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Flora of The Beynam Forest

by

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Flora of The Beynam Forest

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SUMMARY

The Beynam forest, situated on the 40 th. km. of the Ankara-Bâlâ highway within the boundries of Ankara, in the south of the village of Beynam is a relic which covers the Kuyrukçu mountain and consists of *Pinus nigra* Arnold. subsp. *pallasiana* (Lamb.) Holmboe. and *Quercus pubescens* Willd.

The flora of Beynam forest are represented by 66 families, 241 genus and 419 species and Irano-Turanien elements are predominant. The most widely encountered families are *Leguminosae*, *Compositae*, *Labiatae* and *Rosaceae*.

INTRODUCTION

The Beynam forest, situated on the 40 th. km. of the Ankara-Bâlâ highway, within the boundaries of Ankara in the south of the village of Beynam, is a relic which covers the Kuyrukçu mountain and consists of *Pinus nigra* Arnold. subsp. *pallasiana* (Lamb.) Holmboe. and *Quercus pubescens* Willd.

The flora of the Beynam Forest have been studied for the first time by B. Kasaphgil in 1961 and 147 species and 115 genus belonging to 52 families have been identified by this author. However, I have found 419 species and 241 genus partaining to 66 families during my research 1968. As a result it was necessary to publish the flora of the Beynam forest, thus adding 278 species not identified previously.

The Beynam forest has been a suitable area of investigation for the students of Botanics because of its proximity to Ankara. On the other hand the forest was made a region of forest preservation by Law no 4785 issued on 1.7.1966. Ever since this measure,

the forest is being preserved arduously by Dr. Z. Bayer and efforts are being spent towards its improvement.

Another speciality of the forest is that three vegetation types such as steppe, forest and river are found in the very neighborhood of each other.

Floristic properties

The flora of the Beynam forest are represented by 66 families 241 genus and 419 species. The most common families are cited below in alphabetic order *Boraginaceae*, *Caryophyllaceae*, *Compositae*, *Cruciferae*, *Gramineae*, *Labiatae*, *Leguminosae* and *Rosaceae*. If the number of species is considered, the most widely encountered families are *Leguminosae*, *Compositae*, *Labiatae* and *Rosaceae*. The frequency percentage of the families of the Beynam Forest is shown in Fig. 1.

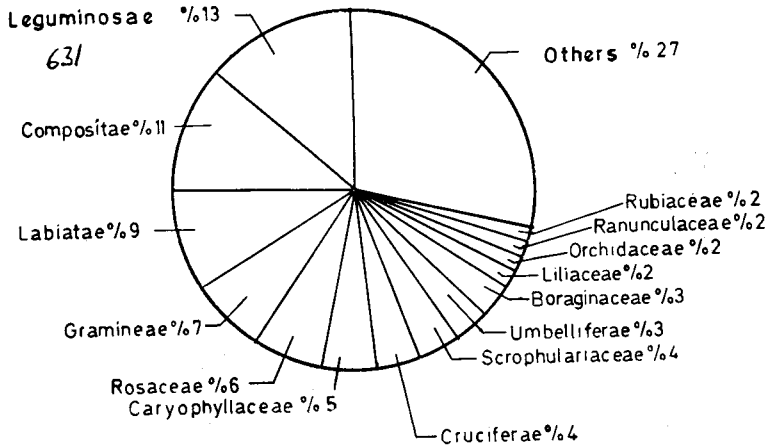


Fig: 1

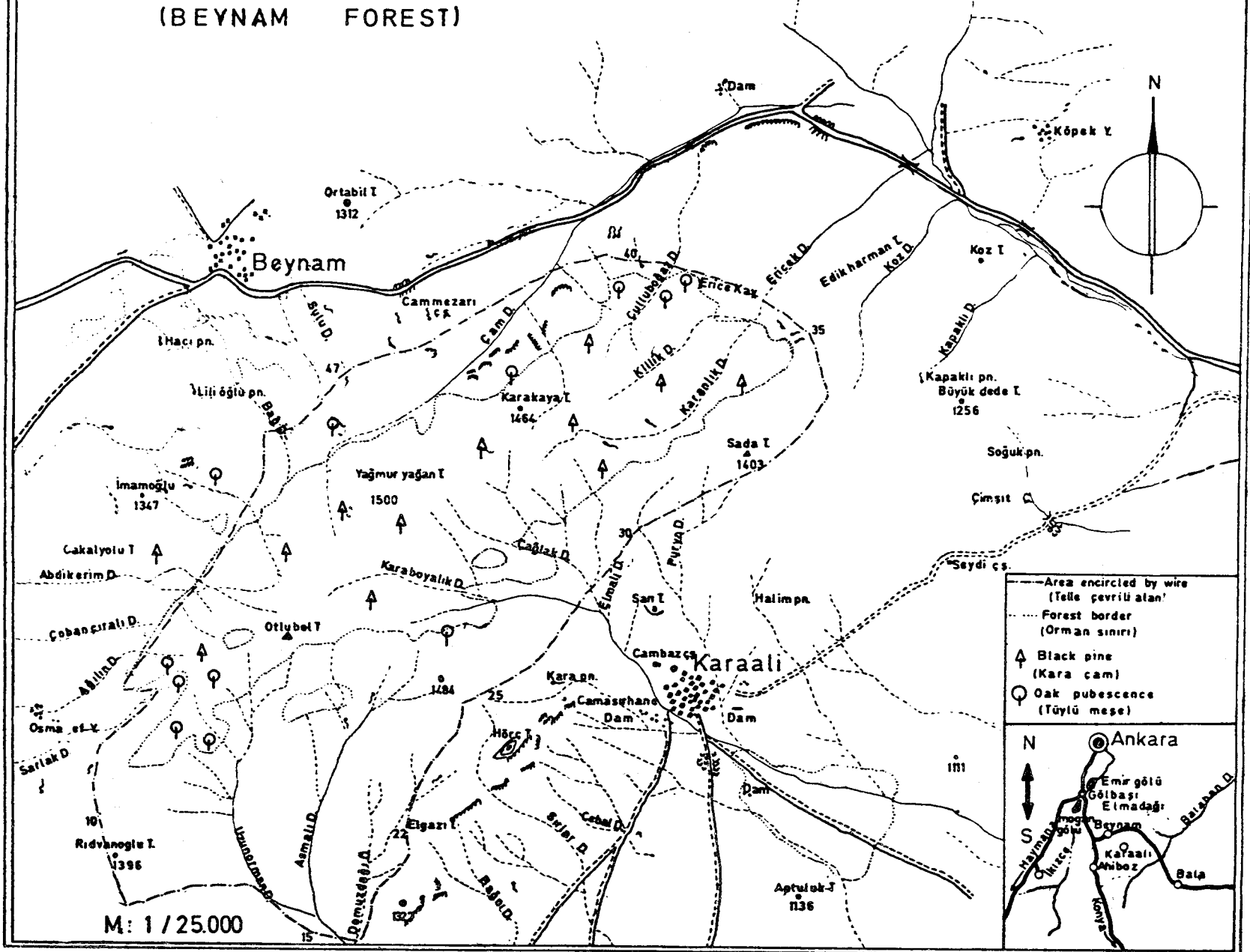
Its area in the plant geography :

Turkey consists of three original elements of plant geography ZOHARY 1963, P, H. DAVIS 1965.

