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Contribution to the Flora of Hazar Mountains (Elazığ)

by

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Contribution to the Flora of Hazar Mountains (Elazığ)

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ABSTRACT

The study was carried out from 1979 to 1981. The plants listed in this study cover the taxa collected from the Hazar Mountains located in the south of the Elazığ province.

The plants were listed in accordance with the sequence used by *Davis* in his book "Flora of Turkey". As a result of the study 636 species which belong to 329 genera and 75 families have been identified.

The distribution percentages of the species within the floristic regions are as follows: *Irano-Turanian* (30.0 %), *Mediterranean* (5.6 %), *Euro-Siberian* (4.4 %), *Endemics* (9.7 %), *Pluriregionals* (39.1 %), *Cosmopolits* (1.7 %) and *undecided* (9.5 %).

ÖZET

Bu çalışma 1979 ile 1981 yılları arasında tamamlandı. Çalışmanın bitki listesindeki taksonlar Elazığ İlinin güneyinde yer alan Hazar Dağlarından toplandı.

Bitkiler *Davis*'in "Flora of Turkey" adlı eserindeki sıraya göre listelendi. Çalışma sonucu 75 familya ve 329 cinsle ait 636 tür teşhis edildi.

Floristik bölgeler arasında türlerin dağılışı şöyledir: *Iran-Turan* (% 30.0), *Akdeniz* (% 5.6), *Avrupa-Sibirya* (% 4.4), *Endemik* (% 9.7), *Çok Bölgeli*, (% 39.1), *Kozmopolit* (% 1.7) ve *karar verilemeyenler* (% 9.5).

INTRODUCTION

The aim of this study was to find out the flora of this area which has not been properly studied before. A few botanists such as Prof. Dr. A. BAYTOP. (1), H.F. von HANDEL-MAZZETTI (4), Dr. A. HUBER-MORATH (5), Dr. P.H. DAVIS (9), P.E.E. SINTENIS (10), M. ZOHARY (11) have collected some material from the area.

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Therefore in this work, we tried to carry out a study of the flora of the Hazar Mountains. We hope that it will be useful.

THE STUDY AREA

The Hazar Mountains are located in the south-eastern part of the Elaziğ province. The area of the Hazar Mountains is approximately 90 square kilometres. The mountain chains have several peaks, their altitudes vary from 1399 m to 2347 m.

According to the meteorological data (12), the annual mean precipitation is around 433.2 mm. The most rainy season of the area is spring. However, summer has a little amount of rain. The annual mean temperature is 13.0°C in the area. The mean maximum temperatures are seen in July (27.2°C) and August (27.0°C) whereas, the mean minimum is found in January (-1.3°C).

The steppe vegetation prevails in the study area. *Astragalus gummi-fer*, *A. kurdicus* var. *muchianus* and *Genista albida* communities are prominent in the vegetation.

MATERIAL and METHOD

The plants were collected monthly in different floristic periods of the vegetation from the study area in 1979 and 1980. Most of the species collected were identified by the authors and some of them were sent to the other taxonomists. For the identification many flora books were used by us such as: Boissier (13), Davis (9), Komarow (14), Rechinger (15), Townsend (16) and Tutin-Heywood (17). The plant samples are deposited in the herbarium of Firat University.

According to Davis's (9) grid system suggested in the "Flora of Turkey" volume I., the study area falls within B7 grid-square (Fig.1). The phytogeographical areas of the plants and endemics were revealed by using "Flora of Turkey" volumes I-VII. The plants belonging to more than two phytogeographical regions were considered as a pluriregional ones.

Although the species are given in alphabetical order, the rank of the families and genera were adopted from the *Flora*.

The numbers which follow the species name show the localities in the area studied (Fig.1). In the plant list we have used abbreviations that should be readily comprehensible.

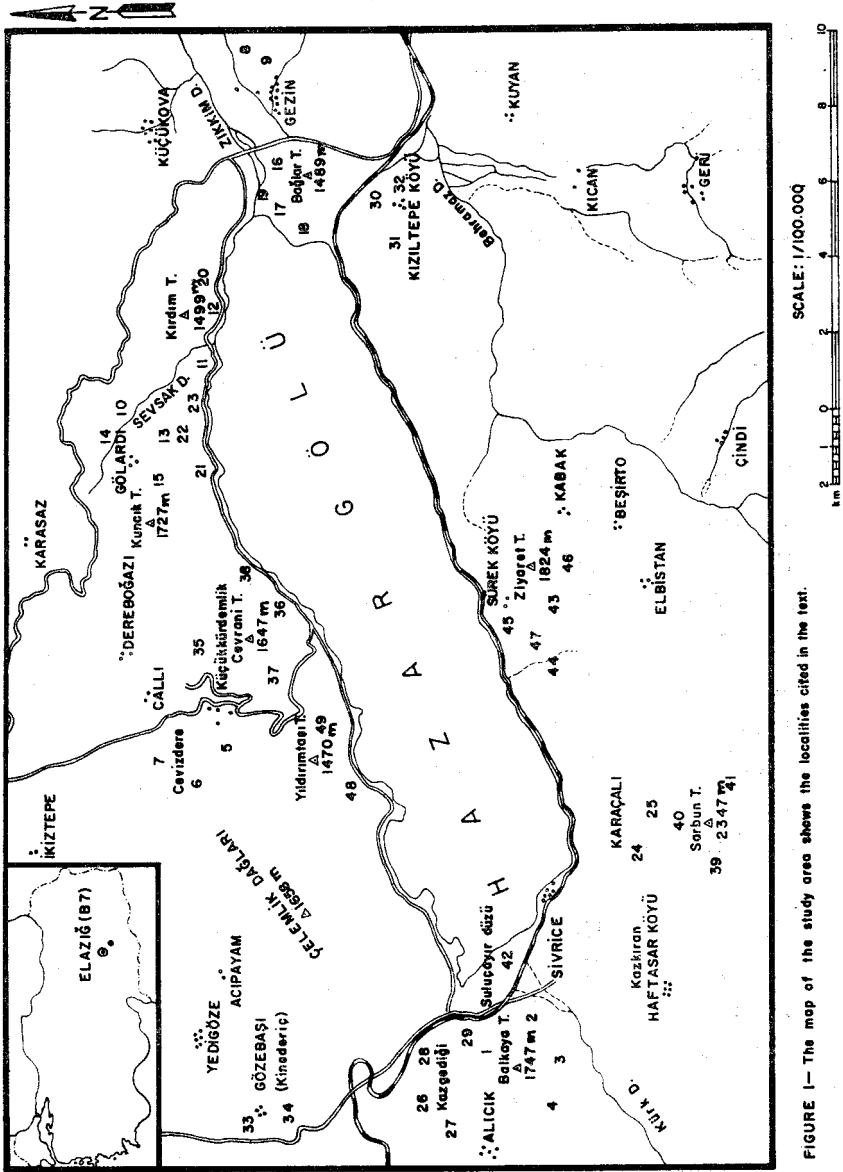


FIGURE 1— The map of the study area shows the localities cited in the text.

ABBREVIATIONS

Alt.	Altitude
Azn.	G.V.Aznavour
Bal.	B.Balansa
Boiss.	P.E.E.Boissier
Bornm.	J.F.N.Bornmüller
Cand.	C.A.Candargy
Contandr.	J.Contandriopoulos
D.	P.H.Davis
Da.	Mountain or mountain range
De.	Stream
E.	East
Ehrend.	F.Ehrendorfer
Fors.-Maj.	G.J.Forsyth-Major
G.	Lake
Hand-Mazz.	H.F.von Handel-Mazzetti
Haradj.	M.Haradjan
Hausskn.	C.Haussknecht
Heldr.	T.von Heldreich
Hub.-Mor.	A.Huber-Morath
Km	Kilometres
Maniss.	A.Manissadjian
m.	metres
N.	North
Plitm.	U.Plitmann
Rech.	K.H.Rechinger fil.
Runem.	H.Runemark
Sint.	P.E.E.Sintenis
Song.	S.Snogerup
S.	South
Spitz.	F.Spitzenberger
Stn.and Hend.	J.D.A.Stainton and D.M.Henderson

d'Urv.	J.S.C.D.d'Urville
W.	West
Yalt.	F.Yaltırık

RESULTS

At the end of the study 603 species were identified from the study area. Two of them belong to the divisio of *Pteridophyta* and the remaining to the divisio of *Spermatophyta*. Thirty-three species given in the list were collected by the other botanists. The distribution percentage of the families of the Hazar Mountains Flora are as follows respectively: *Fabaceae* 82 (12.9 %), *Asteraceae* 78 (12.3 %), *Brassicaceae* 47 (7.4 %), *Lamiaceae* 39 (6.1 %), *Caryophyllaceae* 38 (6.0 %), *Poaceae* 38 (6.0 %), *Apiaceae* 30 (4.7 %), *Boraginaceae* 21 (3.3 %), *Rosaceae* 16 (2.5 %), *Ranunculaceae* 15 (2.3 %) and all the rest of the total 202 (31.7 %).

