

Flora of Kazankaya Canyon (Yozgat-Çorum)

Ahmet DURAN, Ergin HAMZAOĞLU

Kırıkkale University, Faculty of Sciences and Literature, Department of Biology, 71450 Kırıkkale - TURKEY

Received: 15.03.2001

Accepted: 21.03.2002

Abstract: A floristic study of Kazankaya Canyon was carried out. Sixty families, 216 genera and 308 taxa were identified. A species new to science was found from the genus *Scorzonera* L. (*Compositae*). Fifty-two taxa (16.9%) are Irano-Turanian, 41 (13.3%) Mediterranean and 11 (3.6%) Euro-Siberian phytogeographic region elements. The remaining 195 (63.3%) taxa are multi-regional and 9 (2.9%) are not from a determined phytogeographic region. The life forms were determined according to Raunkiaer. The number of endemic taxa is 24 (7.8%). Four taxa show variations not previously reported in the literature. Thirty-four taxa are new floristic records for the square A5.

Key Words: Flora, Kazankaya, Yozgat, Çorum, Turkey

Kazankaya Kanyonunun Florası (Yozgat-Çorum)

Özet: Bu çalışma Kazankaya Kanyonunun florasını araştırmak amacıyla yapılmıştır. Arazi çalışmaları sonunda 60 familya, 216 cins ve bu cinslere ait 308 tür ve tür altı seviyede takson belirlenmiştir. *Scorzonera* L. (*Compositae*) cinsinden bilim dünyası için yeni bir tür tanımlanmıştır. Florayı oluşturan 308 taksondan 52'si (% 16.9) İnan-Turan, 41'i (% 13.3) Akdeniz ve 11'i de (%3.6) Avrupa-Sibirya fitocoğrafik bölgesi elementidir. 195 (% 63.3) takson çok bölgeli ve 9 (% 2.9) taxonun fitocoğrafik bölgesi bilinmemektedir. Toplanan taksonların hayat formlarının belirlenmesi Raunkiaer'in sistemine göre yapılmıştır. Alanımızdaki endemik tür sayısı 24 (% 7.8)'dir. Literatürlerde belirtilen morfolojik özelliklerden farklılık gösteren 4 takson belirlenmiştir. 34 takson A5 karesi için yeni kayıttır.

Anahtar Sözcükler: Flora, Kazankaya, Yozgat, Çorum, Türkiye

Introduction

Kazankaya Canyon is located between Aydıncık (Yozgat) and Ortaköy (Çorum) provinces. The canyon has two passes in the south and north, Kazankaya and İncesu. Most of the study area is located within Yozgat province borders, and the rest is within Çorum province borders. The canyon is approximately 10 km long and is formed from calcareous bedrock. Although the area is located in the transition zone of the Irano-Turanian and Euro-Siberian phytogeographic regions, the effects of the Mediterranean/Irano-Turanian phytogeographic region are seen.

The study area is located between the 40° 12' and 40° 16' north parallels, and between the 35° 19' and 35° 21' longitudes. According to the grid system it falls within the A5 square. The research area is bordered by Kazankaya town (Yozgat) in the south, and by İncesu town (Çorum)

in the north. The altitude of the study area varies between 500 and 1100 m. The Çekerek stream flows through the canyon (Figure 1).

The Mediterranean climate is predominant in the area and characterised by hot and dry summers and cold winters. The total rainfall per year is 544.8 mm in Yozgat, and 420.7 mm in Çorum (DMİGM, 1999). The distribution of rainfall according to season is W.Sp.A.S. (winter, spring, autumn, summer) in Yozgat, and Sp.W.S.A. in Çorum. The rainfall regime is "East Mediterranean Rain Regime Type I" in Yozgat, and "East Mediterranean Rain Regime Type II" in Çorum (Erinç, 1988). According to Emberger's Mediterranean bioclimate layers classification, Yozgat is "upper semi-arid and very cold", and Çorum is "subsemi-arid and very cold". Ombrotermic climate diagrams were drawn using Gausson's method (Akman 1990) (Figures 2 and 3).

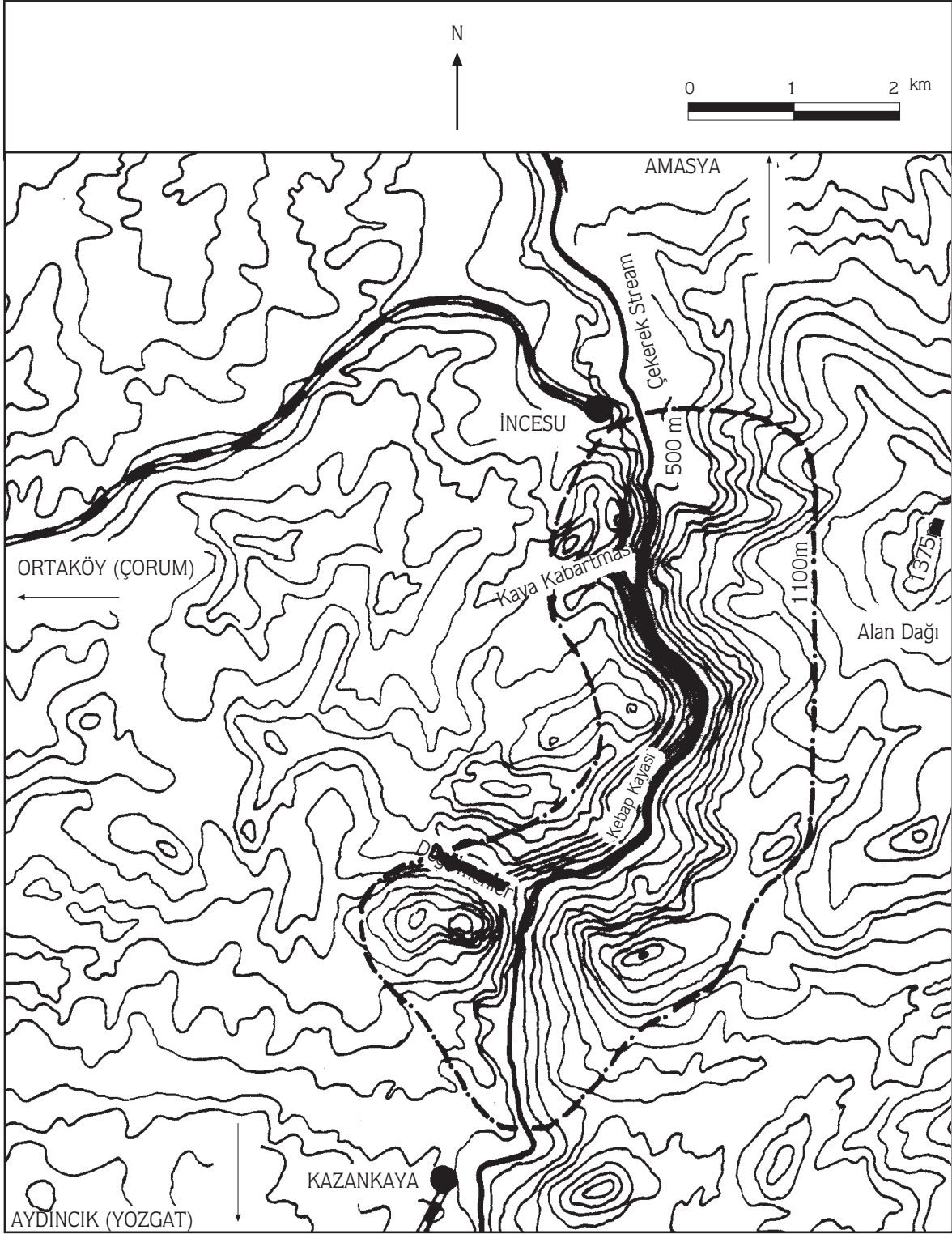


Figure 1. Topographical map of the study area

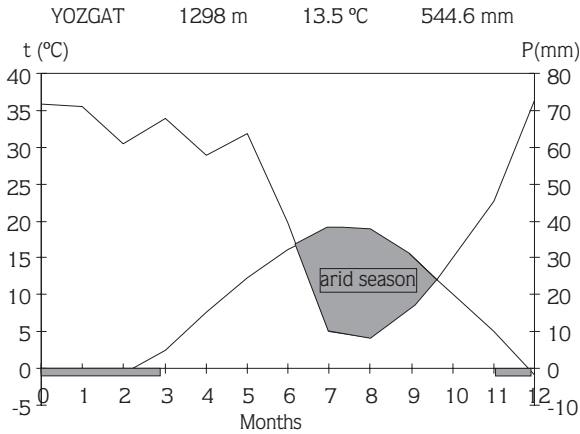


Figure 2. Ombrothermic Climate Diagram of Yozgat

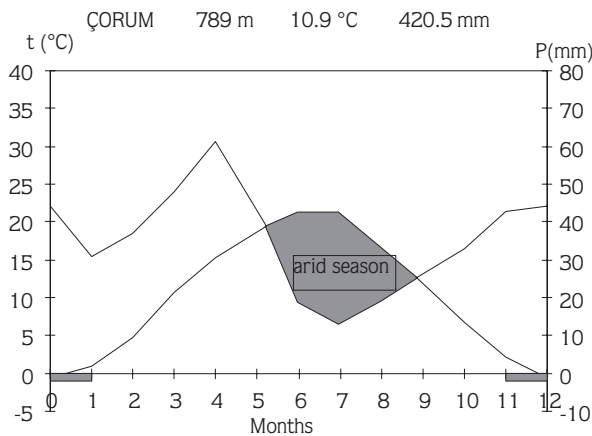


Figure 3. Ombrothermic Climate Diagram of Çorum

The formation of calcareous bedrock goes back to the upper Mesozoic period. Two types of soil are seen: brown forest and alluvial soil. The canyon is formed from very high cliffs and has very large naked rocks (Ketin, 1963; TGM, 1970).

