

Tree and shrub species of the Huzurlu High Plateau (Gaziantep, Turkey)

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Abstract. The plants listed in this study were collected on the Huzurlu High Plateau (Gaziantep) between 2002 and 2004. The main concern of our study was to determine tree and shrub species of this intact area. The research area situated in the northeast of the Amanos Mount falls within Square C6 of the grid system. As a result of the investigations, Euro-Siberian elements were identified in the research area in the form of exclave, particularly in humid places. During the floristic studies, 80 taxa belonging to 58 genera and 34 families were determined. There were nine endemic and rare taxa and the endemism rate was 11.2 %. The List of endemic plants and risk categories follows the IUCN criteria.

Key words: Amanos Mts, flora, shrubs, trees, Turkey

Introduction

The study area lies on the eastern slopes of the Amanos Mts and borders on the province of Osmaniye to the west, district of Islahiye (Gaziantep) to the east and south, and district of Fevzipasa (Gaziantep) to the north. It falls within Square C6 of the grid system adopted by Davis (1965) (Fig. 1). This area was declared a tourist site by the Ministry of Tourism Affairs in 1995 (*Official Newspaper* 1995) on the account of its floristic and faunistic importance and habitat destruction. Thus we started initially with determination of the tree and shrub species in the study area, while the flora of Huzurlu High Plateau will be completed in the near future.

The region was selected for investigation for the following reasons:

1. The study area was located on the Anatolian Diagonal (Seçmen 1996).
2. The study area was situated between the Mediterranean and Irano-Turanian phytogeographical regions (Atalay 1983).

3. In the research area, the Euro-Siberian taxa were found in the form of an enclave, particularly in humid places (Atalay 1983).

4. The habitats were subjected to destruction by the local people.

The altitude of the area increases from 1430 m to 2085 m from west to east, and the highest point of the area is Yağlıpınar summit (2085 m). The slopes generally face east and southeast, and the topography is very steep and broken.

The geological structure of the area is formed by Mesozoic and Cretaceous limestones, Upper Cretaceous ultra-basic rocks (Gabro and Serpentine) and Tertiary marls. The following common soil formations were distinguished in the area: brown calcareous, brown forest, terra rossa, reddish-brown Mediterranean, colluvial, and mixed soil types (Akman 1973a, b).

The study area has a Mediterranean climate, mainly characterised by droughts and hot summers, and rainy and mild winters. Annual precipitation varies from 1332.5 mm to 2525.9 mm, depending on altitude and