According to the results, the distribution percentages of the phytogeographic elements are as follows: *Irano-Turanian* 173 (30.0 %), *Mediterranean* 33 (5.6 %), *Euro-Siberian* 26 (4.4 %), *Endemics* 56 (9.7 %), *Cosmopolits* 10 (1.7 %), *Pluriregionals* 226 (39.1 %) and undecided 55 (9.5 %). As can be seen in the distribution percentages, *Irano-Turanian* phytogeographic elements are found to a quite high degree compared with the others.

Some species were adopted as new records on the basis of distributional data given by Baytop (1), Davis (9), Huber-Morath (5), and Sorger (18). As a result of the study, a hundred species were new records for B7 grid-square. These species were marked with an asterisks in the plant list.

Ten species were morphologically different from the typical ones given in the *Flora* (9). These differences also were mentioned in the plant list.

LOCALITIES

- Station 1. Balkaya Dağı, in the *Astragalus gummifer* community, 1400–1550 m.
- ” 2. Balkaya Dağı, E. slope, in the *Quercus infectoria* woodland, 1350–1450 m.

- " 3. Balkaya Dağı, S. slope, in the pasture, 1300 m.
- " 4. Balkaya Dağı, Gülgediği, in the *Genista albida* Community, 1350-1500 m.
- " 5. Cevizdere, in the *Astragalus* sp. community, 1400 m.
- " 6. Cevizdere, in the *Quercus infectoria* woodland, 1400 m.
- " 7. Cevizdere, in the steppe, 1270-1500 m.
- " 8. Gezin village, Tekevler, along the stream side, 1300 m.
- " 9. Gezin village, Tekevler, in the field, 1300 m.
- " 10. Gölardı village, valley of the Sevsak De., 1250-1450 m.
- " 11. Gölardı village, roadside, 1270-1350 m.
- " 12. Gölardı village, in the sandy places of the shore of the Hazar G., 1250 m.
- " 13. Gölardı village, in the wet meadow, 1300 m.
- " 14. Gölardı village, in the steppe, 1400 m.
- " 15. Gölardı village, in the *Quercus infectoria* woodland 1300-1500.
- " 16. The E. coast of the Hazar G., Kilise, in the plantation area, 1350 m.
- " 17. The E. coast of the Hazar G., Kilise, in the sandy places of the shore, 1240 m.
- " 18. The E. coast of the Hazar G., Kilise, in the unstable gravels, 1300-1400 m.
- " 19. The E. coast of the Hazar G., Kilise, in the wet pasture, 1250-1300 m.
- " 20. The Hazar G., the camping area, in the *Quercus* sp. community, 1350 m.
- " 21. The Hazar G., the camping area of the University, in the sandy places of the shore, 1250 m.
- " 22. The Hazar G., the camping area of the University, in the steppe, 1350 m.
- " 23. The Hazar G., the camping area of the University, in the *Quercus* sp. community, 1300 m.
- " 24. Karaçalı village, Arpalık, in the *Astragalus* sp. community, 1400-1600 m.

- ” 25. Karaçalı village, Arpalık, in the grassland, 1650 m.
- ” 26. Kazgediği, in the *Astragalus* sp. community, 1400 m.
- ” 27. Kazgediği, in the steppe, 1400 m.
- ” 28. Kazgediği, in the *Quercus* sp. community, 1400 m.
- ” 29. Kazgediği, in the field, 1400 m.
- ” 30. Kızaltepe village, in the *Astragalus* sp. community, 1450 m.
- ” 31. Kızaltepe village, in the *Quercus cerris* woodland, 1450 m.
- ” 32. Kızaltepe village, in the steppe, 1450 m.
- ” 33. Gözebaşı village, in the field, 900–950 m.
- ” 43. Gözebaşı village, nearby the road Elazığ-Diyarbakır, 900–1250 m.
- ” 35. Kürdemlik Dağı, the valley of the Kurudere, 1260–1500 m.
- ” 36. Kürdemlik Dağı, in the *Astragalus* sp. community, 1350–1550 m.
- ” 37. Kürdemlik Dağı, in the *Quercus infectoria* woodland, 1400 m.
- ” 38. Kürdemlik Dağı, in the steppe, 1250–1500 m.
- ” 39. Sarbuntepe, in the grassland, 1850–1950 m.
- ” 40. Sarbuntepe, in the Kurudere valley, 1550 m.
- ” 41. Sarbuntepe, in the *Astragalus* sp. community, 1450–1950 m.
- ” 42. Gölbaşı, in the waterlogged places of the *Tamarix* sp. and *Typha* sp. communities, 1250 m.
- ” 43. Sürek village, in the pasture, 1250–1350 m.
- ” 44. Sürek village, in the dried stream bed, 1250–1400 m.
- ” 45. Sürek village, in the sandy places of the shore, 1250 m.
- ” 46. Sürek village, in the rocky places of the steppe, 1300–1500 m.
- ” 47. Sürek village, in the cultivated area, 1350 m.
- ” 48. Güneytepe, in the *Quercus* sp. woodland, 1350 m.
- ” 49. Güneytepe, in the bed of the dried stream, 1300–1350 m.

LIST OF THE VASCULAR PLANTS

I- PTERIDOPHYTA

EQUISETACEAE

Equisetum arvense L.-Sta. 42, Altan 539(620), *E. ramosissimum* Desf.-Sta.25, Altan 650(843).

II- SPERMATOPHYTA

IIA- GYMNOSPERMOPHYTA

CUPRESSACEAE

**Juniperus oxycedrus* L.subsp.*oxycedrus* -Sta. 41, Altan 604.

IIB- ANGIOSPERMOPHYTA

IIBi- DICOTYLEDONOPSIDA

RANUNCULACEAE

Nigella oxypetala Boiss.-Sta. 14, Altan 734, *Delphinium peregrinum* L.-Sta.7, Altan 507, Det.T.Ekim (The species has distinguished in the Flora (9) by having densely pilose folliculus but in our samples it has glabrous one), *Consolida glandulosa* (Boiss.et Huet) Bornm.-Sta.36, Altan 386, *C.oliveriana* (DC.) Schröd.-Sta.27, Altan 358, *Clematis orientalis* L.-Sta.8, Altan 842. *Adonis aestivalis* L. subsp. *aestivalis* -Sta.16, Altan 41, *A.flammea* Jacq.-Sta.7, Altan 53, *Ranunculus arvensis* L.-Sta. 39, Altan 425, *R.brachylobus* Boiss.et Hoh.subsp.*incisilobatus* Dav.-Sta. 19, Altan 579, *R.constantinopolitanus* (DC.) d'Urv.-Sta.43, Altan 17, *R.cuneatus* Boiss.-Sta.19, Altan 43. *R.isthmicus* Boiss.subsp.*stepporum* Davis -Sta.19, Altan 36, *R.kochii* Ledeb.-Sta.25, Altan 10, Det. Hub.-Mor., *R.sericeus* Banks et Sol.-Sta.42, Altan 255, *Ceratocephalus falcatus* (L.) Pers.-Sta.45, Altan 658.

BERBERIDACEAE

**Leontice leontopetalum* L.subsp.*ewersmannii* (Bunge) Coode -Sta.33, Altan 1, **Bongardia chrysgonum* (L.) Spach -Sta.33, Altan 758.

* The figure shows the new record for the B7 grid-square.

PAPAVERACEAE

**Glaucium acutidentatum* Hausskn. et Bornm.-Sta.29, Altan 344, *G.leiocarpum* Boiss.-Sta.6, Altan 45 (219), *Roemeria hybrida* (L.) DC.-Sta.17, Altan 38(146), Det. Hub.-Mor., **Papaver armeniacum* (L.) DC.-Sta.46, Altan 782, *P.lacerum* Popov -Sta.7, Altan 60(145), Det. Hub.-Mor., *P.tauricola* Boiss.-Sta.41, Altan 600(819), Det. Hub.-Mor., *Hypecoum imberbe* Sibth.et Sm.-Sta.17, Altan 42, *Corydalis rutifolia* (Sibth.et Sm.) DC.subsp.*erdellii* (Zucc.) Cullen et Davis -Sta.41, Altan 11, *Fumaria asepala* Boiss.-Sta.7, Altan 134, Det. Hub.-Mor.

