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Flora of Mezra City (Birecik, Şanlıurfa-Turkey)

Vagif Atamov, Mustafa Aslan and Gülşen Ayalp
Department of Biology, Faculty of Sciences and Arts, Harran University, Şanlıurfa, Türkiye

Abstract: This study was aimed to identify the flora of Mezra Beldesi, Birecik, Şanlıurfa between 2003-2004. Fifty-four families, 183 genera and 290 taxa were identified. Eighty-eight taxa (30.3%) are Irano-Turanian, 44 (15.1%) Mediterranean and 6 (2.1%) Euro-Siberian phytogeographic region elements. The remaining 142 (48.9%) taxa are multi-regional and the phytogeographic region of 9 (3.1%) is unknown. The number of endemic taxa 14 (4.8%) and 44 are new floristic records for the square C7.

Key words: Birecik, Mezra, flora

INTRODUCTION

This study was carried out to determine the flora of Mezra city in Birecik (Şanlıurfa). The vegetation of the area has been extensively destroyed by anthropogenic effects and therefore, plants can barely survive under the unsuitable agricultural conditions. Şanlıurfa is the centre of the South-eastern Anatolia Project (GAP) and natural habitats have been destroyed by the construction of dams and tunnels for the irrigation of plains. Therefore, the biological diversity, especially the endemic plants has been affected by this project. After the construction of dams, the populations of the rarer plants should be examined scientifically and new reports prepared for the conservation of plant species.

According to the Flora of Turkey (Davis, 1965-1985; Davis *et al.*, 1988; Güner *et al.*, 2000) some researchers; among them Kotschy, Sintenis, Davis and Zohary have visited and gathered plant specimens from Şanlıurfa (Baytop, 2003). At the sout-east Anatolia, some floristic investigation such as The Flora of Ziyaret Mountain in Ergani (Diyarbakır) (T. Taşkın unpubl. data, 1991), The Flora of Botan Stream (Uluçay) valley in Siirt (S. Yangın unpubl. data, 2001), The Flora of Eğil town in Diyarbakır (Ş. Gürmez unpubl. data 2003), The flora of Kaşmer dağı (Şanlıurfa-Turkey) (Akan *et al.*, 2005), The Flora of Kalecik Mauntain (Aydoğdu and Akan, 2005) Flora of Karacadağ (Şanlıurfa, Diyayarbakır), Ertekin (2002), Flora of Karkamış Dam Reservoir area and its surrounding (Şanlıurfa, Gaziantep-Turkey), (Tukmen *et al.*, 2005) have been performed recently but there has been no vegetational research to date except for a study carried out by (Zohary, 1973).

Some floristic and taxonomik studies were carried out around South-east Anatolia (Kaynak and Ketenoglu,

1980; 1986; Malyer, 1981; 1983; Kaynak, 1987; 1989a; 1989b; Adıgüzel and Aytaç, 2001; Ertekin 1997; 2002; Aslan and Tukmen, 2003; 2001; Türkmen *et al.*, 2002; Ertekin and Saya, 1997, Ertekin, 1999; 2002; Yıldırımlı, 1992; 1994; Yıldız and Aktoklu, 1996) but no regular floristic study has been performed in study area, Mazra Community. That's why, the aim of this study was to determine the flora of Mezra (Birecik) and to determine the endemic and rarer plant species. In addition, South East Anatolia is one of the little known or unknown regions of Turkey (Davis, 1975; Donner, 1990; Çırıcı, 1987). So, study area is included in the little known area. With these objectives, it was expected to contribute to the flora of Şanlıurfa planned to be written in future.

The study area, Mezra town, is located in the Irano-Turanian phytogeographic region and is situated in the C7 square and completely located within the province of Şanlıurfa. The Mezra town is located on the North West of the Şanlıurfa and it constitutes from three hills. It is very close to the Euphrates river and it is an important region to represent the floristic composition of the province. The altitude is between 350 and 600 m.

There are three hilly area and a town around the study area. Generally settlements are dense at the foot of the hilly area. The town is Mezra; the villages in and around the study area are Köprü hilly area, Dümenci hilly area and Mezra hilly area (Fig. 1).

Climate: The study area has a semiarid mediterranean climate. According to Emberger the precipitation-temperature coefficient (Q) is 42.94 (Akman, 1990). Annual mean temperature is 18.7°C . The maximum mean temperature (M) is 46.8°C , in July. The minimum mean temperature (m) is -6.8°C , in February. Annual rainfall is about 457.8 mm (Meteoroloji Bülteni, 1994) and the

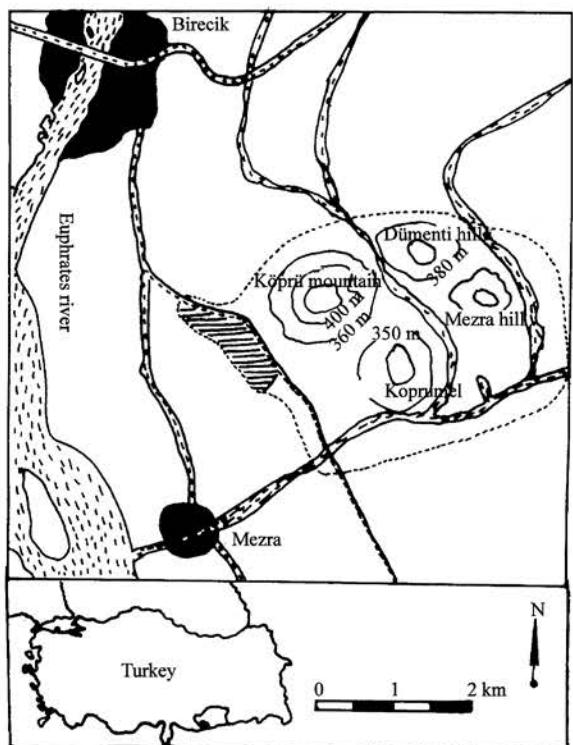


Fig. 1: Geographic map of study area

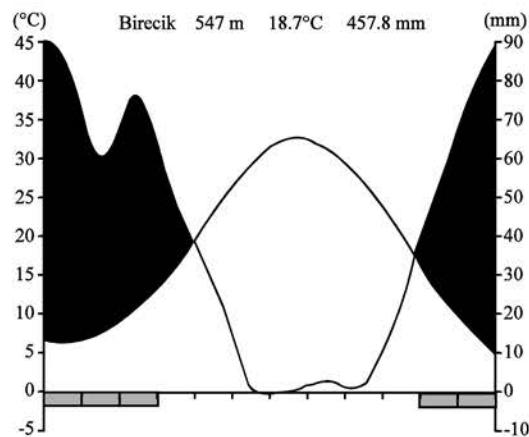


Fig. 2: Ombrothermic diagram of Birecik, Şanlıurfa, Turkey

seasonal precipitation regime is Winter, Spring, Autumn and Summer. This is the first variant of the East Mediterranean precipitation regime. The ombrothermic diagram shows dry and rainy period (Fig. 2).

MATERIALS AND METHODS

To constitute study material, 451 plant specimens were gathered from Mezra city between 2003 and 2004 during different vegetation seasons. A collector number

was given and the specimens were dried according to the standard herbarium methods. The Flora of Turkey and the East Aegean Islands (Davis, 1965-1985; Davis *et al.*, 1988) were used to identify the plant samples. The flora is listed in the appendix. The list of plants is set out according to the order in the Flora of Turkey. In the floristic list of this article, the following details are given: family name, species name and the author(s), the name of district, habitat of plant, altitude, collection date, collector number, endemism and the phytogeographic region element.

The endemic species were categorized according to IUCN Red data categories (IUCN Survival Commission, 2000; Ekim *et al.*, 2000). These abbreviations are given below:

CR-Critically endangered; VU-Vulnerable; LC-Least concern; CR-Critically endangered; EN-Endangered; DD-Data deficient.

The area is completely within C7 grid square an Şanlıurfa province, so "C7 Şanlıurfa" has been omitted from the citations.