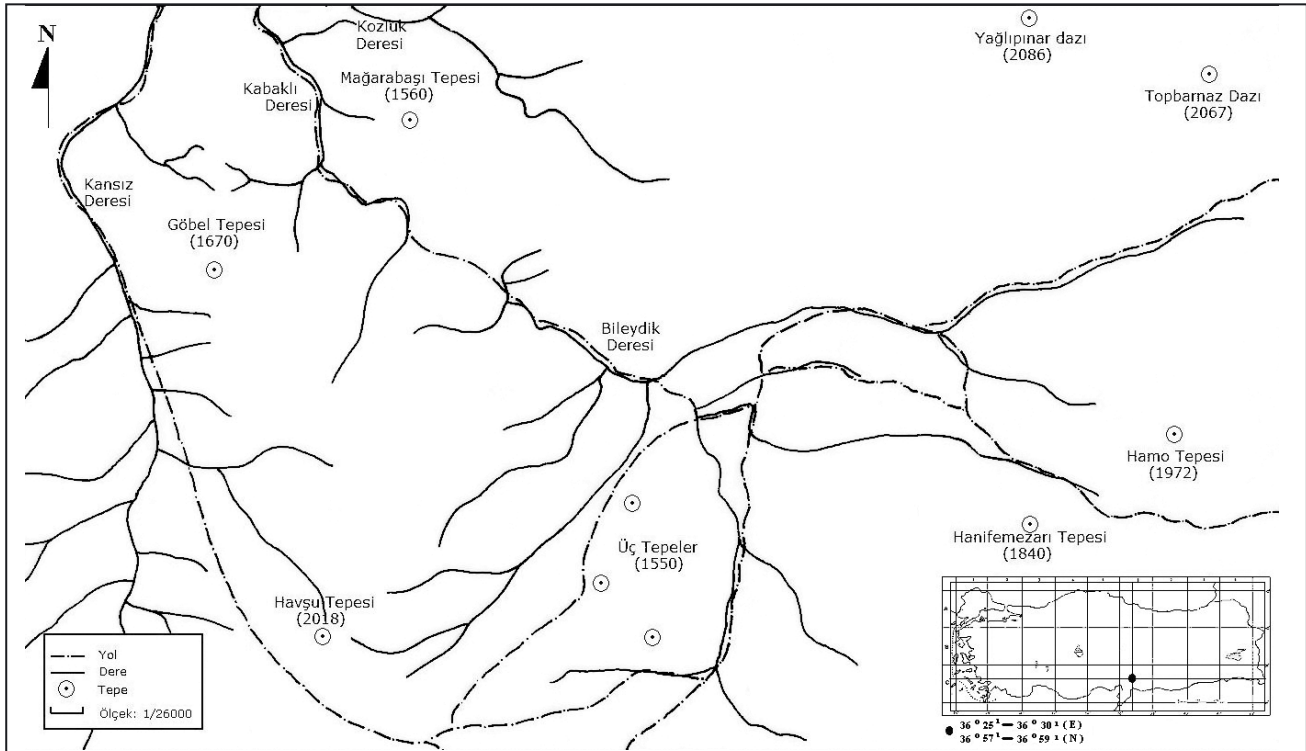


Fig. 1. Map of the study area.

type of summits. The seasonal precipitation regime during the year follows the Winter-Spring-Autumn-and-Summer scheme. This is a typical first version of the East Mediterranean climate (Akman 1990). The annual mean temperature is 11.9°C. The maximum mean temperature (M) is 29.7°C in July, and the minimum mean temperature (m) is -3.6°C in January. The ombrothermic diagram of the study area was prepared according to the climatic data (Anonymous 1999) obtained from İslahiye Meteorological Station (Fig. 2).

According to Emberger's method, the precipitation-temperature coefficient ($Q_2 = 140$, $m = -3.6^\circ\text{C}$) indicates

a Mediterranean climate with rainy and cold weather. On the other hand, according to Climagram Climate Method, climatic data ($M - m = 33.3^\circ\text{C}$ and $M + m/2 = 13.5^\circ\text{C}$) indicates a semi-land climate with cold weather (Akman 1990). These climatic results supported the presumption that the study area has varied microclimatic regions.

The study area lies within the Mediterranean phytogeographical region and, compared to neighboring terrains (Table 1), three main vegetation types can be distinguished there:

1. Maquis vegetation, 500 m to 1000 m, consists of evergreen shrubs and begins at low altitudes in the study area.

2. Forest vegetation, 600 m to 1900 m, occupies different zones depending on local climate conditions, altitude

3. Steppe vegetation, 1900 m to 2085 m, is mostly found just above the timberline at 1900 m and in the place of destroyed *Abies* and *Cedrus* forests. This vegetation consists of pillow-formed and thorny steppe elements (Tragacanth steppe).

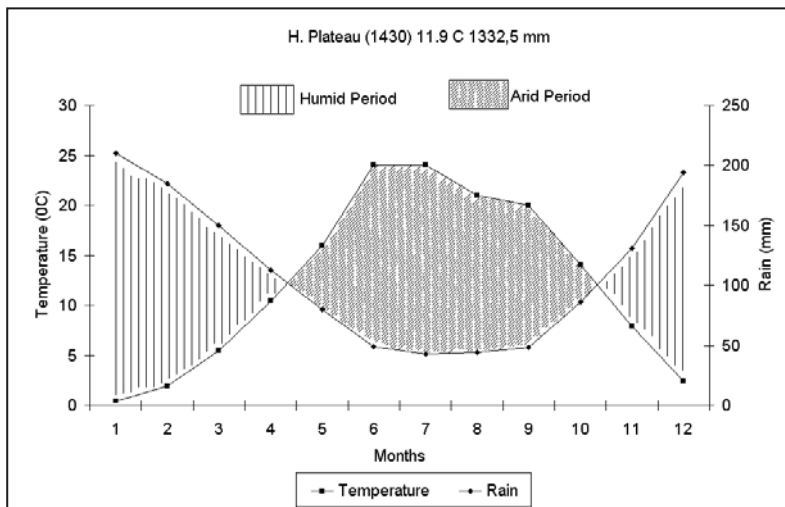


Fig. 2. The weather diagram of research area.

Table 1. Comparison of the study area with the neighbouring regions in relation to vegetation types