1. The mediterranean region

Fig 1. The Geographic situation of the Beynam forest.

BEYNAM ORMANI
(BEYNAM FOREST)



2. The Irano-Turanian region

3. The Euro-Siberian region

Accordingly, the Beynam Forest is located in the Boreal Kingdom of the Irano-Turanian region and the elements of this area are predominant.

In this study, a complementary information is given below for each species:

- The Phytogeographical area
- Its place in the investigation area
- Ecology
- The type of station in which the species are encountered.

PTERIDOPHYTA

Polypodiaceae

Cystopteris fragilis (L.) Bernh. Temp. Damp woods and shady places, 1100 m.

Equisataceae

Equisetum ramosissimum Desf. S. et C. Europe, Asia, and Am. Stream banks and moist meadows, 1300 m. Ericek.

GYMNOSPERMES

Pinaceae

Pinus nigra Arnold. subsp. *pallasiana* (Lam.) Holmboe. Medit.

Cupressaceae

Juniperus oxycedrus L. subsp. *oxycedrus* S. Europe, W. Syrie, N. Iran. Pine woods, oak scrub, 1000-1400 m.

Ephedraceae

Ephedra major Host. Medit. Rocky places, 950 m.

MONOCOTYLEDONES

Potamogetonaceae

Potamogeton densus L. Cosm. In water, Karanlık stream, 1100 m.

Gramineae

- Aegilops cylindrica** Host. Temp. Dry places, steppe, 1300 m.
- Agropyrum trichophorum** (Link.) Richter. Anatolia. Steppe, 1200 m.
- Alopecurus arundinaceus** Poir. Euras. Streamside, 1250 m.
- Andropogon ischaemum** L. Euras. Dry and rocky slopes, steppe, 1300 m.
- Brachypodium silvaticum** (Huds.) P. Beauv. Euras. Wet places and shady places, Karanlık streamside, 1100 m.
- Briza spicata** S. et S. Medit. Open places, 1300 m.
- Bromus cappadocicus** Boiss. et Ball. Anatolia. Steppe, 1250 m
- Bromus tectorum** L. Euras. Steppe, 1300 m.
- Bromus tomentellus** Boiss. İr.-Tur. Steppe, 1250 m.
- Bromus squarrosus** L. var. *villosus* (Gmel.) Koch. Medit. Steppe, 1250 m.
- Dactylis glomerata** L. Temp. In *Pinus nigra* forest, 1400 m.
- Echinaria capitata** (L.) Desf. Medit. Dry places, steppe, 1350 m.
- Festuca ovina** L. Boreal. Steppe, 1350 m.
- Hordeum bulbosum** L. İr-Tur. Steppe, in *Quercus pubescens* scrubs. 1250.m.
- Koeleria cristata** L. İr-Tur. Steppe, 1300 m.
- Melica ciliata** L. subsp. *nebrodensis* (Parl.) Boiss. var. *tomentella* Boiss. Europe, Caucasia. Steppe, 1300 m.
- Milium effusum** L. Euro-Sib. In *Pinus nigra* forest, 1400 m.
- Milium vernale** M. et Bieb, Medit. As above.
- Oryzopsis coerulescens** (Desf.) Hach. Medit. Wet places, 1200 m.
- Pennisetum orientale** Rich. Medit. Dry places, steppe, 1300 m.
- Phleum montanum** C. Koch. Euras. In *Quercus pubescens* scrubs, 1350 m.

Pragmites communis Trin. Cosm. Marshy places, Karanlık stream, 1100 m.

Poa nemoralis L. Medit. In *Pinus nigra* forest, 1450 m.

Scale cereale L. Ir.-Tur. Steppe, 1250 m.

Spodiopogon pogonanthus (Bois. et Bal) Boiss. Endemic. Rocky slopes, 1300 m.

Stipa barbata Desf. Ir.-Tur. Very abundant, steppe, 1150 m.

Cyperaceae

Carex divisa Huds. Euras. In *Pinus nigra* forest, 1450 m.

Carex hordeistichos Vill. C. and W. Europe, Siberia, N. Africa. Wet places, Killik and Karanlık stream, 1150 m.

Carex punctata Gaud. Medit. Marshy places, Karanlık streamside, 1100 m.

Carex vulpina L. Euro-Sib. Marshy places, 1100 m.

Cyperus longus L. Euras. As above.

Scirpus holoschoenus L. var. *australis* (C. Koch.) Boiss. Temp. Marshy meadows, 1150 m.

Liliaceae

Allium rotundum L. Europ; Medit. Steppe, 1250 m.

Asphodeline damascena (Boiss) Bak. Medit. Dry places, 1300m

Colchicum beibersteinii Rony. Pontic. Rocky slopes, 1300 m.

Gagea arvensis Schult. E. Europe; Medit. Open places, 1300 m

Muscari longipes Boiss. Medit. Dry places, 1200 m.

Muscari pinardii Boiss. Anatolia, Syria. Degraded *Pinus nigra* forest.

Muscari racemosum (L.) Mill. Medit. Very abundant, wet places, 950-1500 m.

Ornithogalum armeniacum Baker. Ir.-Tur. Dry places, 1250m

Ornithogalum nanum S. et. S. E. Medit. Open places, 1350 m.

Ornithogalum narbonense L. *Medit.* Steppe, 1250 m.

Ornithogalum tenuifolium Guss. S. Europe, E. *Medit.*, Caucasia. Open and dry paaces, 1350 m.

Juncaceae

Juncus gerardi Lois. Temp. Marshy places. Karanlık stream, 1100 m.

Juncus galucus Ehrh. Euras. Marshy places, 1200 m.

Juncus lampocarpus Ehrh. Euro-Sib. As above.

Iridaceae

Crocus ancyrensis G. Maw. Endemic. C. Anatolia. Very abundant, 1000–1500 m.

Crocus biflorus Mill. var. **nubigenus** Bak. Europe, Anatolia. wet places.

Crocus suterianus Herb. Anatolia. Open places.

Iris kerneriana Achers. et Sintenis. Endemic. C. Anatolia. In *Quercus pubescens* scrubs, 1350 m.

Iris orientalis Mill. C. Anatolia. Marshy places, 1200 m.

Iris schactii Mgf C. Anatolis Degraded *Pinus nigra* forest.