Three vegetation types are seen in the study area. Rock vegetation is clearly separated from forest and hygrophilic vegetation in the area. The most dominant species of rock vegetation are *Draba rigida* Willd., *Arabis caucasica* Willd., *Polygala pruinosa* Boiss., *Arenaria kotcshyana* Fenzl, *Hypericum aviculariifolium* Jaub. & Spach, *Inula aschersoniana* Janka, *Scrophularia scopolii* [Hoppe ex] Pers., *S. libanotica* Boiss., *Micromeria cristata* (Hampe) Griseb., *Thymus leucotrichus* Hal., *Euphorbia herniariifolia* Willd., *Parietaria judaica* L., *Elymus lazicus* (Boiss.) Melderis, and *Melica ciliata* L.

The forest vegetation is found in very restricted areas inside the canyon in bush forms. Dominant species of forest vegetation include *Juniperus oxycedrus* L., *J. foetidissima* Willd., *J. excelsa* M.Bieb., *Berberis crataegina* DC., *Paliurus spina-christi* Mill., *Rhamnus rhodopeus* Velen., *Rhus coriaria* L., *Pistacia terebinthus* L., *Colutea cilicica* Boiss. & Balansa, *Cerasus prostrata* (Labill.) Ser., *Rosa foetida* Herrm., *Cotoneaster integerrimus* Medik., *C. nummularia* Fisch. & C.A.Mey., *Crataegus monogyna* Jacq., *Sorbus umbellata* (Desf.) Fritsch, *Quercus pubescens* Willd., *Q. trojana* P.B.Webb., *Hedera helix* L., *Lonicera etrusca* Santi, and *Jasminum fruticans* L.

Hygrophilic vegetation is seen in the wet parts of the area. Some dominant species of hygrophilic vegetation are *Equisetum arvense* L., *Tamarix smyrnensis* Bunge, *Rubus caesius* L., *R. sanctus* Schreb., *Plantago lanceolata* L., *Platanus orientalis* L., *Galium palustre* L., *Clematis orientalis* L., *Geranium rotundifolium* L., and *Amaranthus retroflexus* L.

Materials and Methods

The study was carried out between 1998 and 2000 and a total of 742 specimens were collected. The majority of the specimens were identified according to the Flora of Turkey (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000). In some cases other literature (Rechinger, 1965-1977; Komarov, 1949; Tutin et al., 1964-1980; Townsend & Guest, 1966-1985; Zohary, 1966-1986; İlarıslan, 1996) was used for identification.

A list of the taxa identified is given in the Appendix. The taxa marked (*) in the appendix are reported from the square A5 for the first time (Donner, 1990). In the appendix the following details are stated: family, species, author(s), locality, altitude, habitat, collection date, collector and number. Also, the phytogeographic region is given together with the species endemism, IUCN threat categories for endemic taxa only and life forms (Ekim et al., 2000).

The specimens are kept in Anadolu Herbarium (ADO), the Faculty of Science and Literature, Kirikkale University.

The findings were compared with the results of other research carried out in the neighbouring areas in terms of phytogeographic elements, number of taxa and endemism (İlarıslan, 1994; Civelek, 1992; Duran &

Duman, 1996; Yıldız, 1996; Ekim & Düzenli, 1983). The life forms are shown in Table 3.

The abbreviations used in the text and appendix are as follows: (Ph)–Phanerophyte, (Ch)–Chamaephyte, (H)–Hemicryptophyte, (Th)–Therophyte, (G)–Geophyte, (LR)–Lower Risk, (cd)–Conservation Dependent, (lc)–Least Concern, (CR)–Critically Endangered, (Euro-Sib. el.)–Euro-Siberian element, (E. Medit. el.)–East Mediterranean element, (Medit. el.)–Mediterranean element, and (Ir.-Tur. el.)–Irano-Turanian element.

Results and Discussion

This study was carried out with 742 plant specimens collected over a period of 2 years. As a result of the identification of the plant specimens, 60 families, 216 genera, and 308 taxa (subsp. and var. included) were determined from the area. Five of the 308 taxa are from the *Pteridophyta* division, and 303 belong to the *Spermatophyta* division. Four taxa are *Gymnospermae* and 299 are in the subdivision *Angiospermae*. Two hundred and seventy-one taxa belong to the class *Dicotyledones* and 28 belong to the class *Monocotyledones*.

Fifty-two taxa (16.9%) are Irano-Turanian, 41 (13.3%) Mediterranean and 11 (3.6%) Euro-Siberian phytogeographic region elements. One hundred and

ninety-five taxa (63.3%) are distributed in at least two phytogeographic regions, and although nine taxa (2.9%) are distributed in the study area, their phytogeographic regions have not been determined. The effect of the Mediterranean and Irano-Turanian phytogeographic regions are seen in the canyon even though it is located in the transition zone of the Irano-Turanian and Euro-Siberian phytogeographic regions (Davis, 1965; Zohary, 1973). The ratio of the Mediterranean phytogeographic region elements is the lowest in all studies, except for Kazankaya Canyon in which the number of Mediterranean-origin taxa is the highest although it is very far from the Mediterranean region (Table 1).

The distributions of the taxa in the phytogeographic regions are compared with the taxa in the neighbouring areas and are given in Table 1. The effects of the Irano-Turanian phytogeographic region become less away from Central Anatolia and the effects of the Euro-Siberian region increase, though not in Kazankaya Canyon.

It is very interesting that the proportion of Euro-Siberian phytogeographic elements is higher than that of Mediterranean elements in all areas except for Kazankaya Canyon (Figure 4). Palaeopalynologic data shows that Anatolia had a dense vegetation cover in the last interglacial period. In this period, some species of Mediterranean origin migrated into the preponctic part of the Black Sea Mountains. These species in the last glacial

Table 1. A comparison of the phytogeographic elements (see captions below for abbreviations)

Research area	Kzn.	Dev.	Çam.	Dum.	Kse.	İnc.
Total taxa	308	628	976	409	1137	843
Irano-Turanian elements %	16.9	37.8	25.1	15.2	26.8	38.0
Mediterranean elements %	13.3	10.1	3.2	6.6	4.8	2.5
Euro-Siberian elements %	3.6	15.9	16.2	13.4	14.4	9.0
Multi-regional elements or those of unknown phytogeographic region %	66.2	36.2	55.2	64.7	54.0	50.5

Abbreviations:

Kzn.: Flora of Kazankaya Canyon (Yozgat-Çorum)

Dev.: Devenci Dağlarının (Yozgat-Tokat) Florasına Katkı (İlarslan, 1994)

Çam.: Çamlıbel Geçidi ve Yıldız Dağı (Sivas-Tokat) Florası (Civelek, 1992)

Dum.: Dumanlı Dağı (Çankırı) Florası (Duran and Duman, 1996)

Kse.: Floristic Characteristic of Köse Dağı (Sivas) (Yıldız, 1996)

İnc.: İncebel Dağları Florası Hakkında Bazı Gözlem ve Bulgular (Ekim and Düzenli, 1983)

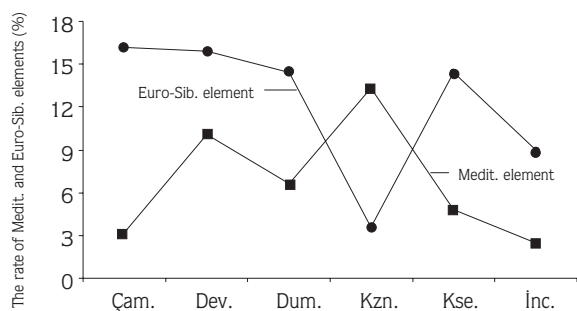


Figure 4. A comparison of Mediterranean and Euro-Siberian elements (for the abbreviations, see the caption of Table 1).

period were shielded in the tectonic valleys and on the slopes, exposed to the south, to protect themselves from the effects of the cool climate (Gemici, 1993). These changes are clearly seen in Kazankaya Canyon.

Compositae is the largest family with 37 taxa in the research area. The other large families are *Labiatae* (34 taxa), *Gramineae* (23 taxa), *Caryophyllaceae* (21 taxa), *Cruciferae* (19 taxa), *Leguminosae* (17 taxa) *Umbelliferae* (15 taxa), *Rosaceae* (13), *Scrophulariaceae* (13) and *Boraginaceae* (13 taxa). In this study, *Rosaceae*, which is not among the largest ten families in the Flora of Turkey, is found in the first ten because the plants with a shrub form are common in this area. Also, some families which have perennial species grown on the rocky areas are represented by more species (Table 2).