The following abbreviations are used in the text:

E: east

Euro.-Sib el.: Euro-Siberian

Ir.-Tur.el.: Irano-Turanian

m: meter

Medi el.: Mediterranean

S: South

subsp. subspecies

var.: variety

W: West

end: Endemic

*: New record for C7 grid square

The plant samples collected from the region were kept in the herbarium of Harran University, Şanlıurfa.

Vegetation: In the study area, steppe vegetation is characterised by *Fabaceae*, *Asteraceae* and *Poaceae* members. *Triticum*, *Hordeum*, *Aegilops*, *Anthemis*, *Achillea*, *Centaurea*, *Lathyrus*, *Trifolium*, *Trigonella* and *Medicago* genera are dominated in the study field.

Amygdalus communis., *Amygdalus lycioides* var. *lycioides*, *Rosa canina*, *Crataegus aronia* var. *aronia*, *Crataegus monogyna* subsp. *monogyna* are some trees and shrubs that are spread at intervals.

There are some cultivated fields around the mountain, mainly pistacio, olive, grape and walnut are grown in these fields. The agriculture is based on cereal, essentially wheat and lentil. Moreover, some vegetables are grown, such as tomato, pepper, eggplant. At the same time, pistacio is produced.

RESULTS AND DISCUSSION

This study was carried out using 451 plant specimens collected over a period of 2 years. As a result of the identification of the plant specimens, 54 families, 183 genera and 290 taxa (subs. And var. included) were determined from the area. One taxa are Gymnospermae and 289 are in the subdivision Angiospermae. Two hundred and thirty-seven taxa belong to the class Dicotyledones and fifty-two belong to the class Monocotyledones.

Eighty-eight taxa (30.3%) are Irano-Turanian, 44 (15.2%) Mediterranean, 6 (2.1%) Euro-Siberian and 1 (0.3%) Sharo-Indian phytogeographic region element. One hundred and forty-two taxa (48.2%) are distributed in at least two phytogeographic region and although 9 taxa (3.1%) 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 Mezra city even though it is located in the transition zone of the Irano-Turanian and Mediterranean phytogeographic regions (Davis, 1975; Zohary, 1973). The ratio of the Mediterranean phytogeographic region elements is the lowest in all studies, except for Mezra city in which the number of Euro-Siberian-origin taxa is the highest although it is very far from the Euro-Siberia 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 East Anatolia and the effects of the Mediterranean region increase, thought not in Mezra city. 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 preponic part of the Mediterrian sea mountains (Toros mountains). These species in the last glacial period were shielded in the tectonic valleys and on the slopes, exposed to the south, to protect themselves from the cool climate (Gemici, 1993) these changes are clearly seen in Mezra city.

Asteraceae is the largest family with 46 taxa in the study area. The other large families are Poaceae (34 taxa), Fabaceae (31), Brassicaceae (16), Lamiaceae (16), Liliaceae (13), Apiaceae (12), Rosaceae (10) Boraginaceae (8) and Scrophulariaceae(6). In this study, Rosaceae, which is not among the largest ten familias 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).

Table 1: A comparison of the phytogeographic elements

Study area	Mzc.	Kar.	Kal.	Krd	Cey.
Total taxa	290.0	464.0	238.00	534.0	407.0
Irano-turanian elements (%)	30.3	22.6	38.20	30.5	26.9
Mediterranean elements (%)	15.1	14.2	8.40	15.4	9.3
Euro-Siberian elements (%)	2.1	2.2	1.68	2.8	1.6
Sharo-Indian	0.4				
Multi-regional elements or those of unknown phytogeographic region (%)	51.7	51.1	51.80	51.3	59.2

Mzc: Flora of Mezra City (Şanlıurfa), Krd: Flora of Karacadağ (Şanlıurfa, Diyarbakır), Kal: Flora of Kaleçik Mountain (Şanlıurfa), Kar: Flora of Karkamış Dam Reservoir area and its surrounding (Şanlıurfa, Gaziantep-Turkey), Cey: Flora of Ceylanpınar State Farm (Şanlıurfa-Turkey)

Table 2: Comparison of large families in the Mezra city and neighboring

Study area	Mzc.	Kar.	Kal.	Krd	Cey.
Total taxa	290	464	238	534	407
Asteraceae	46	74	25	63	52
Poaceae	32	31	13	29	45
Fabaceae	31	60	56	63	60
Brassicaceae	16	21	14	39	22
Lamiaceae	16	26	19	28	21
Liliaceae	13	11	5	20	8
Apiaceae	12	22	14	32	29
Rosaceae	10	11	7	11	2
Boraginaceae	8	11	7	19	13
Scrophulariaceae	6	12	6	23	16

Astragalus, *Verbascum* and *Centaurea* are larger genera in the Flora of Turkey. *Astragalus* is the first and *Centaurea* the sixth larger, genus in this study area and *Verbascum* is not seen in the firs ten floristic list (Appendix). There are large differences in the number of taxa between the Flora of Turkey and this study area.

APPENDIX

The floristic list of plants

SPERMATOPHYTA

GYMNOSPERMAE

EPHEDRACEAE

Ephedra campylopoda C. A. Mey.

C7: Mezra city, Köprü mountain, 350 m, streamside, 28.04.2004, G. Ayalp 116

ANGIOSPERMAE

DICOTYLEDONES

RANUNCULACEAE

**Anemone coronaria* L.

C7: Mezra city; E of Köprü mountain, 350 m, arable field, 28.04.2004, G. Ayalp 196, Atamov and Aslan 97, Medit el.

Adonis dentata Delile

C7: Mezra city, 450 m, Dümenti hill, stony places, 25.04.2004, Atamov and Aslan 444

Adonis flammea Jacq.

C7: Mezra city, E. of Köprü mountain, 460 m, steppe,

stony places, 07.04.2003, G. Ayalp 60, Mezra hills, 350 m, arable field, 21.03.2004 G. Ayalp 605

Ceratocephalus falcatus (L.) Pers.

C7: Mezra city, W. of Köprü mountain, 460 m, steppe, 13.04.2002, G. Ayalp 195

Ranunculus asiaticus L.

C7: Mezra city, Dumenti hill, 450 m, stony places, 07.04.2002, G. Ayalp 610, E. of Köprü mountain, roadside, 350 m, 01.07.2004, G. Ayalp 147, Mezra hill, 480 m, steppe, stony places, 07.04.2003 Atamov and Aslan 609

Ranunculus neapolitanus Ten.

C7: Mezra city, Köprü mountain, Dumenti hill, 470 m, steppe, 11.05.2003, G. Ayalp 194,

**Ranunculus unguis-cati* P.H.Davis

C7: Mezra city, Dumenti hills, 480 m, steppe, 21.03.2004, G. Ayalp 137, end., LC

**Thalictrum flavum* L.

C7: Mezra city, Köprü mountain, 350 m, arable field, 01.07.2004, G. Ayalp 107.

BERBERIDACEAE

Bongardia chrysogonum (L.) Spach

C7: Mezra city, Dumenti hill, 370 m, steppe, 28.04.2003, G. Ayalp 47, Ir.-Tur. el.

PAPAVERACEAE

Glaucium grandiflorum Boiss. and Huet. var. *grandiflorum* Boiss. and Huet.

C7: Mezra city, between Köprü mountain-Mezra hill, 410 m, steppe, stony places, 8.04.2003, G. Ayalp 225, Ir.-Tur. el.

Papaver clavatum Boiss and Hausskn. ex Boiss.

C7: Mezra city, Köprü mountain, roadside, 350 m, 13.04.2003, G. Ayalp 217, end., LC

Papaver rhoeas L.

C7: Mezra city, Köprü mountain, arable field, 350 m, 28.04.2003, G. Ayalp 224

Papaver syriacum Boiss. and Blanche

C7: Mezra city; Köprü mountain, 350 m, arable field, 28.04.2003, G. Ayalp 218

Hypecoum pendulum L.

C7: Mezra city, Köprü mountain, 350 m, arable field, 07.04.2002, G. Ayalp 573

Fumaria asepala Boiss.

C7: Mezra city, Köprü mountain 250 m w., steppe, stony places, 460 m, 7.04.2003, G. Ayalp 579, 28.04.2003, Ir.-Tur. el.