Orchidaceae

Cephalanthera ensifolia (Murr.) Rich. Paleotemp. Shady places, in *Pinus nigra* forest, 1450 m.

Cephalanthera rubra (L.) Rich. Euras. As above.

Epipactis latifolia (Huds.) All. Paleotemp. In *Pinus nigra* forest.

Limodorum abortivum (L.) Schwartz. Europe; *Medit.* As above.

Listera ovata R. Br. Euras. Damp places, Karanlık streamside, 1000 m.

Orchis iberica M. B. Euras. Wet and shady places, Karanlık streamside.

Orchis laxiflora Lam. Sub-Medit. Marshy places, 1250 m.

Orchis mascula L. Euras. In *Pinus nigra* forest, 1100–1400 m.

DICOTYLEDONES

Salicaceae

Populus tremula L. Temp. Under *Pinus nigra*, 1480 m.

Salix alba L. Euras.

Salix capraea L. Euras.

Salix pedicillata Desf. Atlantic; Medit.

Salix viminalis L. Europe, Anatolia. This four species are found in the Killik and Karanlık stream, 1100 m.

Fagaceae

Quercus pubescens Willd. Euras.

Ulmaceae

Ulmus campestris L. Euras. Ericek streamside, 1250 m.

Urticaceae

Parietaria judaica L. Europe, N. Africa.

Loranthaceae

Viscum album L. Euras. On *Pinus nigra*, 1200–1550 m.

Santalaceae

Thesium heterrophyllum Boiss. Anatolia. Calcareous soils, 1300 m.

Aristolohicaeae

Aristolochia maurorum L. E. Medit. Fields. 900 m.

Polygonaceae

Atraphaxis billardieri Jaub. et Spach. var. **billardieri** Ir.-Tur. Rocky slopes, 1250 m.

Polygonum cognatum Meissn. W. Syria, Syrian Desert, N. et B. W. Iran, Caucasia, Roadside, 1400 m.

Rumex acetocella L. Cosm. Steppe, 1350 m.

Rumex crispus L. Cosm. Damp places, 1200 m.

Rumex scutatus L. W., C. et S. Europe, Crimea, Caucasia, N. et N. W. Iran. Rocky slopes, 1250 m.

Chenopodiaceae

Chenopodium foliosum (Moench) Aschers. Mountain of Asia, N. Africa, Europe. Roadside banks, 1200 m.

Caryophyllaceae

Arenaria ledebouriana Fenzl. var. **ledebouriana**. Ir.-Tur. Rocky and stony ground, 1200 m.

Bolantus minuartioides (Jaub, et Spach) Hub.-Mor. Endemic. Mountain steppes, dry hills, 1150 m.

Cerastium gracile Duf. S. Europe, Romania, S. Russia, N. W. Africa. Steppe, 950 m.

Cerastium fontanum Baumg. subsp. **triviale** (Link.) J alas. Cosm. In *Quercus pubescens* scrubs, 1200 m.

Dianthus anatolicus Boiss. Endemic. In *Quercus pubescens* scrubs and steppe, 1250 m.

Dianthus crinitus Sm. var. **crossopetalus** Boiss. Aegean, N. W. Africa, Caucasia, Turkestan, Iran. Mountain steppe, 1400 m.

Holosteum umbellatum L. var **glutinatum** (Bieb.) Gay. Ir.-Tur. Open places, 1200 m.

Minuartia anatolica (Boiss.) Woron. var. **anatolica**. Endemic. Rocks on mountains, 1400 m.

Minuartia circassica (Albow.) Woron. Euxine. Mountain pastures, 1350 m.

Minuartia juniperina (L.) Maire. et Petitm. E. Medit. Rocky places, 1350 m.

Saponaria glutinosa Bieb. N. W. Africa, S. et C. Europe, S. Russia, Crimea. Rocky slopes and forest, 1250 m.

Saponaria prostrata Willd. subsp. **prostrata**. İr.-Tur. Endemic. Rocky igneus, 1400 m.

Silene alba (Mill.) Krause. subsp. **ericalycina** (Boiss.) Walters. Euras. Wet places, 1300 m. Karanlık streamside.

Silene chloraefolia Sm. İr.-Tur. Rocky slopes, steppe, 1300 m.

Silene compacta Fischer. Greece, Bulgaria, S. Russia, Caucasia, N. İraq, N. W. İran. Open *Pinus nigra* places, 1100-1500 m.

Silene italica (L.) Pers. Medit. In *Pinus nigra* forest, 1200-1500 m.

Silene supina Bieb. subsp. **pruinosa** (Boiss.) Chowdh. Syrian Desert, N. W. et W. İran. Steppe, 1300 m.

Silene ruscifolia (Hub.-Mor et Reese.) Hub.-Mor. Endemic. İr.-Tur. On the serpentine motherrock, steppe, 1300 m.

Silene spergulifolia (Desf.) Bieb. İr.-Tur. Screes and slopes, steppe, 1350 m.

Illecebraceae

Herniaria glabra L. Euras. Stony places. steppe, 1300 m.

Herniaria incana Lam. Europe. N. W. Africa, W. Syria, Caucasia, İran. Dry and stony places, 1380 m.

Paronychia kurdica Boiss. var. **kurdica**. S. W. Asia. Anatolia. As above.

Ranunculaceae

Consolida hellespontica (Boiss.) Chater. İr.-Tur. Fellow fields, 950 m.

Consolida orientale (Gay.) Schröd. İr.-Tur. As above.

Delphinium regalis S. F. Gray. var. **paniculata**. Balkans. Hungary, Romania, S. Russia. Deep calcareous soil, 1200 m.

Ranunculus argyreus Boiss. İr.-Tur. and Medit. Open scrub, stony places 1000 m.

Ranunculus arvensis L. Europe, S. W. Asia, N. Africa, Turkestan. Steppe, 900 m.

Ranunculus constantinopolitanus (DC.) d'Urv. Romania, Balkans, Crimea, Caucasia, N. Iraq, Iran, Cyprus, W. Syria. Marshy meadows, 950 m.

Ranunculus falcatus (L.) Pers. Steppe, open places, 1100 m.

Ranunculus illyricus L. subsp. **illyricus**. N. C. et S. Europe, Russia, Caucasia. Slopes, fellow fields, 1250 m.

Berberidaceae

Berberis crataegina DC. Ir.-Tur. Rocky slopes, 1300 m.

Papaveraceae

Fumaria kralikii Jord. Medit. Fields, 1200 m.

Cruciferae

Aethionema arabicum (L.) Andrz. Greece, W. Syria, Syria Desert, Iran, Transcaucasia. Stony slopes, 1250 m.

Aethionema armenum Boiss. Ir.-Tur. Rocky slopes, steppe, 1400 m.