BRASSICACEAE (CRUCIFERAE)

Sinapis arvensis L.-Sta.13, Altan 702 (644), **Raphanus raphanistrum* L.-Sta.9; Altan 833, **Crambe orientalis* L.var.*orientalis* -Sta.21, Altan 829; *Conringia perfoliata* (Meyer) Busch -Sta.4, Altan 679; *Lepidium latifolium* L.-Sta.44, Altan 522, Det. Hub.-Mor.; *L.ruderales* L.-Sta.24, Altan 776; **Cardaria draba* (L.) Desv.subsp.*chalepensis* (L.) Schulz -Sta.39, Altan 462; **C.draba* (L.) Desv.subsp.*draba*. -Sta.38, Altan 215; *Isatis candolleana* Boiss.-Sta.14, Altan 713(709); *I.constricta* Davis -Sta.14, Altan 708; **I.tinctoria* L.subsp.*tomentella* (Boiss.) Davis -Sta.38, Altan 211, Det.E.Yurdakulol; *Aethionema arabicum* (L.) Andrzej. -Sta.38, Altan 217; *A.armenum* Boiss. -Sta.32, Altan 401(818); **A.carneum* (Banks et Sol.) Fedtsch.-Sta.18, Altan 728; *A.grandiflorum* Boiss. et Hohen.-Sta.24, Altan 230 (263); *A.iberideum* (Boiss.) Boiss.-Sta.46, Altan 641; *Thlaspi perfoliatum* L.-Sta.20, Altan 638; *Capsella bursa-pastoris* (L.) Medik.-Sta.20, Altan 640; *Boreava orientalis* Jaub.et Spach -Sta.4, Altan 825; *Myagrum perfoliatum* L.-Sta.11, Altan 688; **Neslia paniculata* (L.) Desv.-Sta.27, Altan 774; *Fibigia clypeata* (L.) Medik.-Sta.6, Altan 44 (100); *F.macrocarpa* (Boiss.) Boiss.-Sta.4, Altan 801; *Alyssum callichorum* Boiss.et Bal.-Sta.38, Altan 835, Det.Hub.-Mor. *A.condensatum* Boiss.et Hausskn.subsp.*flexibile* (Nyar.) Dubley Sta.24, Altan 263 (457), Det.Hub.-Mor.; *A. filiforme* Nyar.-Sta.7, Altan 149 (235-231), Det.Hub.-Mor.; *A.murale* Waldst.et Kit.var. *murale* -Sta.17, Altan 423; *A.strictum* Willd.-Sta.6, Altan 48, Det: Hub.-Mor.; *A.strigosum* Banks et Sol.subsp.*strigosum* -Sta.10, Altan 696(774); *A.szovitsianum* Fisch.et Mey.-Sta.6, Altan 99, Det: Hub.-Mor.; *Clypeola aspera* (Grauer) Turrill-Sta.27, Altan 753; *C.jonthlaspi* L.-Sta.14, Altan 690; **Arabis aucheri* Boiss.-Sta.44, Altan 635; *A.caucasica* Willd.subsp.

caucasica -Sta.46, Altan 642.; **A.nova* Vill.-Sta.12, Altan 722; **Cardemine hirsuta* L.-Sta.43, Altan 296; **C.impatiens* L.var.*impatiens* -Sta. 43, Altan 646; *Hesperis bottae* Fourn. D.22090; *H.pendula* DC.-Sta.10, Altan 678; *Erysimum diffusum* Ehrh.-Sta.14, Altan 719, Det: T.Ekim; *E.Echinellum* Hand.-Mazz.Handel-Mazzetti 2608; **E.repandum* L.-Sta. 14, Altan 720; (The fruit length of the species is mentioned 40 to 60 mm in the Flora (9) but in our samples it goes up to 70 mm), *E.symrnaeum* Boiss. et Bal.-Sta.7, Altan 98, Det: Hub.-Mor.; **Sisymbrium altissimum* L.-Sta.14, Altan 721; *S.loesellii* L.-Sta.8, Altan 832; *Descurainia sophina* (L.) Webbex Prantl D. 28978; *Camelina rumelica* Vel.-Sta. 33, Altan 772 (715-637).

CAPPARACEAE

Cleome ornithopodioides L.-Sta.17, Altan 545.

RESEDACEAE

Reseda lutea L.var.*lutea* -Sta.12, Altan 811.

CISTACEAE

Helianthemum ledifolium (L.) Miller var.*ledifolium* -Sta.6, Altan 111.

VIOLACEAE

Viola occulta Lehm.-Sta.6, Altan 81; *V.odorata* L.-Sta.41, Altan 3.

PORTULACACEAE

**Portulaca oleracea* L.-Sta.41, Altan 836x.

CARYOPHYLLACEAE

Arenaria acerosa Boiss.-Sta.4, Altan 815; *A.gypsophiloides* L.var. *glabra* Fenzl-Sta.29, Altan 362; *A.ledebouriana* Fenzl.var.*ledebouriana* -Sta.24, Altan 226; *A.leptoclados* (Reichb.) Guss. D.28998; *A.serpyllifolia* L.-Sta.14, Altan 694; *Minuartia juniperiana* (L.) Maire et Petitm. -Sta.4, Altan 816; *M.montana* L.subsp.*wiesneri* (stapf) McNeill-Sta.49,

Altan 705; *M.multinervis* (Boiss.) Bornm. D.28995; *M.subtilis* (Fehzl) Hand.-Mazz.-Sta.16, Altan 883; **Stellaria media* (L.) Vill.-Sta. 43, Altan 836Y.; **Cerastium dichotomum* -Sta.7, Altan 120; *C.glomeratum* Thuill.-Sta.43, Altan 643, Det: O.Ketenoglu; **Holosteum umbellatum* L. var.*umbellatum*-Sta.16, Altan 639; *Bufoia tenuifolia* L.-Sta.38, Altan 499; **Sagina procumbens* L.-Sta.41, Altan 482; *Dianthus floribundus* Boiss.-Sta.28, Altan 326; Det: M.Dalci; *D.masmenaeus* Boiss.var.*glabrescens* Boiss.-Sta.4, Altan 805; *D.orientalis* Adams-Sta.46, Altan 517(325), Det: M.Dalci; *D.strictus* Banks et Sol.var.*axilliflorus* (Fenzl) Re. -Sta.41, Altan 450; *Petrorhagia cretica* (L.) Ball et Heywood -Sta. 44, Altan 785; *Saponaria orientalis* L.-Sta.44, Altan 835; *S.prostrata* Willd.subsp.*anatolica* Hedge-Sta.6, Altan 46; *S.viscosa* C.A.Meyer Sta.22, Altan 216; *Phryna ortegioides* (Fisch.et Mey.) Pax et Hoffm.-Sta.17; Altan 554; *Gypsophila pilosa* Hudson-Sta.22, Altan 893; *Acanthophyllum verticillatum* (Willd.) Hand-Mazz.-Sta.18, Altan 869. *Vaccaria pyramidata* Medik.var.*grandiflora* (Fisch.ex DC.) Cull.-Sta.26, Altan 329 (330); *Silene armena* Boiss.var.*armena* -Sta.7, Altan 140, Det: Hub.-Mor.; *S.chaetodonta* Boiss.-Sta.17, Altan 541, Det: Hub.-Mor.; *S.chlorifolia* Sm.-Sta.28, Altan 359, Det: E.Yurdakulol; **S.conoidea* L.-Sta.6, Altan 47; *S.dichotoma* Ehrh.subsp.*dichotoma* -Sta.49, Altan 685; *S.longipetala* Vent.-Sta.5, Altan 142, Det: Hub.-Mor.; *S.montbretiana* Boiss.-Sta.6, Altan 119, Det: Hub.-Mor.; *S.muradica* Schischk. D.28986; *S.vulgaris* (Moench) Garcker var.*vulgaris* -Sta.44, Altan 844; *Cucubalus baccifer* L.-Sta.44, Altan 845; *Agrostemma githago* L.-Sta.28, Altan 315 (The calyx teeth of the species are mentioned 35 mm in the Flora (9) but it goes up to 50 mm in our samples duration of fruit).

ILLECEBRACEAE

Herniaria incana Lam.-Sta.7, Altan 113; *Paronychia chionaea* Boiss.-Sta.32, Altan 402, Det: Hub.-Mor.; *P.kurdica* Boiss.subsp.*kurdica* var.*kurdica* -Sta.38, Altan 366; **Scleranthus annuus* L.subsp.*annuus* -Sta.16, Altan 892; *S.uncinatus* Schur.-Sta.6, Altan 108, Det: E. Yurdakulol.

POLYGONACEAE

Atraphaxis spinosa L.-Sta.11, Altan 558; *Rheum ribes* L.-Sta.46, Altan 790, **Polygonum amphibium* L.-Sta.44, Altan 902; *P.luzuloides*

Joub.et Spach -Sta.46, Altan 523, Det: Hub.-Mor.; *P.polycnemoides* Joub.et Spach -Sta.11, Altan 501; *P.pulchellum* Lois.-Sta.11, Altan 498, Det: Hub.-Mor.; *P.setosum* Jacq.-Sta.41, Altan 595, Det: Hub.-Mor.; *Rumex acetosella* L.-Sta.24, Altan 232; *R.crispus* L.-Sta.42, Altan 298; **R. conglomeratus* Murr.-Sta.19, Altan 865; *R.scutatus* L.-Sta. 28, Altan 338.

CHENOPODIACEAE

Chenopodium album L.subsp.*album* var.*album* -Sta.17, Altan 880; *C.album* L.subsp.*iranicum* Aellen var.*microphyllum* (Boenn.) Aellen -Sta.17, Altan 855; **C.botrys* L.-Sta.17, Altan 553; **Atriplex olivieri* Moq.-Sta.8, Altan 831; *Kochia scoparia* (L.) Schrad.-Sta.11, Altan 487; Det: Hub.-Mor.; **Salsola ruthenica* Iljin -Sta.38, Altan 242; *Noaea mucronata* (Forssk.) Aschers.et Schweinf.subsp.*mucronata* -Sta.12, Altan 583; *N.mucronata* (Forssk.) Aschers. et Schweinf.subsp.*tournefortii* (Spach) Aellen -Sta.41, Altan 593, (427-591), Det: T.Ekim.