Vegetation type	Flora of Dortyol and Erzincan (Hatay) (Turkmen & Duzenli 1998)	Flora of Çimen Mt (Kahramanmaraş) (Varol & Tatlı 2003)	Flora of Başkonuş Mt (Kahramanmaraş) (Varol 2002)	Present study
	<i>Quercus coccifera</i> ; <i>Erica manipuliflora</i> Salibs.; <i>Rhamnus punctatus</i> Boiss. var. <i>angustifolius</i> Post; <i>Pistacia terebinthus</i> subsp. <i>palaestina</i> ; <i>Cotinus coggygria</i> Scop.; <i>Phyllyrea latifolia</i> L. subsp. <i>orientalis</i> Sebst.; <i>Myrtus communis</i> L. subsp. <i>communis</i> ; <i>Arbutus andrachne</i> ; <i>Syrax officinalis</i> ; <i>Calicotome villosa</i> ; <i>Cistus creticus</i>	<i>Quercus coccifera</i> ; <i>Calicotome villosa</i> ; <i>Cercis siliquastrum</i> subsp. <i>siliquastrum</i> ; <i>Syrax officinalis</i> ; <i>Arbutus unedo</i> L.; <i>Erica manipuliflora</i> ; <i>Pistacia terebinthus</i> subsp. <i>palaestina</i> ; <i>Cotinus coggygria</i> ; <i>Phyllyrea latifolia</i> subsp. <i>orientalis</i>	<i>Quercus coccifera</i> ; <i>Syrax officinalis</i> ; <i>Arbutus unedo</i> ; <i>Pistacia terebinthus</i> subsp. <i>palaestina</i> ; <i>Cotinus coggygria</i>	<i>Olea europaea</i> var. <i>europaea</i> ; <i>Quercus coccifera</i> ; <i>Arbutus andrachne</i> ; <i>Pistacia terebinthus</i> subsp. <i>palaestina</i> ; <i>Syrax officinalis</i> ; <i>Rhus coriaria</i> ; <i>Cistus salvifolius</i> ; <i>C. creticus</i> ; <i>Colutea cilicica</i> ; <i>Calicotome villosa</i>
Forest vegetation	<i>Fagus orientalis</i> ; <i>Pinus brutia</i> ; <i>Quercus cerris</i> var. <i>cerris</i> ; <i>P. nigra</i> subsp. <i>pallasiana</i> ; <i>Carpinus orientalis</i> ; <i>Cedrus libani</i> ; <i>Abies cilicica</i> subsp. <i>cilicica</i>	<i>Pinus brutia</i> ; <i>P. nigra</i> subsp. <i>pallasiana</i> ; <i>Cedrus libani</i> ; <i>Abies cilicica</i> ; subsp. <i>cilicica</i> ; <i>Fagus orientalis</i> ; <i>Carpinus orientalis</i> ; <i>Quercus cerris</i> var. <i>cerris</i> ; <i>Q. petraea</i> subsp. <i>pinnatifolia</i> ; <i>Q. libani</i> ; <i>Ostrya carpinifolia</i> ; <i>Populus tremula</i>	<i>Pinus brutia</i> ; <i>P. nigra</i> subsp. <i>pallasiana</i> ; <i>Cedrus libani</i> ; <i>Abies cilicica</i> subsp. <i>cilicica</i> ; <i>Fagus orientalis</i> ; <i>Carpinus orientalis</i> ; <i>Quercus cerris</i> var. <i>cerris</i> ; <i>Q. petraea</i> subsp. <i>pinnatifolia</i> ; <i>Q. libani</i> ; <i>Ostrya carpinifolia</i> ; <i>Populus tremula</i> ; <i>Taxus baccata</i> ; <i>Fraxinus ornus</i> subsp. <i>cilicica</i> ; <i>Sorbus umbellata</i> var. <i>umbellata</i> ; <i>S. torminalis</i> var. <i>pinnatifida</i> ; <i>Corylus avellana</i> var. <i>avellana</i>	<i>Pinus brutia</i> ; <i>P. nigra</i> subsp. <i>pallasiana</i> ; <i>Cedrus libani</i> ; <i>Abies cilicica</i> subsp. <i>cilicica</i> ; <i>Fagus orientalis</i> ; <i>Carpinus orientalis</i> ; <i>Quercus cerris</i> var. <i>cerris</i> ; <i>Q. petraea</i> subsp. <i>pinnatifolia</i> ; <i>Q. libani</i> ; <i>Ostrya carpinifolia</i> ; <i>Populus tremula</i> ; <i>Taxus baccata</i> ; <i>Fraxinus ornus</i> subsp. <i>cilicica</i> ; <i>Sorbus umbellata</i> var. <i>umbellata</i> ; <i>S. torminalis</i> var. <i>pinnatifida</i> ; <i>Corylus avellana</i> var. <i>avellana</i>
Steppe vegetation	<i>Acantholimon libanoticum</i> ; <i>Astragalus macrourus</i> Fisch. & Mey.; <i>Rosa pulverulenta</i> ; <i>Cerastium prostrata</i> (Lab.) Ser. var. <i>prostrata</i> ; <i>Cotoneaster nummularia</i>	<i>Acantholimon acerosum</i> (Willd.) Boiss. var. <i>acerosum</i> ; <i>Astragalus cuspidatulus</i> Eig.; <i>Thymus kotschyanus</i> Boiss.; <i>A. kurdicus</i> Boiss. var. <i>kurdicus</i>	<i>Astragalus plumosus</i> var. <i>plumosus</i> ; <i>A. angustifolius</i> Lam. subsp. <i>angustifolius</i> var. <i>angustifolius</i>	<i>Acantholimon libanoticum</i> ; <i>Astragalus plumosus</i> var. <i>plumosus</i> ; <i>Astragalus commagenicus</i> ; <i>Astragalus barbeyanus</i> <i>Thymus sipyleus</i> subsp. <i>rosulans</i> ; <i>Cotoneaster nummularia</i> ; <i>Rosa pulverulenta</i> ; <i>Prunus divaricata</i> subsp. <i>divaricata</i> ; <i>Daphne oleioides</i> subsp. <i>kurdica</i>