Astragalus L., *Verbascum* L. and *Centaurea* L. are larger genera in the Flora of Turkey. *Centaurea* is the second, and *Astragalus* the sixth largest genus in this study area, and *Verbascum* is not seen in the first ten in

Table 2. Comparison of large families in the canyon and neighbouring areas

Research area	Kzn.	Dev.	Çam.	Dum.	Kse.	İnc.
Total taxa	308	628	976	409	1137	843
<i>Compositae</i>	37	77	142	56	144	110
<i>Labiatae</i>	24	45	62	29	67	65
<i>Gramineae</i>	23	43	53	26	71	44
<i>Caryophyllaceae</i>	21	36	55	17	61	55
<i>Cruciferae</i>	19	39	69	20	75	56
<i>Leguminosae</i>	17	75	83	39	126	89
<i>Umbelliferae</i>	15	30	43	20	42	44
<i>Rosaceae</i>	13	21	45	22	61	34
<i>Boraginaceae</i>	13	25	28	15	34	30
<i>Scrophulariaceae</i>	13	26	49	22	59	36

the floristic list (see Appendix). There are large differences in the number of taxa between the Flora of Turkey and this study area. The differences are because of geologic, geomorphologic, climatic, phytogeographic, geographic and edaphic features. Especially, *Astragalus* and *Verbascum* are localised on steppes in the central and the eastern parts of Anatolia. In this area, the steppe area is very small and the rocky places are very large. Therefore, the number of species from these genera is restricted. The genus *Astragalus*, which is the largest genus in the Flora of Turkey, is in sixth place in this floristic list because this area is stony and bears features of the Mediterranean microclimate (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000; Podlech, 1998a; Podlech, 1998b; Wagenitz & Hellwig, 2000).

Galium L., *Centaurea* and *Minuartia* L., which grow in rocky places, are the most common genera in the canyon. However, in the neighbouring areas, *Astragalus* is the largest genus.

Taxa can also be classified in their life forms. Raunkiaer's life forms spectrum acts as an indicator of the climate or region (Akman and Ketenoğlu, 1992; Raunkiaer, 1934). The life forms of the taxa according to Raunkiaer are given in Table 3.

Table 3. Life Form

Life Form	Number of Species	Rate (%)
Hemicryptophyte (H)	140-142	45.5
Therophyte (Th)	114	37.0
Phanerophyte (Ph)	33-34	10.7
Chamaephyte (Ch)	12-11	3.9
Geophyte (G)	9-7	2.9
Total	308	100

As seen in Table 3, 142 (46.1%) of the species are hemicryptophyte, 114 (37.0%) are therophyte, 34 (11.0%) phanerophyte, 11 (3.6%) chamaephyte, and 7 (2.3%) geophyte.

The number of phanerophytes is quite high in the area, which can be explained by the climate and topography of the canyon. Phanerophytes in shrub form are widespread in the study area because of the effects of the Mediterranean microclimate.

Four taxa (*Arenaria kotschyana* Fenzl subsp. *stenophylla* (Bornm.) McNeill, *Micromeria cristata* (Hampe) Griseb. subsp. *cristata*, *Plantago scabra* Moench,

Allium paniculatum L. subsp. *paniculatum*) show variations in their morphologic features which were not reported in the Flora of Turkey. It is thought that these differences are because of climate, soil and geography. The floral features are stable and help in identifying the species. The characters shown in the Appendix under relevant taxa will widen the border of morphologic features used in the Flora of Turkey (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000).

Table 4. The rate of endemism in compared research

Research area	Kzn.	Dev.	Çam.	Dum.	Kse.	İnc.
Total taxa	308	628	976	409	1137	843
Endemism %	7.8	17.1	14.1	8.5	14.5	15

Scorzonera ekimii A.Duran is recognised as new to science from the Kazankaya Canyon and is being accepted for publication (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000; Tutin et al., 1964-1980; Duran, 2002).

References

- Akman Y (1990). *İklim ve Biyoiklim*. Ankara: Palme Yay.
- Akman Y, Ketenoğlu O (1992). *Vejetasyon Ekolojisi ve Araştırma Metodları*. Ankara: Ank Üniv Fen Fak.
- Civelek S (1992). Çamlıbel Geçidi ve Yıldız Dağı (Sivas-Tokat) Florası. *Doğa-Tr J of Bot* 16: 21-53.
- Davis PH (ed.) (1965-1985). *Flora of Turkey and the East Aegean Islands*. vol. 1-9, Edinburgh: Edinburgh Univ Press.
- Davis PH, Mill RR, Tan K (eds) (1988). *Flora of Turkey and the East Aegean Islands (supplement)*. vol. 10, Edinburgh: Edinburgh Univ Press.
- DMİGM (1999). *Meteoroloji Bülteni*. Ankara: Devlet Meteoroloji İşleri Genel Müdürlüğü Bül.
- Donner J (1990). Distribution Maps to P.H. Davis, Flora of Turkey, vol. 1-10. *Linzer Biol Beitr* 22(2): 381-515.
- Duran A & Duman H (1996). Dumanlı Dağı (Çankırı) Florası. *Tr J of Bot* 20: 143-161, Ek sayı.
- Duran A (2002). A New Species of *Scorzonera* L. (Asteraceae) from Central Anatolia, Turkey. *Israel J Plant Sci* 50(2), in press.
- Ekim T & Düzenli A (1983). İncebel Dağları Florası Hakkında Bazı Gözlem ve Bulgular. *Doğa Bilim Derg Temel Bil* 7: 73-76.
- Ekim T, Koyuncu M, Vural M, Duman H, Aytaç Z & Adıgüzel N (2000). *Türkiye Bitkileri Kırmızı Kitabı (Red Data Book of Turkish Plants)*. Türkiye Tabiatını Koruma Derneği ve Van Yüzüncü Yıl Üniv Yay.
- Eriç S (1988). *Klimatoloji ve Metodları*. İst Üniv Yay No: 3278.
- Gemici Y (1993). Tersiyerden günümüze Türkiye'nin flora ve vejetasyonu. *Tr J of Bot* 17: 221-226.
- Güner A, Özhatay N, Ekim T & Başer KHC (eds) (2000). *Flora of Turkey and the East Aegean Islands (supplement)*. vol. 11, Edinburgh: Edinburgh Univ Press.
- İlarslan R (1994). Deveci Dağlarının (Yozgat-Tokat) Florasına Katkı. *Tr J of Bot* 18: 337-366.
- İlarslan R (1996). Türkiye'nin *Delphinium* L. (Ranunculaceae) cinsinin revizyonu. *Turk J Bot* 20(2): 133-159.
- Ketin İ (1963). *Türkiye Jeoloji Haritası Kayseri Paftası*. Ankara: MTA Yay.
- Komarov VL (ed.) (1949). *Flora of the USSR*. vol. 13, translated from Russian, Jerusalem: Israel P.Sci.Tms.
- Podlech D (1998a). Revision von *Astragalus* L. sect. *Caprini* DC. (Leguminosae). Teil 1. Allgemeiner Teil, Subsect. *Caprini*. *Mitt Bot Staatssamml München* 25(1): 1-513.
- Podlech D (1998b). Revision von *Astragalus* L. sect. *Caprini* DC. (Leguminosae). Teil 2. Subsect. *Gontscharovielle, Erionotus, Purpurascetes*. *Mitt Bot Staatssamml München* 25(2): 515-924.
- Raunkiaer C (1934). *The Life Forms of Plants and Statistical Plant Geography*. Oxford.
- Rechinger HK (ed.) (1965-1977). *Flora Iranica*. Akademische Druck Verlanganstalt, Graz-Austria.
- TGM (1970). *Yeşilirmak Havzası Toprakları*, Topraksu Genel Müdürlüğü Yay No: 241.

Twenty-four of the 308 taxa are endemic in the research area. Three endemic taxa are the Mediterranean phytogeographic region element, 11 Irano-Turanian, and 1 Euro-Siberian. The phytogeographic regions of 9 taxa are not known. The rate of endemism is lower in the areas that are completely in the transition zone. This is because the taxa found in these areas are widespread and grow in more than one phytogeographic region. Euro-Siberian elements are especially distributed in the north of the area and near the Çekerek stream (Table 4).

This research will help in bringing about a better understanding of the Flora of Turkey in the future.

Acknowledgements

We would like to thank the Kırıkkale University Research Fund for its financial support during this study (project no: 98-03-04-04) and Dr. Yusuf Menemen for checking the English.

- Towsend CC & Guest E (eds) (1974). *Flora of Iraq*. vol. 3. Baghdad.
- Tutin TG, Heywood VH, Burges NA, Valentine DH, Walters SM & Webb DA (eds) (1964-1981). *Flora Europaea*. vol. 1-5. Cambridge: Cambridge Univ Press.
- Wagenitz G & Hellwig FH (2000). The genus *Psephellus* Cass. (*Compositae, Cardueae*) revisited with a broadened concept. *Willdenowia* 30: 29-44.
- Yıldız B (1996). Floristic Characteristics of Köse Dağı (Sivas). *Tr J of Bot* 20: 417-456.
- Zohary M (ed.) (1966-1986). *Flora Palaestina*. vol. 1-4. Jerusalem: Academic Press, Israel.
- Zohary M (1973). *Geobotanical foundation of the Middle East*. vol. I-II. Gustav Fischer Verlag, Stuttgart.