AMARANTHACEAE

**Amaranthus blitoides* S.Wats.-Sta.8, Altan 831; **A.chlorostachys* Willd.-Sta.16, Altan 874; **A.patulus* Bert.-Sta.16, Altan 881.

TAMARICACEAE

Tamarix smyrnensis Bunge -Sta.42, Altan 519; *T.tetrandra* Pallas et Bieb.-Sta.42, Altan 274.

HYPERICACEAE (GUTTIFERAE)

Hypericum hyssopifolium Chaix subsp.*elongatum* (Led.) Woron.-Sta.24, Altan 237, Det.Hub.-Mor.; *H.perforatum* L.-Sta.43, Altan 908; *H.scabrum* L.-Sta.16, Altan 371 (218-399) Det.Hub.-Mor.; *H.scabroides* Robson et Poulter D. 22051; *H.triquetrefolium* Turra -Sta.35, Altan 368.

MALVACEAE

**Hibiscus trionum* L.-Sta. 33, Altan 839; *Malva neglecta* Wallr. Sta.39, Altan 601(484), Det.Hub.-Mor.; **M.sylvestris* L.-Sta.34, Altan 891; *Alcea calvertii* (Boiss.) Boiss.-Sta.36, Altan 367, Det: Hub.-Mor.

LINACEAE

Linum mucronatum Bertol.subsp.*mucronatum* -Sta.35, Altan 241.

GERANIACEAE

**Geranium pusillum* Burm.-Sta.21, Altan 764; *G.stepporum* Davis -Sta.18, Altan 39; **G.tuberosum* L.subsp.*tuberosum* -Sta.18, Altan 34; **Erodium hoefftianum* C.A.Meyer -Sta.49, Altan 700; **E.laciniatum* (Cav.) Willd.subsp.*laciniatum* -Sta.49, Altan 698.

ZYGOPHYLLACEAE

Tribulus terrestris L.-Sta.42, Altan 824.

RHAMNACEAE

Paliurus spina-christi Miller -Sta.2, Altan 273.

ANACARDIACEAE

**Rhus coriaria* L.-Sta.7, Altan 506.

FABACEAE (LEGUMINOSAE)

Genista albida Willd.-Sta.4, Altan 370; *Colutea cilicica* Boiss. et Bal.-Sta.32, Altan 415; **Astragalus bicolor* Lam.-Sta.6, Altan 154(242), Det: T.Ekim (Although the species has distinguished in the Flora (9) by having short black adpressed bifurcate hairs on the legume in our samples these hairs are not seen) *A.camptoceras* Bunge -Sta.23, Altan 693(202); *A.campylorrhynchus* Fisch.et Mey.-Sta.14, Altan 718; *A.cephalotes* Banks et Sol.var.*brevicalyx* Eig -Sta.41, Altan 634; *A.cephalotes* Banks et Sol.var.*cephalotes* -Sta.38, Altan 206; *A.christianus* L.-Sta.22, Altan 446; *A.compactus* Lam.-Sta.26, Altan 348; *A.cretaceus* Boiss.et Kotschy.-Sta.38, Altan 387(62); *A.decurrens* Boiss.-Sta.31, Altan 421 (The calyx teeth of the species are mentioned 15-19 mm in the Flora (9) but it goes up to 9-10 mm in our samples) *A.gummifer* Lab.-Sta.35, Altan 388; *A.guttatus* Banks et sol.-Sta.22, Altan 667; **A.hamosus* L.-Sta.33, Altan 760; *A.kurdicus* Boiss.var.*muschianus* (Ky.et Boiss.) Chamb.-Sta.41, Altan 445; *A.lamarckii* Boiss.-Sta.41, Altan 430 (431-

442); *A.leporinus* Boiss.var.*hirsutus* (Post) Chamberlain -Sta.11, Altan 152; *A.macrocephalus* Willd.subsp.*finitimus* (Bunge) Chamb.-Sta.16, Altan 391; *A.microcephalus* Willd.-Sta.41, Altan 429, Det.Hub.-Mor.; *A.plumosus* Willd.var.*krugianus* (Freyn et Bornm.) Chamb.et Matth.-Sta.26, Altan 349, Det.Hub.-Mor.; *A.pycnocephalus* Fisch.var.*pycnocephalus* -Sta.35, Altan 394; *A.tigridis* Boiss.-Sta.37, Altan 201, Det. T.Ekim (Peduncles of the species are mentioned 13-15 cm in the Flora (9) but it is 45 cm length in our samples); *A.vexillaris* Boiss. D.28968; *A.zahlbruckneri* Hand.-Mazz.2580; *Cicer anatolicum* Alef.-Sta.44, Altan 778; **Cicer echinospermum* P.H.Davis -Sta.49, Altan 686; *C.pinnatifidum* Jaub.et Spach -Sta.38, Altan 619; **Vicia anatolica* Turrill -Sta.49, Altan 664; *V.assiriaca* Boiss.-Sta.33, Altan 763; *V.cracca* L.subsp. *stenophyla* Vel.-Sta.2, Altan 277; **V.cracca* L.subsp.*tenuifolia* (Roth) Gaudin -Sta.11, Altan 66; **V.grandiflora* Scop.var.*dissecta* Boiss.-Sta.22, Altan 737; **V.hirsuta* (L.) S.F.Gray -Sta.11, Altan 110; *V.koeieana* Rech.fil.-Sta.47, Altan 802; **V.lathyroides* L.-Sta.49, Altan 665; **V.monantha* Retz.subsp.*monantha* -Sta.10, Altan 735; **V.narbonensis* L.var. *serratifolia* (Jacq.) Ser.-Sta.11, Altan 74; *V.noeana* Reuter ex Boiss.var. *noeana* -Sta.49, Altan 666; *V.peregrina* L.-Sta.42, Altan 879; **Lathyrus aphaca* L.var.*aphaca* -Sta.11, Altan 73; *L.aphaca* L.var.*floribundus* (Vel.) K.Maly D.28979; *L.chloranthus* Boiss.-Sta.3, Altan 266, Det: O. Ketenoğlu; *L.cicera* L.-Sta.6, Altan 170; *L.gorgoni* Parl.var.*gorgoni* -Sta.28, Altan 345; *L.vinealis* Boiss.et Noe.-Sta.16, Altan 33; **Pisum sativum* L.subsp.*elatius* (Bieb.) Aschers et Graebn.var.*brevipedunculatum* Davis et Meikle -Sta.6, Altan 75; *Pisum sativum* L.subsp.*elatius* (Bieb.) Ashers et Graecbn.var.*pumilio* Meikle -Sta.25, Altan 247; *Ononis spinosa* L. subsp. *leiosperma* (Boiss.) Sirj.-Sta.39, Altan 472; *Trifolium arvense* L.var.*arvense* -Sta.28, Altan 346; **T.campestre* Schreb.-Sta.1, Altan 290; *T.dasyurum* C.Presl -Sta.6, Altan 165, Det: Hub.-Mor. **Trifolium echinatum* Bieb.-Sta.11, Altan 169; **T.globosum* L.-Sta.11, Altan 106; *T.hirtum* All.-Sta.6, Altan 168, Det: Hub.-Mor.; *T.pauciflorum* d'Urv.-Sta.6, Altan 171, Det: Hub.-Mor.; *T.pratense* L.var.*pratense* -Sta.42, Altan 265; **T.purpureum* Lois.var.*purpureum* -Sta.11, Altan 175; **T.repens* L.var.*giganteum* Log.-Foss.-Sta.8, Altan 840; *T.resupinatum* L.var.*resupinatum* -Sta.42, Altan 264; **T.speciosum* Willd.-Sta.11, Altan 177; *Melilotus alba* Desr.-Sta.43, Altan 780; *M.officinalis* (L.) Desr.-Sta.43, Altan 779; *Trigonella coelesyriaca* Boiss.-Sta.7, Altan 176; *T.coerulescenes* (Bieb.) Hal.-Sta.35, Altan 225; *T.crassipes*

Boiss.-Sta.49, Altan 680; *T.kotschyi* Fenzl.-Sta.6, Altan 139; *T.lunata* Boiss.-Sta.22, Altan 731; (Although, in the Flora (9) the flowers have been distinguished by having 1 to 3 umbellate, in our samples it is seen 4 umbellate); *T.monantha* C.A.Meyer subsp.*monantha* -Sta.6, Altan 114; *T.monspeliaca* L.-Sta.12, Altan 723; *T.velutina* Boiss.-Sta.6, Altan 207; *Medicago lupulina* L.-Sta.44, Altan 781; *M.minima* (L.) Bart.var.*brevispina* Benth.-Sta.44, Altan 827; **M.orbicularis* (L.) Bart.-Sta.12, Altan 729; **M.polymorpha* L.var.*vulgaris* (Benth.) Shinnery -Sta.27, Altan 826; *M.radiata* L.-Sta.14, Altan 732; *M.rigidula* (L.) All.var.*cinerascens* (Jord.) Rouy -Sta.34, Altan 761; *M.rigidula* (L.) All.var.*rigidula* -Sta.6, Altan 109; *M.sativa* L.subsp.*sativa* -Sta.31, Altan 173; *Dorycnium pentaphyllum* Scop.subsp.*anatolicum* (Boiss.) Gams -Sta.35, Altan 398; *Lotus corniculatus* L.var.*alpinus* Ser.-Sta.40, Altan 447; *L.corniculatus* L.var.*corniculatus* -Sta.3, Altan 260; *L.corniculatus* L.var.*tenuifolius* L.-Sta.42, Altan 542; *L.gebelia* Vent.var.*anthylloides* Boiss. D.22085; *L.gebelia* Vent.var.*gebelia* -Sta.38, Altan 389; *Coronilla varia* L.subsp.*varia* -Sta.26, Altan 311; *Hedysarum syriacum* Boiss.-Sta.19, Altan 866; *Onobrychis argyrea* Boiss.subsp.*argyrea* -Sta.27; Altan 305; *O.fallax* Freyn et Sint.-Sta.26, Altan 304; **Alhagi pseudalhagi* (Bieb.) Desv.-Sta.34, Altan 443.

