Niksar, around Maduru, 450 m, 22 v 1992, FK 1860.
- Dactylis glomerata** L. subsp. glomerata  
Sivas: Koyulhisar, around Batlaca, 850 m, 3.vii 1992, FK 2423.  
Euro-Siberian element.
- D. glomerata** L. subsp. lobata (Drejer) Lindb.f.  
Tokat: Erbaa, Kale village, 300 m, 21 v 1992, FK 1478.  
Euro-Siberian element.
- Cynosurus cristatus** L.  
Tokat: Niksar, Özveren village, Çakmak district, 1200 m, 25 vii 1992, FK 2757.  
Euro-Siberian element.
- C. echinatus** L.  
Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1307.  
Mediterranean element.
- Briza media** L.  
Tokat: Erbaa, Tortepe, 1100 m, 27 ix 1991, FK 1317.
- Echinaria capitata** (L.) Desf.  
Tokat: Reşadiye, 600 m, 23 v 1992, FK 1895, 1897.
- Melica ciliata** L. subsp. ciliata  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 600 m, 18 vi 1992, FK 2227; Tokat: Niksar, Akıncı village, around Ortaburun, 600 m, 24 vii 1992, FK 2703.
- Stipa bromoides** (L.) Dörf.  
Tokat: Reşadiye, Çetik 165.
- S. ehrenbergiana** Trin. & Rupr.  
Tokat: Erbaa, Karayaka, 900 m, 17 vi 1992, FK 2157.  
Irano-Turanian element.
- Phragmites australis** (Cav.) Trin. ex Steudel  
Sivas: Koyulhisar, around Batlaca, 850 m, 18 ix 1992, FK 3040.  
Euro-Siberian element.
- Eragrostis cilianensis** (All.) Vignolo ex Janch.  
Tokat: Erbaa, 250 m, 1 vii 1992, FK 2326.
- Cynodon dactylon** (L.) Pers. var. dactylon  
Tokat: Erbaa, around Dilsiztekte, 350 m, 18 vi 1992, FK 2202a.
- Tragus racemosus** (L.) All.  
Tokat: Erbaa, Doğanyurt, banks of Karaun Stream, 500 m, 9 x 1991, FK 1371.
- Brachiaria eruciformis** (Sm.) Griseb.  
Tokat: Niksar, Akıncı village, around Ortaburun, 650 m, 24 vii 1992, FK 2702.
- Echinochloa crus-galli** (L.) P.Beauv.  
Tokat: Erbaa, Çatalan village, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1192.
- Digitaria sanguinalis** (L.) Scop.  
Tokat: Erbaa, Çatalan village, vicinity of Kızılotlu, 1300 m, 27 ix 1991, FK 1190.
- Setaria viridis** (L.) P.Beauv.  
Tokat: Erbaa, Doğanyurt, 400 m, 26 ix 1991, FK 1249.
- S. verticillata** (L.) P.Beauv.  
Tokat: Niksar, 450 m, 26 vii 1992, FK 2772.
- S. glauca** (L.) P.Beauv.  
Sivas: Koyulhisar, around Batlaca, vicinity of cemetery, 18 ix 1992, 850 m, FK 3045.
- Pennisetum orientale** Rich.  
Sivas: Koyulhisar, around Tuğladağ, 850 m, 4 vii 1992, FK 2555.  
Irano-Turanian element.
- Sorghum bicolor** (L.) Moench  
Tokat: Niksar, Köklüce village, 350 m, 9 x 1993, FK 5837, culture.
- Chrysopogon gryllus** (L.) Trin. subsp. gryllus  
Tokat: Erbaa, Tepekışla village, vicinity of Karatepe, 400 m, 1 vii 1992, FK 2363; Niksar, 400 m, 27 v 1992, FK 1797.
- Bothriochloa ischaemum** (L.) Keng  
Tokat: Erbaa, Doğanyurt, 400 m, 26 ix 1991, FK 1241; Tokat: Niksar, 450 m, 24 vii 1992, FK 2673.