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Flora of Demirkoy (Istranca Mountains / Kırklareli European Turkey)

Abstract

Yarcý, C.: Flora of Demirkoy (Istranca Mountains / Kırklareli European Turkey). — Fl. Medit. 7: 55-99. 1997. — ISSN 1120-4052.

Demirkoy Town and its surroundings are situated in the heart of Istranca (Yıldız) Mountains. Istranca mountains range from northwest to southeast of European Turkey occupying 3 % of total area of Turkey. In the present study, 500 plant taxa were identified out of 1400 plant specimens collected during a period of 3 years.

Introduction

European Turkey resembles the Anatolian Peninsula topographically, geographically and climatologically. The northern and southern parts of the region are covered by mountains whilst the central parts consist of meadows. The Thrace region is encircled by three major seas: Black Sea, Marmara Sea and Aegean Sea. Our study area is in the northeast part of European Turkey (Fig. 1).

The flora of European Turkey is not very well known. The earliest report comes from the field studies of Davis (1965-1988). They are published as 10 volumes covering almost the whole of Turkey's flora under the titles "Flora of Turkey and the East Aegean Islands". Other researchers such as Baytop (1961, 1968-a, b, 1969, 1970), Webb (1966), Dönmez (1968), Quezel & Pamukçuoğlu (1970), Huber-Morath (1973), Özhatay, N. (1975), Çırpıcı (1978), Yaltırık (1984), Demiriz (1988), Ilarslan & al. (1988), Özhatay N. & Özhatay E. (1988), Zeybek (1988), Yarcý & Olgun (1988) and Seçmen & Leblebici (1991) have also made valuable contributions to the flora of European Turkey as well as other parts of Turkey.

Features of the environment

Our study area is situated in the northeast of European Turkey (Fig. 1). It lies between 41°42' - 42°01'N and 27°30' - 28° 04' E. The study area is circular, 60 km in diameter with Demirköy at the center.

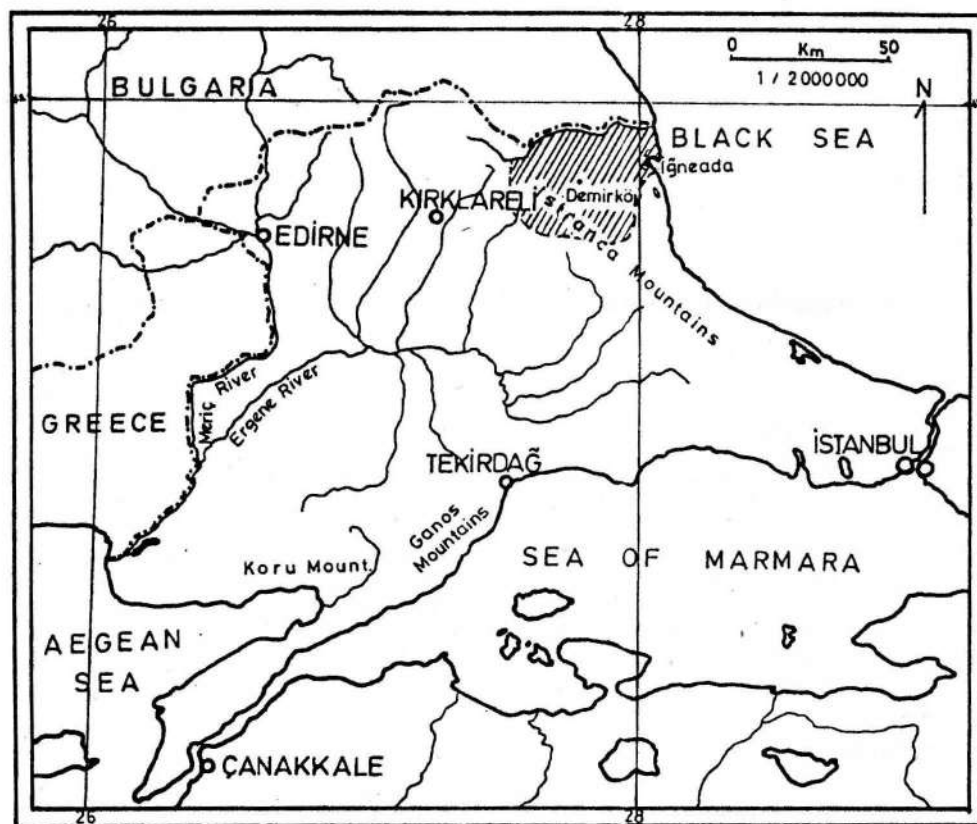


Fig. 1. The study area in European Turkey.

The river Rezve is between the study area and Bulgaria (Fig. 2). Istranca (Yıldız) mountains extend from the northwest to the southeast.

The study area also has a lot of hills, rivers and lakes. Mahya hill (the highest hill in the study area, 1030 m), Sivri hill (861 m), Dalyan hill (775 m.) are some of hills. Çavuş River, Koca River, Bulanik River and Erikli Lake, Mert Lake and Sülüklü Lake are some of rivers and lakes.

There are also number of villages in the vicinity i.e. Yeniceköy Village, Yeşilce Village, Sivrililer Village, etc. (Fig. 2). Essentially, the climate of the area examined is humid, rainy and cool. The average rainfall is 78.8 cm/m²/year.

The average temperature is 10.9 °C, although there are many microclimates in the study area. The general characteristics of the climate are more suitable for Euro-Siberian elements than for Mediterranean and Irano-Turanian elements.

The Mediterranean climate only occurs locally along the seashore. The hard continental climate influences the regions far from the Black Sea.

The suitable season for plant growth is about 200 days a year. The climatical diagram of Demirköy town is given in Fig. 3.

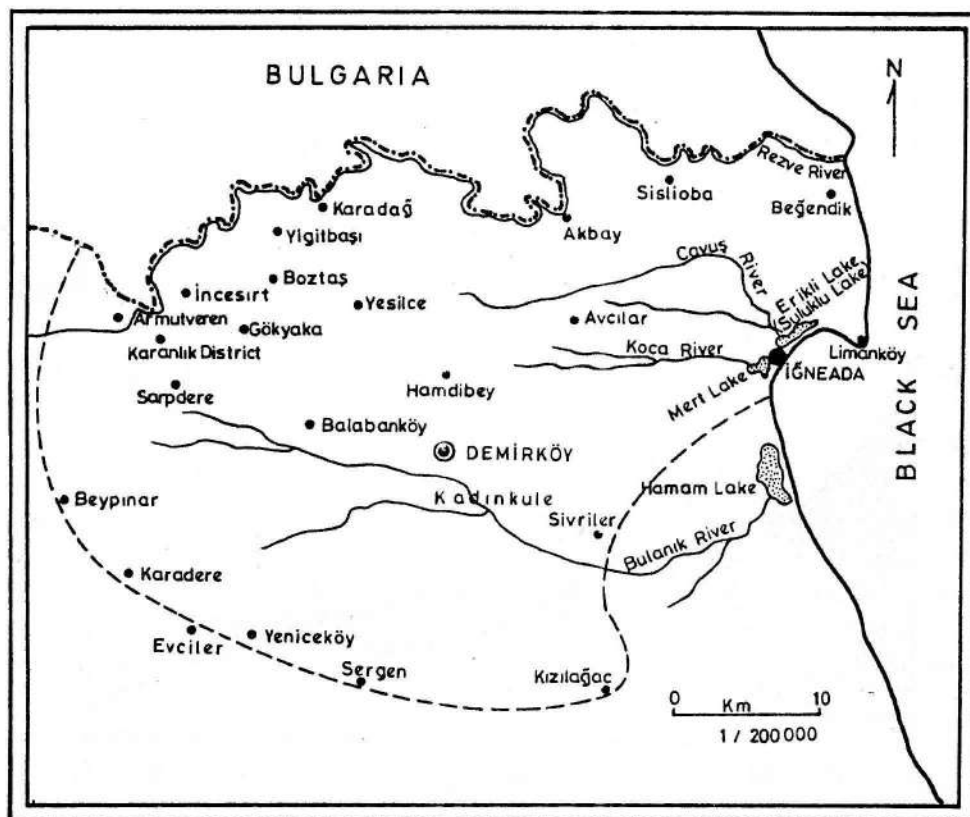


Fig. 2. The lakes, rivers and villages in the study area.

There are few soil types in the study area. The most common are brown forest and podzols.

These soils occur in the forests of *Quercus*, *Carpinus* and *Fagus*. Other soil types are alluvials and rendzinas (Fig. 4).

There are nine types of rocks in terms of geological structure in the study area: granites, mica schist, gneiss, facies, gabbro, andesite, quartz, marble and flysch. The geological structure of the study area is given in Fig. 5.

Some of the general characteristics for the plant distribution are as follows:

Beech (*Fagus orientalis* Lipsky) forests are dominant especially in the north ridges due to the humid climate.

There are also mixed forests of *Quercus* L. and *Carpinus* L. and local Mediterranean elements on the Black Sea shores. We collected typical Mediterranean elements like *Calluna* (L.) Hull., *Erica* L. and *Arbutus* L.

In addition, central parts of the study area have Irano-Turanian elements.

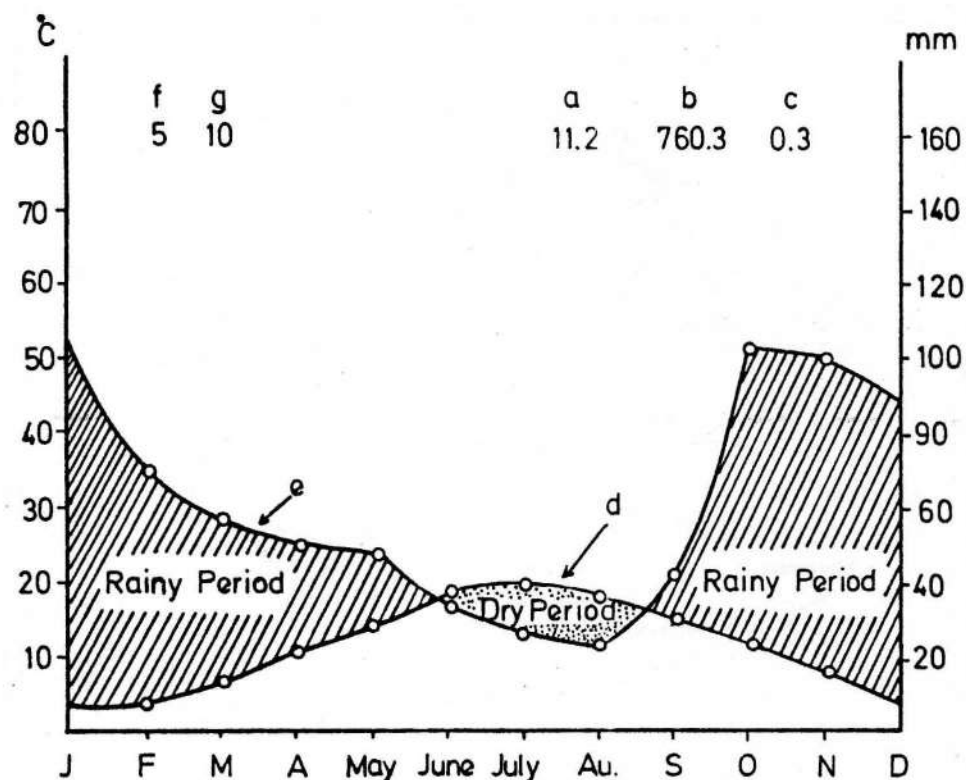


Fig. 3. The climatological diagram of Demirköy station (in the centre of the study area). a, average annual temperature (°C); b, average annual rain (mm); c, minimum average warmth of the coldest month (°C); d, temperature graph; e, rain graph; f, temperature measuring years number; g, rain measuring years number.

Material and methods

We collected the plant specimens during three years. They were identified by using "Flora of Turkey and the East Aegean Islands", Vol. 1-10 (Davis 1965-1988) and "The Flora of European Turkey", Vol 1-3; Webb 1966. Furthermore, specimens collected from the study area were compared with herbarium material in the EGE Herbarium (University of Ege, Izmir). These plant specimens are kept in the EDTU Herbarium (University of Trakya, Edirne). The floristic list is given in order as in the volumes of "Flora of Turkey and the East Aegean Islands". The endemic plants and phytogeographical origins of some species are indicated (i.e. Euro-Sib. element (Euro-Siberian), Medit. element (Mediterranean), Ir.-Tur. element (Irano-Turanian)).

The symbol in the flora list "C.Y." is the initial of the author and original collector. Some plants (especially aquatic) collected by Seçmen & Leblebici are also given in the list.