BRASSICACEAE (CRUCIFERAE)

**Brassica nigra* (L.) Koch.

C7: Mezra city, Dumenti hill, 450 m, stony places, 11.05.2002, G. Ayalp 699

Cardamine hirsuta L.

C7: Mezra city, Köprü mountain 450 E., Dumenti hills, 460 m, steppe, stony places, 11.05.2003, G. Ayalp 397

Capsella bursa-pastoris (L.) Medik.

C7: Mezra city, Dumenti hill, 460 m, steppe, 07.04.2003, G. Ayalp 252

Capsella rubella Reut.

C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2003, G. Ayalp 239, Medit. el.

Crambe orientalis L. var. *orientalis*

C7: Mezra city, Mezra hill, 450 m, steppe, 01.07.2004, G. Ayalp 644, Ir.-Tur. el.

Clypeola aspera (Grauer) Turrill

C7: Mezra city, Köprü mountain, Dumenti hill, 400 m E., 460 m, steppe, stony places, 21.03.2004, G. Ayalp 260, Ir.-Tur. el.

Eruca sativa J.F. Mill.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 28.04.2003, G. Ayalp 634

Erysimum hamosum Blanche ex Post

C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2004, G. Ayalp 642, Ir.-Tur. el.

Iberis acutiloba Bertol.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 07.04.2003, G. Ayalp 243

Hesperis rupestris Boiss. ex Noe

C7: Mezra city, Köprü mountain, 470 m, stony places, 21.03.2004, G. Ayalp 553, Ir.-Tur. el.

Hirschfeldia incana (L.) Lagr.-Foss.

C7: Mezra city, Köprü mountain, 470 m, steppe, stony places, 31.05.2004, G. Ayalp 635

Lepidium sativum L. subsp. *sativum*

C7: Mezra city, Köprü mountain 250 m E., Dumenti hill, 460 m, steppe, stony places, 07.04.2004, G. Ayalp 537

Lepidium sativum L. subsp. *spinoscens* (DC.) Thell.

C7: Mezra city, Köprü mountain, 480 m, steppe, stony places, 07.04.2004, G. Ayalp 538

Rorippa amphibia (L.) Boiss.

C7: Mezra city, Dumenti hill, steppe, stony places, 460 m, 11.05.2003, G. Ayalp 397

Sinapis alba L.

C7: Mezra city, Köprü hill, 350 m, arable field, 11.05.2003, G. Ayalp 398

Sinapis arvensis L.

C7: Mezra city; Köprü mountain, 480 m, steppe, stony places, 8.04.2003, G. Ayalp 633

RESEDACEAE

Reseda lutea L. var. *lutea*

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, G. Ayalp 554

CAPPARACEAE

Capparis ovata Desf.var. *palaestina* Zohary
C7: Mezra city, Köprü mountain, roadside, 350 m, 30.05.2004 Atamov and Aslan 129

CISTACEAE

Helianthemum salicifolium (L.) Mill.
C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 07.04.2003, G. Ayalp 452

CARYOPHYLLACEAE

Cerastium haussknechtii Boiss.
C7: Mezra city, Mezra hill, 460 m, steppe, 21.03.2004, G. Ayalp 401 Ir.-Tur. el., end., DD
Dianthus pallens Sibth. and Sm var. *oxylepis* Boiss.
C7: Mezra city, Köprü mountain, steppe, stony places, 460 m, 30.05.2004, G. Ayalp 639

Gypsophila antari Post and Beaurverd
C7: Mezra city, Mezra hills, 450 m, steppe, 07.04.2003, G. Ayalp 485, Sah.-Arab. el., VU
Gypsophila venusta Fenzl
C7: Mezra city, Köprü mountain, 350 m, stony places, 13.04.2003, G. Ayalp 119, Ir.-Tur. el.

**Loeflingia hispanica* L.
C7: Mezra city, Köprü mountain, 460 m, steppe, 13.04.2003, G. Ayalp 234, Medit el., DD

Minuartia hybrida (Vill.) Schischk. subsp. *hybrida*
C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2003, G. Ayalp 343

Scleranthus annuus L. subsp. *polycarpos* (L.) Theel
C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 11.05.2002, G. Ayalp 344

Silene crassipes Fenzl
C7: Mezra city, Köprü mountain, arable field, 350 m, 11.05.2003, G. Ayalp 199

Silene longipetala Vent.
C 7 Mezra city, Köprü mountain, 350 m, arable field, 11.05.2003, G. Ayalp 200, Ir.-Tur. el.

Vaccaria pyramidata Medik. var. *oxyodonta* (Boiss.) Zohary
C7: Mezra city, Köprü mountain, arable field, 350 m, 11.05.2004, Atamov and Aslan 342, Ir.-Tur. el.

ILLECEBRACEAE

**Paronychia imbricata* Boiss. and Hausskn.
C7: Mezra city, Köprü mountain, 460 m, steppe, 11.05.2003, G. Ayalp 482, end.

POLYGONACEAE

Rumex sanguineus L.
C7: Mezra city, Köprü mountain, 450 m, arable field, 01.07.2004, G. Ayalp 503

CHENOPodiaceae

**Camphorosma monspeliaca* L. subsp. *lessingii* (Litw.) Aellen

C7: Mezra city, Mezra hills, 460 m, steppe, stony places, 31.05.2004, G. Ayalp 306

Chenopodium album L. subsp. *album* var. *album*
C7: Mezra city, Köprü mountain, 450 m, arable field, 30.05.2004, G. Ayalp 407

**Nonea mucronata* (Forssk.) Aschers. and Schweinf subsp. *mucronata*

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 28.04.2003, G. Ayalp 481

TAMARICACEAE

Tamarix smyrnensis Bunge
C7: Mezra city, Köprü mountain, 450 m, stream side, 01.07.2004, G. Ayalp 631

HYPERICACEAE (GUTTIFERAE)

Hypericum cardiophyllum Boiss.
C7: Mezra city, Köprü mountain, 420 m, steppe, 01.07.2004, G. Ayalp 413, VU

Hypericum triquetrifolium Turra
C7: Mezra city, Köprü mountain, 450 m, roadside., 01.07.2004, G. Ayalp 323

MALVACEAE

Malva neglecta Wallr.
C7: Mezra city, Köprü mountain, 450 m, roadside, 30.05.2004, G. Ayalp 138

LINACEAE

Linum mucronatum Bertol. subsp. *mucronatum*
C7: Mezra city, Köprü mountain, 460 m, steppe, 17.03.2003, G. Ayalp 316, Ir.-Tur. el.

Linum mucronatum Bertol. subsp. *orientale* (Boiss.) P.H.Davis
C7: Mezra city, Köprü mountain, 460 m, steppe, 11.04.2003, G. Ayalp 317, Ir.-Tur. el., VU

GERANIACEAE

**Erodium ciconium* (L.) L'Herit
C 7 Mezra city; Köprü mountain, 350 m, roadside, 01.07.2004, G. Ayalp 145

Erodium cicutarium (L.) L'Herit. subsp. *cicutarium*
C7: Mezra city, Köprü mountain, 350 m, roadside., 01.07.2004, G. Ayalp 442

Erodium gruinum (L.) L'Herit
C7: Mezra city, Köprü mountain, 350 m, roadside, 30.05.2004, G. Ayalp 300, Medit. el.

Geranium tuberosum L. subsp. *deserti-syriacum* Davis
C7: Mezra city, Köprü mountain, 350 m, roadside, 30.05.2004, G. Ayalp 301, CR

VITACEAE (AMPELIDACEAE)

Vitis vinifera L.
C7: Mezra city, Köprü mountain, 350 m, streamside, 30.05.2004, G. Ayalp 510

ZYGOPHYLLACEAE

**Fagonia olivieri* DC.

C7: Mezra city, Köprü hill, 450 m, arable field, 01.07.2004,
G. Ayalp 507, Ir.-Tur. el., VU

Peganum harmala L.

C7: Mezra city, Köprü mountain, 450 m, roadside,
30.05.2004, G. Ayalp 132

Zygophyllum fabago L.