ROSACEAE

Cerasus mahaleb (L.) Miller -Sta.44, Altan 657, Det: H.Peşmen; *C.macrocarpa* (C.A.Meyer) Boiss.subsp.*tortuosa* (Boiss.et Hausskn.) Browicz -Sta.18, Altan 868, Det: H.Peşmen; *Rubus sanctus* Schreber -Sta.17, Altan 404, Det: Hub.-Mor.; *Potentilla recta* L.-Sta.25 Altan 241; *P.repens* L.-Sta.40, Altan 468; *Geum urbanum* L.-Sta.43; Altan 846; *Agri-
monia eupatoria* L.-Sta.43, Altan 831; *Sanguisorba minor* Scop.subsp.*lasiocarpa* (Boiss.et Hausskn.) Nordb.-Sta.28, Altan 334; *Rosa canina* L.-Sta.6, Altan 500; *R.hemisphaerica* J.Herrm.-Sta.28, Altan 771; *Cotoneaster nummularia* Fisch. et Mey.-Sta.46, Altan 608; *Crataegus aronia* (L.) Bosc.var.*aronia* -Sta.40, Altan 614; *C.sinaica* Boiss.Hand.-Mazz. 2623; **Pyrus communis* L.subsp.*sativa* (DC.) Hegi -Sta.46, Altan 900; **P.elaeagnifolia* Pallas subsp.*elaeagnifolia* -Sta.10, Altan 668; *P.syriaca* Boiss.var.*syriaca* -Sta.44, Altan 904.

LYTHRACEAE

Lythrum salicaria L.-Sta.39, Altan 461, Det: Hub.-Mor.

ONAGRACEAE

Epilobium hirsutum L.-Sta.42, Altan 532, Det: Hub.-Mor.; *E. minutiflorum* Hausskn.-Sta.42, Altan 512; *E. parviflorum* Schreb.-Sta.19, Altan 420, Det: Hub.-Mor.; *E. roseum* Schr.subsp.*subsessile* (Boiss.) P.H.Raven Hand.-Mazz.2563; *E. tetragonum* L.subsp.*tournefortii* (Mic.) H.Lev.-Sta.43 Altan 513.

CUCURBITACEAE

Bryonia aspera Stav.ex Ledeb.-Sta.6, Altan 689.

CRASSULACEAE

Rosularia radicyflora Boiss.subsp.*radicyflora* -Sta.4, Altan 254;
**Sedum caespitosum* (Cav.) DC.-Sta.46, Altan 660.

APIACEAE (UMBELLIFERAE)

Eryngium campestre L.var.*virens* Link -Sta.38, Altan 369; *Echinophora tenuifolia* L.subsp.*sibthorpiana* (Guss.) Tutin -Sta.27, Altan 653. *Chaerophyllum crinitum* Boiss.-Sta.3, Altan 813; *Grammosciadium platycarpum* Boiss.et Hausskn.-Sta.24, Altan 250; *Anthriscus nemorosa* (Bieb.) Sprengel -Sta.15 Altan 725; *Scandix iberica* Bieb.-Sta.6, Altan 128, Det: O.Ketenoglu; *S.stellata* Banks et Sol.-Sta.6, Altan 129 (84). *Symrniopsis cachroides* Boiss.-Sta.4, Altan 804, Det: H.Peşmen; *Bunium paucifolium* DC.var.*paucifolium* -Sta.37, Altan 190; *Pimpinella kotschyana* Boiss.-Sta.27, Altan 342; *P.tragium* Will.subsp.*lithophila* (Schischkin) Tutin D.22069. *Berula erecta* (Huds.) Coville -Sta.42 Altan 537, Det: Hub.-Mor.; *Conium maculatum* L.-Sta.28, Altan 355; *Parangos pabularia* Lindl.-Sta.46, Altan 791, Det: H.Peşmen; *P. peucedanifolia* Fenzl -Sta.24, Altan 249; *Bupleurum gerardi* All.-Sta.44, Altan 787, Det: H.Peşmen *Ammi visnaga* (L.) Lam.-Sta.42, Altan 536(126); *Falcaria falcaroides* (Bornm.et Wolff) Wolff -Sta.15, Altan 733; *Ferulago asparagifolia* Boiss. D.22055; *F.pauciradiata* Boiss.et Heldr.-Sta.44, Altan 828; Det. H:Peşmen; **Pastinaca sativa* L.-Sta.8,

Altan 847; *Malabaila secacul* Banks et Sol.-Sta.29, Altan 356; *Heracleum antasiaticum* Manden -Sta.43, Altan 788; *Tordylium cappadocicum* Boiss.-Sta.34, Altan 756, Det: H.Peşmen; **Torilis arvensis* (Huds.) Link.subsp. *elongata* (Hoffmans et Link) Cannon -Sta.28, Altan 343; *Astrodaucus orientalis* (L.) Drude -Sta.34, Altan 412; *Caucalis platycarpus* L. D.28972; *Turgenia latifolia* (L.) Hoffm.-Sta.7, Altan 125; *Daucus carota* L.-Sta.3, Altan 280; *Artemisia squamata* L.-Sta.3, Altan 286.

CORNACEAE

**Cornus sanguinea* L.subsp.*australis* (C.A.Meyer) Jav.-Sta.44, Altan 829.

CAPRIFOLIACEAE

Sambucus nigra L.-Sta.44, Altan 843; **Lonicera caprifolium* L.-Sta.15, Altan 912.

RUBIACEAE

Crucianella macrostachya Boiss.-Sta.46, Altan 792; *Asperula arvensis* L.-Sta.6, Altan 96, Det: Hub.-Mor.; *A.stricta* Boiss.subsp.*latibracteata* (Boiss.) Ehrendf.-Sta.27, Altan 323. *Asperula xyloorrhiza* Nabelek -Sta.37, Altan 214; *Galium aparine* L. -Sta.6, Altan 97; *G.galiopsis* (Hand.-Mazz.) Ehrendf.-Sta.16, Altan 405, Det: Hub. -Mor.; *G.haussknechtii* Ehrend. D.28991; *G.nigricans* Boiss.-Sta.41, Altan 436; *G.runcinatum* Ehrend.et Schonb.-Tem. D.28987; **G.subvelutinum* (DC.) C.Koch.-Sta.27, Altan 310, Det: Hub.-Mor.; *G.tenuissimum* Bieb.subsp.*trichophorum* (Kar.et Kir.) Ehr.-Sta.6, Altan 144; *G.verum* L.subsp.*verum* -Sta.31, Altan 407(463) Det: Hub.-Mor; *Callipeltis cucullaria* (L.) Steven -Sta.6, Altan 127; *Cruciata taurica* (Pallas ex Willd.) Ehrend.-Sta.26, Altan 309.

VALERIANACEAE

**Valeriana dioscoridis* Sm.-Sta.11, Altan 54; **Valerianella carinata* Lois.-Sta.49, Altan 682; **V.coronata* (L.) DC.-Sta.28, Altan 765(Height of the species was mentioned 5 to 25 cm in Flora (9) but in our samples

it goes up to 45 cm); *V.glomerata* Boiss.et Bal.-Sta.28, Altan 821; *V.pumila* (L.) DC.-Sta.14, Altan 726(727); *V.tuberculata* Boiss.-Sta.27, Altan 752; **V.vesicaria* (L.) Moench -Sta.11, Altan 103.

DIPSACACEAE

**Dipsacus laciniatus* L.-Sta.42, Altan 848; *Cephalaria speciosa* Boiss.et Kotschy -Sta.6, Altan 494; *Scabiosa argentea* L.-Sta.17, Altan 860; *S.micrantha* Desf.-Sta.4, Altan 812; *S.persica* Boiss. -Sta.1, Altan 807; *Pterocephalus plumosus* (L.) Coulter -Sta.27, Altan 768.