APPENDIX

All the taxa were written in the same order as in the Flora of Turkey. A list of the vascular plant taxa identified from Kazankaya Canyon are given below:

PTERIDOPHYTA

EQUISETACEAE

Equisetum arvense L.

Yozgat: Aydıncık, Kazankaya Geçidi, 600 m, streamside, 16 x 1998, A.Duran 4384.

H.

SINOPTERIDACEAE

Cheilanthes fragrans (L.f.) Sw.

Yozgat: Aydıncık, Kazankaya Geçidi, south-east of Kazankaya Canyon, 650 m, rock crevices, 13 v 2000, A.Duran 5127.

G.

ASPLENIACEAE

Ceterach officinarum DC.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, among shady rocks, 6 x 1998, observation.

H.

ATHYRIACEAE

Cystopteris fragilis (L.) Bernh.

Yozgat: Aydıncık, south of Kazankaya Canyon, 800 m, shady places, 28 vi 2000, A.Duran 5421.

H.

ASPIDACEAE

Dryopteris pallida (Bory) Fomin

Yozgat: Aydıncık, south of Kazankaya Canyon, 800 m, under shady rocks, 28 vi 2000, A.Duran 5443.

Medit. el., G.

SPERMATOPHYTA

GYMNOSPERMAE

CUPRESSACEAE

Juniperus oxycedrus L. subsp. *oxycedrus*

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, in scrub, 6 x 1998, A.Duran 4366.

Ph.

J. foetidissima Willd.

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, stony places, 28 vi 2000, A.Duran 5369.

Ph.

J. excelsa M.Bieb.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, in scrub, 6 x 1998, A.Duran 4400.

Ph.

EPHEDRACEAE

Ephedra major Host

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 27 viii 1998, A.Duran 4369.

Ch.

ANGIOSPERMAE

DICOTYLEDONES

RANUNCULACEAE

Nigella nigellastrum (L.) Willk.

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, open scrub, 28 vi 2000, A.Duran 5402.

Th.

**Consolida thirkeana* (Boiss.) Schröd.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 6 x 1998, A.Duran 4406, endemic.

LR (Ic), Th.

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

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, open scrub, 28 vi 2000, A.Duran 5440.

Th.

Clematis orientalis L.

Yozgat: Aydıncık, Kazankaya Geçidi, Kebap Kayası, 650 m, in scrub, 27 viii 1998, A.Duran 4381.

Ph.

Adonis flammea Jacq.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 700 m, stony places, 16 vii 1999, A.Duran 5596.

Th.

Ranunculus damascenus Boiss. & Gaill.

Yozgat: Aydıncık, Kazankaya Geçidi, around the Kebap Kayası district, 600 m, wet places, 13 v 2000, A.Duran 5050.

Ir.-Tur. el., H.

R. oxyspermus Willd.

Yozgat: Aydıncık, Kazankaya Geçidi, Kebap Kayası, 600 m, stony slopes, 13 v 2000, A.Duran 5049.

H.

Thalictrum minus L. var. *majus* (Crantz) Crép.

Yozgat: Aydıncık, Kazankaya Geçidi, Kebap Kayası, 600 m, wet places, 13 v 2000, A.Duran 4908.

H.

BERBERIDACEAE

Berberis crataegina DC.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, in scrub, 6 x 1998, A.Duran 4371.

Ph.

PAPAVERACEAE

Papaver dubium L.

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, open places, 28 vi 2000, A.Duran 5389.

Th.

Hypocoum imberbe Sibth. & Sm.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 13 v 2000, A.Duran 5099.

Th.

Fumaria asepsala Boiss.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 650 m, open scrub, 13 v 2000, A.Duran 5095.

Ir.-Tur. el., Th.

CRUCIFERAE (Brassicaceae)

Calepina irregularis (Asso) Thell.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, open slopes, 13 v 2000, A.Duran 5063-A.

Th.

Conringia planisiliqua Fisch. & C.A.Mey.

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, rocky slopes, 28 vi 2000, A.Duran 5406.

Ir.-Tur. el., Th.

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

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, open places, 6 x 1998, observation.

H.

***Isatis cappadocica** Desv. subsp. *cappadocica*

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, screes, 28 vi 2000, A.Duran 5432.

Ir.-Tur. el., H.

Aethionema arabicum (L.) Andr. ex DC.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 13 v 2000, A.Duran 5066.

Th.

Thlaspi perfoliatum L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, open scrub, 13 v 2000, A.Duran 5111.

Th.

Hutchinsia petraea (L.) R.Br.

Yozgat: Aydıncık, Kazankaya Geçidi, Kebap Kayası, 600 m, stony places, 13 v 2000, A.Duran 5060.

Th.

Capsella bursa-pastoris (L.) Medik.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, open scrub, 6 x 1998, observation.

Th.

Fibigia eriocarpa (DC.) Boiss.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, on rocks, 6 x 1998, A.Duran 4375.

H.

***Alyssum huetii** Boiss.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, steppe, 13 v 2000, A.Duran 5121.

Ir.-Tur. el., endemic, LR (lc), Th.

A. sibiricum Willd.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, steppe, 13 v 2000, A.Duran 5418.

H.

Clypeola jonthlaspi L.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony places, 13 v 2000, A.Duran 5096.

Th.

Draba rigida Willd. var. *rigida*

Yozgat: Aydıncık, south of Kazankaya Canyon, 13 v 2000, limestone rock crevices, 650 m, A.Duran 4395.

Endemic, LR (lc), H.

Arabis caucasica Willd. subsp. *caucasica*

Yozgat: Aydıncık, south of Kazankaya Canyon, 650 m, limestone rock crevices, 13 v 2000, A.Duran 5133.

H.

Matthiola longipetala (Vent.) DC. subsp. *longipetala*

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, open scrub, 13 v 2000, observation.

Th.

Hesperis bicuspidata (Willd.) Poir.

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, stony places, 28 vi 2000, A.Duran 5361.

H.

***Sobolewsia clavata** (Boiss.) Fenzl

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony slopes, 13 v 2000, A.Duran 4896.

H.

Sisymbrium orientale L.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, open places, 13 v 2000, A.Duran 5088.

Th.

S. loeselii L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, rocky slopes, 28 vi 2000, A.Duran 5433.

Th.

RESEDACEAE

Reseda lutea L. var. *lutea*

Yozgat: Aydıncık, Kazankaya Geçidi, 750 m, stony places, 16 vii 1999, A.Duran 4917.

H.

CISTACEAE

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

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 700 m, open scrub, 13 v 2000, A.Duran 5101.

H.

VIOLACEAE

Viola alba Besser subsp. *alba*

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, open scrub, 13 v 2000, A.Duran 5070.

H.

V. kitaibeliana Roem. & Schult.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony slopes, 13 v 2000, A.Duran 5075.

Th.

POLYGALACEAE

Polygala pruinosa Boiss. subsp. *pruinosa*

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, limestone rock crevices, 16 vii 1999, A.Duran 5129.

H.

CARYOPHYLLACEAE

Arenaria kotcshyana Fenzl subsp. *stenophylla* (Bornm.) McNeill

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, limestone rock crevices, 28 vi 2000, A.Duran 5460.

Endemic, CR, H.

Our specimens have inflorescences with 1-5 flowers. It is with 1 (-3) flowers in the Flora of Turkey (II: 21-22) (Davis, 1966).

A. serpyllifolia L.

Yozgat: Aydıncık, Kazankaya Geçidi, 750 m, stony places, 16 vii 1999, A.Duran 4895.

Th.

***A. leptocladus** (Rchb.) Guss.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, open scrub, 13 v 2000, A.Duran 5104.

Th.

Minuartia juniperina (L.) Maire & Petitm.

Yozgat: Aydıncık, south of Kazankaya Canyon, 650 m, rocky slopes, 13 v 2000, A.Duran 5058.

H.

M. montana L. subsp. *wiesneri* (Stapf) McNeill

Yozgat: Aydıncık, Kazankaya Geçidi, 750 m, rocky slopes, 16 vii 1999, A.Duran 4899.

Ir.-Tur. el., Th.

M. sclerantha (Fisch & C.A.Mey.) Thell.

Yozgat: Aydıncık, Kazankaya Geçidi, around the Değirmenler district, 650 m, steppe, 16 vii 1998, A.Duran 5598.

Ir.-Tur. el., Th.

M. hamata (Hausskn.) Mattf.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, open places, 16 vii 1999, A.Duran 5600.

Th.

M. anatolica (Boiss.) Woronow var. **polymorpha** McNeill

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 6 x 1998, A.Duran 4403.

H.

***M. mesogitana** (Boiss.) Hand.-Mazz. subsp. **mesogitana**

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 13 v 2000, A.Duran 5059.

E. Medit. el., Th.

Holosteum umbellatum L. var. **umbellatum**

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 700 m, open places, 13 v 2000, A.Duran 5069.

Th.

Telephium imperati L. subsp. **orientale** (Boiss.) Nyman

Yozgat: Aydıncık, Kazankaya Geçidi, around the Değirmenler district, 650 m, stony places, 16 vii 1998, A.Duran 4372.

Th.