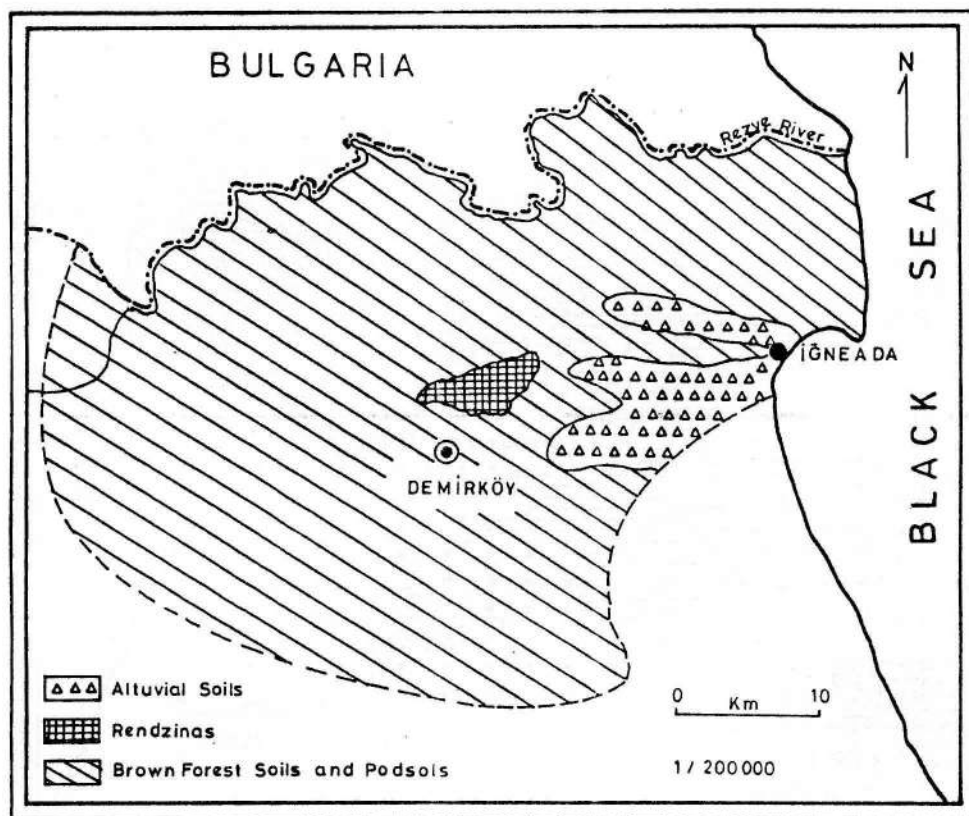


Fig. 4. Soil map in the study area.

Results

List of the vascular plants collected from the study area

PTERIDOPHYTA

Equisetaceae

Equisetum arvense L. - İğneada, Mert Lake Longos Forest, river side, 8 m, 03 Sep 1989, C.Y. 960.

Hypolepidaceae

Pteridium aquilinum (L.) Kuhn. - Around Sivriler Village, *Quercus* forest, 400 m, 28 Jul 1990, C. Y. 734.

Aspleniaceae

Phyllitis scolopendrium (L.) Newm. - Sarpdere Village, around Dupnisa caves, stream side, 420 m, 10 Aug 1990, C. Y. 954.

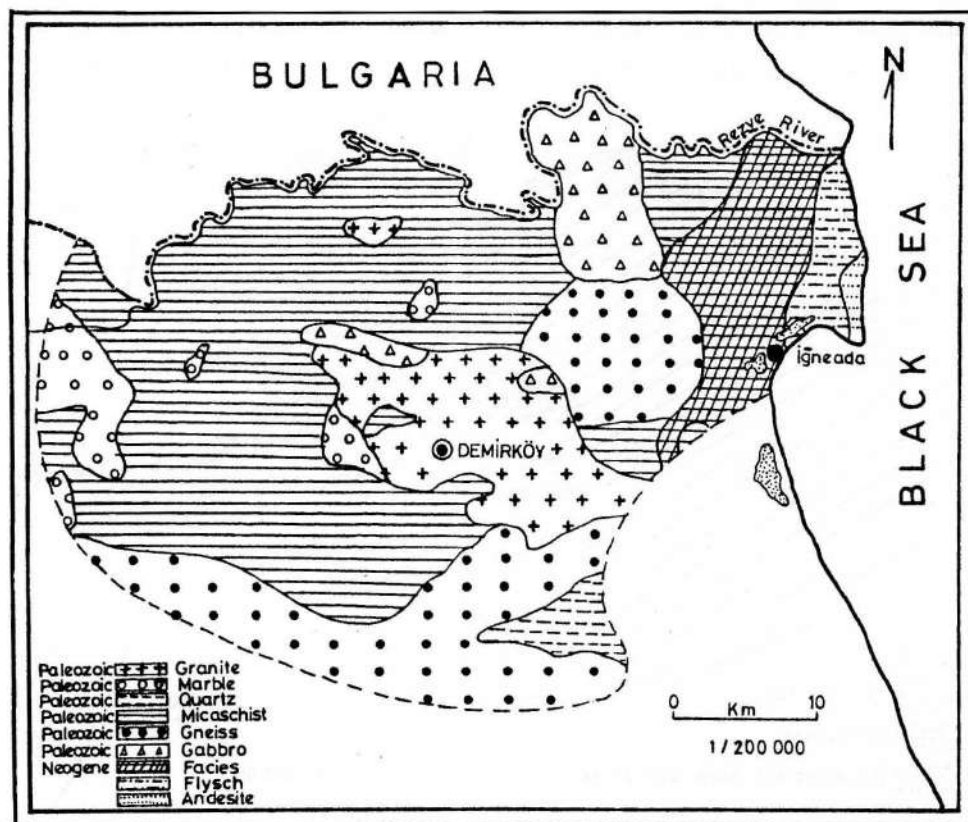


Fig. 5. Geological map of the study area.

SPERMATOPHYTA GYMNOSPERMAE

Pinaceae

Pinus nigra Arn. subsp. *pallasiana* (Lamb.) Holmboe - Between Demirköy and Igneada, 8th km, cultivation, 350 m, 03 Sep 1989, C.Y. 156.

Taxaceae

Taxus baccata L. - Around Mahya hill, 1030 m, 04 Aug 1990, C. Y. 848.

Ephedraceae

Ephedra foeminea Forsk - Between Demirköy-Pýnarhisar, 10 th km, open areas in forest, 220 m, 02 Jul 1990, C. Y. 695.

ANGIOSPERMAE DICOTYLEDONES (MAGNOLIOPSIDA)

Ranunculaceae

Helleborus orientalis Lam. - Between Demirköy-Igneada 18th km, open areas in forest

230 m, 08 May 1991, C. Y. 1379.

Nigella arvensis L. subsp. *glauca* Boiss - Around Yeniceköy Village, open areas in forest, 210 m, 08 Aug 1990, C. Y. 864.

Delphinium peregrinum L. - Between Demirköy and Iğneada, 18th km, open areas in forest, 230 m, 18 May 1991, C. Y. 1285.

Consolida ambigua (L.) P. W. Ball. - Between Demirköy and Iğneada, 18th km, open areas in forest, 230 m, 18 May 1991, C. Y. 1360.

Anemone blanda Schott, Kotschy. - Between Demirköy and Iğneada, 18th km, open areas in forest, 230 m, 18 May 1991, C. Y. 1284.

A. coronaria L. - Between Demirköy and Iğneada, 1st km, open area, 330 m, 06 May 1990, C.Y. 300, Medit. element.

Clematis vitalba L. - Between Demirköy and Iğneada, 2nd km, open area in forest, 300 m, 26 Jul 1990, C. Y. 667.

Adonis annua L. - Iğneada, Between Mert Lake and sea, sandy place, 0 m, 03 Jun 1990, C. Y. 451, Medit. element.

A. aestivalis L. subsp. *aestivalis* - Between Demirköy and Iğneada, 3rd km, open area in forest, 330 m, 26 May 1990, C. Y. 335.

A. flammea Jacq. - Between Iğneada and Limanköy, 1st km, stream side, sandy place, 0 m, 02 Jun 1990, C. Y. 430.

Ranunculus repens L. - Between Demirköy and Kadinkule, 2nd km, open area in forest, 330 m, 25 Jul 1990, C. Y. 492.

R. lanuginosus L. - Between Demirköy and Kadinkule, 3rd km, open area in forest, 320 m, 07 Apr 1990, C. Y. 238.

R. constantinopolitanus (DC) d'Urv. - Between Demirköy and Kadinkule, 1st km, stream side, observation.

R. muricatus L. - Between Iğneada and Limanköy, 1st km, stream side, 0 m, 02 Jun 1990, C.Y. 408.

R. arvensis L. - Between Demirköy and Iğneada, 1st km, open area in forest, 330 m, 06 May 1990, C. Y. 1324.

R. scleratus L. - Sülüklü Lake shore, sandy soil, 5 m, 26 Jun 1985, *Seçmen & Leblebici* 5731.

R. ficaria L. subsp. *calthifolius* (Reichb.) Arc. - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, *C. Y.* 1363.

R. sphaerospermus Boiss. et Blanche - Iğneada, between Mert Lake and sea, sandy soil, 0 m, 03 Jun 1990, *C. Y.* 494.

R. trichophyllus Chaix - Iğneada, between Mert Lake and sea, sandy soil, 5 m, 15 Sep 1990, *C. Y.* 1154.

R. saniculifolius Viv. - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, *C. Y.* 1342.

Thalictrum lucidum L. - Erikli Lake shore, sandy soil, 0 m, 29 Jun 1985, *Seçmen & Leblebici* 5726.

Paeoniaceae

Paeonia peregrina Miller - Between Demirköy and Iğneada, 15th km, rocky slope, 250 m, 16 Jun 1990, *C. Y.* 542.

Papaveraceae

Papaver rhoeas L. - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, *C. Y.* 1275.

Fumaria kralikii Jordan, Cat. - Between Demirköy and Hamdibey, 2nd km, open area in forest, 340 m, 29 Jul 1990, *C. Y.* 754, *Medit. element.*

F. officinalis L. - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, *C. Y.* 1389.

Brassicaceae (Cruciferae)

Sinapis arvensis L. - Between Demirköy-Iğneada, 8th km, open area, 18 May 1991, observation.

Hirschfeldia incana (L.) Lag.-Foss. - Iğneada; between Mert Lake and sea, sandy soil, 0 m, 03 Jun 1990, *C. Y.* 481.

Raphanus raphanistrum L. - Between Demirköy-Kadınkule, 2nd km, open area in forest, 320 m, 26 May 1990, *C. Y.* 320.

Lepidium campestre (L.) Br. - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, *C. Y.* 1388.

Capsella bursa-pastoris (L.) Medik. - Iğneada, between Mert Lake and sea, sandy area, 0 m, 03 Jun 1990, C. Y. 500.

Alyssum alyssoides L. - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, C. Y. 1381.

Rorippa sylvestre (L.) Bess. - Between Demirköy and Kadinkule, 4th km, open area in forest, 320 m, 07 Apr 1990, C. Y. 277.

Barbarea vulgaris R. Br. in Aiton - Between Demirköy and Kadinkule, 4th km, open area in forest, 320 m, 07 Apr 1990, C. Y. 259.

Cardamine bulbifera (L.) Crantz - Iğneada, open area in forest, 20 m, 02 Sep 1990, C. Y. 1108, Euro-Sib. element.

C. graeca L. - Between Demirköy and Kadinkule, 4th km, open area in forest, 320 m, 07 Apr 1990, C. Y. 241.

Matthiola incana (L.) R. Br. in Aiton - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, C. Y. 1309.

Malcolmia flexuosa (Sibth. et Sm.) Sibth. et Sm. - Iğneada, between Mert Lake and sea, sandy area, 0 m, 03 Jun 1990, C. Y. 472, East Medit. element.

Alliaria petiolata (Bieb.) Cavara et Grande - Between Demirköy and Kadinkule, 4th km, open area in forest, 320 m, C. Y. 252.

Capparaceae

Capparis spinosa L. var. *spinosa* - Between Demirköy and Iğneada, 8th km, roadside, 14 Aug 1991, observation.

Resedaceae

Reseda lutea L. var. *lutea* - Between Demirköy and Iğneada, 11th km, roadside, 14 Aug 1991, observation.

Cistaceae

Cistus creticus L. - Between Demirköy and Kadinkule, 1st km, open area in forest, 300 m, 02 Jul 1989, C. Y. 898.

Helianthemum nummularium (L.) Miller subsp. *nummularium* - Between Demirköy and Iğneada, 18th km, 230 m, 18 May 1991, C. Y. 1280.

Tuberaria guttata (L.) Fourr. var. *guttata* - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, C. Y. 1268.

Violaceae

Viola sieheana Becker - Between Demirköy and Iğneada, 3rd km, open area in forest, 320 m, 07 Apr 1990, C. Y. 1215.

V. canina L. - Between Iğneada and Sislioba, 5th km, open area in forest, 80 m, 16 Sep 1990, C. Y. 1177.

V. parvula Tineo, Pug. - Between Iğneada and Demirköy, 18th km, *Quercus* forest, 230 m, 18 May 1991, C. Y. 1384.

V. kitaibeliana Roem. et Schultz. - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, C. Y. 1343.

V. tricolor L. - Between Demirköy and Iğneada, 18th km, *Quercus* forest, 230 m, 18 May 1991, C. Y. 1355.

Polygalaceae

Polygala supina Schreb. - Between Demirköy and Iğneada, 1st km, open area in forest, 330 m, 06 May 1990, C. Y. 297.

Caryophyllaceae

Arenaria serpyllifolia L. - Iğneada, Mert Lake shore, sandy area, 0 m, 03 Jun 1990, C. Y. 473.

Minuartia hirsuta (Bieb.) Hand. - Mazz. subsp. *falcata* (Gris.) Mattf. - Between Demirköy and Iğneada, 18th km, open places in forest, stony slope, 240 m, 18 May 1991, C. Y. 1321.