Aethionema cordatum (Desf.) Boiss. Ir.-Tur. Rock crevices, 1150 m.

Alyssum desertorum Stapf. var. **desertorum**. Europe, S. W. Asia. Open places, 1400 m.

Alyssum murale W. K. subsp. **murale** var. **murale**. C. et S. Europe. S. W. Asia. As above, 1300 m.

Alyssum pateri Nyar. subsp. **pateri**. Endemic. Ir.-Tur. Steppe, 1100 m.

Alyssum sibiricum Willd. Balkans, Crimea et Caucasia. Steppe, 1350 m.

Alyssum thymops (Hub.-Mor. et Reese) Dudley. Ir.-Tur. Steppe, 1300 m.

Alyssum xanthocarpum Boiss. Caucasia, W. Syria. Slopes and forest, 1200 m.

Brassica elongata Ehrh. Ír.-Tur. Steppe, 950 m.

Camelina hispida Boiss. var. **grandiflora** (Boiss.) Hedge. Endemic. Steppe, 900 m.

Conringia perfoliata (C. A. Mey.) Busch. Ír.-Tur. Cultivated land.

Erysimum crassipes Fisch et Mey. W. Syria, N. Íran, Soviet Armenia. Open places, 1250 m.

Fibigia clypeata (L.) Medik. C. Europe, Balkans, W. Syria, N. Íraq, C. et W. Íran, Transcaucasia, Crimea, Egypt. Roadside, rocky slopes, 1400 m.

Ísatis tinctoria L. subsp. **tinctoria**. Anatolia. Cultivated land, 850 m.

Sisymbrium altissimum L. C. Europe, and S. W. Asia. Steppe, 1200 m.

Thlaspi perfoliatum L. Europe, N. Africa and S. W. Asia. Open places, 1400 m.

Turritis laxa (Sibth. et Sm.) Hayek. Medit. Under *Pinus nigra*, 1350 m.

Resedaceae

Reseda lutea L. var. **lutea**. Euras. Roadsides, fields. ditches, 1200 m.

Violaceae

Viola kitaibeliana Roem. et Schult. S. et C. Europe, Cyprus, W. Syria, Caucasia. Stony and open places, 1200 m.

Viola occulta Lehm. Cyprus, W. Syria. Transcaucasia, Crimea, N. et W. Íran. Cultivated land, 1300 m.

Viola odorata L. Europe, Caucasia, W. Syria, N. Íran, N. Íraq, Cyprus, N. W. Africa. In *Quercus pubescens* scrubs, 1200 m.

Tamaricaceae

Tamarix tetrandra Pallas ex bieb. Greece, Aegean, Anti-Lebanon, Cyprus, S. Russia, Crimea. River beds and banks, 1200 m

Cistaceae

Cistus laurifolius L. Medit. Under *Pinus nigra*, 1400 m.

Fumana aciphylla Boiss. İr.-Tur. Rocky slopes, 1400 m.

Fumana procumbens (Dun.) Gren. et Godr. Medit. Rocky slopes and steppe, 1300 m.

Helianthemum canum (L.) Baumg. Anatolia. Steppe, 1250 m.

Heliathemum nummularium (L.) Miller. subsp. **ovatum** (Viv.) Schinz. et Thellung. C. Europe, Balkans. Caucasia, Open *Pinus nigra* area, 1450 m.

Guttiferae

Hypericum hissofolium Chaix. subsp. **elongatum** (Ledeb.) Woron. var. **microcalycinum** (Boiss. et Heldr) Boiss. İr.-Tur. Wet places, 1200 m.

Hypericum lydium Boiss. İr.-Tur. Steppe, 1400 m.

Hypericum perforatum L. Europe. N. Africa, Caucasia, Siberia, C. Asia, N. İran, N. İraq, Cyprus, W. Syria. In *Pinus nigra* forest, 1450 m.

Hypericum scabrum L. İr.-Tur. Dry rocky slopes, 1000 m.

Malvaceae

Althaea cannabina L. C. et S. Europe, S. Russia, Caucasia, N. et N. W. İran, Turkestan, Marshy ground, 1200 m.

Alcea pallida W. K. Hungary, Balkan peninsula. Roadside, 1100 m.

Euphorbiaceae

Euphorbia myrsinites L. Medit. Open *Pinus nigra* places, 1350 m.

Euphorbia stricta L. Europe; Medit. Marshy places, 1200 m.

Euphorbia tinctoria Boiss. İr.-Tur. Steppe, 1300 m.

Geraniaceae

Geranium palustre L. Euro-Sib. Moist places. Karanlık streamside, 1100 m.

Geranium tuberosum L. subsp. **tuberosum**. S. Europe, N. Africa, Cyprus, Crimea, Caucasia, W. Syria, Syrian Desert, N. Iraq, W. Iran. Fellow fields, 1350 m.

Linaceae

Linum hirsutum L. subsp. **anatolicum** (Boiss.) Hayek. var. **anatolicum**. Endemic. İr.-Tur. Calcareous steppe, 1250 m.

Linum mucronatum Bertol. subsp. **armenum** (Bordz.) Davis. İr.-Tur. Rocky slopes, steppe, 1300 m.

Linum tenuifolium L. S. et C. Europe, S. Russia, Crimea, Caucasia, N. W. Iran. Open places, 1400 m.

Rutaceae

Haplophyllum thesioides (Fisch. ex DC) G. Don. S. Russia, Crimea, Steppe, 1200 m.

Anacardiaceae

Rhus coriaria L. Medit. Scrub, banks, roadside, 1400 m.

Polygalaceae

Polygala anatolica Boiss. et Heldr. Greece, Caucasia, N. Iran. In *Pinus nigra* forest, 1400 m.

Polygala pruinosa Boiss. subsp. **pruinosa**. Soviet Armenia. Slopes, hillsides, 1300 m.

Celastraceae

Evonymus europaeus L. Europe, Caucasia. Moist places, 1100 m.

Rhamnaceae

Frangula alnus Miller. subsp. **alnus**. Euro-Sib. Streamsides, 1150 m.

Rhamnus rhodopaeus Velenovsky. Bulgaria, N. Greece, Jugoslavia. Rocky slopes, 1200 m.

Vitaceae

Vitis vinifera L. Medit. Moist places, 1100 m. Karanlık stream, 1200 m.

Leguminosae

Astragalus amoenus Fenzl. Endemic. Steppe, 1250 m.

Astragalus angustifolius Lam. subsp. **angustifolius**. var. **angustifolius**. Anatolia. Steppe, 1300 m.

Astragalus baibutensis Bunge. Ír.-Tur. Mountain steppe, 1350 m.

Astragalus campylosema Boiss. subsp. **campylosema**. Endemic. Ír.-Tur. In *Quercus pubescens* scrub, 1200 m.