Materials and method

The materials of this study comprised 80 woody plant taxa collected on the Huzurlu Plateau in the Amanos Mts, between 2002 and 2004. All plant specimens were identified according to the *Flora of Turkey* (Davis 1965-1982) and various dendrological books (Kayacık 1980, 1981; Anşin & Özkan 1993). All herbarium specimens were deposited at the Herbarium of the Arts and Science Faculty of Gaziantep University. The ombrothermic diagram of the study area was drawn with the help of the interpolation method (Akman 1990), depending on the data obtained from Islahiye Meteorological Station.

The List of endemic plants and risk categories follows the IUCN criteria (1994).

The following abbreviations for the floristic elements are used: Med = Mediterranean, Eur-Sib = Euro-Siberian, Iran-Turan = Irano-Turanian, Cosm = Cosmopolitan-indeterminate as well as E = endemics and R = rare species.

Discussion and conclusion

During the floristic studies in the research area, a total of 81 arboreal plant taxa belonging to 58 genera and 34 families were recorded. Seven taxa were referred to the *Gymnospermae* and the rest to *Angiospermae*. Owing to the fact that arboreal phytodiversity was high at genus and family level, we assumed that this area is a small gene pool. The life forms of the taxa, according to Raunkiaer (1934), have been as follows: microphanerophytes (31.25%), nanophanerophytes (27.5%), mesophanerophytes (26.25%), epiphytephanerophytes (8.75) and megaphanerophytes (6.25) (Fig. 3). Three taxa of the epiphytes were semi-parasitic. It was determined that eight of the identified taxa were endemic and one of those was rare for the flora of Turkey (Ekim & al. 2000), while the rate of endemism was 11.25%.

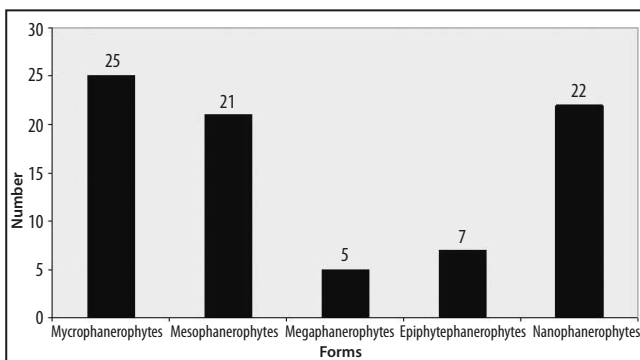


Fig. 3. Life form spectrum.

Distribution of the phytogeographical elements in the study area was as follows: Mediterranean (28,75%), Euro-Siberian (17,5%), Irano-Turanian (7,5%), and cosmopolitan and indeterminate (46,25%) (Fig. 4). Dominance of the Mediterranean and Euro-Siberian elements testified that our study area is a meeting point of the two regions. It was known that many northern plants had migrated to the Amanos Mts by means of the Anatolian Diagonal at the glacial periods and then many of them were drawn back again to the North during the interglacial periods, when the climate became arid and hot. Some species favoured particularly humid places and high altitudes (Davis & al. 1971). Therefore, there were certain historical reasons related to the plant formations occurring at the Huzurlu Plateau.

Our results coincide with the others (Türkmen & Düzenli 1998; Varol 2002; Varol & Tatlı 2003) (Table 1). On the northern slopes, *Fagus orientalis* and *Corylus avellana* formations, which are widespread especially in the Euro-Siberian floristic region of Turkey, constitute a large community on intrusive bedrock at 1500 m to 2000 m a.s.l. The presence of these formations in the study area may be due to local microclimate, the existence of many small streams, frequent fogs that produce higher humidity than in the other Mediterranean regions, and the orographic structure and precipitation.

The families representing the highest number of species are *Rosaceae* (15), *Fabaceae* (9) and *Fagaceae* (7), and the genera with the highest number of species are *Quercus* (6), *Astragalus* (4), *Rosa* (3), *Salix* (3), and *Lonicera* (3).

