

FLORA OF MT AYDOGDU (DENIZLI / TURKEY)

GURKAN SEMİZ^{1*} & ALI CELİK²

¹Akdeniz University, Faculty of Arts & Sciences, Biology Department,
07058, Antalya-Turkey

²Pamukkale University, Faculty of Arts & Sciences, Biology Department,
20017, Denizli-Turkey

Semiz, G. & Celik, A.: Flora of Mt Aydogdu (Denizli / Turkey). *Nat. Croat.*, Vol. 14, No. 3., 185–212, 2005, Zagreb.

The floristic characteristics of Mt Aydogdu (Denizli, Turkey) are presented and the vascular plant species growing in the area are documented. The study was carried out between 2000–2003, and 1112 vascular plant samples were collected. At the end of the study, 586 taxa (at specific and infraspecific ranks) belonging to 82 families and 314 genera were identified. *Asteraceae* (76 species), *Fabaceae* (65 species) and *Brassicaceae* (43 species) are the largest families and *Trifolium* L. (13 species), *Ornithogalum* L. (9 species) and *Veronica* L. (9 species) are the largest genera in the area. The phytogeographic elements and their proportion represented in the study area are as follows: Mediterranean 180 (30.7%), Irano-Turanian 43 (7.3%), Euro-Siberian 24 (4.0%) and multiregional or of unknown phytogeographic origin 339 (58.0%). The endemism rate of the area is 9.7%, less than one third of the mean endemism rate in Turkey.

Key words: vascular plants, flora, Mt Aydogdu, Denizli, Turkey

Semiz, G. & Celik, A.: Flora planine Aydogdu (Denizli / Turska). *Nat. Croat.*, Vol. 14, No. 3., 185–212, 2005, Zagreb.

U radu su prikazane florističke osobine planine Aydogdu (Denizli, Turkey) i zabilježene su vrste vaskularnih biljaka koje rastu na tom području. Istraživanje je provedeno između 2000. i 2003., a prikupljeno je 1112 uzoraka vaskularnih biljaka. Na kraju istraživanja determinirano je sveukupno 586 svojiti (na razini vrste i podvrste) iz 82 porodice i 314 rodova. Najzastupljenije porodice su *Asteraceae* (76 vrsta), *Fabaceae* (65 vrsta) i *Brassicaceae* (43 vrste), te rodovi *Trifolium* L. (13 vrsta), *Ornithogalum* L. (9 vrsta) i *Veronica* L. (9 vrsta). Fitogeografski elementi i njihov omjer je sljedeći: Mediteranski 180 (30.7%), Irano-Turanski 43 (7.3%), Euro-sibirski 24 (4.0%) i multiregionalni ili nepoznatog fitogeografskog porijekla 339 (58.0%). Stupanj endemizma ovog područja je 9.7%, manje od jedne trećine srednje vrijednosti endemizma za Tursku.

Ključne riječi: vaskularne biljke, flora, planina Aydogdu, Denizli, Turska

* Correspondence address: semiz@akdeniz.edu.tr

INTRODUCTION

Turkey is situated in the temperate Mediterranean climate zone and belongs to the Eurasia provinces between three floristic regions, Mediterranean, Euro-Siberian and Irano-Turanian (DAVIS, 1965–1985; DAVIS *et al.*, 1988). With 9222 species, the flora of the Turkey is the richest in Europe and is also richer than that of neighbouring countries (GUNER *et al.*, 2000). Indeed such diversity is more typical of a continent or tropical country than an individual temperate country. In addition, nearly one in every three plants in Turkey is endemic, an astonishingly high percentage for a mainland country (GUNER *et al.*, 2000; OZHATAY, 2002).

The main reasons for this rich diversity of plants species in Turkey are as follows: variation in climate; topographical diversity; aquatic environments; variation in altitudinal range from sea level up to 5000 m; the presence of several major mountain ranges in Anatolia constituting effective barriers against the geographical diffusion of species (EKIM, 1990; OZHATAY, 2002). The Pleistocene Ice Age also made a contribution to the formation of the great diversity (ZOHARY, 1973). As a result, Turkey is the gene centre of a number of genera (for example, *Triticum* L., *Astragalus* L., *Verbascum* L., *Bolanthus* (Ser.) Reichb.) (OZCELIK, 2000).

The purpose of the study was to investigate the diversity of flora on Mt Aydogdu (near Denizli) in Western Anatolia. Mt Aydogdu was selected as a research area since it is little studied and has some interesting characteristics in terms of both flora and geography because it is located in a transition region. The area generally contains two phytogeographic regions: the Mediterranean and Irano-Turanian.