M. anatolica (Boiss.) Woron. var. *polymorpha* McNeill - Iğneada, around Mert Lake, stony soil, 3 m, 21 Jun 1991, C. Y. 641.

M. glomerata (Bieb.) Degen - Iğneada, around Mert Lake, stony soil, 3 m, 21 Jun 1990, C. Y. 1140.

Stellaria holostea L. - Between Demirköy and Kadinkule, 3rd km, open places in forest, 320 m, 07 Apr 1990, C. Y. 1264, Euro-Sib. element.

Cerastium fontanum Baumg. subsp. *triviale* (Link.) J alas - Between Demirköy and Iğneada, 1st km, open places in forest, 330 m, 06 May 1990, C. Y. 304.

Moenchia mantica. (L.) Bartl. subsp. *mantica* - Between Demirköy and Iğneada, 1st km, open places in forest, 300 m, 15 Aug 1990, C. Y. 69.

Sagina maritima Don.- Iğneada, around Mert Lake, sandy soil, 5 m, 15 Sep 1969, C. Y. 1169.

Spergularia media (L.) C. Presl. - Iğneada, between Mert Lake and Sea, sandy soil, 0 m, 03 Jun 1990, C. Y. 487.

S. marina (L.) Gris. - Around Sergen Village, open places in *Quercus* forest, 300 m, 04 Aug 1990, C. Y. 838.

S. diandra (Guss.) Heldr. and Sart. - Iğneada, in "Longos" Forest, moist soil, 20 m, 02 Sep 1990, C. Y. 1118.

Dianthus armeria L. subsp. *armeria* - Around Yeşilce Village, open places in forest, 400 m, 15 Aug 1990, C. Y. 1024, Euro-Sib. element.

D. calocephalus Boiss. - Between Demirköy and Kadıncık, 2nd km, in mixed forest, 320 m, 26 May 1990, C. Y. 811.

D. giganteus d'Urv. - Between Demirköy and Kadıncık, 1st km, open places in forest, 300 m, 02 Jul 1989, C. Y. 570.

Petrorhagia prolifera (L.) Ball. et Heywood - Around Yeşilce Village, open places in forest, 400 m, 15 Aug 1990, C. Y. 1065.

P. velutina (Guss.) Ball. et Heywood - Iğneada, Limanköy- around the airport, open places in forest, 20 m, 17 Jun 1990, C. Y. 1186.

Gypsophyla muralis L. - Iğneada, Mert Lake shore, sandy soil, 0 m, 21 Jun 1990, C. Y. 977, Euro-Sib. element.

Silene sangaria Coode et Cullen - Iğneada, Mert Lake shore, sandy places, 10 m, 01 Sep 1990, C. Y. 1098.

Silene vulgaris (Moench) Garcke var. *vulgaris* - Between Demirköy and Iğneada, 3rd km, open places, hard soil, 330 m, 27 May 1990, C. Y. 400.

S. tenuiflora Guss. - Between Demirköy and Iğneada, 18th km, open places in forest, 230 m, 18 May 1990, C. Y. 1289.

S. dichotoma Ehrh. subsp. *dichotoma* - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 0 m, 02 Jun 1990, C. Y. 1290.

S. gallica L. - Sarpdere Village, around Dupnisa caves, open places in forest, 10 Aug 1990, C. Y. 1288.

Lychnis coronaria (L.) Desr. - Between Demirköy and Kadinkule, 1st km, open places in forest, 300 m, 02 Jul 1989, C. Y. 1025, Euro-Sib. element.

Agrostemma githago L. - Iğneada, between Mert Lake and sea, sandy soil, 0 m, 03 Jun 1990, C. Y. 340.

Illecebraceae

Scleranthus perennis L. subsp. *marginatus* (Guss.) Arc. - Between Demirköy and Iğneada, 3rd km, open area, 330 m, 27 May 1990, C. Y. 380.

S. perennis L. subsp. *dichotomus* (Schur.) Stoj. et Stefanof - Between Demirköy and Iğneada, 1st km, open area, 330 m, 06 May 1990, C. Y. 282.

S. annuus L. subsp. *annuus* - Between Demirköy and Iğneada, 15th km, open places in forest, 250 m, 16 Jun 1990, C. Y. 520.

Polygonaceae

Polygonum lapathifolium L. - Iğneada, Sülüklü Lake shore, sandy soil, 5 m, 29 Jun 1985, Seçmen & Leblebici 5736.

P. hydropiper L. - Between Demirköy and Iğneada, 11th km, open places, streamside, moist soil, 300 m, 20 Jun 1990, C. Y. 1180.

P. arenastrum Bor. - Around Yiğitbaşı Village, open place in forest, streamside, 420 m, 14 Aug 1990, C. Y. 975.

P. aviculare L. - In Demirköy, roadside, 650 m, 20 Jun 1990, observation.

Rumex acetosella L. - Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 27 May 1990, C. Y. 611.

R. tuberosus L. subsp. *tuberosus* - Between Demirköy and Iğneada, 11th km, open places in forest, streamside, 300 m, 20 Jun 1990, C. Y. 612.

R. crispus L. - Around Armutveren Village, open places in forest, streamside, 370 m, 08 Aug 1990, C. Y. 851.

R. conglomeratus Murray - Iğneada, Mert Lake shore, moist soil, 5 m, 29 Jun 1985, Seçmen & Leblebici 5805.

R. sanguineus L. - Between Demirköy and Kadinkule, 10th km, open places in forest, moist soil, 220 m, 27 Jul 1990, C. Y. 710.

Chenopodiaceae

Chenopodium album L. subsp. *album* - Iğneada, Mert Lake shore, moist soil, 10 m, 01 Sep 1990, C. Y. 1073.

Atriplex hastata L. - Iğneada, Mert Lake shore, moist soil, 5 m, 29 Jun 1985, *Seçmen & Leblebici* 5810.

Kochia scoparia (L.) Schrad. - Iğneada, Mert Lake shore, open places in forest, 5 m, 01 Sep 1990, *C. Y.* 1081.

Salsola ruthenica Iljin - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 0 m, 02 Jun 1990, *C. Y.* 415.

Amaranthaceae

Amaranthus deflexus L. - Sarpdere Village, around Dupnisa caves, open places in forest, 370 m, 10 Aug 1990, *C. Y.* 753.

Phytolaccaceae

Phytolacca americana L. - Between Demirköy and Iğneada, 11th km, open places in forest, 300 m, 20 Jun 1990, *C. Y.* 1236.

Tamaricaceae

Tamarix parviflora DC. - Between Iğneada and Limanköy, 1st km, streamside, 2 m, 16 Sep 1990, *C. Y.* 1229.

Hypericaceae

Hypericum calycinum L. - Between Demirköy and Iğneada, 18th km, open places in forest, 230 m, 18 May 1991, *C. Y.* 1404. Euxine element.

H. perforatum L. - Iğneada, Limanköy, around airport, open places in forest, hard soil, 20 m, 17 Jun 1990, *C. Y.* 573.

Malvaceae

Malva sylvestris L. - Between Demirköy and Kadinkule, 2nd km, open area in forest, 320 m, 26 May 1990, *C. Y.* 324.

M. neglecta Wallr. - Around Balabanköy Village, open places in forest, 380 m, 02 Jun 1990, *C. Y.* 790.

Alcea pallida Waldst et Kit. - Around Kadinkule, open places in forest, 330 m, 03 Aug 1990, *C. Y.* 810.

Althea officinalis L. - Iğneada, Mert Lake shore, moist and sandy soil, 5 m, 15 Sep 1990, *C. Y.* 1146.

Tiliaceae

Tilia argentea Desf. ex DC - Between Demirköy and Hamdibey, 2nd km, open places in forest, 340 m, 29 Jul 1990, *C. Y.* 746, Euro-Sib. element.

Geraniaceae

Geranium lucidum L. - Between Demirköy and Kadinkule, 3rd km, open places in forest, 330 m, 07 Apr 1990, C. Y. 246.

G. purpureum Vill. - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 0 m, 02 Jun, C. Y. 432.

G. robertianum L. - Between Demirköy and Kadinkule, 1st km, open places in forest, 300 m, 02 Jul 1989, C. Y. 951.

G. rotundifolium L. Iğneada, Mert Lake shore, sandy soil, 0 m, 03 Jun 1990, C. Y. 474.

G. molle L. subsp. *molle* - Iğneada, Mert Lake shore, sandy soil, 0 m, 03 Jun 1990, C. Y. 485.

Erodium ciconium (L.) L'Herit - Between Demirköy and Iğneada, 18th km, open places in forest, 230 m, 18 May 1991, C. Y. 1302.

Aceraceae

Acer platanoides L. - Around Balabanköy Village, mixed forest, 380 m, 02 Aug 1990, C. Y. 766, Euro-Sib. element.

Acer campestre L. subsp. *campestre* - Iğneada, Mert Lake shore, sandy soil, 0 m, 03 Jun 1990, C. Y. 1200, Euro-Sib. element.

Vitaceae

Vitis sylvestris Gmelin - Iğneada, Mert Lake shore, in mixed forest, 10 m, 01 Set 1990, C. Y. 1070.

Rhamnaceae

Paliurus spina-christii Miller - Iğneada, Limanköy, around the airport, brushwood, 20 m, 17 Jun 1990, C. Y. 560.

Celastraceae

Euonymus europaeus L. - Around Yiğitbaşı Village, open area in mixed forest, 420 m, 14 Aug 1990, C. Y. 962, Euro-Sib. element.

Fabaceae (Leguminosae)

Cercis siliquastrum L. subsp. *siliquastrum* - Between Demirköy and Iğneada, 18th km, open places in forest, 230 m, 18 May 1991, C. Y. 1407.

Chamaecytisus hirsutus (L.) Link. - Between Demirköy and Iğneada, 11th km, open area in forest, 300 m, 20 Jun 1990, C. Y. 610.

- C. supinus* (L.) Link. - Iğneada, Mert Lake shore, open place in forest, 3 m, 21 Jun 1990, C. Y. 634, Euro-Sib. element.
- Robinia pseudoacacia* L. - Around Sivriler Village, open area in forest, 360 m, 28 Jul 1990, C. Y. 736.
- Astragalus glycyphyllos* L. subsp. *glycyphyllos* - Between Iğneada and Sislioba, 5th km, open places in forest, 80 m, 16 Sep 1990, C. Y. 1176, Euro-Sib. element.
- Vicia cracca* L. subsp. *gerardii* Gaudin - Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 27 May 1990, C. Y. 373.
- V. cracca* L. subsp. *stenophylla* - Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 27 May 1990, C. Y. 359.
- V. villosa* Roth., Tent. subsp. *villosa* - Between Demirköy and Kadinkule, 1st km, open place in forest, 300 m, 02 Jul 1989, C. Y. 390.
- V. villosa* Roth., Tent. subsp. *eriocarpa* - Between Demirköy and Kadinkule, 1st km, open place in forest, 300 m, 02 Jul 1989, C. Y. 29.
- V. hirsuta* (L.) S. F. Gray - Between Demirköy and Iğneada, 3rd km, open place in forest, 330 m, 27 May 1990, C. Y. 401.
- V. hybrida* L. - Iğneada, Limanköy, around the airport, open place in forest, hard soil, 20 m, 17 Jun 1990, C. Y. 552.
- Lathyrus laxiflorus* (Desf.) O. Kuntze subsp. *laxiflorus* - Between Demirköy and Kadinkule, 1st km, open place in forest, 300 m, 02 Jul 1989, C. Y. 72.
- L. aphaca* L. var. *affinis* - Between Demirköy and Iğneada, 18th km, open place in forest, 230 m, 18 May 1991, C. Y. 1330.
- Ononis spinosa* L. subsp. *antiquorum* (L.) Briq. - Between Demirköy and Iğneada, 2nd km, open place in forest, 300 m, 26 Jul 1990, C. Y. 679, Medit. element.
- Trifolium uniflorum* L. - Between Demirköy and Iğneada, 1st km, roadside, 330 m, 06 May 1990, C. Y. 293, Medit. element.
- T. repens* L. var. *repens* - Between Demirköy and Iğneada, 1st km, roadside, 330 m, 06 May 1990, C. Y. 1322.
- T. repens* L. var. *orphanideum* (Boiss.) Boiss. - Between Demirköy and Iğneada, 1st km, roadside, 330 m, 06 May 1990, C. Y. 296.