C7: Mezra city, Köprü mountain, 450 m, roadside,
01.07.2004, G. Ayalp 509, Ir.-Tur. el.

ANACARDIACEAE

Pistacia khinjuk Stocks

C7: Mezra city, Köprü mountain, 450 m, roadside,
11.04.2004, G. Ayalp 122, Ir.-Tur. el.

Pistacia vera L.

C7: Mezra city, Köprü hill, 350 m, pistachio grove,
11.04.2004, G. Ayalp 125, Ir.-Tur. el

**Rhus coriaria* L.

C7: Mezra city, Köprü mountain, 450 m, roadside,
11.04.2004, G. Ayalp 124, Ir.-Tur. el.

FABACEAE (LEGUMINOSAE)

Argyrolobium crotalariaeoides Jaub. and Spach

C7: Mezra city, Köprü mountain, 460 m, steppe, stony
places, 30.05.2004, G. Ayalp 558, Dümenli hills, 380 m,
steppe, stony places, 28.04.2002, G. Ayalp 559, VU

Astragalus ancistrocarpus Boiss and Hausskn.

C7: Mezra city, Köprü mountain, 460 m, steppe, 17.03.2003,
G. Ayalp 100, Ir.-Tur. el., VU

Astragalus brachystachys DC.

C7: Mezra city, Köprü mountain, 460 m, steppe, 21.03.2004,
G. Ayalp 446, Ir.-Tur. el., EN

Astragalus cretaceus Boiss. and Kotschy.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony
places, 28.04.2002, G. Ayalp 447, Dümenli hill, 460 m,
steppe, stony places, 07.04.2002, G. Ayalp 448 Ir.-Tur. el.

Astragalus diphtherites Fenzl var. *diphtherites*

C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2002,
G. Ayalp 102, Ir.-Tur. el.

Astragallus lagurus Willd.

C7: Mezra city, Köprü mountain, 460 m, steppe, 21.03.2004,
G. Ayalp 443, Ir.-Tur. el.

Astragalus lanigerus Desf.

C7: Mezra city, Köprü mountain, 460 m, steppe, 21.03.2004,
G. Ayalp 544, Ir.-Tur. el.

Astragalus russellii Banks and Sol.

C7: Mezra city, Köprü mountain, 460 m, steppe, 31.05.2004,
G. Ayalp 603, Ir.-Tur. el., VU

**Astragalus strictifolius* Boiss. var. *strictifolius*

C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2003,
G. Ayalp 351, Ir.-Tur. el.

Coronilla scorpioides (L.) Koch

C7: Mezra city, Dümenti hill, 450 m, steppe, stony places,
07.04.2003, G. Ayalp 440

Glycyrrhiza glabra L. var. *glabra*

C7: Mezra city, Dümenti hills, 450 m, steppe, stony places,
30.05.2004, G. Ayalp 430

Hedysarum pannosum (Boiss.) Boiss.

C7: Mezra city, Köprü mountain, 440 m, steppe, 17.03.2003,
G. Ayalp 561, Mezra hill, 390 m, steppe, 28.04.2003, G.
Ayalp 562, Ir.-Tur. el., VU

Hedysarum varium Willd.

C7: Mezra city, Köprü mountain, 440 m, steppe, 30.05.2004,
G. ayalp 456, Ir.-Tur. el.

Hippocratea unisiliquoasa L. subsp. *unisiliquoasa*

C7: Mezra city, Köprü mountain, 440 m, steppe, 13.04.2003,
G. Ayalp 450

Lathyrus cassius Boiss.

C7: Mezra city, Köprü mountain, 440 m, steppe, 07.03.2003,
G. Ayalp 553, Medit.el.

Lens orientalis (Boiss.) Hand.-Mazz.

C7: Mezra city, Köprü mountain, 440 m, steppe, 07.03.2003,
G. Ayalp 554

Onobrychis crista-galli (L.) Lam

C7: Mezra city, Mezra hill, 440 m, steppe, 07.04.2002, G.
Ayalp 466, Medit. el

Onobrychis galegifolia Boiss.

C7: Mezra city, Köprü mountain, 440 m, steppe, 28.04.2002,
G. Ayalp 468, Ir.-Tur. el.

Ononis biflora Desf.

C7: Mezra city, Köprü mountain, 440 m, steppe, 28.04.2003,
G. Ayalp 565, Medit. el.

Prosopis farcta (Banks and Sol.) Macbride

C7: Mezra city, Köprü mountain, 440 m, steppe, 30.05.2004,
G. Ayalp 455

Trifolium speciosum Willd.

C7: Mezra city, Köprü mountain, 440 m, steppe, 01.07.2004,
G. Ayalp 460

Trifolium tomentosum L.

C7: Mezra city, Köprü mountain, 440 m, steppe, 07.04.2004,
G. Ayalp 459

Trigonella monantha C.A Meyer subsp. *noeana* (Boiss.)
Hub.-Mor.

C7: Mezra city, Köprü mountain, 440 m, steppe, 11.05.2004,
G. Ayalp 465, Ir.-Tur. el.

Trigonella coelesyriaca Boiss.

C7: Mezra city, Köprü mountain, 440 m, steppe, 07.04.2002,
G.ayalp 545, Dümenti hill, 390, step, 13.04.2002, G. Ayalp
547, Ir.-Tur. el.

Trigonella mesopotamica Hub.-Mor.

C7: Mezra city, Köprü mountain, 440 m, steppe, 28.04.2003,
G. Ayalp 549, Ir.-Tur. el.

Trigonella spicata Sibth. and Sm

C7: Mezra city, Köprü mountain, 350 m, stony places,
11.05.2002, G. Ayalp 569, Medit. el.

Trigonella spruneriana Boiss. var. *spruneriana*

C7: Mezra city, Köprü mountain, 460 m, steppe, 13.04.2003, G. Ayalp 568, Ir.-Tur. el.

Vicia mollis Boiss. and Hausskn. ex Boiss.

C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2003, G. Ayalp 462, Ir.-Tur. el.

Vicia palaestina Boiss.

C7: Mezra city, Köprü mountain, 460 m, stony places, 01.07.2004, G. Ayalp 461, Medit. el.

Vicia peregrina L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 28.04.2003, G. Ayalp 463

Vicia sativa L. subsp. *sativa* L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 07.04.2003, G. Ayalp 555

ROSACEAE

Amygdalus arabica Oliv.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 28.04.2002, G. Ayalp 172

Amygdalus communis L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 17.03.2002, G. Ayalp 168, Köprü mountain, 380 m, streamside, 30.05.2003, G. Ayalp 170 Ir.-Tur. element

**Amygdalus lycioides* Spach

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 11.04.2004, G. Ayalp 171

Crataegus monogyna Jacq. subsp. *monogyna*

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 10.09.2004, Atamov and Aslan 601, Ir.-Tur. el.

Potentilla speciosa Willd. var. *speciosa*

C7: Mezra city, Köprü mountain, 360 m, streamside, 21.03.2004, G. Ayalp 235

Pyracantha coccinea Roemer

C7: Mezra city, Köprü mountain, 360 m, streamside, 11.04.2004, G. Ayalp 164

**Rosa gallica* L.

C7: Mezra city, Köprü mountain, 360 m, streamside, 28.04.2003, G. Ayalp 111

**Rosa phoenicia* Boiss.

C7: Mezra city, Köprü mountain, 360 m, streamside, 11.05.2002, G. Ayalp 315

Rubus sanctus Schreber

C7: Mezra city, Köprü mountain, 360 m, streamside, 11.05.2003, G. Ayalp 317

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

C7: Mezra city, Köprü mountain, 360 m, steppe, 13.04.2004, Atamov and Aslan 612

PUNICACEAE

Punica granatum L.

C7: Mezra city, Köprü mountain, 360 m, streamside, 30.05.2004, G. Ayalp 520

CUCURBITACEAE

Bryonia multiflora Boiss. and Heldr.

C7: Mezra city, Köprü mountain, 360 m, streamside, 30.05.2004, G. Ayalp 515, Ir.-Tur. el.

APIACEAE (UMBELLIFERAE)

Ainsworthia trachycarpa Boiss.