ASTERACEAE (COMPOSITAE)

**Bidens tripartita* L.-Sta.8, Altan 901(838) (Achenes of the species has been mentioned by bearing 2 aristae in the Flora (9) but in our sample it is found 3 aristae); *Xanthium spinosum* L.-Sta.27, Altan 621; *X.strumarium* L.subsp.*cavanillesii* (Schouw) D.Löve et P.Dansereau -Sta.17, Altan 590; *Inula aucheriana* DC.-Sta.31, Altan 413; *Pulicaria dysenterica* (L.) Bernh.-Sta.42, Altan 526, Det: T.Ekim; *P.vulgaris* (L.) Gaertner -Sta.42, Altan 515; *Helichrysum armenium* DC.subsp. *araxinum* (Kirp.) Takht. D.22071; *H.plicatum* DC.subsp.*plicatum* -Sta.26, Altan 318, Det: Hub.-Mor.; *Logfia arvensis* (L.) Holub -Sta.48, Altan 683; *Evax analotica* Boiss.et Heldr.-Sta.41, Altan 483, Det: Hub.-Mor.; *Erigeron acer* L.subsp.*acer* -Sta.19, Altan 875, Det: R.İlarslan; *Conyza canadensis* (L.) Croquist -Sta.49, Altan 724; *Bellis perennis* L.-Sta.39, Altan 605; *Senecio eriospermus* DC.var.*eriospermus* Hand.-Mazz. 2280; *S.mollis* Wild.-Sta.8, Altan 839, Det: A.Güner; *S.vernalis* Waldst.et Kit.-Sta.5, Altan 596 (29-55); *Tussilago farfara* L.-Sta.25, Altan 4; *Anthemis altissima* L.-Sta.7, Altan 91, Det: Hub.-Mor.; *A.coelopoda* Boiss.var.*bourgaei* Boiss.-Sta.35, Altan 194; *A.tinctoria* L.var.*tinctoria* -Sta.1, Altan 267(320); *A.wiedemanniana* Fisch.et Mey.-Sta.7, Altan 57, Det: Hub.-Mor.; *Achillea biebersteinii* Afan.-Sta.41, Altan 464 (210); *A.millefolium* L.subsp.*millefolium* -Sta.39, Altan 481; *A.vermicularis* Trin.sl.-Sta.46, Altan 796; *Tanacetum chiliophyllum* (Fisch.et Mey.) Schultz Bip.var.*chiliophyllum* -Sta.7, Altan 135, Det: Hub.-Mor.; *Trip-leurospermum decipiens* (Fisch.et Mey.) Bornm.-Sta.42, Altan 268; *Artemisia vulgaris* L.-Sta.8, Altan 846; *Gundelia tournefortii* L.var. *tenuisecta* Boiss.-Sta.41, Altan 479; *Cousinia sintenisii* Freyn -Sta.17,

Altan 857; *Arctium minus* (Hill) Bernh.subsp.*pubens* (Babington) Arenes-Sta.42, Altan 841; *Onopordum candidum* Nab -Sta.17, Altan 872; *O.carduchorum* Bornm.et Beauverd -Sta.38, Altan 384; **Cirsium arvense* (L.) Scop.subsp.*vestitum* (Wimmer et Grab.) Petrak -Sta.42, Altan 850; *C.lappaceum* (Bieb.) Fischer -Sta.40, Altan 477; **C.rhizocephalum* C.A. Meyer subsp.*sinuatum*(Boiss.) Davis et Paris -Sta.39, Altan 602; *C.vulgare* (Savi) Ten.-Sta.17, Altan 871; *Picnomon acarna* (L.) Cass.-Sta. 17, Altan 587; *Ptilostemon afer* (Jacq.) Greu.subsp.*ebernus* Greu.Hand. -Mazz.2571; *Carduus acanthoides* L.subsp.*acanthoides* -Sta.39, Altan 480; *C.nutans* L.-Sta.39, Altan 464; *Serratula cerinthifolia* (Sm.) Boiss. -Sta.37, Altan 363; *Centaurea aggregata* Fisch.et Mey. ex DC.subsp. *aggregata* -Sta.28, Altan 342; *C.depressa* Bieb. D.28974; *C.iberica* Trev.ex Sprengel -Sta.17, Altan 586; *C.kurdica* Reichardt -Sta.26, Altan 306, Det: Hub.-Mor.; *C.pyrrhoblephara* Boiss.-Sta.44, Altan 656; *C.saligna* (C.Koch) Wagen. Hand.-Mazz.2617; *C.solstitialis* L.subsp.*solstitialis* -Sta.38, Altan 825; *C.triumfettii* All.-Sta.16, Altan 30, Det: Hub.-Mor.; *C.urvillei* DC.subsp.*hayakiana* Wagenitz -Sta.6, Altan 136; *C.virgata* Lam.-Sta.26, Altan 317; *Zoegea leptaura* L.-Sta.26, Altan 333; *Crupina crupinastrum* (Moris) Vis.-Sta.6, Altan 90; *Cnicus benedictus* L.var.*benedictus* -Sta.6, Altan 69; *C.benedictus* L.var.*kotschyii* Boiss.M.Z.et P.1860-32; *Carthamus persicus* Willd.-Sta.27, Altan 823; *Carlina oligocephala* Boiss.et Kotschy.subsp.*oligocephala* -Sta.42, Altan 847; *Xeranthemum annuum* L.-Sta.7, Altan 504; *Siebera pungens* (Lam.) J.Gay -Sta.38, Altan 505; *Chardinia orientalis* (L.) O.Kuntze -Sta.38, Altan 192; *Echinops orientalis* Trautv.-Sta.38, Altan 392; *E.pungens* Trautv.var.*pungens* -Sta.41, Altan 478, Det: E.Yurdakulol; *Scorzonera acantholimon* Hand.-Mazz.-Sta.41, Altan 467; *S.semicana* DC.-Sta.35, Altan 193; *Tragopogon longirostris* Bisch.ex Schultz Bip.-Sta.5, Altan 137; *Leontodon asperrimus* (Willd.) J.Ball -Sta.41, Altan 465; *Reichardia glauca* Matthews -Sta.19, Altan 863; *Pilosella auriculoides* (A.F.Lang) Sell et West -Sta.40, Altan 475; *Lactuca aculeata* Boiss.et Kotschy ex Boiss. -Sta.7, Altan 497; *Scariola orientalis* (Boiss.) Sojak-Sta.11, Altan 608; *S.viminea* (L.) F.M.Schmidt -Sta.46, Altan 525, Det: E. Yurdakulol; *Lapsana communis* L.subsp.*intermedia* (Bieb.) Hayek -Sta.39, Altan 597; *Taraxacum crepidiforme* DC.Sta.39, Altan 612; *T.syriacum* Boiss. -Sta.16, Altan 562; *Chondrilla juncea* L.var.*juncea* -Sta.36, Altan 485; *Crepis alpina* L.-Sta.6, Altan 138; *C.foetida* L.subsp.*rhoedifolia* (Bieb.) Celak -Sta.44, Altan 797; *C.sancta* (L.) Babcock -Sta.16, Altan 28, Det: Hub.-Mor.

CAMPANULACEAE

Campanula involucrata Aucher ex A.Dc.-Sta.24, Altan 251 (The species were mentioned by having two stigmas in the Flora (9), but it has three stigmas in our samples occasionally); *C.reuterana* Boiss.et Bal. A.Baytop 20157; *C.stricta* L.var.*stricta* -Sta.41, Altan 460; *C.strigosa* Banks et Sol.-Sta.37, Altan 222; *Legousia pentagonia* (L.) Thellung -Sta.11, Altan 83.

PRIMULACEAE

Androsace maxima L.-Sta.7, Altan 87; *Lysimachia verticillaris* Sprengel -Sta.43, Altan 840; *L.vulgaris* L.-Sta.43, Altan 832; **Anagallis arvensis* L.var.*caerulea* (L.) Gouan -Sta.16, Altan 885.

ASCLEPIADACEAE

Cynanchum acutum L.subsp.*sibiricum* (Willd.) Rech.-Sta.34, Altan 687; *Vincetoxicum canescens* (Willd.) Decne.subsp.*canescens* -Sta.24, Altan 233; *Cionura erecta* (L.) Griseb.-Sta.36, Altan 365.

GENTIANACEAE

**Centaurium pulchellum* (Swartz) Druce -Sta.42, Altan 538.

CONVOLVULACEAE

Convolvulus arvensis L.M.Zohary et Plitm. 18603-64; **C.betonici-folius* Miller subsp.*peduncularis* (Boiss.) Paris -Sta.17, Altan 873; *C.cardeni-chorum* Davis -Sta.4, Altan 814; *C.holosericeus* Bieb.subsp.*holosericeus* -Sta.35, Altan 390x; *C.holosericeus* Bieb.subsp.*macrocalycinum* Hausskn. et Bornm.ex Borm.-Sta.35, Altan 390y.