After a thorough study of the relevant papers about this district (Yıldız 1984, Donner 1990; Duman & al. 1991; Türkmen & Düzenli 1995, 1998; Varol 2002, Varol & Tatlı 2003), a total of four species can be regarded as new records for Square C6: *Capparis ovata* var. *palaestina*, *Frangula alnus* subsp. *alnus*, *Rosa villosa*, and *Salix cinerea*.

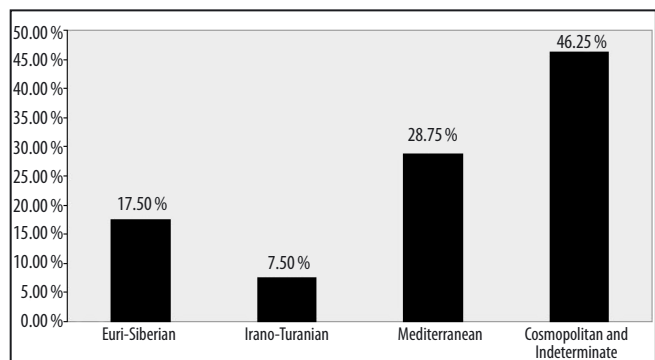


Fig. 4. Phytogeographic region spectrum.

Table 2. Endemic plants and risk category

Family	Taxa	Endemism	IUCN category
Betulaceae	<i>Alnus glutinosa</i> subsp. <i>antitaurica</i>	Endemic	LR (nt)
Brassicaceae	<i>Alyssum peltarioides</i> subsp. <i>virgatiforme</i>	Endemic	LR (lc)
Caprifoliaceae	<i>Lonicera caucasica</i> subsp. <i>orientalis</i>	Endemic	LR (lc)
Fabaceae	<i>Astragalus aintabicus</i>	Endemic	LR (cd)
	<i>A. commagenicus</i>	Endemic	LR (lc)
Fagaceae	<i>Quercus petraea</i> subsp. <i>pinnatiloba</i>	Endemic	LR (lc)
Lamiaceae	<i>Phlomis longifolia</i> var. <i>bailanica</i>	Endemic	LR (cd)
Oleaceae	<i>Fraxinus ornus</i> subsp. <i>cilicica</i>	Endemic	LR (lc)
Plumbaginaceae	<i>Acantholimon libanoticum</i>	Rare	Vu

Endemism and rareness ratio: % 11.25

The anthropogenic impact was rather heavy in the study area, especially on the communities consisting mostly of endemic plants. For example, the habitats were destroyed by cutting of trees and shrubs for the needs of the local people. During our surveys we talked to the local people about the importance of preserving the habitats and informed them about the endemic and rare plants.

Several species of ornamental trees have been found in the study area, such as *Pyrus communis*, *Malus sylvestris* and *Punica granatum* cultivated by some of the local people. And there were some cultivated *Rosa* species in local gardens.

Appendix 1

List of tree and shrub species

GYMNOSPERMAE

Cupressaceae

Juniperus drupacea Labill.: C6, Gaziantep, Islahiye, Yağlıpınar summit, *Pinus nigra* forest, 1800-1850 m, 15.09.2003 (Cosm).

Juniperus oxycedrus L. subsp. *oxycedrus*: C6, Gaziantep, Islahiye, Hanife summit, circumtances, south slopes at free areas, 1550-1600 m, 24.06.2003 (Med).

Pinaceae

Abies cilicica (Ant. & Kotschy) Carr subsp. *cilicica*: C6, Gaziantep, Islahiye, Hamo summit, mixed forests, 1600-1650 m, 28.09.2003 (Med).

Cedrus libani A. Rich.: C6, Gaziantep, Islahiye, exit way of Plateau, at slopes, 1650-1700 m, 13.09.2003 (Med).

Pinus brutia Ten.: C6, Gaziantep, Islahiye, exit way of Plateau, at slopes, 1000-1100 m, 13.09.2003 (Med).

Pinus nigra Arn. subsp. *pallasiana* (Lamb.) Holmboe: C6, Gaziantep, Islahiye, Kokarca ridges, pure forest, 1600-1650 m, 14.09.2003 (Cosm).

Taxaceae

Taxus baccata L.: C6, Gaziantep, Islahiye, Kansız location, the next to the stream, 1700-1750 m, 06.09.2002 (Cosm).

ANGIOSPERMAE

Magnoliopsida

Aceraceae

Acer monspessulanum L. subsp. *microphyllum* (Boiss.) Bornm.: C6, Gaziantep, Islahiye, the southwestern part of plateau, at slopes, 1600-1650 m, 12.07.2003 (Cosm).

Acer platanoides L.: C6, Gaziantep, Islahiye, Kabaklık-Kansız stream location, the edge of stream, 1350-1400 m, 25.10.2002 (Eur-Sib).

Anacardiaceae

Pistacia terebinthus L. subsp. *palaestina* (Boiss.) Engl.: C6, Gaziantep, Islahiye, the exit of plateau, slopes, 1500-1550 m, 12.07.2003 (Med).