C7: Mezra city, Köprü mountain, 360 m, streamside, 11.05.2004, G. Ayalp 595, Medit. el.

Daucus carota L.

C7: Mezra city, Köprü mountain, 360 m, roadside, 30.05.2004, G. Ayalp 597

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

C7: Mezra city, Köprü mountain, 360 m, streamside, 17.03.2003, G. Ayalp 203, Dümenti hill, 435 m, roadside, 11.05.2003, G. Ayalp 202, Ir.-Tur. el.

Eryngium campestre L. var. *virens* Link

C7: Mezra city, Köprü mountain, 360 m, streamside, 11.05.2004, Atamov and Aslan 598

Eryngium creticum Lam

C7: Mezra city, Köprü mountain, 360 m, streamside, 01.07.2004, G. Ayalp 641, Medit. el.

Ferulago macrocarpa (Fenzl) Boiss.

C7: Mezra city, Mezra hills, 360 m, streamside, 21.03.2004, G. Ayalp 594, Ir.-Tur. el.

Lagoeicia cuminoides L.

C7: Mezra city, Dümenti hill, 360 m, streamside, 30.05.2004, G. Ayalp 640, Medit. el.

Prangos meliocarpoides Boiss. var. *meliocarpoides*

C7: Mezra city, Mezra hill, 460 m, steppe, 30.05.2004, G. Ayalp 489, Ir.-Tur. el., end, DD

Prangos peucedanifolia Fenzl

C7: Mezra city, Köprü mountain, 460 m, steppe, 30.05.2004, G. Ayalp 490, Ir.-Tur. el.

Scandix pecten-veneris L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 13.04.2004, G. Ayalp 504.

Tordylium aegyptiacum (L.) Lam

C7: Mezra city, Köprü mountain, 460 m, stony places, 30.05.2004, G. Ayalp 600, Medit. el.

Torilis leptophylla (L.) Reichb.

C7: Mezra city, Mezra hill, 460 m, steppe, stony places, 28.04.2004, G. Ayalp 601, Dümenti hill, 420 m, step alan 28.04.2004, Atamov and Aslan 602

VALERIANACEAE

Valerianella vesicaria (L.) Moench.

C7: Mezra city, Mezra hill, 480 m, steppe, stony places, 07.04.2004, Atamov and Aslan 112, Dümenti hill, 390 m, steppe, stony places, 28.04.2004, Atamov and Aslan 404

Valerianella dentata (L.) Poll.

C7: Mezra city, Dümenti hill, 440 m, steppe, stony places,

07.04.2003, G. Ayalp 484

DIPSACACEAE

Scabiosa argentea L.

C7: Mezra city, Dümenti hill, 400 m, stony places, 30.05.2004, Atamov and Aslan 632

Scabiosa calocephala Boiss.

C7: Mezra city; Mezra hill, 360 m, steppe, 31.05.2004, G. Ayalp 621, Ir.-Tur. el.

Scabiosa persica Boiss.

C7: Mezra city, Mezra hill, 460 m, steppe, 11.05.2003, G. Ayalp 570, Ir.-Tur. el.

ASTERACEAE (COMPOSITAE)

Achillea vermicularis Trin.

C7: Mezra city, Köprü mountain, 460 m, steppe, 11.05.2003, G. Ayalp 390, Ir.-Tur. el.

Achillea wilhelmsii C. Koch.

C7: Mezra city, Mezra hill, 430 m, steppe, 30.05.2004, G. Ayalp 501, Ir.-Tur. el.

Anthemis haussknechtii Boiss. and Reuter

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 07.04.2003, G. Ayalp 502.

Mezra hill, 430 m, steppe, stony places, 21.03.2004, Atamov and Aslan 494

**Anthemis kotschyana* Boiss. var. *kotschyana*

C7: Mezra city, Mezra hill, 380 m, steppe, stony places, 11.05.2002, G. Ayalp 272

**Anthemis pauciloba* Boiss. var. *microstepana* (Eig.) Grierson

C7: Mezra city, Mezra hill, 460 m, steppe, 11.05.2004, G. Ayalp 273, Medit. el., end., LR

Anthemis pauciloba Boiss. var. *pauciloba*

C7: Mezra city, Köprü mountain, 460 m, stony places, 07.04.2003, G. Ayalp 274, end. LR

Anthemis tinctoria L. var. *tinctoria*

C7: Mezra city, Köprü mountain, 460 m, arable field, 30.05.2004, Atamov and Aslan 498.

Artemisia herba-alba L.

C7: Mezra city, Köprü mountain, 460 m, steppe, 17.03.2003, Atamov and Aslan 293; Mezra hill, 350 m, arable field, 17.03.2003, Atamov and Aslan 294, Ir.-Tur. el.

Artemisia vulgaris L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 31.05.2004, G. Ayalp 110.

**Bellis perennis* L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 17.05.2003, Atamov and Aslan 292. Köprü mountain, 460 m, steppe, 01.07.2004, G. Ayalp 280, Aur.-Sib. el.

Carduus pycnocephalus L. subsp. *breviphyllarius* Davis

C7: Mezra city, Mezra hill, 390 m, steppe, 17.03.2003, Atamov and Aslan 295, Ir.-Tur. el.

**Carlina involucrata* Poiret subsp. *libanotica* (Boiss.)

Mevsel and Kastner

C7: Mezra city, Köprü mountain, 460 m, steppe, 01.07.2004, 267, Medit. el.

Carlina lanata L.

C7: Mezra city, Köprü mountain, 460 m, stony places, 11.05.2004, G. Ayalp 502, Medit. el.

Chondrilla juncea L. var. *juncea*

C7 Mezra city, Köprü mountain, 460 m, steppe, stony places, 01.07.2004, G. Ayalp 264

Centaurea rigida Banks and Sol.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 01.07.2004, Atamov and Aslan 261, Ir.-Tur. el.

Centaurea sclerolepis Boiss.

C7: Mezra city, Köprü mountain, 460 m, stony places, 17.03.2003, G. Ayalp 387, Dümenti hills, 460 m, stony places, 07.04.2004, Atamov and Aslan 388, Ir.-Tur. el., end., VU

Centaurea solstitialis L. subsp. *solstitialis*

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, G. Ayalp 389

Centaurea triumfetti All.

C7 Mezra city, Köprü mountain, 460 m, steppe, stony places, 01.07.2003, G. Ayalp 296

Cichorium glandulosum Boiss. and Huet.

C7: Mezra city, Köprü mountain, 460 m, steppe, 01.07.2003, G. Ayalp 266, Ir.-Tur. el.

Cichorium intybus L.

C7: Mezra city, Köprü mountain, 460 m, steppe, 01.07.2003, Atamov and Aslan 290

Cirsium alatum (Gmelin) Bobrov subsp. *pseudocreticum*

Davis and Parris

C7: Mezra city, Köprü hill, 460 m, steppe, 07.04.2004, G. Ayalp 630, Ir.-Tur. el., end., LC

Cirsium vulgare (Savi) Ten.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, G. Ayalp 308.

Crepis foetida L. subsp. *rhoeadifolia* (Bieb.) Celak

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, G. Ayalp 499 *Crepis kotschyana* (Boiss.) Boiss.

C7: Mezra city, Köprü mountain, 460 m, steppe, 01.07.2004, Atamov and Aslan 539.

Crepis sancta (L.) Babcock

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 21.03.2003, G. Ayalp 379.

Crupina crupinastrum (Moris) Vis.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 11.05.2003, G. Ayalp 359

Echinops viscosus DC. subsp. *bithynicus* (Boiss.) Rech. Fil.