Astragalus cretaceus Boiss. et Ky. Ír.-Tur. Calcareous slopes, 1200 m.

Astragalus deinacanthus Boiss. Ír.-Tur. Steppe, 1300 m.

Astragalus densifolius Lam. Endemic. Ír.-Tur. Steppe, limestone slopes, 1100 m.

Astragalus dictyophysus Reuter. ex Bunge. Ír.-Tur. Field margins, 1250 m.

Astragalus gymnolobus Fischer. Endemic. Ír.-Tur. Calcareous steppe, 1300 m.

Astragalus hamosus L. Medit. Fields, 1300 m.

Astragalus hirsutus Vahl. Endemic. Under *Pinus nigra*, 1300m

Astragalus lycius Boiss. Endemic. Steppe, limestone slopes, 1350 m.

Astragalus lycius Boiss. Endemic. Ír.-Tur. Steppe, 1300 m.

Astragalus macrocephalus Willd. subsp. **macrocephalus**. Endemic. Ír.-Tur. Gravelly hillslopes, steppe, 1200 m.

Astragalus macrocepus Boiss. Endemic. Ír.-Tur. Calcareous steppe, 1150 m.

Astragalus microcephalus Willd. Ír.-Tur. Mountain steppe, 1150 m.

Astragalus panduratus Bunge. Endemic. Ír.-Tur. Steppe, 1500 m.

Astragalus pinetorum Boiss. Endemic. Ír.-Tur. Pine woods, 1500 m.

Astragalus plumosus Willd. var. **plumosus**. C. et S. Anatolia. Steppe, 1400 m.

Astragalus setulosus Boiss. et Bal. Endemic. Steppe, 900 m.

Astragalus strictifolius Boiss. var. **kutepovi** Sirj. İr.-Tur. Mountain steppe, 1300 m.

Astragalus strigillosus Bunge, Endemic. İr.-Tur. Steppe, Gypsum hills, 1300 m.

Astragalus vulnerariae DC. Endemic. Steppe, 1350 m.

Chamaecytisus pygmaeus (Willd.) Rothm. Euro-Sib. Under *Pinus nigra*. streamside, 1100 m.

Cicer anatolicum Alef. İr.-Tur. Moist places, 1100 m.

Colutea cilicica Boiss. et Bal. Greece, Crimea, Caucasia, N. W. İran, N. İraq, W. Syria. Oak wood and open *Pinus nigra* forest, 1200 m.

Coronilla varia L. subsp. **varia**. S. et C. Europe, Crimea, Caucasia, W. Syria In *Quercus pubescens* scrubs, 1200 m.

Dorycnium pentaphyllum Scop. subsp. **anatolicum** (Boiss.) Gams. Endemic. İr.-Tur. In *Pinus nigra* forest and *Quercus pubescens* scrubs, 1300 m.

Genista albida Willd. Balkans, S. Russia, Crimea, Caucasia. In *Pinus nigra* forest, 1350 m.

Genista aucheri Boiss. Endemic. İr.-Tur. Deep calcareous soils, 1300 m.

Hedysarum varium Willd. İr. -Tur. In *Quercus pubescens* scrubs. 1250 m.

Lathyrus digitatus (Bieb.) Fiori. E. Medit. As above, 1150 m.

Lathyrus nissolia L. Europe, Crimea, Caucasia, N. W. Africa, N. İraq. Moist places, 1100 m.

Lathyrus pratensis L. Euro-Sib. Streamsidcs, Killik and Karanlık stream 1100 m.

Lathyrus tuberosus L. Euro-Sib. As above.

Lotus corniculatus L. var. **tenuifolius** L. Europe. Streamside, 1100 m.

Medicago rigidula (L.) var. **rigidula** Euras. Steppe, 1300 m.

Medicago sativa L. Euras. Steppe and calcareous soils, 1300 m.

Melilotus officinalis (L.) Desr. Euras. Disturbed ground, 1250m

Onobrychis argyrea Boiss. subsp. **argyrea**. Endemic. İr.-Tur. Usually on the calcareous soils, steppe, 1400 m.

Onobrychis armena Boiss. et Huet. Endemic. In *Quercus pubescens* scrubs, 1250 m.

Onobrychis hypargyrea Boiss. Balkans. Anatolia. Often limestone and in *Quercus pubescens* scrubs, 1200 m.

Ononis spinosa L. subsp. **leiosperma** (Boiss.) Sirj. Balkans, Cyprus, W. Syria, N. İraq, N. W. İnan. Streamside and water meadows, 1100 m.

Pisum sativum L. subsp. **elatius** (Bieb.) A. et G. var. **brevipedunculatum** Davis. et Meihle. Medit. Steppe, 1250 m.

Tetragonolobus maritimus (L.) Roth. W., C. et S. Europe, Crimea, Caucasia, N. Africa. Marshy ground and stagnat pools, Killik and Karanlık stream, 1150 m.

Trifolium arvense L. var. **arvense**. Europe; Medit. Steppe, 1250 m.

Trifolium pannonicum Jacq. subsp. **elongatum** (Willd.) Zoh. Endemic. In *Pinus nigra* forest clearings, 1300 m.

Trofolium physodes Stev. var. **psilocalyx** Boiss. E. Medit. Moist places, Karanlık streamsides, 1100 m.

Trifolium pratense L. var. **pratense**. Europe, Anatolia. Shady and wet places, Karanlık streamsides, 1100 m.

Trigonella fischeriana Ser. İr.-Tur. Steppe, 1150 m.

Trigonella monantha C. A. Meyer. subsp. **monantha** İr.-Tur. Steppe, 1200 m.

Vicia cracca L. subsp. **stenophylla** Vel. İtaly, Balkans, Hungary, Romania, Crimea, Cyprus, Transcaucasia, W. Syria, N. İraq. Usually in *Quercus pubescens* srubs, 1200 m.

Vicia narbonensis L. var. **narbonensis** S. Europe, Romania,

Hungary, Crimea S. W. Asia, N. Africa. Wet places, Karanlık stream, 1100 m.

Vicia peregrina L. Medit, Crimea. S. W. et C. Asia. Steppe and *Quercus pubescens* scrubs, 1250 m.

Rosaceae

Agrimonia eupatoria L. Europe, Anatolia, Atlantic Islands, N. Africa, W. et E. Asia. Damp meadows, Killik and Karanlık stream, 1100 m.

Amelanchier rotundifolia (Lam.) Dum.- Courset. subsp. **integrifolia** (Boiss et Hohem) Browica. Caucasia. N. Iraq, Anatolia. Open *Pinus nigra* forest, 1200 m.

Cotoneaster nummularia Fisch. et Mey. Crete, Cyprus, Latakia, Lebanon, N. Iraq, Caucasia, W. Iran. In *Pinus nigra* forest, 1300 m.