Rhus coriaria L.: C6, Gaziantep, Islahiye, the exit of plateau, at slopes, 1500-1550 m, 12.07.2003 (Cosm).

Araliaceae

Hedera helix L.: C6, Gaziantep, Islahiye, Kabaklık location, at tree, 1400-1450 m, 13.09.2003 (Cosm).

Betulaceae

Alnus glutinosa (L.) Gaertn. subsp. *antitaurica* Yalt.: C6, Gaziantep, Islahiye, Kansız location, the edge of stream, 1300-1350 m, 16.09.2003, E (Med).

Brassicaceae

Alyssum peltarioides Boiss. subsp. *virgatiforme* (Nýar.) Dudley: C6, Gaziantep, Islahiye, Uçtepe-Hafşo lo-

cation, free area, 1600-1650 m, 22.06.2003, E (Iran-Turan).

Buxaceae

Buxus sempervirens L.: C6, Gaziantep, İslahiye, Karagöz location, in forest, 1400-1450 m, 16.09.2003 (Eur-Sib).

Capparaceae

Capparis ovata Desf. var. *palestina* Zohary: C6, Gaziantep, İslahiye, the exit of plateau, the edge of way, 1100-1150 m, 16.09.2003 (Med).

Caprifoliaceae

Lonicera caucasica Pall. subsp. *orientalis* (Lam.) D.F. Chamb. & Long: C6, Gaziantep, İslahiye, Kabaklık-Kansız stream location, at slopes, free area, 1350-1400 m, 07.06.2003, E (Cosm).

L. etrusca Santi var. *hispidula* Boiss.: C6, Gaziantep, İslahiye, 07.06.2003 (Cosm).

L. nummulariifolia Jaub. & Spach subsp. *nummulariifolia*: C6, Gaziantep, İslahiye, Kabaklık-Kansız stream location, the edge of way, 1350-1400 m, 17.05.2003 (Cosm).

Celastraceae

Euonymus latifolius (L.) Mill. subsp. *latifolius*: C6, Gaziantep, İslahiye, Kozluk stream location, the edge of stream, 1450-1500 m, 15.09.2003 (Eur-Sib).

Cistaceae

Cistus creticus L.: C6, Gaziantep, İslahiye, Kansız-Bileydik stream location, 1200-1250 m, 25.10.2003 (Med).

C. salviifolius L.: C6, Gaziantep, İslahiye, the exit way of plateau, 1450-1500 m, 07.06.2003 (Cosm).

Cornaceae

Cornus sanguinea L. subsp. *cilicica* (Wangerin) D.F. Chamb.: C6, Gaziantep, İslahiye, Kozluk-Kansız stream location, free area, 1350-1400 m, 13.09.2003 (Med).

Corylaceae

Carpinus orientalis Mill. subsp. *orientalis*: C6, Gaziantep, İslahiye, Kabaklık-Kansız stream location, the edge of stream, 1300-1350 m, 07.06.2003 (Eur-Sib).

Corylus avellana L. var. *avellana*: C6, Gaziantep, İslahiye, Kabaklık-Kozluk stream junction, 1300-1350 m, 07.06.2003 (Eur-Sib).

Ostrya carpinifolia Scop.: C6, Gaziantep, İslahiye, Kabaklık-Kozluk stream junction, the edge of stream, 1300-1350 m, 07.06.2003 (Med).

Ericaceae

Arbutus andrachne L.: C6, Gaziantep, İslahiye, the exit way of plateau, the edge of way, 1500-1550 m, 12.07.2003 (Med).

Fabaceae

Astragalus aintabicus Boiss.: C6, Gaziantep, İslahiye, Kansız location, at slopes, free area, 1400-1450 m, 12.07.2003, E.

A. barbeyanus Post: C6, Gaziantep, İslahiye, Yağlıpınar summit, southern slopes, 1750-1800 m, 07.06.2003 (Cosm).

A. commagenicus (Hand.-Mazz.) Şirj.: C6, Gaziantep, İslahiye, Yağlıpınar summit, southern slopes, 1750-1800 m, 07.06.2003, E.

A. plumosus Willd. var. *plumosus*: C6, Gaziantep, İslahiye, Yağlıpınar summit, southern slopes, 1750-1800 m, 12.07.2003 (Cosm).

Calicotome villosa (Poir.) Link: C6, Gaziantep, İslahiye, The exit way of plateau, the edge of way, 1500-1550 m, 17.05.2003 (Med).

Cercis siliquastrum L. subsp. *siliquastrum*: C6, Gaziantep, İslahiye, Kansız-Bileydik stream location, the edge of stream, 1300-1350 m, 25.10.2003 (Cosm).