- C7: Mezra city, Köprü mountain, 460 m, steppe, 01.07.2003, Atamov and Aslan 398
Filago pyramidalis L.
 C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 07.04.2002, G. Ayalp 261, Dümenti hills, 369 m, steppe, 17.05.2003, Atamov and Aslan 282
 **Hieracium bornmuelleri* Freyn
 C7: Mezra city, Köprü mountain, 460 m, stony places, 31.05.2003, G. Ayalp 315, end., LC
Matricaria aurea (L.) Schultz Bip.
 C7 Mezra city, Köprü mountain, 460 m, steppe, 07.04.2004, Atamov and Aslan 497
 **Onopordum acanthium* L.
 C7: Mezra city, Köprü mountain, 460 m, steppe, 11.03.2003, G. Ayalp 362, Mezra hill, 350 m, arable field, 30.05.2004, Atamov and Aslan 364.
Phagnalon graecum Boiss.
 C7: Mezra city, Dümenti hill, 400 m, steppe, 11.05.2004, Atamov and Aslan 270
Picris strigosa Bieb. var. *strigosa*
 C7: Mezra city, Köprü mountain, 460 m, steppe, 11.05.2003, G. Ayalp 495, Ir.-Tur. el.
 **Pulicaria arabica* (L.) Cass.
 C7: Mezra city, Köprü mountain, 460 m, steppe, 11.05.2002, Atamov and Aslan 385
Pulicaria vulgaris (L.) Gaertner
 C7: Mezra city, Köprü mountain, 460 m, steppe, 30.05.2004, G. Ayalp 496, Avr.-Sib. el.
 **Santolina chamaecyparissus* L.
 C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 28.04.2003, G. Ayalp 275, Mezra city, Köprü mountain, 460 m, steppe, 11.05.2003, G. Ayalp 276
 **Scorzonera laciniota* L. subsp. *laciniota*
 C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2003, Atamov and Aslan 277
Scorzonera mollis Bieb. subsp. *szowitzii* (DC.) Chamberlain
 C7: Mezra city, Köprü mountain, 460 m, steppe, 17.03.2003, G. Ayalp 288, Ir.-Tur. el.
 **Scorzonera pseudolanata* Grossh.
 C7: Mezra city, Köprü mountain, 460 m, steppe, 11.04.2004, G. Ayalp 386, Ir.-Tur. el.
Senecio vernalis Waldst and Kit
 C7: Mezra city, dümenti hill, 460 m, steppe, stony places, 21.03.2004, G. Ayalp 282, Köprü mountain, 460 m, steppe, stony places, 17.03.2003, Atamov and Aslan 284
Taraxacum aleppicum Dahlst.
 C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, G. Ayalp 263
Taraxacum butleri Van Soest
 C7: Mezra city, Köprü mountain, 460 m, steppe, 17.03.2003, Atamov and Aslan 359
 **Tragopogon longirostris* Bisch. Ex Schultz Bip. var. *abbreviatus* Boiss.
 C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2003, Atamov and Aslan 285
Tragopogon longirostris Bisch ex Schultz var. *longirostris*
 C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 11.05.2003, G. Ayalp 392, Mezra hill, 450 m, steppe, 11.05.2004, Atamov and Aslan 393
 **Tragopogon pusillus* Bieb.
 C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2002, Atamov and Aslan 139, Dümenti hills, 350 m, steppe, 21.03.2004, G. Ayalp 140
Xeranthemum annuum L.
 C7: Mezra city, Köprü mountain, 460 m, steppe, 30.05.2004, Atamov and Aslan 269
CAMPANULACEAE
Campanula reuterana Boiss. and Ball.
 C7: Mezra city, Köprü mountain, 460 m, steppe, 07.04.2002, G. Ayalp 109, Ir.-Tur. el.
PRIMULACEAE
Anagallis arvensis L.var. *arvensis*
 C7: Mezra city, Mezra hill, 410 m, steppe, stony places, 11.05.2003, G. Ayalp 504, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, Atamov and Aslan 430.
Anagallis arvensis L. var. *parviflora* (Hoffmanns. and Link) Ces., Pass. and Gib.
 C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 07.04.2003, G. Ayalp 229, Medit. el.
 **Anagallis foemina* J.F.Mil.
 C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 07.04.2003, G. Ayalp 228, Medit. el.
OLEACEAE
Olea europaea L. var. *europaea*
 C7: Mezra city, Köprü mountain, 460 m, steppe, 21.03.2004, G. Ayalp 423, Medit. el.
Olea europaea L. var. *sylvestris* (Miller) Lehr.
 C7: Mezra city, Köprü mountain, 460 m, stony places, 28.04.2003, G. Ayalp 124, Medit. el.
APOCYNACEAE
Vinca herbacea Waldst and Kit.
 C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2003, Atamov and Aslan 149
GENTIANACEAE
 **Centaurea pulchellum* (Swartz) Druce
 C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, G. Ayalp 451
Gentiana olivieri Griseb.
 C7: Mezra city, Köprü mountain, 460 m, steppe, 21.03.2004,

G. Ayalp 411, Ir.-Tur. el.

CONVOLVULACEAE

Convolvulus arvensis L.

C7: Mezra city, Köprü mountain, 460 m, steppe, arable field, 05.03.2004, G. Ayalp 586

Convolvulus stachydifolius Choisy

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, Atamov and Aslan 387, Mezra hill, 460 m, steppe, stony places 188, Ir.-Tur. el.

Convolvulus dorycnium L. subsp. *oxysepalus* (Boiss.) Rech. fil.

C7: Mezra city, Köprü mountain, 460 m, stony places, 31.05.2004, G. Ayalp 314, Medit. el

CUSCUTACEAE

Cuscuta compstris Yunck.

C7: Mezra city, Mezra hills, 390 m, on the *Vitis vinifera*, 11.04.2004, Atamov and Aslan 512

BORAGINACEAE

Anchusa aucheri DC.

C7: Mezra city, Köprü mountain, 460 m, steppe, 21.03.2004, Atamov and Aslan 336

Anchusa azurea J.F Mil. var. *azurea*

C7: Mezra city, Mezra hill, 460 m, steppe, stony places 28.04.2003, G. Ayalp 333, C 7 Mezra city, Köprü mountain, 460 m, steppe, stony places, 21.03.2004, G. Ayalp 634

Anchusa strigosa Labill.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 07.04.2003, G. Ayalp 330

Buglossoides arvensis (L.) G.H. Johnstone

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 21.03.2004, Atamov and Aslan 661, Mezra hill, 390 m, steppe, stony places, 21.03.2004, G. Ayalp 162

Buglossoides incrassata (Guss.) G.H. Johnstone

C7: Mezra city, Köprü mountain, 460 m, stony places, 21.03.2004, G. Ayalp 663, Medit.el.

Heliotropium europaeum L.

C7: Mezra city, Köprü mountain, 460 m, stony places, 01.07.2004, G. Ayalp 697, Medit. el.

Onosma giganteum Lam

C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2003, G. Ayalp 137, Medit. el

Onosma molle DC.

C7: Mezra city, Köprü mountain, 460 m, stony places, 13.04.2002, G. Ayalp 158, Ir.-Tur. el.

SOLANACEAE

Hyoscyamus niger L.

C7: Mezra city, Mezra hill, 460 m, roadside, 11.04.2004, Atamov and Aslan 674

Lycium anatolicum A.Baytop and R. Miller

C7: Mezra city, Mezra hill, 460 m, roadside, 11.04.2004, G. Ayalp 630, Ir.-Tur. el., end., LC

SCROPHULARIACEAE

**Melapryrum arvense* L. var. *arvense* L.

Mezra city, Köprü mountain, 460 m, steppe, 01.07.2004, G. Ayalp 753, Avr.-Sib. el.

Scrophularia xanthoglossa Boiss. var. *decipiens* (Boiss. ex Kotc.) Boiss.

C7: Mezra city, Köprü mountain, 460 m, stony places, 11.05.2002, G. Ayalp 206, Ir.-Tur. el.

Verbascum tenue Murb.

C7: Mezra city, Köprü hill, 460 m, steppe, 30.05.2004, G. Ayalp 208, Ir.-Tur. el., end.VU

Veronica anagallis-aquatica L. subsp. *anagallis-aquatica*

C7: Mezra city, Köprü mountain, 460 m, streamside, 11.05.2004, G. Ayalp 584, Mezra hill, 400 m, streamside, 07.04.2004, Atamov and Aslan 583

Veronica hispidula Boiss. ex Huet. subsp. *hispidula*

C7: Mezra city, Mezra hill, 460 m, streamside, 30.05.2004, G. Ayalp 525, Ir.-Tur. el.