Study area

The research area (Mt Aydogdu) is located between Central Anatolia and Western Anatolia regions and at longitude 37° 30' – 37° 40' N and latitude 29° 03' – 29° 28' E, in the south of Denizli province and within the provincial boundary of Denizli and Mugla. According to the grid square system used in the Flora of Turkey (DAVIS, 1965–1988), Mt Aydogdu is located in Square C2 (Fig. 1). The research area is bordered in the south by Tekkekoy, Sariabat and Akyar villages; in the north by Pinarlar and Aydogdu villages; in the west by Serinhisar. Before the intensive field trips started, the study area was first divided into six sub-areas (localities) related to major topographical land formations (i.e. ridges, streams, hills, etc.). In the study area, the largest streams are Aydere, Korkuyucak, Caygelen, Ozgelen, Korkuyu, Manasir and Degirmendere. The surface area of the study area is ca 296 km² as established by using a planometer on a map with a scale 1/25.000.

The climatic data of the study area were obtained from the meteorology stations at Serinhisar (940 m) and Tavas (950 m), both located within Denizli province. For both stations, the mean annual temperature is 13.1 °C and precipitation is 595.3 mm. According to Emberger's formula, the values of »M« and »m« of the hottest and coldest months were calculated to be 38.8 °C and –13.0 °C respectively (ANON., 1999a). The dry period in the region is between the end of April and end of October. The coldest month is January with a mean temperature of 1.9 °C. With respect