- T. hybridum* L. var. *hybridum* - Iğneada, Mert Lake shore, moist soil, 0 m, 03 Jun 1990, C. Y. 447.
- T. hybridum* L. var. *anatolicum* (Boiss.) Boiss. - Around Yeşilce Village, open place in forest, 400 m, 15 Aug 1990, C. Y. 1016.
- T. nigrescens* Viv. subsp. *petrisavii* (Clem) Holmboe - Around Kadinkule, open place in forest, 330 m, 03 Aug 1990, C. Y. 819.
- T. speciosum* Willd. - Between Demirköy and Iğneada, 15th km, roadside, 250 m, 16 Jun 1990, C. Y. 517.
- T. campestre* Schreb. - Between Demirköy and Kadinkule, 1st km, open place in forest, 300 m, 02 Jul 1989, C. Y. 36.
- T. dubium* Sibth. - Between Iğneada and Limanköy, 1st km, open area, 0 m, 02 Jun 1990, C. Y. 435.
- T. micranthum* Viv. - Between Demirköy and Iğneada, 1st km, open place in forest, 330 m, 06 May 1990, C. Y. 303.
- T. spumosum* L. - Between Demirköy and Iğneada, 3rd km, open place in forest, 330 m, 27 May 1990, C. Y. 348, Medit. element.
- T. pratense* L. var. *pratense* - Around Sergen Village, open place in forest, 300 m, 04 Aug 1990, C. Y. 1182.
- T. striatum* L. - Around Sergen Village, open place in forest, 300 m, 04 Aug 1990, C. Y. 842.
- T. arvense* L. var. *arvense* - Between Demirköy and Iğneada, 15th km, roadside, stony and hard soil, 250 m, 16 Jun 1990, C. Y. 1322.
- T. angustifolium* L. var. *angustifolium* - Between Demirköy and Iğneada, 15th km, roadside, hard and stony soil, 250 m, 16 Jun 1990, C. Y. 527.
- T. purpureum* Lois. var. *purpureum* - Between Demirköy and Iğneada, 18th km, open place in forest, 230 m, 18 May 1991, C. Y. 1335.
- Melilotus officinalis* (L.) Desr. - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 0 m, 02 Jun 1990, C. Y. 440.
- M. alba* Desr. - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 0 m, 02 Jun 1990, C. Y. 442.

Medicago orbicularis (L.) Bart. - Between Iğneada and Limanköy, 1st km, streamside, 0 m, 02 Jun 1990, C. Y. 416.

M. lupulina L. - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 0 m, 02 Jun 1990, C. Y. 417.

M. sativa L. subsp. *sativa* - Around Yiğitbaşı Village, open area in forest, 420 m, 14 Aug 1990, C. Y. 992.

M. polymorpha L. var. *vulgaris* (Benth.) Shinnars - Between Iğneada and Limanköy, 1st km, streamside, 0 m, 02 Jun 1990, C. Y. 443.

M. marina L. - Sarpdere Village, around Dupnisa caves, open places in forest, 370 m, 10 Aug 1990, C. Y. 939.

Dorycnium graecum (L.) Ser. - Iğneada, around the airport, open places in mixed forest, hard soil, 20 m, 17 Jun 1990, C. Y. 558, Euxin. element.

D. pentaphyllum Scop. subsp. *herbaceum* (Vill.) Rouy. - Between Demirköy and Iğneada, 15th km, roadside, 250 m, 16 Jun 1990, C. Y. 515.

Ornithopus compressus L. - Between Demirköy- Iğneada, 3rd km, open place in forest, 330 m, 27 May 1990, C. Y. 387, Medit element.

Rosaceae

Prunus spinosa L. subsp. *dasyphylla* (Schur) Domin - Around Yiğitbaşı Village, open place in mixed forest, 420 m, 14 Aug 1990, C. Y. 1003, Euro-Sib. element.

P. domestica L. - Around Gökyaka Village, open place in mixed forest, 350 m, 09 Aug 1990, C. Y. 893.

Cerasus avium (L.) Moench. - Between Demirköy and Kadinkule, 3rd km, open area in forest, 320 m, 07 Apr 1990, C. Y. 243.

C. mahaleb (L.) Miller var. *mahaleb* - Iğneada, Mert Lake shore, near the forest, 0 m, 03 Jun 1990, C. Y. 463.

Filipendula vulgaris Moench. - Between Demirköy and Kadinkule, 1st km, open area in forest, 350 m, 02 Jul 1989, C. Y. 58, Euro-Sib. element.

Rubus idaeus L. - Iğneada, Mert Lake shore, near forest, 0 m, 21 Jun 1990, C. Y. 649.

R. sanctus Schreber - Iğneada, Mert Lake shore, sandy soil, 03 Jun 1990, C. Y. 461.

- R. canescens* DC. var. *canescens* Borkh. - Between Karanlık and Karadere Villages, 3rd km, open place in forest, 400 m, 03 Sep 1989, C. Y. 112.
- R. canescens* DC. var. *glabratus* (Godron) Davis and Meikle - Between Demirköy and Iğneada, 3rd km, open place in forest, hard soil, 20 m, C. Y. 567, Euro-Sib. element.
- Potentilla argentea* L. - Around Yeşilce Village, open place in forest, 400 m, 15 Aug 1990, C. Y. 1033.
- P. inclinata* Vill. - Between Demirköy and Iğneada, 18th km, open area in forest, 18 May 1991, C. Y. 1279.
- P. recta* L. Around Yeşilce Village, open area in forest, 400 m, 15 Aug 1991, C. Y. 1061.
- P. reptans* L. - Between Demirköy and Kadinkule, open area in forest, 320 m, 26 May 1990, C. Y. 328.
- Fragaria vesca* L. - Around Kadinkule, open places in forest, 320 m, 07 Apr 1990, C. Y. 812.
- Geum urbanum* L. - Around Kadinkule, open places in forest, 330 m, 03 Aug 1990, C. Y. 1131, Euro-Sib. element.
- Agrimonia eupatoria* L. - Between Karanlık and Karadere Villages, 3rd km, open area in forest, 400 m, 03 Sep 1989, C. Y. 162.
- Sanguisorba minor* Scop. subsp. *muricata* (Spach) Briq. - Between Demirköy and Kadinkule, 1st km, open area in forest, 300 m, 02 Jul 1989, C. Y. 21.
- Rosa canina* L. - Around Balabanköy, open places in forest, 320 m, 03 Sep 1989, C. Y. 134.
- Mespilus germanica* L. - Around Armutveren Village, open area in forest, 370 m, 08 Aug 1990, C. Y. 850, Hyrcano-Euxine element.
- Crataegus monogyna* Jacq subsp. *monogyna* - Around Beğendik Village, open places in forest, 100 m, 16 Sep 1990, C. Y. 1224.
- Sorbus aucuparia* L. - Between Demirköy and Kadinkule, 1st km, open area in forest, 300 m, 02 Jul 1989, C. Y. 66, Euro-Sib. element.
- S. torminalis* (L.) Crantz., var. *torminalis* - Between Karanlık and Karadere Villages, 3rd km, open places in forest, 400 m, 03 Sep 1989, C. Y. 135.

Cydonia oblonga Miller - Between Demirköy and Kadınkule, 3rd km, open places in forest, 320 m, 07 Apr 1990, C. Y. 235.

Malus sylvestris Miller subsp. *orientalis* var. *orientalis* - Around Balabanköy Village, open places in mixed forest, 380 m, 02 Aug 1990, C. Y. 763.

Pyrus communis L. subsp. *communis* - Around Yiğitbaşı Village, open area in forest, 420 m, 14 Aug 1990, C. Y. 1006.

P. amygdaliformis Vill. var. *amygdaliformis* - Between Karanlık and Karadere Villages, 3rd km, open places in forest, 400 m, 03 Sep 1989, C. Y. 110.

Lythraceae

Lythrum salicaria L. - Iğneada, Mert Lake shore, moist soil, 5 m, 29 Jun 1985, Seçmen & Leblebici 5692, Euro-Sib. element.

Onagraceae

Circaea lutetiana L. - Between Demirköy and Kadınkule, 10th km, open area in forest, 220 m, 27 Jul 1990, C. Y. 707.

Epilobium hirsutum L. - Around Yiğitbaşı Village, open area in mixed forest, 420 m, 14 Aug 1990, C. Y. 957.

E. lanceolatum Seb. et Mauri - Around Yiğitbaşı Village, open places in forest, 420 m, 14 Aug 1990, C. Y. 972.

E. roseum Schreber subsp. *subsessile* (Boiss.) P. H. Raven - Around Yiğitbaşı Village, open places in forest, 420 m, 14 Aug 1990, C. Y. 978.

Trapaceae (Hydrocaryaceae)

Trapa natans L. - Iğneada, Mert Lake shore, 5 m, 29 Jun 1985, Seçmen & Leblebici 5703.

Haloragidaceae

Myriophyllum spicatum L. - Iğneada, Mert Lake, 5 m, 15 Sep 1990, C. Y. 1154.

Cucurbitaceae

Ecballium elaterium (L.) A. Rich. - Between Demirköy and Iğneada, 18th km, roadside, 230 m, 18 May 1991, C. Y. 1409, Medit element.

Bryonia alba L. - Between Iğneada and Sislioba Villages, 5th km, open area in forest, 80 m, C. Y. 1190, Euro-Sib. element.

Crassulaceae

Umbilicus rupestris (Salisb.) Dandy - Around Sergen Village, open area in forest, 300 m, 04 Aug 1990, C. Y. 846.

Sedum telephium L. subsp. *maximum* (L.) Krockner - Between Karadere and Balabanköy Villages, 12th km, open places in forest, 400 m, C. Y. 127, Euro-Sib element.

S. hispanicum L. var. *hispanicum* - Around Yeşilce Village, open area in forest, 400 m, 15 Aug 1990, C. Y. 1016.

S. pallidum Bieb. var. *pallidum* - Between Demirköy and Kadinkule, 1st km, open places in forest, 300 m, 02 Jul 1989, C. Y. 56.

Apiaceae (Umbelliferae)

Eryngium maritimum L.- Iğneada, Mert Lake shore, sandy soil, 5 m, 01 Sep 1990, C. Y. 1101.

E. campestre L. var. *campestre* - Iğneada, Mert Lake shore, sandy soil, 0 m, 21 Jun 1990, C. Y. 631.

E. campestre L. var. *virens* Link. - Between Balabanköy and Demirköy, 5th km, open area in forest, 320 m, 03 Sep 1989, C. Y. 143.

Anthriscus caucalis Bieb. - Between Demirköy and Iğneada, 3rd km, open place in forest, 330 m, 27 May 1990, C. Y. 367.

Scandix stellata Banks. et Sol. - Between Demirköy and Iğneada, 15th km, open area in forest, hard and pebbled soil, 250 m, 16 Jun 1990, C. Y. 531.

Berula erecta (Hudson) Coville - Iğneada, Erikli Lake shore, moist soil, 5 m, 27 Jun 1985, Seçmen & Leblebici 5693.

Conium maculatum L. - Around Yeşilce Village, open area in forest, 400 m, 15 Aug 1990, C. Y. 1046.

Ferula communis L. subsp. *communis* - Between Yeniceköy and Demirköy, 2nd km, roadside, 20 Jun 1990, observation, Medit. element.

Ferulago confusa Velenowsky - Between Demirköy and Kadinkule, 1st km, open area in forest, 300 m, 02 Jul 1989, C. Y. 37, Euro-Sib. element.

Pastinaca sativa L. subsp. *urens* (Req. ex Godron) Celak - Around Balabanköy Village, open places in mixed forest, 380 m, 02 Aug 1990, C. Y. 758.

Tordylium apulum L. - Between Demirköy and Kadinkule, 2nd km, open places in forest, 320 m, 26 May 1990, C. Y. 316, Medit. element.

Daucus carota L. - Between Demirköy and Iğneada, 11th km, open places in forest, 300 m, 20 Jun 1990, C. Y. 595.

Araliaceae

Hedera helix L. - Around Yiğitbaşı Village, mixed forest, 420 m, 14 Aug 1990, C. Y. 955.

Cornaceae

Cornus mas L. - Around Armutveren Village, mixed forest, 370 m, 08 Aug 1990, C. Y. 872, Euro-Sib. element.

Caprifoliaceae

Sambucus ebulus L. - Around Gökyaka Village, open area in mixed forest, 350 m, 09 Aug 1990, C. Y. 906, Euro-Sib. element.

S. nigra L. - Around Yeşilce Village, mixed forest, 400 m, 15 Aug 1990, C. Y. 1126, Euro-Sib. element.

Lonicera caprifolium L. - Between Demirköy and Iğneada, 18th km, mixed forest, 260 m, 18 May 1991, C. Y. 1353.

Dipsacaceae

Dipsacus laciniatus L. - Sarpdere Village, around Dupnisa caves, open area in forest, 370 m, 10 Aug 1990, C. Y. 941.

Knautia integrifolia (L.) Bert. var. *bidens* (Sm.) Borbas - Iğneada, Limanköy, around the airport, open area in mixed forest, 20 m, 17. Jun 1990, C. Y. 554, East Medit. element.

K. drymeia Heuffel - Between Demirköy and Kadinkule, 1st km, open area in forest, 300 m, 02 Jul 1989, C. Y. 96, Euro-Sib. element.

Scabiosa columbaria L. subsp. *columbaria* var. *columbaria* - Around Balabanköy, open area in mixed forest, 380 m, 02 Aug 1990, C. Y. 784.

S. columbaria L. subsp. *ochroleuca* (L.) Celac var. *ochroleuca* - Around Gökyaka Village, open area in mixed forest, 350 m, 09 Aug 1990, C. Y. 902.

S. columbaria L. subsp. *ochroleuca* (L.) Celac var. *webbiana* (Don) Matthews - Around Yeniceköy Village, open area in forest, 210 m, 02 Aug 1990, C. Y. 805.

S. atropurpurea L. subsp. *maritima* (L.) Arc. - Around Sergen Village, open area in forest, 300 m, 04 Aug 1990, C. Y. 847.