Colutea cilicica Boiss. & Bal.: C6, Gaziantep, İslahiye, Hamo summit location, at forest, 1600-1650 m, 28.09.2003 (Cosm).

Coronilla emerus L. subsp. *emeroides* (Boiss. & Sprun.) Uhrova: C6, Gaziantep, İslahiye, Kabaklık-Kansız stream location, the edge of way, 1350-1400 m, 21.06.2003 (Cosm).

Spartium junceum L.: C6, Gaziantep, İslahiye, the exit way of plateau, 1550-1600 m, 17.05.2003, (Med).

Fagaceae

Fagus orientalis Lipsky: C6, Gaziantep, İslahiye, Hafşa summit location, pure forest, 1800-1850 m, 22.06.2003 (Eur-Sib).

Quercus brantii Lindl.: C6, Gaziantep, İslahiye, the exit way of plateau, at slopes, 1200-1250 m, 12.07.2003 (Iran-Turan).

Q. cerris L. var. *cerris*: C6, Gaziantep, İslahiye, the exit way of plateau, the edge of way, 1550-1600 m, 21.06.2003 (Med).

Q. coccifera L.: C6, Gaziantep, İslahiye, the exit way of plateau, 1100-1200 m, 16.09.2003 (Med).

Q. infectoria Olivier subsp. *boissieri* (Reut.) O. Schwarz: C6, Gaziantep, İslahiye, the exit way of plateau, at slopes, 1500-1550 m, 12.07.2003 (Med).

Q. libani Olivier: C6, Gaziantep, Islahiye, the exit way of plateau, at slopes, 1450-1500 m, 12.07.2003 (Iran-Tuan).

Q. petraea (Mattuschka) Liebl. subsp. *pinnatiloba* (C. Koch) Menitsky: C6, Gaziantep, Islahiye, Yağlıpınar-Burunsuz location, at slopes, 1800-1850 m, 12.07.2003, E.

Juglandaceae

Juglans regia L.: C6, Gaziantep, Islahiye, Kozluk stream location, the edge of stream, 1350-1400 m, 15.09.2003 (Cosm).

Lamiaceae (Labiatae)

Phlomis longifolia Boiss. & Bl. var. *bailanica* (Vierh.) Hub.-Mor.: C6, Gaziantep, Islahiye, Tandır village, the edge of way, 600-650 m, 17.05.2003, E.

Thymus sipyleus Boiss. subsp. *rosulans* (Borbás) J alas: C6, Gaziantep, Islahiye, Yağlıpınar summit, free rocky area, 1900-1950 m, 14.09.2003 (Cosm).

Loranthaceae

Loranthus europaeus Jacq.: C6, Gaziantep, Islahiye, Kansız-Bileydik stream location, at oak, 1300-1350 m, 25.10.2003 (Cosm).

Viscum album L. subsp. *abietis* (Wiesb.) Abromeit: C6, Gaziantep, Islahiye, the entrance of plateau, at *Pinus nigra*, 1500-1550 m, 15.09.2003 (Cosm).

V. album subsp. *austriacum* (Wiesb.) Vollm.: C6, Gaziantep, Islahiye, the entrance of plateau, at *Pinus nigra*, 1500-1550 m, 15.09.2003 (Cosm).

Moraceae

Ficus carica L. subsp. *carica*: C6, Gaziantep, Islahiye, Kabaklık-Kansız stream location, at slopes, 1400-1450 m, 07.06.2003 (Cosm).

Oleaceae

Fraxinus ornus L. subsp. *cilicica* (Lingelsh.) Yalt.: C6, Gaziantep, Islahiye, Kabaklık-Kansız stream location, deciduous forests, 1450-1500 m, 07.06.2003 E (Med).

Olea europaea L. var. *europaea*: C6, Gaziantep, Islahiye, the exit way of plateau, 900-1000 m, 13.09.2003 (Med).

Phytolacaceae

Phytolacca pruinosa Fenzl: C6, Gaziantep, Islahiye, Hamo summit, the edge of way, 1450-1500 m, 13.09.2003 (Med).

Platanaceae

Platanus orientalis L.: C6, Gaziantep, Islahiye, Kabaklık location, the edge of stream, 1400-1450 m, 13.09.2003 (Cosm).

Plumbaginaceae

Acantholimon libanoticum Boiss.: C6, Gaziantep, Islahiye, Yağlıpınar hill, at tragacanth steppe, 1950-2000 m, 27.09.2002, R (Med).

Ranunculaceae

Clematis vitalba L.: C6, Gaziantep, Islahiye, Kabaklık-Kansız stream location, at tree, 1350-1400 m, 15.09.2003 (Cosm).

Rhamnaceae

Frangula alnus Mill. subsp. *alnus*: C6, Gaziantep, Islahiye, the entrance of plateau – I. Bridge, at rocks, 1500-1550 m, 07.06.2003 (Eur-Sib).