***Dianthus floribundus** Boiss.

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, stony places, 28 vi 2000, A.Duran 5339.

Ir.-Tur. el., H.

D. zonatus Fenzl var. **zonatus**

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, limestone rock crevices, 16 vii 1999, A.Duran 4909.

H.

D. zonatus Fenzl var. **aristatus** (Boiss.) Reeve

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 6 x 1998, A.Duran 4405.

H.

Velezia rigida L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 750 m, open places, 16 vii 1999, A.Duran 4923.

Th.

Saponaria prostrata Willd. subsp. **prostrata**

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, stony places, 28 vi 2000, A.Duran 5378.

Endemic, Ir.-Tur. el., LR (lc), H.

***Gypsophila sphaerocephala** Fenzl ex Tchich. var. **cappadocica** Boiss.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, limestone rock crevices, 16 vii 1999, A.Duran 4906.

Endemic, Ir.-Tur. el., LR (lc), H.

Silene chlorifolia Sm.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 700 m, open scrub, 16 vii 1999, A.Duran 5430.

H.

S. spergulifolia (Desf.) M.Bieb.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, open places, 6 x 1998, A.Duran 4397.

Ir.-Tur. el., H.

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

Yozgat: Aydıncık, south of Kazankaya Canyon, 700 m, stony places, 28 vi 2000, A.Duran 5081.

H.

S. conica L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 650 m, open places, 13 v 2000, A.Duran 5051.

Th.

ILLECEBRACEAE

Herniaria incana Lam.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony places, 16 vii 1999, A.Duran 5603.

H.

Paronychia kurdica Boiss. subsp. **kurdica** var. **kurdica**

Yozgat: Aydıncık, Kazankaya Geçidi, around the Değirmenler district, 750 m, rocky places, 16 vii 1998, A.Duran 5585.

H.

POLYGONACEAE

Polygonum lapathifolium L.

Yozgat: Aydıncık, south of Kazankaya Canyon, 650 m, stony places, 6 x 1998, A.Duran 4410.

Th.

Rumex acetosella L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, streamside, 16 vii 1999, A.Duran 5601.

H.

CHENOPODIACEAE

Chenopodium botrys L.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, open places, 6 x 1998, A.Duran 4388.

Th.

Noaea mucronata (Forssk.) Asch. & Schweinf. subsp. **mucronata**

Yozgat: Aydıncık, south of Kazankaya Canyon, 650 m, steppe, 6 x 1998, A.Duran 4404.

H.

AMARANTHACEAE

Amaranthus retroflexus L.

Yozgat: Aydıncık, south of Kazankaya Canyon, 650 m, waste ground, 6 x 1998, A.Duran 4385.

Th.

***A. blitoides** S.Watson

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 600 m, waste places, 6 x 1998, A.Duran 4386.

Th.

TAMARICACEAE

Tamarix smyrnensis Bunge

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, streamside, 6 x 1998, A.Duran 4373.

Ph.

GUTTIFERAE (Hypericaceae)***Hypericum lydium* Boiss.**

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, stony places, 28 vi 2000, A.Duran 5359.

H.

H. aviculariifolium* Jaub. & Spach subsp. *depilatum* (Frey & Bornm.) Robson var. *depilatum

Yozgat: Aydıncık, south of Kazankaya Canyon, 700 m, rocky places, 28 vi 2000, A.Duran 5072.

Endemic, Ir.-Tur. el., LR (lc), H.

MALVACEAE***Malva neglecta* Wallr.**

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, steppe, 6 x 1998, observation.

Th.

***Althea hirsuta* L.**

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, open places, 28 vi 2000, A.Duran 5341.

Th.

GERANIACEAE***Geranium rotundifolium* L.**

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, open places, 13 v 2000, A.Duran 5102.

Th.

***G. pyrenaicum* Burm.**

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, open scrub, 13 v 2000, A.Duran 5468.

H.

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

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 600 m, open scrub, 28 vi 2000, A.Duran 5436.

Th.

ZYGOPHYLLACEAE***Peganum harmala* L.**

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, waste ground, 16 vii 1999, observation.

H.

RUTACEAE***Haplophyllum armenum* Spach**

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, dry rocky slopes, 13 v 2000, A.Duran 5073.

Endemic, LR (lc), H.

VITACEAE (Ampelidaceae)***Vitis sylvestris* C.C.Gmel.**

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, climbing over trees near water, 6 x 1998, observation.

Ph.

RHAMNACEAE***Paliurus spina-christi* Mill.**

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, in scrub, 13 v 2000, observation.

Ph.

***Rhamnus catharticus* L.**

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, in scrub, 28 vi 2000, A.Duran 5376.

Euro-Sib. el., Ph.

***R. rhodopeus* Velen. subsp. *anatolicus* (Grub.) Browicz & Ziel.**

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, rocky places, 28 vi 2000, A.Duran 5135.

Ph.

ANACARDIACEAE***Rhus coriaria* L.**

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 6 x 1998, 600 m, stony places, observation.

Ph.

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

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, in scrub, 6 x 1998, A.Duran 4370.

E. Medit. el., Ph.

CELASTRACEAE***Euonymus verrucosus* Scop.**

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, in scrub, 28 vi 2000, A.Duran 5371.

Ph.

LEGUMINOSAE (Fabaceae)***Colutea cilicica* Boiss. & Balansa**

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, in scrub, 28 vi 2000, A.Duran 5373.

Ph.

****Astragalus sesameus* L.**

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, open places, 13 v 2000, A.Duran 5115.

Medit. el., Th.

***A. hamosus* L.**

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, open scrub, 13 v 2000, A.Duran 5109.

Th.

***A. micropterus* Fisch.**

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, open slopes, 6 x 1998, A.Duran 4418.

Endemic, Ir.-Tur. el., LR (lc), Ch.

***A. squalidus* Boiss. & Noë**

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, calcareous steppe, 28 vi 2000, A.Duran 5338.

H.

***Psoralea bituminosa* L.**

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, scrub, 28 vi 2000, A.Duran 5416.

Medit. el., H.

***Vicia ervilia* (L.) Willd.**

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 600 m, open places, 13 v 2000, A.Duran 5086.

Th.

***Lathyrus setifolius* L.**

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, stony places, 13 v 2000, A.Duran 5080.

Medit. el., Th.

***Pisum sativum* L. subsp. *sativum* var. *arvense* (L.) Poir.**

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, stony places, 13 v 2000, A.Duran 5126.

Th.

Trigonella spruneriana Boiss. var. *spruneriana*

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, steppe, 13 v 2000, A.Duran 5092,

Ir.-Tur. el., Th.

T. monspeliaca L.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony slopes, 13 v 2000, A.Duran 5399.

Medit. el., Th.

T. spicata Sibth. & Sm.

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, open places, 28 vi 2000, A.Duran 5398.

E. Medit. el., Th.

Medicago sativa L. var. *sativa*

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, stony places, 6 x 1998, A.Duran 4417.

H.

M. minima (L.) Bartal. var. *minima*

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, steppe, 13 v 2000, A.Duran 5098.

Th.

Coronilla scorpioides (L.) Koch

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, open scrub, 13 v 2000, A.Duran 5122.

Th.

C. varia L. subsp. *varia*

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, open places, 16 vii 1999, A.Duran 4912.

H.

Hippocrepis unisiliquosa L. subsp. *unisiliquosa*

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, open places, 28 vi 2000, A.Duran 5388.

Th.

***Hedysarum pestalozzae** Boiss.

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, stony places, 28 vi 2000, A.Duran 5395.

Endemic, Ir.-Tur. el., LR (lc), H.

ROSACEAE

Prunus divaricata Ledeb. subsp. *divaricata*

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, in scrub, 13 v 2000, A.Duran 5139.

Ph.

Cerasus prostrata (Labill.) Ser. var. *prostrata*

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 6 x 1998, A.Duran 4407.

Medit. el., Ch.

***Rubus caesius** L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, streamside, 16 vii 2000, A.Duran 5602.

Ph.

R. sanctus Schreb.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, banks of rivers, 6 x 1998, A.Duran 4368.

Ph.

Potentilla recta L.

Yozgat: Aydıncık, south of Kazankaya Canyon, 650 m, wet places, 6 x 1998, A.Duran 5431.

H.

Geum urbanum L.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, shady places, 13 v 2000, observation.

Euro-Sib. el., H.

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

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, open places, 13 v 2000, A.Duran 5087.

H.

Rosa foetida Herrm.

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, in scrub, 28 vi 2000, A.Duran 5374.

Ir.-Tur. el., Ph.

R. horrida Fisch.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, in scrub, 6 x 1998, A.Duran 5470.

Ph.

***Cotoneaster integerrimus** Medik.

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, in scrub, 28 vi 2000, A.Duran 5377.

Ph.

C. nummularia Fisch. & C.A.Mey.

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, rocky places, 16 vii 1999, A.Duran 4901, 5142.

Ph.

Crataegus monogyna Jacq. subsp. *monogyna*

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, near scrub, 6 x 1998, A.Duran 4367.

Ph.

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

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, rocky places, 28 vi 2000, A.Duran 5372.

Ph.

CRASSULACEAE

Sedum acre L.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony places, 13 v 2000, A.Duran 5065.

Ch.