Asteraceae (Compositae)

Xanthium spinosum L. - Around Iğneada, roadside, 8 m, 03 Sep 1989, C. Y. 180.

Inula britannica L. - Between Demirköy and Iğneada, 2nd km, open places in forest, 300 m, 26 Jul 1990, C. Y. 665, Euro-Sib. element.

Pulicaria sicula (L.) Moris. - Iğneada, Sülüklü Lake shore, moist soil, 3 m, 29 Jun 1985, Seçmen & Leblebici 5739, Medit. element.

Gnaphalium supinum L. - Between Demirköy and Iğneada, 18th km, open area in forest, 260 m, 18 May 1991, C. Y. 1293.

Filago vulgaris Lam. - Iğneada, Limanköy, around the airport, open places in mixed forest, hard soil, 20 m, 17 Jun 1990, C. Y. 577.

F. eriocephala Guss. - Between Karanlık and Karadere Villages, 3rd km, open area in forest, 400 m, 03 Sep 1989, C. Y. 103, East Medit element.

F. pyramidata L. - Between Demirköy and Iğneada, 11th km, open area in forest, 300 m, 20 Jun 1990, C. Y. 615.

Aster tripolium L. - Iğneada, Mert Lake shore, sandy soil, 5 m, 15 Sep 1990, C. Y. 1135.

Dicrocephala integrifolia (L. fil.) Kuntze - Around Iğneada, sandy soil, 3 m, 16 Sep 1990, C. Y. 1233.

Bellis perennis L. - Between Demirköy and Kadinkule, 3rd km, open places in forest, 320 m, 07 Apr 1990, C. Y. 233, Euro-Sib. element.

Senecio vulgaris L. - Between Demirköy and Kadinkule, 3rd km, roadside, 330 m, 18 Jul 1990, Observation.

S. vernalis Waldst. et Kit. - Iğneada, centrum, roadside, 5 m, 18 Jun 1991, C. Y. 1413.

Tussilago farfara L. - Between Karanlık and Karadere Villages, 3rd km, open places in forest, 400 m, 03 Sep 1989, C. Y. 269, Euro-Sib. element.

Calendula suffruticosa Vahl. - Iğneada, Mert Lake shore, sandy soil, 0 m, 03 Jun 1990, C. Y. 490, West Medit. element.

Anthemis cretica L. subsp. *tenuiloba* (DC.) Grierson - Between Karanlık and Karadere Villages, open area in forest, 400 m, 03 Sep 1989, C. Y. 115.

A. arvensis L. - Around Gökyaka Village, open area in mixed forest, 350 m, 09 Aug 1990, C. Y. 892.

- A. tinctoria* L. var. *tinctoria* - Around Yeşilce Village, open place in forest, 400 m, 15 Aug 1990, C. Y. 1029.
- A. triumphettii* (L.) All. - Around Yeşilce Village, open area in forest, 400 m, 15 Aug 1990, C. Y. 1032.
- A. altissima* L. - Between Demirköy and Iğneada, 11th km, open area in forest, 300 m, 20 Jun 1990, C. Y. 592.
- Achillea grandiflora* Friv. - Around Sergen Village, open area in forest, 300 m, 04 Aug 1990, C. Y. 837.
- A. millefolium* L. subsp. *pannonica* (Scheele) Hayek - Around Gökyaka Village, open places in forest, 350 m, 09 Aug 1990, C. Y. 931.
- A. setacea* Waldst et Kit. - Iğneada, Mert Lake shore, sandy soil, 3 m, 21 Jun 1990, C. Y. 637, Euro-Sib. element.
- A. critmifolia* Waldst et Kit. - Between Demirköy and Iğneada, 15th km, open area in forest, hard soil, 250 m, 16 Jun 1990, C. Y. 533, Euro-Sib. element.
- Tanacetum corymbosum* (L.) Schultz Bip. subsp. *cinereum* (Gris.) Hayek - Between Iğneada and Sislioba Village, 5th km, open places in forest, 80 m, 16 Sep 1990, C. Y. 1179, Euro-Sib. element.
- Matricaria chamomilla* L. var. *chamomilla* - Between Iğneada and Limanköy, 1st km, streamside, 3 m, 02 Jun 1990, C. Y. 433.
- Artemisia absinthium* L. - Between Demirköy and Hamdibey, 2nd km, open places in mixed forest, 340 m, 29 Jul 1990, C. Y. 744.
- Arctium minus* (Hill.) Bernh. subsp. *minus* - Around Kadinkule, open places in forest, 330 m, 03 Aug 1990, C. Y. 825.
- Onopordum tauricum* Willd. - Around Sergen Village, open area in forest, 300 m, 04 Aug 1990, C. Y. 835, Euro-Sib. element.
- Cirsium vulgare* (Savi) Ten. - Iğneada, Limanköy, around the airport, open area in forest, hard soil, 17 Jun 1990, C. Y. 543.
- C. arvense* (L.) Scop. subsp. *vestitum* (Wimmer et Grab.) Petrak - Between Demirköy and Iğneada, 11th km, open area in forest, 300 m, 20 Jun 1990, C. Y. 589.

- Carduus nutans* L. subsp. *leiophyllus* (Petr.) Stoj. et Stef. - Around Armutveren Village, open area in mixed forest, 370 m, 08 Aug 1990, C. Y. 855.
- C. acicularis* Bertol. - Around Sergen Village, open area in forest, 300 m, 04 Aug 1990, C.Y.832.
- Centaurea kilea* Boiss. - Around Gökyaka Village, open area in forest, 350 m, 09 Aug 1990, C.Y. 917, Endemic.
- C. solstitialis* L. subsp. *solstitialis* - Around Armutveren Village, open area in forest, 370 m, 08 Aug 1990, C. Y. 862.
- C. salonitana* Vis. - Around Armutveren Village, open area in mixed forest, 370 m, 08 Aug 1990, C. Y. 877, Euro-Sib. element.
- C. cyanus* L. - Between Demirköy and Kadıncık, 1st km, open places in forest, 300 m, 02 Jul 1989, C. Y. 13.
- Carthamus lanatus* L. - Iğneada, Limanköy, around the airport, open area in forest, hard soil, 20 m, 17 Jun 1990, C. Y. 546.
- Carlina corymbosa* L. - Iğneada, Mert Lake shore, sandy soil, 5 m, 21 Jun 1990, C. Y. 635, Medit. element.
- C. graeca* Heldr. et Sart. - Around Armutveren Village, open places in forest, 370 m, 08 Aug 1990, C. Y. 883, East Medit. element.
- Cichorium intybus* L. - Around Sergen Village, open area in forest, 300 m, 04 Aug 1990, C. Y. 844.
- Leontodon cichoraceus* (Ten.) Sanguinetti - Around Balabanköy Village, open places in forest, 380 m, 02 Aug 1990, C. Y. 775, Medit. element.
- L. hispidus* L. var. *hispidus* - Between Demirköy and Iğneada, 11th km, open area in forest, 300 m, 20 Jun 1990, C. Y. 582.
- L. crispus* Vill. var. *asper* (Waldst. et Kit.) Rohl. - Around Sivrilir Village, open places in forest, 360 m, 28 Jul 1990, C. Y. 725.
- Sonchus asper* (L.) Hill. subsp. *glaucescens* (Jordan) Ball. - Between Iğneada and Limanköy Villages, 1st km, streamside, sandy soil, 4 m, 02 Jun 1990, C. Y. 420.
- Pilosella piloselloides* (Vill.) Sojak in Preslia subsp. *piloselloides* - Between Demirköy and Iğneada, 3rd km, open area in forest, 330 m, 27 May 1990, C. Y. 360.

Lactuca saligna L. - Between Demirköy and Iğneada, 3rd km, open area in forest, 330 m, 27 May 1990, C. Y. 377.

Mycelis muralis (L.) Dum. - Sarpdere Village, around Dupnisa caves, open area in forest, 370 m, 10 Aug 1990, C. Y. 948, Euro-Sib. element.

Chondrilla juncea L. var. *juncea* - Around Yeniceköy Village, open area in forest, 210 m, 02 Aug 1990, C. Y. 804.

Crepis reuterana Boiss. subsp. *reuterana* - Between Demirköy and Iğneada, 3rd km, open area in forest, 330 m, 27 May 1990, C. Y. 375.

C. foetida L. subsp. *foetida* - Iğneada, Limanköy, around the airport, open area in mixed forest, hard soil, 20 m, 17 Jun 1990, C. Y. 551.

C. sancta (L.) Babcock - Around Yeşilce Village, open places in forest, 400 m, 15 Aug 1990, C. Y. 1017.

C. zacintha (L.) Babcock - Between Demirköy and Iğneada, 3rd km, open area, C. Y. 405, Medit. element.

C. setosa Hall. - Between Demirköy and Iğneada, 11th km, open area in forest, 300 m, 20 Jun 1990, C. Y. 590.

Campanulaceae

Campanula persicifolia L. - Iğneada, Limanköy, around the airport, open area in mixed forest, hard soil, 20 m, 17 Jun 1990, C. Y. 576, Euro-Sib. element.

C. rapunculus L. var. *rapunculus* - Around Balabanköy Village, open places in forest, 380 m, C. Y. 776.

Asyneuma limonifolium (L.) Jachen subsp. *limonifolium* - Between Demirköy and Kadinkule, 3rd km, roadside, 27 Jul 1991, observation.

Legousia pentagonia (L.) Thellung - Between Iğneada and Limanköy, 1st km, streamside, sandy soil, C. Y. 422, East Medit. element.

Ericaceae

Rhododendron ponticum L. subsp. *ponticum* - Between Demirköy and Iğneada, 1st km, *Fagus* forest, 330 m, 06 May 1990, C. Y. 288, Euxine element.

Erica manipuliiflora L. - Around Sivrilir Village, open area in forest, 360 m, 28 Jul 1990, East Medit. element, C. Y. 723.

Calluna vulgaris (L.) Hull. - Between Demirköy and Kadınkule, 3rd km, open area in forest, 320 m, 07 Apr 1990, C. Y. 265.

Arbutus unedo L. - Between Iğneada and Limanköy, 2nd km, open area in forest, 15 m, 17 Sep 1990, C. Y. 1267.

Primulaceae

Primula vulgaris Huds. subsp. *sibthorpii* (Hoffmans) W. W. Sm. Forrest - Between Demirköy and Kadınkule, 1st km, open area in forest, 300 m, 02 Jul 1989, C. Y. 1, Euxine element.

Cyclamen coum Miller var. *coum* - Between Demirköy and Iğneada, 1st km, *Quercus* forest, 330 m, 03 Mar 1990, C. Y. 206.

Lysimachia atropurpurea L. - Between Demirköy and Iğneada, 15th km, open area in forest, hard soil, 250 m, 16 Jun 1990, C. Y. 511, East. Medit. element.

L. nummularia L. - Around Yeşilce Village, open places in forest, 400 m, 15 Aug 1990, C. Y. 1027, Euro-Sib. element.

Anagallis arvensis L. var. *arvensis* - Between Karanlık and Karadere Villages, 3rd km, open area in forest, 400 m, 03 Sep 1989, C. Y. 107.

Samolus valerandi L. - Iğneada, Erikli Lake shore, moist soil, 5 m, 29 Jun 1985, Seçmen & Leblebici 5701.

Oleaceae

Jasminum fruticans L. - Iğneada, Mert Lake shore, open places in forest, 5 m, 01 Sep 1990, C.Y. 1080, Medit. element.

Fraxinus ornus L. subsp. *ornus* - Around Sivrilir Village, open area in forest, 360 m, 28 Jul 1990, C. Y. 719, Euro-Sib. element.

Phillyrea latifolia L. - Iğneada, Mert Lake shore, 5 m, 01 Sep 1990, C. Y. 1079, Medit. element.

Asclepiadaceae

Periploca graeca L. var. *graeca* - Iğneada, mixed forest, 5 m, 17 Sep 1990, C. Y. 1238, East Medit. element.

Vincetoxicum speciosum Boiss. et Spruner - Between Demirköy and Yeniceköy, 10th km, *Fagus* forest, 220 m, 27 Jul 1990, C. Y. 708, East Medit. element.

V. hirundinaria Medicus - Around Kadinkule, *Fagus* forest, 330 m, 03 Aug 1990, C. Y. 809.

Cionura erecta (L.) Griseb. - Iğneada, seashore, sandy soil, 0 m, 01 Sep 1990, C. Y. 1096, East Medit. element.

Gentianaceae

Centaurium erythraea Rafn. subsp. *erythraea* - Around Balabanköy Village, open area in mixed forest, 380 m, 02 Aug 1990, C. Y. 793, Euro-Sib. element.

Convolvulaceae

Convolvulus arvensis L. - Between Karanlık Village and Karadere Village, 3rd km, open area in forest, 400 m, 03 Sep 1989, C. Y. 108.

C. elegantissimus Miller - Iğneada, Limanköy, around the airport, open places in forest, hard soil, 20 m, 17 Jun 1990, C. Y. 553, Medit. element.

Calystegia sepium (L.) R. Br. subsp. *sepium* - Iğneada, Erikli Lake shore, open area in forest, 5 m, 30 Jun 1985, Seçmen & Leblebici 5856.