Rosaceae

Cerasus mahaleb (L.) Mill. var. *mahaleb*: C6, Gaziantep, Islahiye, Kabaklık-Kansız stream location, the edge of stream, 1350-1400 m, 07.06.2003 (Med).

Cotoneaster nummularia Fischer & C.A. Mey.: C6, Gaziantep, Islahiye, Yağlıpınar summit, subalpine rocks, 1950-2000 m, 27.09.2003 (Cosm).

Crataegus monogyna Jacq. subsp. *monogyna*: C6, Gaziantep, Islahiye, the exit way of plateau, at slopes, 1600-1650 m, 12.07.2003 (Cosm).

C. orientalis Pall. ex M. Bieb. var. *orientalis*: C6, Gaziantep, Islahiye, Kabaklık-Kansız stream location, free area, 1300-1350 m, 12.07.2003 (Iran-Turan).

Malus sylvestris Mill. subsp. *orientalis* (Uglitzk.) Browicz. var. *orientalis*: C6, Gaziantep, Islahiye, Kabaklık-Kozluk stream location, the edge of stream, 1350-1400 m, 15.09.2003 (Cosm).

Prunus divaricata Ledeb. subsp. *divaricata*: C6, Gaziantep, Islahiye, Yağlıpınar summit, subalpine rocks, 1950-2000 m, 14.09.2003 (Cosm).

Pyrus elaeagnifolia Pall. subsp. *kotschyana* (Boiss. ex Decne) Browicz: C6, Gaziantep, Islahiye, Kabaklık-Kozluk stream location, at free areas, 1350-1400 m, 14.09.2003 (Iran-Turan).

P. syriaca Boiss. var. *syriaca*: C6, Gaziantep, Islahiye, the entrance way of plateau, at slopes, 1600-1650 m, 12.07.2003 (Cosm).

Rosa canina L.: C6, Gaziantep, Islahiye, the edge of way, 1400-1450 m, 07.06.2003 (Cosm).

R. pulverulenta M. Bieb.: C6, Gaziantep, Islahiye, the edge of way, 1400-1450 m, 23.06.2003 (Cosm).

R. villosa L.: C6, Gaziantep, Islahiye, Hanife summit, south ern slopes, at rocks, 1550-1600 m, 24.06.2003 (Cosm).

Rubus canescens DC. var. *glabratus* (Godr.) P.H. Davis & Meikle: C6, Gaziantep, Islahiye, the entrance

way of plateau, at slopes, 1550-1600 m, 23.06.2003 (Eur-Sib).

R. sanctus Shreb.: C6, Gaziantep, Islahiye, Plateau center, the edge of river, 1400-1450 m, 23.06.2003 (Cosm).

Sorbus torminalis (L.) Crantz var *pinnatifida* Boiss.: C6, Gaziantep, Islahiye, Yağlıpınar summit, southwest, coniferous forests, 1600-1650 m, 23.06.2003 (Eur-Sib).

S. umbellata (Desf.) Fritsch var. *umbellata*: C6, Gaziantep, Islahiye, Hanife summit, northern slopes, at free areas, 1700-1750 m, 23.06.2003 (Cosm).

Salicaceae

Populus tremula L.: C6, Gaziantep, Islahiye, Kabaklık-Kansız stream location, the edge of stream, 1350-1400 m, 21.06.2003 (Eur-Sib).

Salix alba L.: C6, Gaziantep, Islahiye, Hanife summit location, the edge of stream, 1450-1500 m, 22.06.2003 (Eur-Sib).

S. cinerea L.: C6, Gaziantep, Islahiye, Hanife summit location, the edge of stream, 1400-1450 m, 22.06.2003 (Eur-Sib).

S. pedicellata Desf. subsp. *pedicellata*: C6, Gaziantep, Islahiye, Kansız location, the edge of stream 1400-1450 m, 25.10.2002 (Med).

Styracaceae

Styrax officinalis L.: C6, Gaziantep, Islahiye, the entrance way of plateau, the edge of way, 1550-1600 m, 12.07.2003 (Med).

Thymelaeaceae

Daphne oleoides Schreber subsp. *kurdica* (Bornm.) Bornm.: C6, Gaziantep, Islahiye, Yağlıpınar summit, at free areas, 1950-2000 m, 14.09.2003 (Iran-Turan).

Ulmaceae

Ulmus glabra Huds.: C6, Gaziantep, Islahiye, Kabaklık-Kansız location, the edge of stream, 1300-1350 m, 17.05.2003 (Eur-Sib).

Liliopsida

Liliaceae

Smilax excelsa L.: C6, Gaziantep, Islahiye, Kabaklık-Kansız location, the edge of stream, 1300-1350 m, 25.10.2003 (Eur-Sib).

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