S. album L.

Yozgat: Aydıncık, Kazankaya Geçidi, around the Değirmenler district, 650 m, rocky slopes, 16 vii 1998, A.Duran 5580.

Ch.

S. hispanicum L. var. *hispanicum*

Yozgat: Aydıncık, Kazankaya Geçidi, around the Değirmenler district, 650 m, rocky slopes, 16 vii 1998, A.Duran 5581.

Th.

UMBELLIFERAE (Apiaceae)

Anthriscus nemorosa (M.Bieb.) Spreng.

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, stony places, 28 vi 2000, A.Duran 5363.

H.

A. cerefolium (L.) Hoffm.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, limestone rock crevices, 28 vi 2000, A.Duran 5425.

Th.

A. caucalis M.Bieb.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 600 m, shady rocks, 13 v 2000, A.Duran 5061.

Th.

Scandix stellata Banks & Sol.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, stony places, 13 v 2000, A.Duran 5077.

Th.

***S. aucheri** Boiss.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, steppe, 28 vi 2000, A.Duran 5423.

Ir.-Tur. el., Th.

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

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, rocky slopes, 13 v 2000, A.Duran 5348.

G.

Bupleurum rotundifolium L.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, steppe, 28 vi 2000, A.Duran 5400.

Th.

Johrenia tortuosa (Fisch. & C.A.Mey.) D.F.Chamb.

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, open scrub, 28 vi 2000, A.Duran 5362.

H.

Malabaila secacul Banks & Sol.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, stony places, 16 vii 1999, A.Duran 5604.

H.

Zosima absinthifolia (Vent.) Link

Yozgat: Aydıncık, north-west of Kazankaya Canyon, 1000 m, limestone rock crevices, 28 vi 2000, A.Duran 5352.

H.

***Torilis japonica** (Houtt.) DC.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, open slopes, 16 vii 1999, A.Duran 5586.

Th.

T. leptophylla (L.) Rchb.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony slopes, 28 vi 2000, A.Duran 5426.

Th.

Turgeniopsis foeniculacea (Fenzl) Boiss.

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, open places, 28 vi 2000, A.Duran 5393.

Th.

Caucalis platycarpus L.

Yozgat: Aydıncık, Kazankaya Geçidi, 850 m, open places, 28 vi 2000, A.Duran 5394.

Th.

Daucus carota L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, slopes, 16 vii 1999, A.Duran 5587.

Th.

ARALIACEAE**Hedera helix** L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, creeping on the ground, 16 vii 1999, observation.

Ph.

CAPRIFOLIACEAE**Lonicera etrusca** Santi var. **etrusca**

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, in scrub, 28 vi 2000, observation.

Medit. el., Ph.

VALERIANACEAE**Valeriana dioscoridis** Sm.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony slopes, 13 v 2000, A.Duran 5082.

E. Medit. el., H.

Centranthus longiflorus Stev. subsp. **longiflorus**

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony places, 28 vi 2000, A.Duran 4414.

Ir.-Tur. el., H.

C. calcitrapa (L.) Dufur.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, rocky places, 28 vi 2000, A.Duran 5452.

Medit. el., Th.

DIPSACACEAE

Scabiosa columbaria L. subsp. **ochroleuca** (L.) Čelak. var. **ochroleuca** (L.) Coult.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 700 m, stony places, 16 vii 1999, A.Duran 4882.

H.

S. rotata M.Bieb.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, steppe, 28 vi 2000, A.Duran 5605.

Ir.-Tur. el., Th.

COMPOSITAE (Asteraceae)

***Xanthium strumarium** L. subsp. **cavanillesii** (Schouw) D.Löve & Dans.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, open places, 6 x 1998, A.Duran 4383.

Th.

Inula montbretiana DC.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony slopes, 28 vi 2000, A.Duran 5444.

Ir.-Tur. el., H.

I. thapsoides (M.Bieb. ex Willd.) Spreng. subsp. **thapsoides**

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, open places, 16 vii 1999, A.Duran 4245.

H.

***I. aschersoniana** Janka

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, limestone rock crevices, 28 vi 2000, A.Duran 5466.

LR (lc), H.

Logfia arvensis (L.) Holub

Yozgat: Aydıncık, Kazankaya Geçidi, 850 m, stony places, 16 vii 1999, A.Duran 4893.

Th.

Conyza canadensis (L.) Cronquist

Yozgat: Aydıncık, K.C. Geçidi, 750 m, wet places, 6 x 1998, A.Duran 4411.

Th.

- Senecio vernalis** Waldst. & Kit.
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, stony slopes, 28 vi 2000, observation.
Th.
- Anthemis cretica** L. subsp. **tenuiloba** (DC.) Grierson
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, open slopes, 16 vii 1999, A.Duran 5595.
H.
- A. cotula** L.
Yozgat: Aydıncık, Kazankaya Geçidi, 850 m, open places, 16 vii 1999, A.Duran 4888.
Th.
- A. tinctoria** L. var. **discoidea** (All.) DC.
Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony slopes, 28 vi 2000, A.Duran 5403.
H.
- Achillea biebersteinii** Afan.
Yozgat: Aydıncık, south-east of Kazankaya Canyon, 800 m, steppe, 16 vii 1999, A.Duran 5384.
Ir.-Tur. el., H.
- *Tanacetum albipannosum** Hub.-Mor. & Grierson
Yozgat: Aydıncık, north of Kazankaya Canyon, 1100 m, rocky places, 28 vi 2000, A.Duran 5344.
H.
- Tripleurospermum elongatum** (Fisch. & C.A.Mey.) Bornm.
Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, open slopes, 13 v 2000, A.Duran 5119.
H.
- Artemisia scoparia** Waldst. & Kit.
Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, steppe, 6 x 1998, A.Duran 4412.
H.
- Picnemon acarna** (L.) Cass.
Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony places, 28 vi 2000, observation.
Medit. el., Th.
- Carduus nutans** L. subsp. **leiophyllus** (Peterm.) Stoj. & Stef.
Yozgat: Aydıncık, Kazankaya Geçidi, around the Değirmenler district, 650 m, rocky places, 16 vii 1998, A.Duran 5594.
H.
- Centaurea solstitialis** L. subsp. **solstitialis**
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, open scrub, 13 v 2000, observation.
Th.
- C. iberica** Trev. ex Spreng.
Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, open places, 28 vi 2000, observation.
H.
- C. urvillei** DC. subsp. **urvillei**
Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, limestone rock crevices, 28 vi 2000, A.Duran 5462.
E. Medit. el., H.
- C. urvillei** DC. subsp. **armata** Wagenitz
Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, limestone rock crevices, 28 vi 2000, A.Duran 5446.
E. Medit. el., H.
- C. virgata** Lam.
Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, steppe, 6 x 1998, A.Duran 4377.
H.
- Crupina crupinastrum** (Moris) Vis.
Yozgat: Aydıncık, Kazankaya, 650 m, steppe, 28 vi 2000, observation.
Th.
- Xeranthemum annuum** L.
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, steppe, 16 vii 1999, A.Duran 5593.
Th.
- Echinops pungens** Trautv. var. **pungens**
Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, open scrub, 28 vi 2000, A.Duran 5386.
Ir.-Tur. el., H.
- Scolymus hispanicus** L.
Yozgat: Aydıncık, Kazankaya Geçidi, 850 m, open scrub, 16 vii 1999, A.Duran 4881.
Medit. el., H.
- Leontodon crispus** Vill. subsp. **asper** (Waldst. & Kit.) Rohlena, var. **asper**
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 600 m, stony places, 28 vi 2000, A.Duran 5442.
H.
- Picris strigosa** M.Bieb. subsp. **strigosa**
Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, steppe, 6 x 1998, A.Duran 4393.
Ir.-Tur. el., H.
- Reichardia glauca** Matthews
Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, steppe, 6 x 1998, A.Duran 4396.
Ir.-Tur. el., H.
- Hieracium reductum** Freyn & Sint.
Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, limestone rock crevices, 16 vii 1999, A.Duran 4904.
Endemic, LR (cd), H.
- Pilosella x auriculoides** (Láng) Sell & West
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 700 m, open scrub, 28 vi 2000, A.Duran 5449.
H.
- Steptorhamphus tuberosus** (Jacq.) Grossh.
Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, rocky places, 28 vi 2000, A.Duran 5428.
H.
- Scariola viminea** (L.) F.W.Schmidt
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, stony places, 6 x 1998, A.Duran 4422.
H.
- Mycelis muralis** (L.) Dumort.
Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, shady rock ledges, 28 vi 2000, A.Duran 5464.
Euro-Sib. el., H.