Crataegus monogyna Jacq. subsp. **monogyna**. Euro-Sib. River beds, Killik streamside, 1100 m.

Crataegus orientalis Pallas ex Bieb. var. **orientalis**. Anatolia. Degraded *Pinus nigra* forest, 1350 m.

Crataegus tanacetifolia (Lam.) Pers. Endemic. As above.

Filipendula ulmaria (L.) Maxim. Euro-Sib. Damp meadows, 1200 m.

Filipendula vulgaris Moench. Euro-Sib. In *Quercus pubescens* scrubs, 1300 m.

Geum urbanum L. Euro-Sib. Shady banks of streams, 1100 m.

Potentilla inclinata Vill. C. et S. Europe, C. et S. Russia, Caucasia, Iran, C. et N. Asia. Damp places, 1350 m.

Potentilla reptans L. Europe. N. Africa, Ethiopia, Cyprus, Syria, Caucasus, N. Iraq, Iran, N. W. et C. Asia. Damp places, streamside, 1200 m.

Prunus avium (L.) Moench. C. et S. Europe, Caucasia, N. W. Iran. In *Quercus pubescens* scrubs, 1250 m.

Prunus domestica L. subsp. **insititia** Poir. Euras. As above.

Prunus spinosa L. subsp. **dasyphylla**. Euro-Sib. Degraded *Pinus nigra* forest 1200 m.

Pyracantha coccinea Roemer. S. Europe, Crimea, Caucasia, N. W. Iran. streamside, 1150 m.

Pyrus amygdaliformis Vill. var. **amygdaliformis**. Anatolia. Streamside. 1100 m. Killik and Karanlık stream.

Pyrus elaeagnifolia Pallas. subsp. **elaegnifolia**. N. C. et S. Anatolia. Degraded *Pinus nigra* forest.

Rosa canina L. Euras Forest clearings, 1250 m.

Rosa hemisphaerica J. Herrm. Ir. -Tur. In dry habitats.

Rubus tereticaulis P. J. Mill. w. etc. Europ Streamside, 1100 m.

Sanguisorba minor Scop. subsp. **murieta** (Spach.) Briq. Euras. In *Pinus nigra* forest, 1400 m.

Sorbus umbellata (Desf.) Fritsch. var. **umbellata**. Balkans, Lebanon, Palestine, Caucasia. Streamside, 1100 m.

Sorbus torminalis (L.) Crantz. var. **torminalis**. Euro-Sib. In *Pinus nigra* forest. 1450 m.

Crassulaceae

Sedum subulatum (C. A. Meyer) Boiss. S. Russia, Caucasia. Rocky slopes, 1350 m.

Lythraceae

Lythrum salicaria L. Euro-Sib. Wet places, Killik and Karanlık stream.

Oenotheraceae

Epilobium angustifolium L. Euras. Wet places. Killik and Karanlık streams, 1100 m.

Epilobium hirsutum L. Euras. Stream banks. 1000 m.

Umbelliferae

Artedia squamata L. Medit. Roadsides. hills and slopes, 1350m

- Astrodaucus orientalis** (L.) Drude. Ír.-Tur. Steppe, 1200 m.
- Bupleurum heldreichii** Boiss. et Bal. Endemic. Ír.-Tur. Steppe, 1300 m.
- Bupleurum sulphureum** Boiss. et Bal. Endemic. Ír.-Tur. Steppe, 1150 m.
- Daucus carota** L. Europe; Anatolia. Wet places, 1100 m.
- Echinophora tournefortii** Jaub. et Spach. Ír.-Tur. Rocky and dry places.
- Ferulago pauciradiata** Boiss. et Heldr. Endemic. Ír.-Tur. Mountain steppe 1250 m.
- Peucedanum palimbioides** Boiss. Endemic. Ír.-Tur. Dry eroded slopes, 1100 m.
- Pimpinella tragium** Vill. subsp. **polyclada** (Boiss. Et Heldr.) Tutin. Balkan, N. Íran. Hills, 1250 m.
- Prangos melicarpoides** Boiss. var. **melicarpoides**. Endemic. Ír.-Tur. Rocky slopes. steppe, 1300 m.
- Scandix australis** L. subsp. **grandiflora** (L.) Thell. S. Europe, Crimea, Caucasia. Azerbaijan, Soviet Armenia, W. Íran, Lebanon, Syrian Desert. Fields and roadsides, 1300 m.
- Seseli tortuosum** L. S. Europe, N. W. Africa, Libya, Crimea, Caucasia. Azerbaijan, Rocky slopes, 1250 m.
- Torilis leptophylla** (L.) Rehb. W. et E. Europe, Caucasia, Khorassan, N. Íraq, Syrian Desert, Turkestan, N. Pakistan, Waste places.
- Turgenia latifolia** (L.) Hoffm. Euras. Cultivated places, 1350 m.
- Zosima absinthifolia** (Vent.) Link. S. W. and C. Asia. Steppe, limestone slopes, 1200 m.

Primulaceae

- Anagallis arvensis** L. Subcosm. Open places, 1200 m.
- Lysimachia vulgaris** L. Euras. Damp places, 1300 m.
- Androsace maxima** L. Euras; Meit. Steppe, 1150 m.

Plumbaginaceae

Acantholimon echinus (L.) Boiss. Ír.-Tur. Steppe, 1000 m.

Acantholimon venustum Boiss. Ír.-Tur. As above.

Plumbago europaea L. Medit. Sandy places, 1100 m.

Oleaceae

Jasminum fruticans L. Medit. Rocky slopes, 1250 m.

Ligustrum vulgare L. Europe, submedit. Streamside, 1100 m.

Apocynaceae

Vinca herbacaca W. K. Europe, Anatolia. Steppe, 950 m.

Asclepiadaceae

Vincetoxicum canescens (Willd.) Decn. Ír.-Tur. Open places, 1300 m.

Vincetoxicum tmoleum Boiss. Ír.-Tur. Steppe, 1300 m.

Boraginaceae

Alkanna orientalis (L.) Boiss. Ír.-Tur. Dry places, 1400 m.

Anchusa italica Retz. Ír.-Tur. Roadside, 1250 m.

Anchusa leptophylla T. et S. Ír.-Tur. Steppe, 1350 m.

Cerinthe minor L. Submedit. Steppe, 1200 m.

Cynoglossum pictum Ait. Medit. Roadside, 1300 m.

Lappula barbata M. B. var. *cariensis* Gurck. Anatolia. Steppe.

Lithospermum arvense L. Euras. Steppe, 1200 m.

Lithospermum officinale L. Euras. Damp places, 1100 m.

Moltkia aurea Boiss. Ír.-Tur. Dry places, Steppe, 1200 m.

Moltkia coerulea Lehm. Ír.-Tur. Steppe, 1250 m.

Myosotis collina Hoffm. Paleotemp. In *Pinus nigra* forest, 1400 m.