C. sylvatica (Kit.) Griseb. - Between Demirköy and Yeniceköy, 10th km, *Fagus* forest, 220 m, 07 Jul 1990, C. Y. 688.

Boraginaceae

Heliotropium europaeum L. - Between Demirköy and Iğneada, 15th km, open places in forest, 250 m, 18 May 1991, C. Y. 1306, East Medit. element.

Myosotis arvensis (L.) Hill. subsp. *arvensis* - Between Demirköy and Iğneada, 11th km, open places in forest, 300 m, 20 Jun 1990, C. Y. 616, Euro-Sib. element.

M. alpestris F. W. Schmidt subsp. *alpestris* - Between Demirköy and Iğneada, 1st km, open area in forest, 330 m, 06 May 1990, C. Y. 305.

M. laxa Lehm. subsp. *caespitosa* (C. F. Schultz) N. Hylander ex Nordn - Iğneada, Erikli Lake shore, moist soil, 5 m, 29 Jun 1985, Seçmen & Leblebici 5724.

Lithospermum purpureocaeruleum L. - Iğneada, Mert Lake shore, 5 m, 01 Sep 1990, C. Y. 1072, Euro-Sib. element.

Echium italicum L. - Between Demirköy and Hamdibey, 2nd km, open area in forest, 340 m, 29 Jul 1990, C. Y. 748, Medit. element.

E. vulgare L. - Between Demirköy and Iğneada, 15th km, open area in forest, 250 m, 18 May 1991, C. Y. 1305, Euro-Sib. element.

Onosma echioides L. - Between Demirköy and Kadınkule, 2nd km, open places in forest, 320 m, 26 May 1990, C. Y. 322, *Medit. element.*

Symphytum orientale L. - Between Demirköy and Kadınkule, 3rd km, roadside, 320 m, 07 Apr 1990, C. Y. 261, *Euro-Sib. element.*

Trachystemon orientalis (L.) G. Don. - Between Demirköy and Kadınkule, 1st km, open area in forest, 300 m, 02 Jul 1989, C. Y. 49, *Euxine element.*

Anchusa officinalis L. - Between Demirköy and Iğneada, 3rd km open places in forest, 330 m, 27 May 1990, C. Y. 399.

A. azurea Miller var. *azurea* - Between Demirköy and Iğneada, 15th km, open places in forest, 250 m, 18 May 1991, C. Y. 1315.

Pulmonaria obscura Dumort. - Between Demirköy and Kadınkule, 2nd km, open places in forest, 320 m, 26 May 1990, C. Y. 326, *Euro-Sib. element.*

Alkanna tinctoria (L.) Tausch. subsp. *tinctoria* - Between Demirköy and Iğneada, 15th km, open area in forest, 250 m, 18 May 1991, C. Y. 1317, *Medit. element.*

Solanaceae

Datura stramonium L. - Between Demirköy and Hamdibey, 2nd km, open area in forest, 340 m, 29 Jul 1990, C. Y. 739.

Hyoscyamus niger L. - Between Iğneada and Limanköy, 1st km, streamside, sandy soil, 3 m, 02 Jun 1990, C. Y. 445.

Scrophulariaceae

Verbascum blattaria L. - Between Iğneada and Limanköy, 1st km, sandy soil, 3 m, 02 Jun 1990, C. Y. 604.

V. ovalifolium Donn. ex Sims. subsp. *ovalifolium* - Around Balabanköy Village, open area in forest, 380 m, 02 Aug 1990, C. Y. 795, *Euro-Sib. element.*

V. densiflorum Bertol. - Around Yiğitbaşı Village, open place in forest, 420 m, 14 Aug 1990, C. Y. 966, *Euro-Sib. element.*

V. sinuatum L. var. *sinuatum* - Iğneada, Mert Lake shore, sandy soil, 5 m, 15 Sep 1990, C. Y. 1156, *Medit. element.*

Scrophularia umbrosa Dum. - Around Kadınkule, open place in forest, 330 m, 03 Aug 1990, C. Y. 826, *Euro-Sib. element.*

Antirrhinum majus L. subsp. *majus* - Iğneada, Mert Lake shore, sandy soil, 3 m, 03 Jun 1990, C. Y. 448.

Linaria genistifolia (L.) Miller subsp. *genistifolia* - Between Karanlık and Karadere Villages, 3rd km, open area in forest, 400 m, 03 Sep 1989, C. Y. 128, Euro-Sib. element.

L. vulgaris Miller - Around Sivrilir Village, open place in forest, 360 m, 28 Jul 1990, C. Y. 728.

L. simplex (Willd.) DC. - Around Yeşilce Village, open place in forest, 400 m, 15 Aug 1990, C.Y. 1036, Medit. element.

L. pelisseriana (L.) Miller - Between Demirköy and Iğneada, 15th km, open place in forest, hard soil, 250 m, 16 Jun 1990, C. Y. 503, Medit. element.

Kickxia commutata (Bernh. ex Reichb.) Fritsch subsp. *commutata* - Around Balabanköy Village, open place in mixed forest, 380 m, 02 Aug 1990, C. Y. 777, Medit. element.

K. spuria (L.) Dumort subsp. *integrifolia* (Brot.) R. Fernandes - Around Boztaş Village, mixed forest, 420 m, 14 Aug 1990, C. Y. 979.

Digitalis ferruginea L. subsp. *ferruginea* - Around Balabanköy Village, open place in forest, 380 m, 02 Aug 1990, C. Y. 761, Euro-Sib. element.

D. viridiflora Lindley - Around Incesirt Village, open area in forest, 350 m, 09 Aug 1990, C. Y. 921, East Medit. element.

D. lanata Ehrh. - Around Karacadağ Village, open places in forest, 400 m, 09 Aug 1990, C. Y. 920, Euro-Sib. element.

Veronica anagallis-aquatica L. - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 4 m, 02 Jun 1990, C. Y. 446.

V. chamaedris L. - Between Demirköy and Kadınkule, 3rd km, open places in forest, 320 m, 07 Apr 1990, C. Y. 237, Euro-Sib. element.

V. officinalis L. - Between Demirköy and Iğneada, 1st km, open places in forest, 330 m, 06 May 1990, C. Y. 298, Euro-Sib. element.

Euphrasia pectinata Ten. - Around Armutveren Village, open area in forest, 370 m, 08 Aug 1990, C. Y. 878, Euro-Sib. element.

Orobanchaceae

Orobanche minor Sm. Engl. - Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 27 May 1990, C. Y. 402.

O. caryophyllacea Smith. - Iğneada, Mert Lake shore, sandy soils, 4 m, 03 Jun 1990, C. Y. 471.

Verbenaceae

Verbena officinalis L. - Between Demirköy and Yeniceköy, 10th km, open places in forest, 220 m, 27 Jul 1990, C. Y. 701.

Vitex agnus-castus L. - Between Demirköy and Kadinkule, 1st km, streamside, 350 m, 27 Jul 1991, observation, Medit. element.

Lamiaceae (Labiatae)

Ajuga reptans L. - Between Demirköy and Iğneada, 15th km, open places in forest, 250 m, 18 May 1991, C. Y. 1310, Euro-Sib. element.

Teucrium chamaedrys L. subsp. *chamaedrys* - Between Demirköy and Iğneada, 15th km, open places in forest, hard soil, 250 m, 16 Jun 1990, C. Y. 512, Euro-Sib. element.

T. polium L. - Around Armutveren Village, open places in forest, 370 m, 08 Aug 1990, C. Y. 854.

Rosmarinus officinalis L. - Sarpdere Village, around Dupnisa caves, open places in forest, 370 m, 10 Aug 1990, C. Y. 944, Medit. element.

Lavandula stoechas L. subsp. *stoechas* - Between Demirköy and Iğneada, 15th km, open places in forest, 250 m, 18 May 1991, C. Y. 1311, Medit. element.

Lamium garganicum L. subsp. *laevigatum* Arcangeli, Comp. - Iğneada, Mert Lake shore, sandy soil, 5 m, 03 Jun 1990, C. Y. 457.

L. amplexicaule L. - Between Demirköy and Kadinkule, 3rd km, open places in forest, 320 m, 07 Apr 1990, C. Y. 242, Euro-Sib. element.

L. purpureum L. var. *purpureum* - Between Demirköy and Kadinkule, 3rd km, open places in forest, 320 m, 07 Apr 1990, C. Y. 221, Euro-Sib. element.

L. maculatum L. var. *maculatum* - Iğneada, Mert Lake shore, sandy soil, 5 m, 03 Jun 1990, C. Y. 470, Euro-Sib. element.

Stachys germanica L. subsp. *bithynica* (Boiss.) Bhattacharjee - Around Yeşilce Village, open area in forest, 400 m, 15 Aug 1990, C. Y. 1013, Euro-Sib. element.

S. sylvatica L. - Between Demirköy and Hamdibey, 2nd km, open area in forest, 340 m, 29 Jul 1990, C. Y. 751, Euro-Sib. element.

- S. angustifolia* Bieb. - Between Demirköy and Iğneada, 15th km, open places in forest, 250 m, 16 Jun 1990, C. Y. 537, Euro-Sib. element.
- Prunella vulgaris* L. - Between Demirköy and Kadinkule, 3rd km, open places in forest, 320 m, 07 Apr 1990, C. Y. 258, Euro-Sib. element.
- Origanum vulgare* L. subsp. *hirtum* (Link.) Ietswaart - Around Yeniceköy Village, open places in forest, 210 m, 02 Aug 1990, C. Y. 803, East Medit. element.
- O. vulgare* subsp. *viride* (Boiss.) Hayek. - Around Karadağ Village, open places in forest, 400 m, 14 Aug 1990, C. Y. 974.
- O. vulgare* L. subsp. *vulgare* - Around Gökyaka Village, open places in forest, 350 m, 09 Aug. 1990, C. Y. 904, Euro-Sib. element.
- Calamintha grandiflora* (L.) Moench. Meth - Around Yeşilce Village, open places in forest, 400 m, 15 Aug 1990, C. Y. 1062, Euro-Sib. element.
- C. sylvatica* Bromf. subsp. *ascendens* (Jordan) P. W. Ball - Between Demirköy and Yeniceköy, 10th km, open places in forest, 220 m, 27 Jul 1990, C. Y. 685, Euro-Sib. element.
- Thymus roegneri* C. Koch. - Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 27 May 1990, C. Y. 353, Euro-Sib. element.
- T. longicaulis* C. Presl. subsp. *longicaulis* var. *subisophyllus* (Borbas) Jalas - Around Yeşilce Village, open places in forest, 400 m, 15 Aug 1990, C. Y. 1022.
- Mentha pulegium* L. - Around Sivrilir Village, open places in forest, 360 m, 28 Jul 1990, C. Y. 729.
- M. aquatica* L. - Between Iğneada and Limanköy, 1st km, streamside, sandy soil, 3 m, 02 Jun 1990, C. Y. 431.
- M. longifolia* (L.) Hudson subsp. *typhoides* (Briq.) Harley var. *typhoides* - Around Yiğitbaşı Village, mixed forest, 420 m, 14 Aug 1990, C. Y. 980.
- Lycopus europaeus* L. - Around Yiğitbaşı Village, mixed forest, 420 m, 14 Aug 1990, C. Y. 958, Euro-Sib. element.
- Salvia viridis* L. - Between Demirköy and Iğneada, 15th km, open places in forest, 250 m, 18 May 1991, C. Y. 1312, Medit. element.
- S. forskahlei* L. - Iğneada, Mert Lake shore, sandy soil, 5 m, 21 Jun 1990, C. Y. 646.

S. nutans L. - Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 25 Jul 1990, C. Y. 347, Euro-Sib. element.

S. verbenaca L. - Around Balabanköy Village, open places in forest, 380 m, 02 Aug 1990, C. Y. 771, Medit. element.

Plumbaginaceae

Limonium virgatum (Willd.) Fourr. - Iğneada, Mert Lake shore, sandy soil, 5 m, 15 Sep 1990, C. Y. 1136, Medit. element.

Plantaginaceae

Plantago major L. subsp. *major* - Between Demirköy and Yeniceköy, 10th km, open places in forest, 220 m, 27 Jul 1990, C. Y. 700.

P. coronopus L. subsp. *commutata* (Guss.) Pilger - Between Iğneada and Limanköy, 1st km, streamside, sandy soil, 3 m, 02 Jun 1990, C. Y. 413, East Medit. element.

P. maritima L. - Iğneada, Mert Lake shore, sandy soil, 5 m, 01 Sep 1990, C. Y. 1071.

P. lanceolata L. - Iğneada, Mert Lake shore, sandy soil, 5 m, 03 Jun 1990, C. Y. 454.

P. lagopus L. - Between Demirköy and Yeniceköy, 10th km, open area in forest, 220 m, 27 Jul 1990, C. Y. 697, Medit. element.

P. scabra Moench. - Iğneada, Mert Lake shore, sandy soil, 5 m, 01 Sep 1990, C. Y. 1069.

Thymeleaceae

Daphne pontica L. - Between Demirköy and Kadinkule, 3rd km, open places in forest, 320 m, 07 Apr 1990, C. Y. 229.

Loranthaceae

Viscum album L. subsp. *album* - Iğneada, as parasite on *Fraxinus*, 5 m, 01 Sep 1990, C. Y. 1084.

Euphorbiaceae

Euphorbia peplis L. - Around Sergen Village, open places in forest, 300 m, 04 Aug 1990, C. Y. 840, Medit. element.