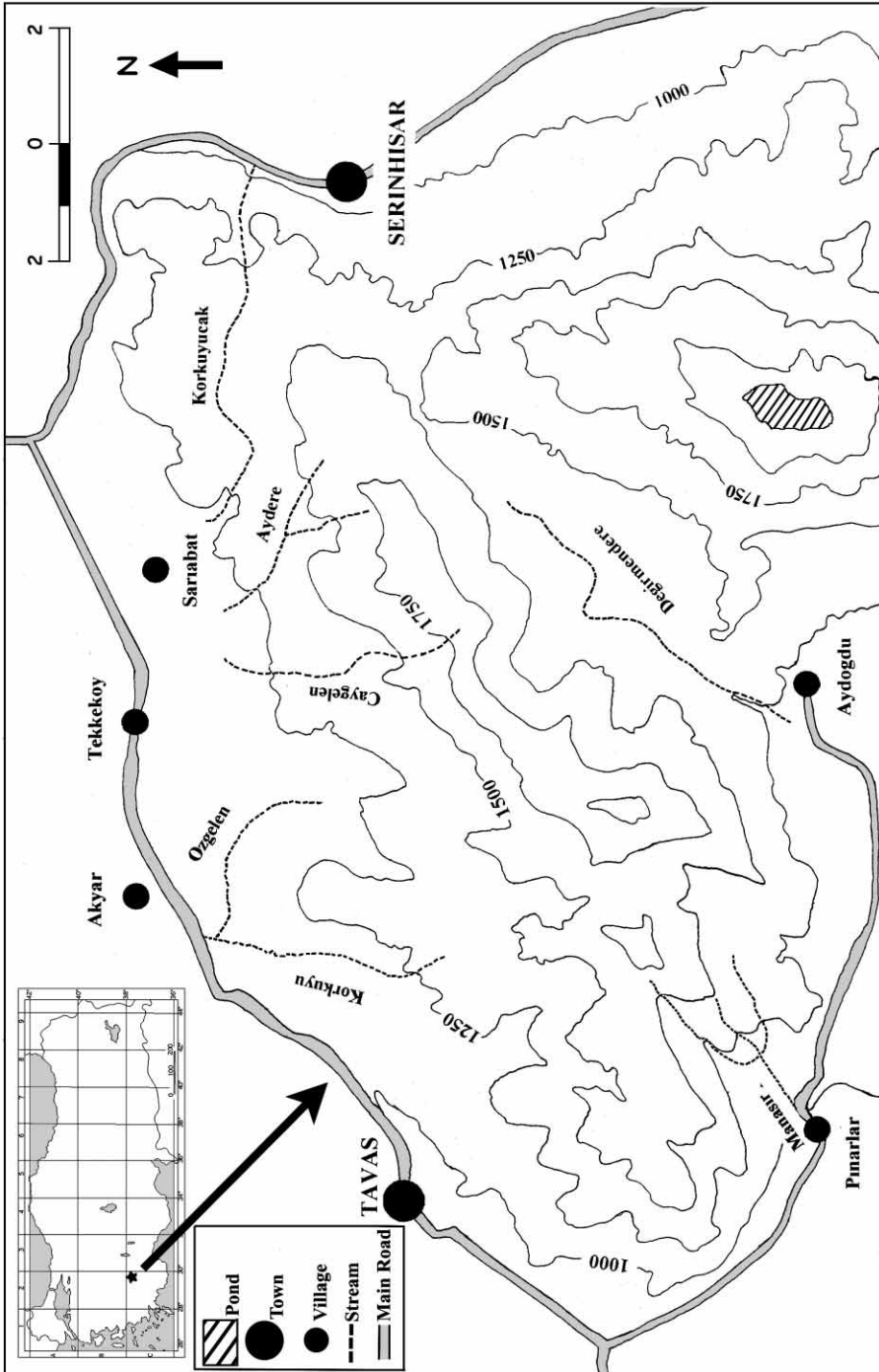


Fig. 1. Location of the study area.

to Emberger's Mediterranean bioclimatic zones as modified for Turkey by AKMAN (1990), the area belongs to the Mediterranean zone, with semi-arid winters. The geological structure of the research area mostly contains rocks belonging to the Mesozoic-Tertiary, Quaternary and Neogene (ALTINLI, 1954; ALADAG, 1997; KOCAHARZEN, 2000). There are six large soil groups in the study area: brown forest soils, red-brown soils, alluvial soils, chestnut soils, non-calcareous soils, and colluvial soils (ANON, 1999b). Colluvial soils are found especially in the agricultural areas around villages of Tekkekoy, Sariabat and Akyar. These soil groups are the results of the local differences in climate, topography and parent rock in the area (ANON, 2000).

MATERIAL AND METHODS

Sample collection

Many botanical excursions were made to the area between the years 2000 and 2003. Efforts were made to collect both flowering and fruiting specimens throughout each of the six sub-areas (localities) of the study area as a whole. The specimens were prepared according to established herbarium techniques (SECMEN *et al.*, 1986). These specimens were identified using information in the *Flora of Turkey and the East Aegean Islands* (DAVIS, 1965–1988; DAVIS *et al.*, 1988; GUNER *et al.*, 2000) and in some cases other floristic literature is used (BOISSIER, 1867–1888; TUTIN *et al.*, 1964–1980; HEYWOOD, 1978; ZOHARY, 1966–1986; YALTIRIK, 1984; SECMEN & LEBLEBICI, 1996; LEBLEBICI, 1990; ILARSLAN, 1996; DUSEN & SUMBUL, 2000).

Presentation of floristic list

The sub-areas (localities) of the study area are listed in Appendix I-A. Seven different habitat types were determined within the study area as a whole (Appendix I-B). Sub-areas No.1 and 4 were quite variable, with all seven habitat types.

The floristic list is presented in Appendix II. Divisions are shown in the orders of *Pteridophyta*, *Gymnospermae*, *Angiospermae* (Dicots and Monocots). Separate families, genera and species within each division are listed in an alphabetical order. Taxa names are presented in the traditional manner followed by sub-area number (localities), habitat code, collectors' names, collectors' plant numbers, their phyto-geographic regions (DAVIS, 1965–1985; DAVIS *et al.*, 1988; GUNER *et al.*, 2000) and whenever applicable, endemisms and endemism categories (ANON, 2001). Author abbreviations follow BRUMMITT & POWELL (1992).

Threatened categories are proposed for endemic taxa according to IUCN risk categories (GIVEN, 1994; EKIM *et al.*, 2000; ANON, 2001). All the identified samples were deposited in the Herbarium of Pamukkale University in Denizli. Abbreviations used in the text and the appendix are as follows; E. Medit.: Eastern Mediterranean element, Euro-Sib.: Euro-Siberian element; Ir.-Tur.: Irano-Turanian element; Cos.: Cosmopolitan, End.: Endemic, GSE: Gurkan Semiz (Collector's name), VU: Vulnerable, EN: Endangered, LR-lc: Lower Risk-least concern, LR-nt: Lower Risk-near threatened, LR-cd: Lower Risk-conservation dependent.

RESULTS AND DISCUSSION

In this study, 1112 vascular plants specimens were collected and identified. They are distributed among 586 taxa, belonging to 314 genera within 82 families growing in the area. Three species are nonflowering vascular plants (*Pteridophyta*). Nine species belong to *Gymnospermae*, while the remaining, 574 species were *Angiospermae*. The distribution of plant taxa in the study area into the higher taxonomical groups is shown in Tab. 1.

Tab. 1. The distribution of the taxa into the higher taxonomical groups.