Nonnea macrosperma Boiss. et Heldr. Ír.-Tur. Steppe, 1300m

Onosma isauricum Boiss. et Heldr. Ír.-Tur. Steppe, 1200 m.

Onosma pallidum Boiss. Ír.-Tur. Steppe, 1250 m.

Onosma tauricum Pall. Anatolia, Steppe, 1200 m.

Rochelia stellulata Reichb. Euras. Roadside, 1400 m.

Convolvulaceae

Convolvulus compactum Boiss. Ír.-Tur. Stony places, 1200 m.

Convolvulus lineatus Fl. Gr. Ír.-Tur. As above, 1300 m.

Solanaceae

Hyocymus niger L. Ír.-Tur. Roadside, and steppe, 1250 m.

Scrophulariaceae

Bungea trifida (Vahl.) C. A. Mey. Ír.-Tur. Steppe, 1200 m.

Digitalis orientalis Lam. Ír.-Tur. Open places, 1200 m.

Linaria coridifolia Desf. Ír.-Tur. Steppe, 1100 m.

Pedicularis comosa L. Anatolia. Damp places, 1250 m.

Verbascum caudatum Freyn. et Bornm. Endemic. Anatolia. Steppe, 1150 m.

Verbascum cheiranthifolium Boiss. var. **cheiranthifolium**. Caucasia. Roadside. steppe, 1300 m.

Verbascum glomeratum Boiss. Anatolia, Syria. Steppe, 1400m

Verbascum lasianthum Boiss. Endemic. Roadside, 1300 m.

Verbascum meinckeanum Murb. Endemic. S. Anatolia. Roadside, 1450 m.

Verbascum soongoricum Schrenk. Caucasia, C. Europe, Íran. Deep calcareous soils, 1300 m.

Verbascum vulcanicum Boiss. et Heldr. var. **vulcanicum**. Endemic. C. Anatolia Steppe, 1250 m.

Veronica anagallis-aquatica L. S. Europe, Anatolia. In water, 100 m.

Veronica arvensis L. Euras. Open places, 1200 m.

Veronica cymbalaria L. Medit. Degraded places, 1150 m.

Veronica multifida (L.) Benth. Euras. Steppe, 1250 m.

Acanthaceae

Acanthus spinosus L. Anatolia. Erosion slopes, steppe, 950 m.

Labiatae

Ajuga chia Poir. Ír.-Tur. Steppe, 1150 m.

Ajuga salicifolia Stev. Ír.-Tur. Deep calcareous soils, 1250 m.

Ballota nigra L. Europe, N. Africa. Roadside, 1250 m.

Calamintha graveolens (M. B.) Benth. Ír.-Tur. Steppe, 1200m.

Calamintha vulgaris (L.) Druce. Euras. In *Quercus pubescens* scrubs, 1250 m.

Lamium macrodon Boiss. et Huet. Anatolia. Open places.

Lamium purpureum L. Euro-Sib. As above.

Lycopus europaeus L. Boreal. Wet places, 1100 m.

Marrubium parviflorum Fisch. et Mey. var. **oligodon**, Boiss. Ír. -Tur. Steppe, 1200 m.

Mentha tomentosa D'Urv. Paleotemp. In water, 1100 m.

Nepeta nuda L. subsp. **albiflora** (Boiss.) Gams. Pontic. In *Quercus pubescens* scrubs, 1200 m.

Phlomis armeniaca Willd. Ír.-Tur. Steppe, 1250 m.

Phlomis herba-venti L. Ír.-Tur. Steppe, 1200 m.

Salvia acetabulosa Vahl. Anatolia, steppe.

Salvia aethiopsis L. Europe; Medit. Steppe, 1300 m.

Salvia candidissima Vahl. Ír.-Tur. Erosion slopes, 1250 m.

Salvia cryptantha Montbr. et Auch. Ír.-Tur. Steppe, 1200 m.

Salvia rosaefolia Smith. Ír.-Tur. Steppe, 1350 m.

Salvia syriaca L. Anatolia. Steppe, 1400 m.

Salvia tchihatcheffi Boiss. Anatolia. Steppe, 1300 m.

Salvia verbanacea L. Europe; Anatolia. Steppe, 1250 m.

Satureia hortensis L. E. Medit. Open places, 1300 m.

- Scutellaria salviaefolia* Benth. Ír.-Tur. Steppe, 1350 m.
Scutellaria orientalis L. Ír.-Tur. Steppe, 1300 m.
Sideritis galatica Bornm. Submedit. Steppe, 1250 m.
Sideritis montana L. var. *comosa* Boiss. Europe, Africa. Steppe.
Stachys annua L. Anatolia. Rocky slopes.
Stachys cretica S. et S. subsp. *anatolica* Hub.-Mor. Anatolia. Steppe, 1350 m.
Stachys lavandulaefolia Vahl. Anatolia. Rocky slopes, steppe, 1350 m.
Teucrium orientale L. Ír.-Tur. Steppe, 1200 m.
Teucrium polium L. Medit; Ír.-Tur. Steppe, 1150 m.
Thymus jankae Celak. C. Anatolia. Steppe, 1300 m.
Thymus sipyleus Boiss. var. *punctatus* Boiss. Ír.-Tur. Calcareous steppe, 1300 m.
Ziziphora capitata L. Ír.-Tur. Steppe, 1250 m.
Ziziphora tenuior L. Ír.-Tur. As above.

Plantaginaceae

- Plantago holosteum* Lam. Medit. Roadside, 1450 m.
Plantago logopus L. Medit. Steppe, 1300 m.
Plantago lanceolata L. Europe; Submedit. Roadside.

Globulariaceae

- Globularia orientalis* L. Anatolia. Steppe, 1400 m.
Globularia trichosantha Fisch. et Mey. Anatolia. Ooen places, 1300 m.

Campanulaceae

- Asyneuma limonifolium* Sibth. et Sm. Ír.-Tur. Degraded places, steppe, 1350 m.
Asyneuma limonifolium Sibth. et Sm. var. *canescens* (Boiss.) Bornm. Ír.-Tur. In *Quercus pubescens* scrubs, 1200 m.

Campanula argea Boiss. İr.-Tur. Rocky slopes, 1200 m.

Campanula lyrata Lam. Anatolia. In *Pinus nigra* forest, 1200–1500 m.

Legousia speculum-veneris (L.) Chaix. Submedit. Rocky slopes.

Cucurbitaceae

Bryonia multiflora Boiss. et Heldr. İr.-Tur. Rocky slopes, 1300 m.

Rubiaceae

Asperula bornmuelleri Vel. İr.-Tur. Steppe, 1300 m.

Asperula glomerata (Bieb.) Gris. İr.-Tur. Rocky slopes, 1300m

Galium aperina L. Paleotemp. In *Quercus pubescens* scrubs, 1200 m.