CUSCUTACEAE

**Cuscuta campestris* Yuncker -Sta.42, Altan 826; **C.monogyna* Vahl subsp.*monogyna* -Sta.10, Altan 911.

BORAGINACEAE

Heliotropium circinatum Griseb.-Sta.17, Altan 563; *H.dolosum* De Not.-Sta.38, Altan 376; **Rochelia cancellata* Boiss.et Bal.-Sta.10, Altan

662; *R.disperma* (L.Fil.) C.Koch var.*disperma* -Sta.7, Altan 123; **Myosotis laxa* Lehm.subsp.*caespitosa* (C.F.Schultz) Hyl.ex North.-Sta.27, Altan 770; **M.ramosissima* Rochel ex Schultes subsp.*ramosissima* -Sta.44, Altan 649; *Myosotis sicula* Guss.Hand.-Mazz.2548; *M.stricta* Link ex Roemer et Schultes -Sta.14, Altan 673; *Paracaryum strictum* (C.Koch) Boiss.-Sta.24, Altan 240; **Neatostema apulum* (L.) Johnston -Sta.49, Altan 706; *Echium italicum* L.-Sta.17, Altan 411; *Onosma aucheranum* DC. Hub.-Mor.13532; *O.bracteosum* Hausskn.et Bornm.-Sta.24, Altan 248, Det: Hub.-Mor.; *O.roussaei* DC.-Sta.6, Altan 124, Det: Hub.-Mor.; *O.sericeum* Willd.-Sta.2, Altan 281, Det: Hub.-Mor.; *Brunnera orientalis* (Schenk) Johnston -Sta.40, Altan 452; *Anchusa aucheri* DC.-Sta.35, Altan 224(35), Det: Hub.-Mor.; *A.azurea* Miller var.*azurea* -Sta.29, Altan 350; *A.leptophylla* Roemer et Schultes subsp.*tomentosa* (Boiss.) Chamb.-Sta.17, Altan 856, Det: H.Peşmen; *Nonea anchusoides* Boiss.et Buhse -Sta.10, Altan 751; *Alkanna megacarpa* DC.-Sta.6, Altan 85.

SOLANACEAE

Solanum alatum Moench -Sta.9, Altan 844; *S.nigrum* L.subsp. *nigrum* -Sta.9, Altan 845; **Datura innoxia* Miller -Sta.34, Altan 907; *Hyoscyamus reticulatus* L.-Sta.17, Altan 26.

SCROPHULARIACEAE

Verbascum agrimoniifolium (C.Koch) Hub.-Mor.-Sta.43, Altan 514; *V.apiculatum* Hub.-Mor.var.*tigridaeum* H.M. D.22064; *V.apiculatum* Hub.-Mor. x *lasianthum* Boiss. H.M.10620; *V.apiculatum* Hub.-Mor. x *sinuatum* L. H.M.10621; *V.cheiranthifolium* Boiss.var.*asperulum* (Boiss.) Murb.-Sta.17, Altan 886; *V.diversifolium* Hochst.-Sta.1, Altan 253; *V.lasianthum* Boiss.ex Bentham -Sta. 17, Altan 416; *Scrophularia lucida* L.-Sta.19, Altan 552; *S.orientalis* L.Hub.-Mor.11583; *S.pegaea* Hand.-Mazz. 2613; **S.rimarum* Bornm. -Sta. 44, Altan 794; *S.scopolii* (Hoppe ex) Pers.var.*scopolii* -Sta.43, Altan 842; *S.umbrosa* Dum.-Sta. 43, Altan 841; *S.xanthoglossa* Boiss.var.*decipiens* (Boiss.et Kotsch.) -Sta.43, Altan 793; *Anarrhinum orientale* Bentham -Sta.28, Altan 354; *Linaria antilibanotica* Rech. fil.-Sta.7, Altan 68; **L.chalepensis* (L.) Miller.var.*chalepensis* -Sta.11, Altan 122; *L.genistifolia* (L.) Miller subsp.

confertifolia (Boiss.) Davis -Sta.44, Altan 906; *L.kurdica* Boiss.et Hohen.subsp.*kurdica* -Sta.14, Altan 910; *L.simplex* (Willd.) DC.-Sta.14, Altan 697; **Kickxia elatine* (L.) Dumort-subsp.*crinita* (Mob.) Greu.-Sta.16, Altan 882; *K.lanigera* (Desf.) Hand.-Mazz.-Sta.17, Altan 822; *Veronica anagallis-aquatica* L.Sta.39, Altan 848; **V.anagalloides* Guss.-Sta.39, Altan 471, Det: A.Öztürk; *V.biloba* Schreber -Sta.12, Altan 676; **V.bornmuelleri* Hausskn.-Sta.12, Altan 749; *V.bozakmanii* M.A.Fischer -Sta.43, Altan 750; *V.campylopoda* Boiss.-Sta.12, Altan 747; *V.macrostachya* Vahl.subsp.*mardinensis* (Bornm.) M.A. Fischer -Sta.41, Altan 208; *V.orientalis* Miller subsp.*orientalis* -Sta.16, Altan 27; *V.orientalis* Miller subsp.*orientalis* x *V.multifida* (L.) Benth.-Sta. 6, Altan 102, Det: A.Öztürk; *V.viscosa* Boiss.-Sta.49, Altan 669; **Odontites verna* (Bellardi) Dumort.subsp.*serotina* (Dumort.) Corb.-Sta.42, Altan 581, Det.Hub.-Mor.

OROBANCHACEAE

Orobanche aegyptiaca Pers.-Sta.28, Altan 332; *O.anatolica* Boiss. et Reuter.-Sta.27, Altan 743; *O.sintenisii* G.Beck D.29059.

ACANTHACEAE

Acanthus dioscoridis L.var.*dioscoridis* -Sta.38, Altan 364.

VERBENACEAE

Verbena officinalis L.-Sta.49, Altan 625.

LAMIACEAE (LABIATAE)

Ajuga chamaepitys (L.) Schreber subsp.*chia* (Schreber) Arcangeli var.*ciliata* Briquet -Sta.11, Altan 707, Det: H.Peşmen; *Teucrium chamaedrys* L.subsp.*sinuatum* (Celak.) Rech.fil.-Sta.36, Altan 379; *T.multicaule* Montbr.et Auch.-Sta.35, Altan 196, Det: T.Ekim; *T.parviflorum* Schreb.-Sta.30, Altan 419, Det: T.Ekim; *T.polium* L.-Sta.27, Altan 331, Det: T.Ekim; *T.scordium* L.subsp.*scordioides* (Sch.) Maire et Petittm.-Sta.42, Altan 518; *Scutellaria megalaspis* Rech.fil.-Sta.6, Altan 820, Det: H.Peşmen; *S.orientalis* L.subsp. *bicolor* (Hochst.) Edmond.-Sta.35, Altan 199; *Eremostachys molucelloides* Bunge -Sta.14, Altan 52; *Phlo-*

mis kurdica Rech.fil.-Sta.1, Altan 256; *P.pungens* Willd.var.*hispid*a Hub.-Mor.-Sta.28, Altan 336; *P.rigida* Labill.-Sta.1, Altan 257; *Marrubium astracanicum* Jacq.-Sta.41, Altan 451; *M.cuneatum* Russel -Sta.15, Altan 810; *Stachys annua* (L.) L.-Sta.43, Altan 830; *S.cretica* L.subsp.*garana* (Boiss.) Rech.fil.-Sta.1, Altan 292; *S.mardinensis* (Post.) Re. Mill -Sta.43, Altan 838; *S.iberica* Bieb.subsp.*stenostachya* (Boiss.) Rech. fil.Sta.30, Altan 417; *Stachys lavandulifolia* Vahl var.*lavandulifolia* -Sta.24, Altan 228; *Nepeta fissa* C.A.Meyer -Sta.46, Altan 898; *Lallemantia iberica* (Bieb.) Fisch.et Mey.-Sta.6, Altan 94; **Prunella laciniata* (L.) L.-Sta.39, Altan 456, Det: Hedge; *P.vulgaris* L.-Sta.42, Altan 852; *Satureja hortensis* L.-Sta.17, Altan 582, Det: Hedge; *Clinopodium vulgare* L.subsp.*arundanum* (Boiss.) Nyman -Sta.3, Altan 806; *Acinos rotundifolius* Pers.-Sta.26, Altan 742; *Thymus kotschyanus* Boiss. et Hohen var.*kotschyanus* -Sta.1, Altan 258; *Mentha spicata* L. subsp. *spicata* -Sta.39, Altan 454, Det: Hedge; **Lycopus europaeus* L.-Sta.42, Altan 624, Det: Hub.-Mor.; *Ziziphora capitata* L.-Sta.6, Altan 118, Det: Hedge; *Z.taurica* Bieb.subsp.*taurica* -Sta.26, Altan 741; *Salvia aethiopsis* L.-Sta.26, Altan 327, Det: Hedge; *S.candidissima* Vahl subsp.*candidissima* -Sta.24, Altan 227; *S.frigida* Boiss. -Sta.6, Altan 151, Det: Hedge; *S.multicaulis* Vahl.-Sta.6, Altan 49, Det:Hedge; *S.palaestina* Bentham Hub.-Mor.10737; *S.russellii* Benth. -Sta.38, Altan 380; *S.trichoclada* Benth.-Sta.6, Altan 112, Det:Hedge; *S.verticillata* L.-Sta.46, Altan 799, Det: H.Peşmen.

PLUMBAGINACEAE

**Plumbago europaea* L.-Sta.46, Altan 530; *Acantholimon acerosum* (Willd.) Boiss.var.*acerosum* -Sta. Altan 299; *A.ulicinum* (Willd. ex Schultes) Boiss.subsp.*lycaonicum* (Boiss.et Heldr.) Bokhari et Edmondson -Sta.26, Altan 341;

PLANTAGINACEAE

**Plantago gentianoides* Sm.-Sta.39, Altan 611, Det: Hub.-Mor.; *P.lanceolata* L.-Sta.25, Altan 239; *P.major* L.-Sta.42, Altan 524.