- Chondrilla juncea** L. var. *juncea*
Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, rocky places, 6 x 1998, A.Duran 4420.
H.
- Crepis alpina** L.
Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, steppe, 28 vi 2000, A.Duran 5343.
Th.
- C. foetida** L. subsp. *rhoaedifolia* (M.Bieb.) Çelak.
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, open slopes, 16 vii 1999, A.Duran 5472.
Th.
- C. sancta** (L.) Babç.
Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony places, 13 v 2000, A.Duran 5056.
Th.
- CAMPANULACEAE**
- Campanula involuocrata** Aucher ex A.DC.
Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, stony places, 28 vi 2000, A.Duran 5351.
Ir.-Tur. el., H.
- Asyneuma limonifolium** (L.) Janch. subsp. *limonifolium*
Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, rocky slopes, 28 vi 2000, A.Duran 5342.
H.
- A. virgatum** (Labill.) Bornm. subsp. *virgatum*
Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, rocky slopes, 28 vi 2000, A.Duran 5401.
H.
- Legousia pentagonia** (L.) Thell.
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, open scrub, 16 vii 1999, A.Duran 5590.
E. Medit. el., Th.
- PRIMULACEAE**
- Androsae maxima** L.
Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, rocky places, 28 vi 2000, observation.
Th.
- Cyclamen coum** Mill., var. *coum*
Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony ground under scrub, 13 v 2000, A.Duran 5074.
G.
- OLEACEAE**
- Jasminum fruticans** L.
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 600 m, in scrub, 28 vi 2000, observation.
Medit. el., Ph.
- APOCYNACEAE**
- Vinca herbacea** Waldst. & Kit.
Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, stony places, 13 v 2000, A.Duran 5131.
Ch.
- ASCLEPIADACEAE**
- Vincetoxicum fuscum** (Hornem.) Rchb.f. subsp. *fuscum*
Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, stony places, 28 vi 2000, A.Duran 5350.
H.
- CONVOLVULACEAE**
- Convolvulus cantabrica** L.
Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, open places, 28 vi 2000, A.Duran 5391.
H.
- C. arvensis** L.
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, open scrub, 16 vii 1999, A.Duran 5357.
H.
- BORAGINACEAE**
- Heliotropium europaeum** L.
Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony places, 6 x 1998, A.Duran 4391.
Th.
- Lappula barbata** (M.Bieb.) Gürke
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, stony places, 16 vii 1999, A.Duran 5588.
H.
- Rochelia disperma** (L.f.) C. Koch var. *disperma*
Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, steppe, 13 v 2000, A.Duran 5143-A.
Th.
- Myosotis ramosissima** Rochel ex Schult. subsp. *ramosissima*
Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, open places, 13 v 2000, A.Duran 5143-B.
Th.
- M. sicula** Guss.
Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, wet places, 13 v 2000, A.Duran 5084.
Th.
- Cynoglossum officinale** L.
Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony places, 13 v 2000, A.Duran 5063-B.
Euro-Sib. el., H.
- Echium italicum** L.
Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, stony slopes, 16 vii 1999, A.Duran 5589.
Medit. el., H.
- Onosma isaauricum** Boiss. & Heldr.
Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, rocky slopes, 13 v 2000, A.Duran 5136.
Endemic, Ir.-Tur. el., LR (lc), H.
- Anchusa leptophylla** Roem. & Schult. subsp. *incana* (Ledeb.) D.F.Chamb.
Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, rocky slopes, 6 x 1998, A.Duran 5379.
Endemic, Ir.-Tur. el., LR (lc), H.
- A. pusilla** Guşul.
Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, open places, 13 v 2000, A.Duran 5120.
Th.
- Nonea caspica** (Willd.) G.Don
Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, stony places, 13 v 2000, A.Duran 4920.
Ir.-Tur. el., Th.

N. stenosolen Boiss. & Balansa

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, rocky places, 13 v 2000, A.Duran 5108.

Endemic, Ir.-Tur. el., LR (lc), H.

Alkana orientalis (L.) Boiss. var. **orientalis**

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 600 m, steppe, 6 x 1998, A.Duran 4392-B.

H.

SCROPHULARIACEAE

Verbascum orientale (L.) All.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony places, 13 v 2000, A.Duran 5053.

E. Medit. el., Th.

V. glomeratum Boiss.

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, steppe, 28 vi 2000, A.Duran 5385.

Ir.-Tur. el., H.

***V. splendidum** Boiss.

Yozgat: Aydıncık, Kazankaya Geçidi, 800 m, near scrub, 16 vii 1999, A.Duran 4897.

Endemic, E. Medit. el., LR (lc), H.

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

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 650 m, limestone rock crevices, 13 v 2000, A.Duran 557.

H.

S. libanotica Boiss. subsp. **libanotica** var. **pontica** R.Mill.

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, limestone rock crevices, 28 vi 2000, A.Duran 5383.

Ir.-Tur. el., H.

S. xanthoglossa Boiss. var. **decipiens** (Boiss. & Kotschy) Boiss.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony slopes, 13 v 2000, A.Duran 5137.

Ir.-Tur. el., H.

Anarrhinum orientale Benth.

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, limestone rock crevices, 16 vii 1999, A.Duran 4389.

Ir.-Tur. el., H.

Linaria corifolia Desf.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around the Uzungeçit district, 650 m, steppe, 13 v 2000, A.Duran 5417.

Endemic, Ir.-Tur. el., LR (lc), H.

L. simplex (Willd.) DC.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony places, 13 v 2000, A.Duran 5052.

Medit. el., Th.

Digitalis lamarckii Ivan.

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, open scrub, 16 vii 1999, A.Duran 4926.

Endemic, Ir.-Tur. el., LR (lc), H.

***Veronica praecox** All.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, rocky slopes, 13 v 2000, A.Duran 5105-A.

Th.

V. hederifolia L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, shady places, 13 v 2000, A.Duran 5105-B.

Th.

V. multifida L.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, stony places, 13 v 2000, A.Duran 5113.

Endemic, Ir.-Tur. el., LR (lc), Ch.

GLOBULARIACEAE

Globularia orientalis L.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, steppe, 13 v 2000, observation.

Ir.-Tur. el., Ch.

G. trichosantha Fish. & C.A.Mey. subsp. **trichosantha**

Yozgat: Aydıncık, Kazankaya Geçidi, around the Değirmenler district, 650 m, grassy slopes, 16 vii 1998, A.Duran 5584.

H.

LABIATAE (Lamiaceae)

Teucrium chamaedrys L. subsp. **syspirense** (C.Koch) Rech.f.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 6 x 1998, A.Duran 4408.

Ir.-Tur. el., Ch.

T. polium L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, steppe, 13 v 2000, observation.

H.

***Scutellaria rubicunda** Hornem subsp. **brevibracteata** (Stapf) J.R.Edm.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony places, 28 vi 2000, A.Duran 5434.

Endemic, E. Medit. el., LR (lc), H.

S. salviifolia Benth.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, open places, 13 v 2000, A.Duran 5090.

Endemic, LR (lc), H.

S. orientalis L. subsp. **pinnatifida** J.R.Edm.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, rocky slopes, 13 v 2000, A.Duran 5132.

Ch.

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

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, limestone rock crevices, 28 vi 2000, A.Duran 5465.

H.

L. amplexicaule L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, waste ground, 13 v 2000, A.Duran 5100.

Euro-Sib. el., Th.

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

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, shady scrub, 28 vi 2000, A.Duran 4415.

Euro-Sib. el., H.

Marrubium globosum Montbret & Aucher ex Benth. subsp. **globosum**

Yozgat: Aydıncık, Kazankaya, 650 m, open places, 13 v 2000, A.Duran 5138.

Endemic, Ir.-Tur. el., LR (lc), Ch.

Sideritis montana L. subsp. **montana**

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, steppe, 13 v 2000, A.Duran 5064.

Medit. el., Th.

Stachys iberica M.Bieb. subsp. **stenostachya** (Boiss.) Rech.f.

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, stony slopes, 28 vi 2000, A.Duran 5392.

Ir.-Tur. el., Th.

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

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, rocky places, 16 vii 1998, A.Duran 5597.

H.

N. fissa C.A.Mey.

Yozgat: Aydıncık, south of Kazankaya Canyon, 650 m, screes, 6 x 1998, A.Duran 4399.

Ir.-Tur. el., H.

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

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, in scrub, 28 vi 2000, A.Duran 5463.

H.

Acinos rotundifolius Pers.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, steppe, 13 v 2000, observation.

Th.

Micromeria myrtifolia Boiss. & Hohen

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, rocky places, 6 x 1998, A.Duran 5387.

E. Medit. el., Ch.

M. cristata (Hampe) Griseb. subsp. **cristata**

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, rock crevices, 6 x 1998, A.Duran 4379.

Medit. (mt.) el., Ch.

Calyces (c. 2.5 mm long versus 3-6 mm long) and corollas (c. 4 mm long versus 5-11 mm long) of the specimens above are shorter than those in the Flora of Turkey (VII: 344-346) (Davis, 1982).

Thymus leucotrichus Hal. var. **leucotrichus**

Yozgat: Aydıncık, south of Kazankaya Canyon, 650 m, limestone rock crevices, 6 x 1998, A.Duran 4401.

E. Medit. el., Ch

Ziziphora capitata L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, steppe, 13 v 2000, observation.

Ir.-Tur. el., Th.

Z. tenuior L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, steppe, 16 vii 1999, A.Duran 4887.

Ir.-Tur. el., Th.

Salvia tomentosa Mill.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, open scrub, 6 x 1998, A.Duran 5448.

Medit. el., H.

S. viridis L.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, stony slopes, 13 v 2000, A.Duran 5128.

Medit. el., Th.

S. virgata Jacq.

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, near scrub, 16 vii 1999, A.Duran 4921.

Ir.-Tur. el., H.

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

Yozgat: Aydıncık, Kazankaya Geçidi, 800 m, stony places, 16 vii 1999, A.Duran 4880.