Veronica syriaca Roemer ex Schult.

C7: Mezra city, mezra hill, 460 m, streamside, 28.04.2003, G. Ayalp 582, Medit. el

ORABANCHACEAE

Orabanche aegyptiaca Pers.

C7: Mezra city, Köprü mountain, 460 m, streamside, 11.05.2003, Atamov and Aslan 506

VERBENACEAE

Verbena officinalis L.

C7: Mezra city, Köprü mountain, 460 m, streamside, 01.07.2004, Atamov and Aslan 508

LAMIACEAE (LABIATAE)

Lamium aleppicum Boiss ex Hausskn

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 04.07.2004, G. Ayalp 404, Dümenci hill, 410 m, steppe, 28.04.2004, G. Ayalp 405, Ir.-Tur. el.

Mentha longifolia (L.) J.Huds. subsp. *longifolia*

C7: Mezra city, Köprü mountain, 410 m, streamside, 01.07.2004, G. Ayalp 476, Avr.-Sib. el.

Mentha longifolia (L.) J.Huds subsp. *thyphoides* (Briq.)

Harley var. *thyphoides*

C7: Mezra city, Köprü mountain, 410 m, streamside, 01.07.2004, G. Ayalp 491

**Mentha longifolia* (L.) J.Huds subsp. *noeana* (Boiss. and Briq.) Briq.

C7: Mezra city, Köprü mountain, 410 m, streamside, 01.07.2004, G. Ayalp 477, VU

Mentha pulegium L.

C7: Mezra city, Köprü mountain, 410 m, streamside, 11.03.2004, G. Ayalp 527

Phlomis bruguieri Desf.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony

places, 11.05.2003, G. Ayalp 474, Mezra hill, 410 m, steppe, 01.07.2004, Atamov and Aslan 540, Ir.-Tur. el.

Phlomis rigida Labill.

C7: Mezra city, Köprü mountain, 460 m, stony places, 13.04.2003, G. Ayalp 492, Ir.-Tur. el.

Salvia brachyantha (Bordz.) Pobed.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 07.04.2003, G. Ayalp 531, Mezra hill, 400 m, steppe, 21.03.2004, G. Ayalp 533, Ir.-Tur. el.

**Satureja thymbra* L.

C7: Mezra city, Köprü mountain, 460 m, stony places, 28.04.2003, G. Ayalp 492, Medit. el *Scutellaria tomentosa* Bertol.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, G. Ayalp 572, Dümenti hill, 400 m, steppe, 11.03.2004, Atamov and Aslan 573, Ir.-Tur. el.

Teucrium multicaule Montb. ex Much

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 11.05.2004, G. Ayalp 525, Mezra hill, 400 m, steppe, 28.04.2004, G. Ayalp 526, Ir.-Tur. el.

Teucrium polium L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 17.03.2004, G. Ayalp 469, Mezra hill, 400 m, steppe, 01.07.2004, Atamov and Aslan 471

Teucrium pruinatum Boiss.

Mezra city, Köprü mountain, 460 m, stony places, 04.07.2003, G. Ayalp 528, Ir.-Tur. el.

Thymbra spicata L. var. *spicata* L.

C7: Mezra city, Köprü mountain, 460 m, stony places, 01.07.2004, G. Ayalp 471, Mezra hill, 400 m, steppe, 07.04.2003, G. Ayalp 541

Ziziphora tenuior L.

C7: Mezra city, Köprü mountain, 460 m, stony places, 31.05.2004, G. Ayalp 478, Ir.-Tur. el.

Ziziphora capitata L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 28.04.2003, G. Ayalp 522, Mezra hill, 400 m, steppe, 11.05.2002, G. Ayalp 524, Ir.-Tur. el.

PLUMBOGINACEAE

**Acantholimon armenum* Boiss. and A.Huet. var. *armenum*

C7: Mezra city, Köprü mountain, 460 m, steppe, 17.03.2003, G.ayalp 130, Ir.-Tur. el.

PLANTAGINACEAE

Plantago afra L.

C7: Mezra city, Köprü mountain, 460 m, stony places, 07.04.2003, Atamov and Aslan 231

**Plantago major* L. subsp. *major*

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 01.07.2004, G. Ayalp 733

EUPHORBIACEAE

Chrozophora tinctoria (L.) Raf.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 01.07.2004, G. Ayalp 756

Euphorbia chamaesyce L.

C7: Mezra city, Köprü mountain, 460 m, steppe, 11.05.2002, Atamov and Aslan 588

Euphorbia falcata L. subsp. *falcata* var. *falcata*

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places., 07.04.2003, G. Ayalp154

Euphorbia macrooclada Boiss.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 11.05.2003, G. Ayalp 589, Mezra hill, 400 m, steppe, 31.05.2004, Atamov and Aslan 586, Ir.-Tur. el.

Euphorbia macrostegia Boiss.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 13.04.2003, G. Ayalp 587

MORACEAE

Ficus carica L. subsp. *carica*

C7: Mezra city, Köprü hill, 460 m, olive grove, 01.07.2004, Atamov and Aslan 719.

Ficus carica L. subsp. *rupestris* (Hausskn.) Browica.

C7: Mezra city, Köprü hill, 460 m, olive grove, 01.07.2004, G. Ayalp 720, Ir.-Tur. el.

ULMACEAE

Celtis australis L.

C7: Mezra city, Köprü hill, 460 m, olive grove, 11.04.2004, G. Ayalp 518, Medit. el.

SALICACEAE

Salix acmophylla Boiss.

C7: Mezra city, Köprü hill, 460 m, streamside, 04.11.2004, G. Ayalp 721, Ir.-Tur. el.

RUBIACEAE

Asperula orientalis Boiss. ex Hohen.

C7: Mezra city, Köprü mountain, 460 m, steppe, 21.03.2004, G. Ayalp 741, Ir.-Tur. el.

Cruciata articulata (L.) Ehrend.

Mezra city, Köprü mountain, 460 m, steppe, 11.05.2003, G. Ayalp 302, Ir.-Tur. el.

Gallium canum Req. ex DC. subsp. *canum*

C7: Mezra city, Köprü mountain, 460 m, stony places, 07.04.2003, G. Ayalp 304, Medit. el.

Gallium canum Req. ex DC. subsp. *ovatum* Ehrend.

C7: Mezra city, Köprü mountain, 460 m, stony places, 13.07.2003, G. Ayalp 306, Medit. el.

Galium tricornutum Dandy

C7: Mezra city, Köprü hill, 460 m, steppe, 28.04.2003, Atamov and Aslan 174, Medit. el.

Sherardia arvensis L.

C7: Mezra city, Köprü hill, 460 m, stony places, 28.04.2003, G. Ayalp 193, Medit. el.

MONOCOTYLEDONES

ARACEAE

Eminium spiculatum (Blume) Schott var. *spiculatum*

C7: Mezra city, Köprü mountain, 460 m, steppe, 11.04.2004, G. Ayalp 210, Ir.-Tur. el.

LILIACEAE

Allium ampeloprasum L.

C7: Mezra city, Köprü mountain, 460 m, steppe, 30.05.2003, Atamov and Aslan 322

Allium flavum L. subsp. *tauricum* (Besser ex Reichb.) Stearn var. *tauricum*

C7: Mezra city, Köprü mountain, 460 m, stony places, 11.05.2003, G. Ayalp 215, Medit. el.

Allium nigrum L.

C7: Mezra city, Köprü mountain, 420 m, arable field, 11.04.2003, G. Ayalp 214, Medit. el.

Allium stamineum Boiss.

C7: Mezra city, Köprü mountain, 410 m, arable field, 30.05.2003, G. Ayalp 216, Medit. el.

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

C7: Mezra city, Köprü mountain, 460 m, steppe, 30.05.2003, G. Ayalp 321, Avr.-Sib. el.

**Bellevalia macrobotrys* Boiss.

C7: Mezra city, Köprü mountain, 460 m, steppe, 30.05.2003, G. Ayalp 323, Ir.-Tur. el.