E. palustris L. - Iğneada, Mert Lake shore, sandy soil, 5 m, 21 Jun 1990, C. Y. 633, Euro-Sib. element.

E. platyphyllos L. - Iğneada, Limanköy, around the airport, open area in forest, hard soil, 20 m, 17 Jun 1990, C. Y. 575.

E. stricta L. - Between Iğneada and Sislioba Villages, 5th km, open places in forest, 80 m, 16 Sep 1990, C. Y. 1181, Euro-Sib. element.

E. helioscopia L. - Between Demirköy and Kadınkule, 3rd km, open places in forest, 320 m, 07 Apr 1990, C. Y. 222.

E. paralias L. - Iğneada, Mert Lake shore, sandy soil, 5 m, 01 Sep 1990, C. Y. 1100, Medit. element.

E. seguieriana Necker subsp. *seguieriana* - Around Gökyaka Village, open places in forest, 350 m, 09 Aug 1990, C. Y. 933, Euro-Sib. element.

E. seguieriana Necker subsp. *niciciana* (Borbas ex Novak) Rech. - Around Gökyaka Village, open places in forest, 350 m, 09 Aug 1990, C. Y. 934.

E. lucida Waldst. et Kit. - Between Iğneada and Sislioba Villages, 5th km, open places in forest, 80 m, 16 Sep 1990, C. Y. 1184, Euro-Sib. element.

E. amygdaloides L. var. *amygdaloides* - Around Kadınkule, open area in forest, 330 m, 03 Aug 1990, C. Y. 822, Euro-Sib. element.

E. amygdaloides L. var. *robbiae* (Turrit) Radcliffe-Smith. - Around Gökyaka Village, open places in forest, 350 m, 09 Aug 1990, C. Y. 935.

Urticaceae

Urtica pilulifera L. - Between Demirköy and Iğneada, 11th km, open places in forest, 300 m, 20 Jun 1990, C. Y. 609, Medit. element.

U. urens L. - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, C. Y. 1349.

Parietaria judaica L. - Iğneada, mixed forest, 10 m, 02 Sep 1990, C. Y. 1128, Euro-Sib. element.

Cannabaceae

Humulus lupulus L. - Between Demirköy and Kadınkule, 2nd km, by a garden, 290 m, 02 Jul 1989, observation, Euro-Sib. element.

Moraceae

Morus alba L. - Between Demirköy and Iğneada, 3rd km, roadside, 320 m, 02 Jul 1989, observation.

Ficus carica L. subsp. *carica* - Between Demirköy and Iğneada, 18th km, open area in forest, 230 m, 18 May 1991, C. Y. 1344.

Ulmaceae

Ulmus minor Miller subsp. *minor* - Iğneada, Mert Lake shore, mixed forest, 5 m, 01 Sep 1990, C. Y. 1097.

U. laevis Pallas - Around Sislioba Villages, mixed forest, 120 m, 16 Sep 1990, C. Y. 1219, Euro-Sib. element.

Juglandaceae

Juglans regia L. - Between Demirköy and Hamdibey, 2nd km, open area in mixed forest, 340 m, 29 Jul 1990, C. Y. 747.

Platanaceae

Platanus orientalis L. - Between Demirköy and Iğneada, 15th km, open places in mixed forest, 240 m, 18 May 1991, C. Y. 1337.

Fagaceae

Fagus orientalis Lipsky - Between Demirköy and Yeniceköy, 10th km, 220 m, 02 Jul 1989, C. Y. 89, Euro-Sib. element.

Quercus robur L. subsp. *robur* - Around Armutveren Village, mixed forest, 370 m, 08 Aug 1990, C. Y. 867, Euro-Sib. element.

Q. hartwisiana Steven - Between Iğneada and Sislioba Villages, 9th km, 90 m, 16 Sep 1990, C. Y. 1202.

Q. frainetto Ten. - Between Iğneada and Sislioba Villages, 9th km, 90 m, 16 Sep 1990, C. Y. 1206, Euro-Sib. element.

Q. petraea (Mattuschka) Liebl. subsp. *petraea* - Around Yiğitbaşı Village, mixed forest, 420 m, 14 Aug 1990, C. Y. 998.

Q. petraea (Mattuschka) Liebl. subsp. *iberica* - Around Balabanköy Village, mixed forest, 380 m, 02 Aug 1990, C. Y. 765.

Q. infectoria Olivier subsp. *infectoria* - Around Yiğitbaşı Village, mixed forest, 420 m, 14 Aug 1990, C. Y. 999, Euro-Sib. element.

Q. cerris L. var. *cerris* - Around Beğendik Village, mixed forest, 100 m, 16 Sep 1990, C. Y. 1227, Medit. element.

Corylaceae

Carpinus betulus L. - Around Sivrililer Village, mixed forest, 360 m, 28 Jul 1990, C. Y. 715, Euro-Sib. element.

C. orientalis Miller subsp. *orientalis* - Around Yeşilce Village, mixed forest, 400 m, 15 Aug 1990, C. Y. 1047.

Corylus avellana L. var. *avellana* - Iğneada, mixed forest, 5 m, 03 Sep 1989, C. Y. 164, Euro-Sib. element.

Betulaceae

Alnus glutinosa (L.) Gaertner subsp. *glutinosa* - Around Yeşilce Village, streamside, 400 m, 15 Aug 1990, C. Y. 1045.

Salicaceae

Salix alba L. - Around Yeniceköy Village, streamside, 210 m, 02 Aug 1990, C. Y. 807, Euro-Sib. element.

S. cinerea L. - Around Kadinkule, streamside, 330 m, 03 Aug 1990, C. Y. 827, Euro-Sib. element.

Populus tremula L. - Around Balabanköy Village, mixed forest, 380 m, 02 Aug 1990, C. Y. 764, Euro-Sib. element.

Ceratophyllaceae

Ceratophyllum demersum L. - Iğneada, Mert Lake, 29 Jun 1985, Seçmen & Leblebici 5717, Euro-Sib. element.

Rubiaceae

Sherardia arvensis L. - Between Demirköy and Kadinkule, 1st km, open places in forest, 300 m, 02 Jul 1989, C. Y. 62, Medit. element.

Galium odoratum (L.) Scop. - Around Yeşilce Village, open places in forest, 400 m, 15 Aug 1990, C. Y. 1015, Euro-Sib. element.

G. palustre L. - Between Demirköy and Kadinkule, 10th km, open area in forest, 220 m, 27 Jul 1990, C. Y. 692, Euro-Sib. element.

G. verum L. subsp. *verum* - Between Iğneada and Sislioba Villages, 9th km, open places in forest, 90 m, 16 Sep 1990, C. Y. 1213, Euro-Sib. element.

G. album Miller subsp. *pycnotrichum* (H. Braun) Krendl. - Between Iğneada and Sislioba Villages, 9th km, open places in forest, 90 m, 16 Sep 1990, C. Y. 1212, Euro-Sib. element.

G. aparine L. - Between Iğneada and Sislioba Villages, 5th km, open places in mixed forest, 80 m, 16 Sep 1990, C. Y. 1174.

Cruciata laevipes Opiz, Seznam - Between Demirköy and Iğneada, 18th km, open places in forest, 230 m, 18 May 1991, C. Y. 1354, Euro-Sib. element.

C. pedemontana (Bellardi) Ehrend. - Between Demirköy and Iğneada, 18th km, open places in forest, 230 m, 18 May 1991, C. Y. 1364.

MONOCOTYLEDONES (LILIOPSIDA)

Butomaceae

Butomus umbellatus L. - Iğneada, Mert Lake, 0 m, 18 Jun 1991, C. Y. 1410.

Alismataceae

Alisma lanceolatum With. - Iğneada, Sülüklü Lake shore, 3 m, 29 Jun 1985, Seçmen & Leblebici 5740.

A. gramineum Lcj. - Iğneada, Erikli Lake, 29 Jun 1985, Seçmen & Leblebici 5729.

Najadaceae

Najas minor All. - Iğneada, Erikli Lake, 29 Jun 1985, Seçmen & Leblebici 5699.

Potamogetonaceae

Potamogeton natans L. - Between Demirköy and Iğneada, 2nd km, in stream, 18 Jun 1991, observation.

P. panormitanus Biv. - Iğneada, Erikli Lake, 29 Jun 1985, Seçmen & Leblebici 5700.

P. trichoides Cham. et Schlecht - Iğneada, Erikli Lake, 29 Jun 1985, Seçmen & Leblebici 5718.

P. crispus L. - Iğneada, Erikli Lake, 29 Jun 1985, Seçmen & Leblebici 5715.

P. pectinatus L. - Iğneada, Mert Lake, 29 Jun 1985, Seçmen & Leblebici 5798.

Araceae

Arum italicum Miller - Iğneada, Mert Lake shore, sandy soil, 5 m, 03 Jun 1990, C. Y. 484.

A. maculatum L. - Between Demirköy and Iğneada, 18th km, open places in forest, moist soil, 245 m, 18 May 1991, C. Y. 1390.

Lemnaceae

Lemna minor L. - Iğneada, Limanköy, around the airport, in water, 17 Jun 1990, C. Y. 581.

Liliaceae

Smilax excelsa L. - Between Demirköy and Iğneada, 1st km, *Quercus* forest, 330 m, 03 Mar 1990, C. Y. 219.

Ruscus aculeatus L. var. *aculeatus* - Between Demirköy and Kadinkule, 3rd km, mixed forest, 320 m, 07 Apr 1990, C. Y. 267.

R. hypoglossum L. - Between Demirköy and Iğneada, 10th km, mixed forest, 290 m, 18 May 1991, C. Y. 1294, Euro-Sib. element.

Asparagus acutifolius L. - Iğneada, mixed forest, 10 m, 01 Sep 1990, C. Y. 1091, Medit. element.

A. tenuifolius Lam. - Iğneada, mixed forest, 5 m, 17 Sep 1990, C. Y. 1240, Euro-Sib. element.

Polygonatum multiflorum (L.) All. - Between Demirköy and Iğneada, 11th km, mixed forest, 280 m, 18 Jun 1991, C. Y. 1273.

Scilla bifolia L. - Between Demirköy and Iğneada, 18th km, mixed forest, 230 m, 18 May 1991, C. Y. 1399, Medit. element.

Ornithogalum umbellatum L. - Between Demirköy and Kadinkule, 3rd km, open places in forest, 330 m, 03 Mar 1990, C. Y. 211.

O. ortophyllum Ten. - Between Demirköy and Iğneada, 18th km, open places in forest, 230 m, 18 May 1991, C. Y. 1296.

Muscari comosum (L.) Miller - Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 27 May 1990, C. Y. 332, Medit. element.

M. neglectum Guss. - Between Demirköy and Kadinkule, 3rd km, open places in forest, 320 m, 07 Apr 1990, C. Y. 254.

Colchicum turcicum Janca - Around Yeşilce Village, open places in forest, 400 m, 15 Aug 1990, C. Y. 1037, Medit. element.

Amaryllidaceae

Leucojum aestivum L. - Between Demirköy and Iğneada, 15th km, wet places, 280 m, 18 May 1991, C. Y. 1338, Euro-Sib. element.

Iridaceae

Iris pseudacorus L. - Between Demirköy and Iğneada, 15th km, swampside, 280 m, 18 May 1991, C. Y. 1400.

I. sintenisii Janca - Between Demirköy and Iğneada, 18th km, open area in forest, calcareous soil, 230 m, 18 May 1991, C. Y. 1329, Euro-Sib. element.

I. suaveolens Boiss. et Reuter - Between Demirköy and Iğneada, 8th km. stony soils, 300 m, 07 Apr 1990, observation, East Medit. element.

Crocus chrysanthus (Herbert) Herbert - Between Demirköy and Kadinkule, 4th km, open places in forest, 07 Apr 1990, C. Y. 223.

C. biflorus Miller subsp. *biflorus* - Between Demirköy and Iğneada, 15th km, open area, rocky soil, 07 Apr 1990, C. Y. 1277, East Medit. element.

C. pallasii Goldb. subsp. *pallasii* - Between Iğneada and Sislioba Villages, 5th km, open area, stony soil, 80 m, 10 Dec 1990, C. Y. 1173.

Orchidaceae

Orchis laxiflora Lam. - Between Demirköy and Iğneada, 1st km, open area, wet soil, 330 m, 06 May 1990, C. Y. 295.

Typhaceae

Typha angustifolia L. - Iğneada, Mert Lake, 5 m, 15 Sep 1990, C. Y. 1153.

T. domingensis Pers. - Iğneada, Erikli Lake, 5 m, 29 Jun 1985, *Seçmen & Leblebici* 5720.

Juncaceae

Juncus heldreichianus Marsson ex Parl. subsp. *heldreichianus* - Between Demirköy and Kadinkule, 1st km, open area, wet soil, 300 m, 02 Jul 1989, C. Y. 86, East-Medit. element.

J. effusus L. - Iğneada, Limanköy, around the airport, wet soil, 20 m, 17 Jun 1990, C. Y. 566, Cosmopolit.

J. littoralis C. Meyer - Iğneada, Erikli Lake shore, wet soil, 5 m, 29 Jun 1985, *Seçmen & Leblebici* 5714, Medit. element.