Ir.-Tur. el., H.

PLUMBAGINACEAE

Plumbago europaea L.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, waste ground, 6 x 1998, A.Duran 4421.

Euro-Sib. el., H.

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

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, rocky slopes, 6 x 1998, A.Duran 4891.

Ir.-Tur. el., Ch.

PLANTAGINACEAE

Plantago lanceolata L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, streamside, 16 vii 1999, A.Duran 4894.

H.

P. scabra Moench

Yozgat: Aydıncık, Kazankaya Geçidi, 750 m, rocky slopes, 16 vii 1999, A.Duran 4892.

Th.

Our specimens have stems with hirsute and glandular-pubescent hairs. It is with hirsute and not with glandular-pubescent hairs in the Flora of Turkey (VII: 518-519) (Davis, 1982).

ELAEAGNACEAE

Elaeagnus angustifolia L.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, in scrub, 6 x 1998, A.Duran 4380.

Ph.

EUPHORBIACEAE

Andrachne telephioides L.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, screes, 6 x 1998, A.Duran 4409.

H.

Chrozophora tinctoria (L.) Raf.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 6 x 1998, A.Duran 4413.

Th.

Mercurialis annua L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, open places, 16 vii 1999, A.Duran 5110.

Th.

***Euphorbia rhabdotosperma** Radcl.-Sm.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, rocky slopes, 13 v 2000, A.Duran 5103.

Ir.-Tur. el., Th.

E. ledebourii Boiss.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony places, 13 v 2000, A.Duran 5089.

Th.

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

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, open places, 28 vi 2000, A.Duran 5396.

Th.

E. herniariifolia Willd. var. *herniariifolia*

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, limestone rock crevices, 28 vi 2000, A.Duran 5412.

H.

E. virgata Waldst. & Kit.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, rocky slopes, 13 v 2000, A.Duran 5141.

H.

URTICACEAE

Parietaria judaica L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 550 m, limestone rock crevices, 13 v 2000, A.Duran 5410.

H.

P. lusitanica L.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, limestone rock crevices, 6 x 1998, A.Duran 5435.

Medit. el., Th.

MORACEAE

Ficus carica L. subsp. *carica*

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, stony slopes, 13 v 2000, observation.

Ph.

ULMACEAE

Celtis australis L.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 6 x 1998, A.Duran 4419.

Medit. el., Ph.

PLATANACEAE

Platanus orientalis L.

Yozgat: Aydıncık, Kazankaya Canyon, 600 m, streamside, 16 vii 1998, observation.

Ph.

FAGACEAE

Quercus pubescens Willd.

Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, in scrub, 28 vi 2000, A.Duran 5368.

Ph.

***Q. trojana** Webb

Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, in scrub, 28 vi 2000, A.Duran 5567.

E. Medit. el., Ph.

RUBIACEAE

Sherardia arvensis L.

Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, open scrub, 28 vi 2000, A.Duran 5345.

Medit. el., Th.

Crucianella bithynica Boiss.

Yozgat: Aydıncık, south of Kazankaya Canyon, 850 m, near scrub, 28 vi 2000, A.Duran 5390.

E. Medit. el., Th.

***C. exasperata** Fisch. & C.A.Mey.

Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, stony slopes, 28 vi 2000, A.Duran 5347.

Ir.-Tur. el., Th.

Asperula arvensis L.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, open places, 13 v 2000, A.Duran 5062.

Medit. el., Th.

Galium palustre L.

Yozgat: Aydıncık, Kazankaya, 600 m, wet places, 6 x 1998, A.Duran 4394.

Euro-Sib. el., H.

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

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, stony places, 16 vii 1999, A.Duran 5439.

Ir.-Tur. el., H.

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

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, rocky slopes, 28 vi 2000, A.Duran 5411.

H.

G. fissurense Ehrend. & Schönb.-Tem.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, stony places, 28 vi 2000, A.Duran 5451.

Endemic, Euxine el., LR (lc), H.

G. paschale Forssk.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, open scrub, 13 v 2000, A.Duran 5112.

E. Medit. (mt.) el., H.

G. incanum Sm. subsp. *elatus* (Boiss.) Ehrend.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, stony places, 16 vii 1998, A.Duran 5582, 5583.

Ir.-Tur. el., H.

G. spurium L. subsp. *spurium*

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, open scrub, 28 vi 2000, A.Duran 5437.

Euro-Sib. el., Th.

G. aparine L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, around Kaya Kabartması, 550 m, open scrub, 28 vi 2000, A.Duran 5360.

Th.

Cruciata taurica (Pall. ex Willd.) Ehrend.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, rocky slopes, 16 vii 1998, A.Duran 5579.

Ir.-Tur. el., H.

MONOCOTYLEDONES

LILIACEAE

Asparagus officinalis L.

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, in scrub, 28 vi 2000, A.Duran 5471.

G.

Allium paniculatum L. subsp. *paniculatum*

Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, rocky places, 28 vi 2000, A.Duran 5415.

G.

Our specimens have the periant segments yellowish and 3-3.5 mm long. It is with pink, white, whitish, greenish-white or pale

greenish periant segments 4-5 mm long in the Flora of Turkey (VIII: 172-174) (Davis, 1984).

**A. flavum* L. subsp. *tauricum* (Besser ex Rchb.) Stearn var. *tauricum*

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, stony places, 28 vi 2000, A.Duran 5473.

Medit. el., G.

**Ornithogalum nivale* Boiss.

Yozgat: Aydıncık, south of Kazankaya Canyon, 600 m, open places, 13 v 2000, A.Duran 5094.

E. Medit. el., G.

Muscari neglectum Guss.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 650 m, wet places, 13 v 2000, A.Duran 5124.

G.

GRAMINEAE (Poaceae)

Brachypodium sylvaticum (Huds.) P.Beauv.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, stony slopes, 16 vii 1999, A.Duran 4902.

Euro-Sib. el., H.

**Elymus lazicus* (Boiss.) Melderis subsp. *divaricatus* (Boiss. & Balansa) Melderis

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, limestone rock crevices, 28 vi 2000, A.Duran 5405.

Ir.-Tur. el., H.

Aegilops triuncialis L.

Yozgat: Aydıncık, south of Kazankaya Canyon, 700 m, steppe, 13 v 2000, A.Duran 5475.

Th.

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

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, steppe, 16 vii 1998, A.Duran 5592.

Th.

**Bromus commutatus* Schrad.

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, open places, 13 v 2000, A.Duran 5076.

Th.

B. japonicus Thumb. subsp. *japonicus*

Yozgat: Aydıncık, Kazankaya Geçidi, around the Değirmenler district, 650 m, steppe, 16 vii 1998, A.Duran 5591.

Th.

B. sterilis L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, open scrub, 28 vi 2000, A.Duran 5450.

Th.

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

Yozgat: Aydıncık, south of Kazankaya Canyon, 750 m, open scrub, 28 vi 2000, A.Duran 5438-B.

Medit. el., Th.

**Milium vernale* M.Bieb. subsp. *vernale*

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, steppe, 13 v 2000, A.Duran 5093.

Medit. el., Th.

Phleum exaratum Hochst. ex Griseb. subsp. *exaratum*

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, open places, 16 vii 1999, A.Duran 4922.

Th.

Festuca callieri (Hack. ex St.-Yves) Markgr. apud Hayek subsp. *callieri*

Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, steppe, 28 vi 2000, A.Duran 5404.

H.

Vulpia unilateralis (L.) Stace

Yozgat: Aydıncık, Kazankaya Geçidi, around Kebap Kayası, 600 m, stony places, 13 v 2000, A.Duran 5055.

Th.

Poa pratensis L.

Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, rock crevices, 28 vi 2000, A.Duran 5356.

H.

P. bulbosa L.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, steppe, 13 v 2000, observation.

H.

Dactylis glomerata L. subsp. *hispanica* (Roth) Nyman

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 500 m, stony places, 13 v 2000, observation.

H.

Echinaria capitata (L.) Desf.

Yozgat: Aydıncık, south of Kazankaya Canyon, 700 m, stony places, 13 v 2000, observation.

Th.

Melica ciliata L. subsp. *ciliata*

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, stony places, 28 vi 2000, A.Duran 5454.

H.

Stipa bromoides (L.) Dörfel.

Yozgat: Aydıncık, Kazankaya Geçidi, 700 m, limestone rock crevices, 16 vii 1999, A.Duran 5467.

Medit. el., Th.

Piptatherum coerulescens (Desf.) P.Beauv.

Yozgat: Aydıncık, north of Kazankaya Canyon, 1000 m, rocky slopes, 28 vi 2000, A.Duran 5354.

H.

Setaria viridis (L.) P.Beauv.

Çorum: Ortaköy, Kazankaya Canyon, İncesu Geçidi, 600 m, open places, 16 x 1998, A.Duran 4382.

Th.

Pennisetum orientale Rich.

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, dry rocky slopes, 6 x 1998, A.Duran 4423.

Ir.-Tur. el., H.

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

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, steppe, 16 vii 1998, A.Duran 5455.

H.

Bothriochloa ischaemum (L.) Keng

Yozgat: Aydıncık, Kazankaya Geçidi, 650 m, under scrub, 27 viii 1998, A.Duran 4900.

H.