**Bellevalia gracilis* Feinbrun

C7: Mezra city, Köprü mountain, 460 m, steppe, 30.05.2003, G. Ayalp 322, Ir.-Tur. el., end., LC

**Gagea reticulata* (Pallas) F.J. Schulz

C7: Mezra city, Köprü mountain, 460 m, steppe, 30.05.2003, G. Ayalp 326, Ir.-Tur. el.

Hyacinthella nervosa (Bertol.) Chouard

C7: Mezra city, Köprü mountain, 460 m, steppe, 21.03.2003, G. Ayalp 319, Ir.-Tur. el.

Muscari comosum (L.) J.F. Mil.

C7: Mezra city, Köprü mountain, 460 m, streamside, 21.03.2003, G. Ayalp 212

Ornithogalum montanum Cirillo

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 11.04.2004, G. Ayalp 209

Ornithogalum oligophyllum ED Clarke

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 17.03.2003, G. Ayalp 211

AMARYLLIDACEAE

Ixiolirion tataricum (Pall.) Herb. subsp. *tataricum*

C7: Mezra city, Köprü hill, 460 m, stony places, 28.04.2002, G. Ayalp 320, Ir.-Tur. el.

ORCHIDACEAE

Orchis anatolica Boiss.

C7: Mezra city, Köprü mountain, 460 m, steppe, 01.07.2004, Atamov and Aslan 399

Orchis coriophora L.

Mezra city, Köprü mountain, 460 m, steppe, 01.07.2004, Atamov and Aslan 513

CYPERACEAE

**Carex diluta* M Bieb.

C7: Mezra city, Dümenci hill, 400 m, streamside, 01.07.2004, Atamov and Aslan 579

**Carex pachystylis* J. Gay

Mezra city, Köprü mountain, 460 m, streamside, 01.07.2004, Atamov and Aslan 513

Cyperus longus L.

C7: Mezra city, Dümenci hill, 400 m, streamside, 01.07.2004, G. Ayalp 799

POACEAE (GRAMINEA)

Aegilops speltoides Tausch var. *ligustica* (Savign) Bornm

C7: Mezra city, Köprü mountain, 460 m, streamside, 11.05.2003, G. Ayalp 440

Aegilops triuncialis L. subsp. *triuncialis*

C7: Mezra city, Köprü mountain, 460 m, streamside, 11.05.2003, G. Ayalp 348

Aegilops umbellulata Zhuk. subsp. *umbellulata*

C7: Mezra city, Köprü mountain, 460 m, steppe, 11.05.2003, G. Ayalp 350, Ir.-Tur. el.

Arrhenatherum palaestinum Boiss.

C7: Mezra city, Köprü mountain, 460 m, steppe, 28.04.2003, G. Ayalp 407

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

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 28.04.2003, G. Ayalp 357

Avena sterilis L. subsp. *sterilis*

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 28.04.2003, G. Ayalp 359

Avena barbata Pott ex Link subsp. *barbata*

C7: Mezra city, Zeytinbahe, 460 m, steppe, stony places, 28.04.2003, G. Ayalp 360

**Bromus gracillimus* Bunge ex Memm

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 11.05.2003, G. Ayalp 416

Bromus japonicus Thunb. subsp. *japonicus*

C7: Mezra city, Köprü mountain, 460 m, steppe, 07.04.2003, Atamov and Aslan 432

Bromus pumilo (Trin.) P.M Smith

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 11.05.2002, G. Ayalp 410

Bromus scoparius L.

C7: Mezra city, Köprü mountain, 460 m, streamside, 11.05.2004, G. Ayalp 434

Bromus squarrosus L.

C7: Mezra city, Köprü mountain, 460 m, stony places, 13.04.2003, Atamov and Aslan 352

Bromus sterilis L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, G. Ayalp 354.

Bromus tectorum L.

C7: Mezra city, Köprü mountain, 460 m, streamside, 07.04.2004, Atamov and Aslan 412

Catapodium rigidum (L.) C.E. Hubb. ex Dony subsp. *rigidum* var. *rigidum*

C7: Mezra city, Köprü mountain, 460 m, steppe, 07.04.2004, Atamov and Aslan 415.

**Crithopsis delileana* (Schultes) Roshev.

C7: Mezra city, Köprü mountain, 460 m, steppe, 07.04.2004, Atamov and Aslan 419

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

C7: Mezra city, Köprü mountain, 460 m, streamside, 07.04.2004, Atamov and Aslan 420

Dactylis glomerata L. subsp. *glomerata*

C7: Mezra city, Köprü mountain, 460 m, streamside, 07.04.2004, Atamov and Aslan 418, Avr.-Sib. el.

Echinaria capitata (L.) Desf.

C7: Mezra city, Köprü mountain, 460 m, steppe, 07.04.2004, Atamov and Aslan 402,

**Elymus longearistatus* (Boiss.) Tzvelev subsp. *sintenisii* Melderis

C7: Mezra city, Köprü mountain, 460 m, streamside, 07.04.2004, Atamov and Aslan, Dümenli hill, 400 m, steppe, 30.05.2004, G. Ayalp 426, Ir.-Tur., element, end., EN

**Festuca callieri* (Hackel ex St.-Yves.) F. Markgr. subsp. *callieri*

C7: Mezra city, Köprü mountain, 460 m, streamside, 07.04.2004, Atamov and Aslan 437, Dümenli hills, 390 m, steppe, 07.04.2002, G. Ayalp 438

**Heteranthelium piliferum* (Banks ex Sol.) Hochst.

C7: Mezra city, Köprü mountain, 460 m, steppe, 07.04.2004, Atamov and Aslan 430

Hordeum bulbosum L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 11.05.2004, G. Ayalp 449

Hordeum murinum L. subsp. *glaucum* (Steudfel) Tzvelev

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, G. Ayalp 421, Dümenli hill, 420 m, steppe, 11.04.2004, G. Ayalp 423

Koeleria cristata (L.) Pers.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 28.04.2003, G. Ayalp 417

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

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, 30.05.2004, G. Ayalp 424

Phragmites australis (Cav.) Trin ex Steudel

C7: Mezra city, Köprü mountain, 460 m, streamside, 30.05.2004, G. Ayalp 420

Poa angustifolia L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, G. Ayalp 447

Poa bulbosa L.

C7: Mezra city, Köprü mountain, 460 m, steppe, stony places, G. Ayalp 439

**Secale cereale* L. var. *cereale* L.

C7: Mezra city, Köprü mountain, 460 m, streamside, 30.05.2004, G. Ayalp 427

Dümenli hill, 400 m, steppe, 30.05.2004, G. Ayalp 428

Stipa holosericea Trin.

C7: Mezra city, Köprü mountain, 460 m, streamside, 31.05.2004, G. Ayalp 414, Ir.-Tur. el.

Vulpia persica (Boiss. ex Buhse) V. Kreez ex Bobrov.

C7: Mezra city, Köprü mountain, 460 m, streamside, 11.04.2004, G. Ayalp 415, Ir.-Tur.el.

Table 3: The rate of endemism in compared research

Study area	Mzc.	Kar.	Kal.	Krd	Cey.
Total taxa	290.0	464.0	238.0	534.0	407.0
Endemism (%)	4.8	3.1	5.4	5.8	2.4

The differences are because of geologic, geomorphologic, climatic, phytogeographic, geographic and adaphic features. Especially, *Centaurea* and *Verbascum* are localised on steppes in the central and eastern parts of Anatolia. In this area, the steppe and rocky place area is very large. Therefore, the number of species from these genera is restricted. The genus *Verbascum*, which is the largest genus in the second genus in the Flora of Turkey, is not seen in the first ten 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).

Teucrium, *Centaurea* and *Hypericum*, which grow in rocky places, are the most common genera in the Mezra city. However in the neighboring areas, *Astragalus* is the largest genus. Fourteen out of the 290 taxa are endemic in the study area. Three endemic taxa are the Mediterranean phytogeographic region element, 7 Iranio-Turanian. The phytogeographic regions of 4 taxa are not known. The rate of endemism is lower in the areas that are completely in the transition zone (Table 3). This is because the taxa found in these areas are widespread and grow in more than one phytogeographic region.

This study will help in bringing about a better understanding of the flora of Turkey in the future.

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