Galium coronatum S. et S. İr.-Tur. Steppe, 1000 m.

Galium incanum S. et S. subsp. **elatus** (Boiss.) Ehrendf. Medit. Open places, 1350 m.

Galium ruthenicum Willd. Euras. In *Quercus pubescens* scrubs, 1200 m.

Galium verum L. C. et S. Europe. As. above.

Rubia tinctorium L. İr.-Tur. Damp places.

Caprifoliaceae

Lonicera etrusca Sant. var. **etrusca**. Medit. In *Pinus nigra* forest, 1400 m.

Viburnum lantana L. Euro-Sib. In the Killik streamside, 1100 m.

Valerianaceae

Centranthus longiflorus Stev. subsp. **longiflorus**. İr.-Tur. Screes, rocky slopes, 1200 m.

Valeriana tuberosa L. Euras. Steppe, 1200 m.

Valerianella carinata Lois. W., C. et S. Europe, Transcaucasia, Crimea, W. Syria, N. İraq, S. İnan, N. Africa, Steppe, 1250m.

Valerianella vesicaria (L.) Moench. S. France, Italy, Aegean, Iran, N. Iraq, Palestine, Lebanon, Anti-Lebanon, Syria, Cyprus, C. Asia, Algeria. Fields and rocky slopes, 1200 m.

Dipsacaceae

Cephalaria syriaca (L.) Schrader. Medit. Fields, roadsides, 1400 m.

Dipsacus laciniatus L. Euras. Wet places, Killik and Karanlık stream.

Morina persica L. Ir.-Tur. Rocky slopes, 1200 m.

Scabiosa micrantha Desf. N. Balkans, Talysch, Transcaucasia, S. Russia, N. Iran, Steppe, 1250 m.

Scabiosa rotata Bieb. Ir.-Tur. Steppe, 1300 m.

Compositae

Achillea micratha M. B. Ir.-Tur. Steppe, 1350 m.

Achillea phrygia Boiss. et Bal. Anatolia. Steppe, 1250 m.

Achillea setacea Waldst. et Kit. Ir.-Tur. Steppe, 1300 m.

Achillea teretifolia Willd. Anatolia. Steppe, 950 m.

Anthemis montana L. var. *linneana* Gren. et Godr. N. medit. Open places.

Anthemis tinctoria L. var. *pallida* (DC.) Boiss. Ir.-Tur. Steppe. 1150 m.

Arthemisia fragrans Willd. Ir.-Tur. Steppe, 1100 m.

Bidens tripartitus L. Europe, Anatolia. Marshy places, 1000 m.

Carduus nutans L. Anatolia. Degraded places, steppe, 1100 m.

Cousinia birandiana Hub.-Mor. Ir.-Tur. Steppe, 1000 m.

Centaurea drabifolia Sibth. et Sm. subsp. *detansa* (Bornm.) Wagenitz. Ir.-Tur. Steppe, 1250 m.

Centaurea carduiformis DC. Anatolia. Steppe, 1200 m.

Centaurea squarrosa Willd. Ir.-Tur. Degraded places, steppe.

Centaurea thracica (Vel.) Hayek. Ir.-Tur. Steppe.

Centaurea triumfetti All. subsp. **cana** (Sibth. et Sm.) Hayek. Ír.-Tur. Fields, roadsides, steppe, 1250 m.

Centaurea urvillei DC. Ír.-Tur. Rocky slopes, steppe, 1250 m.

Chardinia orientalis O. Ktze. Ír.-Tur. Deep calcareous soils.

Chondrilla juncea L. Euras. Steppe, 1250 m.

Chrysanthemum poteriifolium (Led) Bornm. Endemic. In *Pinus nigra* forest, 1200–1550 m.

Cirsium arvense Scop. Subcosm. Wet places, 1000 m.

Crepis macropus Boiss. et Heldr. Aatolia. Steppe, 1300 m.

Crupina crupinastrum (Mor.) Vis. Submedit. Steppe, 1400 m.

Echinops ritro L. S. et W. Europe. Degraded places, 1200 m.

Eupatorium cannabinum L. Euras. Damp places, 1000 m.

Filago microcephala Pomel. Ír.-Tur. Steppe, 1350 m.

Hieracium auriculoides Lang. subsp. **leioculoides** Zahn. Euras. In *Pinus nigra* forest, 1200 m.

Hieracium auriculoides Lang. subsp. **nudescens** N. P. Euras. In *Pinus nigra* forest, 1200–1550 m.

Hieracium hoppeanum Schult. subsp. **isauricum** Hub.-Mor. Anatolia. Stony places, 1400 m.

Hieracium pannosum Boiss. subsp. **pannosum** (Boiss.) N. P. Euras. Open and dry places, 1400 m.

Hieracium proceum Fr. subsp. **proceum**. Ír.-Tur. Calcareous erosion soils 1300 m.

Hieracium tuberculatum Freyn. et Sint. Ír.-Tur. Open places.

Înula cordata Boiss. Anatolia. Damp places, Karanlık stre-amside, 1100 m.

Înula montbretiana DC. Anatolia. Steppe, 1150 m.

Jurinea pontica Hausskn. et Freyn. Ír.-Tur. Steppe, 1200 m.

Lapsana communis L. subsp. **intermedia** (Bieb.) Hayek. Euro-Sib. In *Pinus nigra* forest, 1200–1550 m.

Leontodon asper (W. K.) Poir, Ír.-Tur. Steppe, 1400 m.

Reichardia dichotoma (Bieb.) Freyn. İr.-Tur. Steppe.

Sichorium inthibus L. Cosm. Roadside, 1200 m.

Scolymus hispanicus L. İr.-Tur. Rocky slopes, 1250 m.

Scorzonera eriophora DC. Anatolia. Open *Pinus nigra* forest, 1400 m.

Scorzonera tomentosa L. Anatolia. Steppe, 1350 m.

Tussilago farfara L. Euras. Wet places, Karanlık stream, 1100 m.

Xeranthemum annuum L. W. Europe. Anatolia. Steppe, 1300 m.

ÖZET

Beynam ormanı Ankara-Bâlâ karayolunun 40. km. de Beynam Köyünün güneyindeki Kuyrukçu dağım örten *Pinus nigra* Arnold. subsp. *pallasiana* (Lamb.) Holmboe. (Karaçam) ve *Quercus pubescens* Willd. (Tüylü meşe) türleriyle örtülü rölik bir ormandır.

Kuyrukçu dağının florası 66 familya, 241 cins ve 419 tür ile temsil edilmiştir. İrano-Turaniyen elemanlarının çoğunlukta olduğu bu dağ florunda yaygın olan başlıca familyalar *Leguminosae*, *Compositae*, *Labiatae* ve *Rosaceae* dir.

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