J. inflexus L. - Iğneada, Erikli Lake shore, wet soil, 5 m, 29 Jun 1985, *Seçmen & Leblebici* 5707.

J. compressus Jacq. - Iğneada, Erikli Lake shore, moist soil, 5 m, 29 Jun 1985, *Seçmen & Leblebici* 5690.

J. gerardii Loisel subsp. *gerardii* - Iğneada, Sülüklü Lake shore, moist soil, 5 m, 27 Jun 1985, *Seçmen & Leblebici* 5732.

J. articulatus L. - Between Iğneada and Limanköy, 1st km, streamside, 5 m, 02 Jun 1990, C. Y. 410, Euro-Sib. element.

Luzula forsteri (Sm.) DC. - Iğneada, open places in mixed forest, 5 m, 17 Sep 1990, C. Y. 1254, Euro-Sib. element.

Cyperaceae

Cyperus longus (L.) Hay. - Iğneada, Mert Lake shore, 5 m, 17 Sep 1990, C. Y. 1239.

C. rotundus L. - Between Demirköy and Iğneada, 18th km, open area, wet soil, 230 m, 18 May 1991, C. Y. 1274.

C. fuscus L. - Iğneada, Mert Lake shore, 5 m, 15 Sep 1990, C. Y. 1162, Euro-Sib. element.

Eleocharis mitracarpa Steudel - Iğneada, Sülüklü Lake, 29 Jun 1985, Seçmen & Leblebici 5735.

Schoenoplectus lacustris (L.) Palla subsp. *tabernaemontanii* (C. C. Gmelin) A. et D. Löve, Iğneada, Mert Lake, 26 Sep 1985, Seçmen & Leblebici 5805.

S. litoralis (Schrader) Palla - Iğneada, Erikli Lake, 29 Jun 1985, Seçmen & Leblebici 5704.

Scirpus sylvaticus L. - Iğneada, open places in forest, wet soils, 5 m, 02 Sep 1990, C. Y. 1112.

Bulboschoenus maritimus (L.) Palla var. *maritimus* - Iğneada, Erikli Lake, 5 m, 29 Jun 1985, Seçmen & Leblebici 5803.

B. maritimus (L.) Palla var. *cymosus* (Reichb.) Kit. et Oteng-Yeboah - Iğneada, Sülüklü Lake, 29 Jun 1985, Seçmen & Leblebici 5744.

Scirpoides holoschoenus (L.) Sojak - Iğneada, Erikli Lake, 29 Jun 1985, Seçmen & Leblebici 5710.

Cladium mariscus (L.) Pohl., Iğneada, Erikli Lake, 29 Jun 1985, Seçmen & Leblebici 5713.

Carex otrubae Podp. - Iğneada, Erikli Lake shore, 5 m, 29 Jun 1985, Seçmen & Leblebici 5708, Euro-Sib. element.

C. divisa Hudson - Iğneada, Mert Lake shore, 0 m, 29 Jun 1985, Seçmen & Leblebici 5792.

C. extensa Good. - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 5 m, 02 Jun 1990, C. Y. 412, Euro-Sib. element.

Poaceae (Gramineae)

Elymus repens (L.) Gould. subsp. *repens* - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 5 m, 02 Jun 1990, C. Y. 418.

E. hispidus (Opiz.) Melden subsp. *hispidus* - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 5 m, 02 Jun 1990, C. Y. 427.

Aegilops umbellulata Zhuk. subsp. *umbellulata* - Between Demirköy and Iğneada, 15th km, open area, stony soil, 250 m, 16 Jun 1990, C. Y. 523, Ir.-Tur. element.

Hordeum marinum Hudson var. *marinum* - Between Demirköy and Iğneada, 3rd km, open area, 330 m, 27 May 1990, C. Y. 384.

H. murinum L. subsp. *leporinum* (Link.) Arc. var. *leporinum* - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 3 m, 02 Jun 1990, C. Y. 414.

Bromus hordeaceus L. subsp. *hordeaceus* - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 0 m, 02 Jun 1990, C. Y. 421.

B. intermedius Guss.- Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 27 May 1990, C. Y. 351.

B. tectorum L. - Between Iğneada and Limanköy, 1st km, open area, sandy soil, 5 m, 02 Jun 1990, C. Y. 428.

B. diandrus Roth. - Around Armutveren Village, open places in forest, 370 m, 08 Aug 1990, C. Y. 886.

Koeleria brevis Steven - Around Yiğitbaşı Village, open places in forest, 420 m, 14 Aug 1990, C. Y. 995, Euxine element.

Aira elegantissima Schur. subsp. *elegantissima* - Between Demirköy and Iğneada, 11th km, open places in forest, 300 m, 20 Jun 1990, C. Y. 617, Medit. element.

Agrostis stolonifera L. - Around Armutveren Village, open area in forest, 370 m, 08 Aug 1990, C. Y. 852, Euro-Sib. element.

Polypogon monspeliensis (L.) Desf. - Between Iğneada and Limanköy Village, 1st km, open area, 5 m, 02 Jun 1990, C. Y. 407.

Phleum bertoloni DC. - Around Armutveren Village, open area in forest, 370 m, 08 Aug 1990, C. Y. 879.

F. callieri (Hackel ex Yves) F. Markgraf apud Hayek subsp. *callieri* - Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 27 May 1990, C. Y. 391.

Lolium perenne L. - Between Demirköy and Yeniceköy, 10th km. open area in forest, 220 m, 27 Jul 1990, C. Y. 682, Euro-Sib. element.

Poa trivialis L. - Iğneada, Mert Lake shore, sandy soil, 0 m, 03 Jun 1990, C. Y. 499.

P. bulbosa L. - Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 27 May 1990, C. Y. 334.

Cynosurus echinatus L. var. *purpureus* Fiori et Paol. - Iğneada, open area, 3 m, 16 Sep 1990, C. Y. 1232, Medit. element.

Briza maxima L. - Between Demirköy and Iğneada, 3rd km, open places in forest, 330 m, 27 May 1990, C. Y. 397.

Stipa capensis Thunb. - Iğneada, open places in forest, 5 m, 17 Sep 1990, C. Y. 1256, Medit. element.

Phragmites australis (Cav.) Trin. ex Steud. - Iğneada, Mert Lake shore, 5 m, 16 Sep 1990, C. Y. 1172, Eur.-Sib. element.

Cynodon dactylon (L.) Pers. var. *dactylon* - Around Yiğitbaşı Village, open area, 420 m, 14 Aug 1990, C. Y. 968.

Chrysopogon gryllus (L.) Trin. subsp. *gryllus* - Between Demirköy and Iğneada, 15th km, open area, stony soil, 250 m, 16 Jun 1990, C. Y. 509.

Botriochloa ischaemum (L.) Keng. - Around Yeniceköy Village, open places in forest, 210 m, 02 Aug 1990, C. Y. 798.

Conclusions

Total of 500 taxa belonging to 88 families were identified in this study. Families and the taxa are given below:

Pteridophyta	: 3 families , 3 taxa
Gymnospermae	: 3 families, 3 taxa
Angiospermae	: 82 families, 494 taxa
Dicotyledoneae	: 68 families, 413 taxa
Monocotyledoneae	: 14 families, 81 taxa

Families having the most taxa are as follows:

<i>Asteraceae</i>	: 53 taxa
<i>Fabaceae</i>	: 40 taxa
<i>Lamiaceae</i>	: 28 taxa
<i>Rosaceae</i>	: 26 taxa
<i>Poaceae</i>	: 25 taxa
<i>Caryophyllaceae</i>	: 24 taxa
<i>Ranunculaceae</i>	: 21 taxa

The results show that the study area is quite rich in plant taxa due to the number of different climates, soil types (i.e. alluvials, rendzinas, podsols and brown forest soils) and habitats present. Climatical, edaphical, topographical and geographical variations cause a great variety of habitats such as forests, seashores, lakes, rivers, hills, and grasslands.

Despite the phytogeographical origins of 157 plants are given below, the origin of many others could not be determined.

Euro-Siberian elements	: 99
Mediterranean elements	: 57
Irano-Turanian element	: 1

This phytogeographical distribution clearly shows that dominant elements are Euro-Siberian. However, Mediterranean elements also dispersed widely whilst Irano-Turanian is represented with only one species.

The flora of the study area resembles the flora of Bulgaria and Greece (Tutin & al. 1964-1980). As a matter of fact, most of the plants collected in the area have been cited in the flora for these countries. The ratio of the Euro-Siberian elements in the study area increases gradually towards Bulgaria. This resulted the decrease of the elements originated Mediterranean and Irano-Turanian region.

Despite similarities of both the study area and Greece, the study area has less Mediterranean elements. This is an expected result because the Mediterranean climate occurs only on the coast of the Black Sea locally, whilst Greece is almost completely a Mediterranean country.

The flora of the study area resembles the flora of the south parts of European Turkey especially Ganos (Isik) Mountain. But the flora of Ganos Mountain has generally Mediterranean originated elements due to the influence of its Mediterranean climate. The forests are generally dry. Our study area is more humid and marshy than Ganos Mountain. Therefore, the study area has humid forests of *Fagus* and is rich in species of the families *Cyperaceae*, *Juncaceae* etc. that need a marshy habitat.

Fagus orientalis Lipsky is widely distributed in the study area. This species grows on the northern slopes of the mountains. These slopes are influenced by the humidity of the north and northeast winds. These winds are passing throughout the Black Sea and the results are very suitable ecological conditions for those types of plant. These winds naturally discharge heavily loaded fogs over the northern slopes. It is known that *Fagus orientalis* is a hygrophylous species. *Quercus* spp. that are distributed on the south slopes

and ridges do not need a humid climate but sunlight. Moreover, southern slopes and ridges receive more sunlight than northern ones and provide suitable conditions for widespread distributions of *Quercus* spp.

The distribution of *Gymnosperm* species shows an interesting pattern in the study area. Few species of this group are known from European Turkey. These are *Taxus baccata* L., *Pinus nigra* Arn. subsp. *pallasiana* (Lamb.) Holmboe, *P. brutia* Ten. and *Ephedra campylopoda* C. A. Meyer. *P. brutia* spreads only on the coasts of the Gulf of Saros of European Turkey. *P. nigra* subsp. *pallasiana* spreads in a very limited area on the coast of Black Sea. *P. nigra* subsp. *pallasiana* was first brought into the study area as a cultivated plant, and since then this species has spread spontaneously. The study area does not have a very rich *Gymnosperm* flora despite the fact that they are distributed widely in the nearby areas (Northwest Anatolia and coasts of the Gulf of Saros). This can be explained by the unsuitable ecological conditions of the study area for *Gymnospermae* taxa. (It has more humid climate and less calcareous soils than the other regions).

There are only two mountain ranges in the European Turkey: in the north, Istranca Mountains (Yıldız Mountains; the study area is located in the heart of this mountain ranges) and in the south, Ganos (Işık) Mountains. The latter extends towards west-Koru Mountains. The average altitude varies between 300-400 m. Moreover, European Turkey is connected to Europe and Anatolia and the study area has not very special habitats. Therefore, the endemism ratio is too low. This ratio of the study area is 0.2 % and we can only one endemic species: *Centaurea kilea* Boiss. The genus *Centaurea* has 107 endemic species in Turkey. *Centaurea kilea* Boiss. is endemic to the Marmara region (European Turkey and West Black Sea region of Turkey).

Four different types of vegetation have been determined in the study area: forest vegetation, shrub vegetation, grass vegetation and aquatic vegetation. The biological spectrum is different in these vegetation types. But, in general, the ratios are as follows:

In Forest Vegetations:

Phanerophytes	36.6 %
Hemicryptophytes	28.55 %
Chamephytes	16.9 %
Geophytes	10.57 %
Therophytes	7 %

In Shrub Vegetation:

Phanerophytes	2.5 %
Hemicryptophytes	52.5 %
Chamephytes	22.5 %
Therophytes	22.5 %

In Grass Vagation:

Hemicryptophytes	42.8 %
Chamephytes	16.6 %
Geophytes	4.7 %
Therophytes	35.7 %

Aquatic vegetation has mainly helophyte (for instance; *Phragmites*, *Typha*, etc.) and hydrophyte (for instance; *Lemna*, etc.) species.

As seen above, the ratio of Hemicryptophytes is rather high in all of the vegetation types. It is known that the ratio of Hemicryptophytes is very high in temperate zones. They form half of the flora especially in deciduous forests and grasslands.

It has been found that there are also geophytes in forests and grass vegetation. Geophytes are typical for the Mediterranean climate. This clearly shows the influence of Mediterranean climate over the study area.

As seen above, the ratio of the therophytes is 7 % in the forest vegetation, 22.7 % in the shrub vegetation and 35.7 % in the grass vegetation. This result is expected because it is known that therophytes are distributed predominantly in the grass vegetation in the Mediterranean area. However, they are less than in the other vegetation types.

Chamephytes are also found in the study area. Chamephytes grow in the places that have hard continental climates. This shows that a hard continental climate also occurs locally in the study area. The results of the vegetation studies in the study area will be published shortly.

Acknowledgements

I am grateful to Prof. Dr. Özcan Seçmen who supervised my PhD thesis. I am also grateful to my friend Dr. Beytullah Özkan who prepared the maps and figures. Many thanks to Dr. Yılmaz Çamlıtepe for checking the manuscript.

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