SANTALACEAE

Thesium aureum Jaub.-Sta.6, Altan 117; *T.tauricolum* Boiss.et Hausskn.-Sta.1, Altan 817.

RAFFLESIACEAE

Pilostyles haussknechtii Boiss.ex Somm.-Laub.-Sta.1, Altan 849.

ARISTOLOCHIACEAE

Aristolochia maurorum L.-Sta.6, Altan 130.

EUPHORBIACEAE

Andrachne telephioides L.-Sta.12, Altan 744; *Crozophora tinctoria* (L.) Rafin.-Sta.21, Altan 540; *Euphorbia aleppica* L.-Sta.21, Altan 521; *E.altissima* Boiss.var.*altissima* -Sta.43, Altan 897; **E.arvalis* Boiss.et Heldr. -Sta.27, Altan 631, Det:Hub.-Mor.; *E.cheiradenia* Boiss.et Hoh.-Sta.6, Altan 65; *E.denticulata* Lam.-Sta.46, Altan 661; *E.macroc-lada* Boiss.-Sta.35, Altan 370; *E.szovitsii* Fisch.et Mey.var.*kharputilis* Aznav.-Sta.41, Altan 426.

URTICACEAE

Urtica dioica L.-Sta.18, Altan 557; *Parietaria judaica* L.-Sta.46, Altan 783.

CANNABIACEAE

**Cannabis sativa* L.-Sta.17, Altan 870.

MORACEAE

Ficus carica L.-Sta.46, Altan 516.

FAGACEAE

Quercus brantii Lindl.-Sta.37, Altan 373, Det: F.Yaltırık; *Q.brantii* x *Q.libani* -Sta.31, Altan 408, Det: F.Yaltırık; *Q.cerris* L.var.*cerris* -Sta.37, Altan 378, Det: F. Yaltırık; *Q.infectoria* Oliv.subsp.*boissieri* (Reut) Gürke - Sta.6, Altan 76.

SALICACEAE

Salix alba L.-Sta.45, Altan 827; *S.triandra* L.subsp.*bornmuelleri* (Hausskn.) A.Skv.-Sta.45, Altan 655.

ALISMATACEAE

Alisma lanceolatum With -Sta.42, Altan 275.

IIBü- MONOCTYLEDONOPSIDA**POTAMOGETONACEAE**

Potamogeton filiformis Pers.-Sta.42, Altan 510, Det: E.Yurdakulol.

NAIADACEAE

Naias major All.Naiade Majeure -Sta.42, Altan 511.

ALLIACEAE

Allium ampeloprasum L.-Sta.46, Altan 784, Det: M.Koyuncu;
A.kharputense Freyn et Sint.-Sta.43, Altan 675, Det: M.Koyuncu;
A.rotundum L.-Sta.26, Altan 340, Det: N.Özhatay; *A.stamineum* Boiss.
 -Sta.26, Altan 339.

LILIACEAE

Colchicum bifolium Freyn et Sint.-Sta.25, Altan 15, Det: T.Baytop;
Tulipa armena Boiss.var.*armena* -Sta.6, Altan 56, Det: T.Baytop;
Scilla sibirica Haw.-Sta.25, Altan 13, Det: M.Koyuncu; *Ornithogalum*
tenuifolium Guss.-Sta.10, Altan 58, Det: M.Koyuncu; *Muscari armenia-*
cum Baker -Sta.39, Altan 16, Det: M.Koyuncu; *M.comosum* (L.) Mill.
 -Sta.15, Altan 59, Det: A.Baytop; *M.neglectum* Guss.-Sta.24, Altan 2,
 Det: M.Koyuncu; *Hyacinthella nervosa* (Bertol.) Chouard -Sta.41, Altan
 23.

AMARYLLIDACEAE

Ixiolirion montanum Labill.-Sta.24, Altan 229, Det: T.Baytop;
Sternbergia clusiana Glawl.-Sta.14, Altan 670, Det: H. Peşmen; *Me-*
rendera sobolifera C.A.Meyer.-Sta.39, Altan 19, Det: T.Baytop.

IRIDACEAE

Crocus biflorus Miller -Sta.39, Altan 22, Det: T.Baytop; *C.leichtlinii*
 (Dewar) Bowles -Sta.41, Altan 21, Det: T. Baytop; *C.pallasii* Goldb.

-Sta.26, Altan 630, Det: T.Baytop; *Iris persica* L.-Sta.24, Altan 14.
Gladiolus atroviolaceus Boiss. -Sta.10, Altan 51, Det: M.Koyuncu.

POACEAE (GRAMINEAE)

Briza humilis M.Bieb.-Sta.27, Altan 759; *Cynosurus echinatus* L. -Sta.39, Altan 473; *Dactylis glomerata* L.-Sta.5, Altan 131; *Echinaria capitata* (L.) Desf.-Sta.5, Altan 153; *Eremopoa persica* (Trin.) Rozhev. -Sta.25, Altan 243; *Festuca ovina* L.Sta.28, Altan 347; *Poa bulbosa* L.f. *vivipara* -Sta.6, Altan 72; *P.trivialis* L.-Sta.39, Altan 437, Det: A.Baytop; *Bromus macrostachys* Desf.-Sta.3, Altan 803; *B.madritensis* L.var. *ciliatus* Guss.-Sta.37, Altan 186; *B.sterilis* L.Sta.6, Altan 162; *B.tomentellus* Boiss.-Sta.25, Altan 248; *Aegilops ovata* L.-Sta.1, Altan 293; *A.triuncialis* L.-Sta.1, Altan 289; *A.umbellata* Zhuk.-Sta.38, Altan 187; *Agropyron trichophorum* (Link.) Richt.-Sta.16, Altan 61; *Hordeum bulbosum* L.-Sta.26, Altan 316 (71); *H.glaucum* Steud.-Sta.2, Altan 288; *Taeniatherum crinitum* (Schreb) Nevski -Sta.7, Altan 155; *Melica persica* Kunth -Sta.35, Altan 181. *Apera intermedia* Hack. -Sta.3, Altan 283; *Calamagrostis pseudophragmites* (Hall.f.) Koel -Sta.39, Altan 438; *Phleum exeratum* Griseb.-Sta.6, Altan 157, Det: A.Baytop; *P.pratense* L. Sta.26, Altan 308; *Polypogon monspeliense* (L.) Desf.-Sta.19, Altan 862; *Arrhenatherum elatius* (L.) P.Beauv.ex J.S.et C.B.Presl-Sta.6, Altan 160; *Avena sterilis* L.-Sta.6, Altan 159, Det: A.Baytop; *Phragmites communis* Trin.-Sta.42, Altan 890; *Stipa ehrenbergiana* Trin. et Rupr.-Sta.6, Altan 163; *S.holosericea* Trin.-Sta.41, Altan 439, Det: A.Baytop; *Oryzopsis holciformis* (M.B.) Hack -Sta.6, Altan 161; *Cynodon dactylon* L.-Sta.19, Altan 858; *Crypsis alopecuroides* (Pill. et Mitterp.) Schard.-Sta.19, Altan 566; *C.schoenoides* (L.) Lam.-Sta.19, Altan 567, Det: A.Baytop; *Panicum crus-galli* L.var.*brevisetum* Doell -Sta.19, Altan 859; *S.sanguinale* L.-Sta.19, Altan 884; *Setaria viridis* (L.) P.B. -Sta.39, Altan 899; *Andropogon halepensis* Fl.Gr.Sta.39, Altan 889.

ARACEAE

Arum maculatum L.-Sta.46, Altan 853.

CYPERACEAE

Bolboschoenus maritimus (L.) Palla -Sta.42, Altan 864; *B.maritimus* (L.) Pal.var.*macrostachyus* Sond.-Sta.42, Altan 300; *Cyperus fuscus*

L.-Sta.19, Altan 565; *C.longus* L.-Sta.44, Altan 837, Det: H.Peşmen; *Eleachoris uniglumis* (Link) Schultes -Sta.42, Altan 568(877); *Scirpus holoschoenus* L.-Sta.42, Altan 849; *Holoschoenus vulgaris* Link -Sta.42, Altan 849, Det: H.Peşmen; *Schoenoplectus lacustris* (L.) Palla subsp. *glaucus* (Hartman) Oteng-Yeboah -Sta.42, Altan 444(527), Det: H.Peşmen; *Juncellus laevigatus* (L.) Clarke -Sta.19, Altan 580.

JUNCACEAE

Juncus compressus Jacq.-Sta.42, Altan 272, Det: H.Peşmen; *J.fontanesii* Gay -Sta.42, Altan 903, Det: H.Peşmen; *J.inflecus* L.-Sta.42, Altan 622 (271-337); *J.rechingeri* Snogerup -Sta.42, Altan 895, Det: H.Peşmen.

ORCHIDACEAE

Gymnadenia conopsea (L.) R.Br.-Sta.28, Altan 307, Det: J.Renz.

SPARGANIACEAE

Sparganium ramosom Huds.-Sta.42, Altan 894.

TYPHACEAE

Typha domingensis Pers.-Sta.42, Altan 626, Det: A.Baytop; *T.latifolia* L.-Sta.42, Altan 629; *T.laxmannii* Lecephim -Sta.42, Det: A. Baytop.

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