	Number of families	Number of genera	Number of taxa in total (sp.+ subsp.+ var.)
<i>Pteridophyta</i>	3	3	3
<i>Spermatophyta</i>	79	311	583
<i>Gymnospermae</i>	3	5	9
<i>Dicotyledones</i>	68	260	489
<i>Monocotyledones</i>	8	46	85

The species of the study area, categorized by phytogeographic region, can be listed as follows: Mediterranean 180 (30.7%), Irano-Turanian 43 (7.3%) and Euro-Siberian 24 (4.0%); multiregional or unknown phytogeographic origin 339 (58.0%).

According to these data the research area is located in the transition zone between the Mediterranean and Irano-Turanian floristic regions. However, the influence of the Mediterranean phytogeographic region is greater. When the number of taxa is taken into consideration, the family *Asteraceae* ranks first with 76 species (Tab. 2). This is related mainly to the greater ecological tolerance and effective distribution of seeds of the group. The family *Fabaceae* is the second largest group represented by 65 species. The reason for this is that some species of this family are

Tab. 2. Largest families and species numbers within each family.

	Genera	Species	% Species
<i>Asteraceae</i>	46	76	12.96
<i>Fabaceae</i>	24	65	11.09
<i>Brassicaceae</i>	28	43	7.33
<i>Poaceae</i>	28	41	6.99
<i>Lamiaceae</i>	16	28	4.77
<i>Liliaceae</i>	9	27	4.60
<i>Caryophyllaceae</i>	9	24	4.09
<i>Apiaceae</i>	18	23	3.92
<i>Rosaceae</i>	10	23	3.92
Other Families	126	236	40.27

cultivated in agricultural areas and many wild taxa are widespread in some habitats such as steppe, pastures and forest openings. *Fabaceae* is at the same time the largest family in the Flora of Turkey (DAVIS *et al.*, 1988). The worldwide distribution of these families shows that they have a similar distribution pattern (HEYWOOD, 1978). The *Brassicaceae* family, which is the fourth largest family in the Flora of Turkey, comes third in the area (DAVIS *et al.*, 1988). Some species of this family are cultivated plants; others are troublesome weeds of fields, wastelands, gardens and roadsides.

Tab. 3. Largest genera and species numbers within each genera in the area.

Genus	Number of species	Genus	Number of species
<i>Trifolium</i>	13	<i>Galium</i>	7
<i>Ornithogalum</i>	9	<i>Alyssum</i>	7
<i>Veronica</i>	9	<i>Verbascum</i>	7
<i>Centaurea</i>	8	<i>Ranunculus</i>	7
<i>Silene</i>	8	<i>Astragalus</i>	6
<i>Anthemis</i>	7	<i>Medicago</i>	6

The species belonging to the top ten families constitute about 65% of the total species number. The genera with the largest number of species in the study area are (Tab. 3) *Trifolium* L. (13 species), *Ornithogalum* L. (9 species) and *Veronica* L. (9 species). *Trifolium* has a total of 250–300 species in temperate and subtropical regions of both hemispheres; it is one of the largest genera of flowering plants (ZOHARY & HELLER, 1984; CLEVELAND, 1985; BISBY *et al.*, 1994). Most countries bordering the Mediterranean possess some endemic *Trifolium* species, the greatest numbers being found in Turkey and Bulgaria (PEDERSON *et al.*, 1999). The known number of *Trifolium* species in the whole of Turkey is 104 (ZOHARY, 1970; KESKIN, 2001). It is the largest genus also in the study area, where the rainfall is relatively high and the vegetation is predominantly forest.

The genera *Ornithogalum* and *Veronica* both rank second. The known number of *Ornithogalum* species in Turkey is 43 (DUSEN & DENIZ, 2005). *Ornithogalum* is represented within the seventh genera in the list, because the study area is one of cultivated fields and has various suitable habitats for different *Ornithogalum* species.

Species belonging to the genus *Veronica* are especially well distributed in the scrubby and forest areas in the study area. The species of *Astragalus* L. and *Verbascum* L., both of which are characteristic steppe plants, are not very common in the study area, where steppe habitats are quite limited.

The number of endemic taxa in the study area is 57, and the endemism rate is 9.7%. Thirty-eight of these taxa belong to the Mediterranean phytogeographic element. Furthermore, two of the endemic taxa belong to the Irano-Turanian phytogeographic region. Multiregional endemics number 16. The comparative distribution of species by phytogeographic region and endemism ratios on Mt Aydogdu

Tab. 4. The comparative distribution of species by phytogeographic regions and endemism ratios in the research area and four nearby areas.

Areas	Mediterranean (%)	Irano-Turanian (%)	Euro-Siberian (%)	Endemism Ratios (%)
Aydogdu Mountain	30.7	7.3	4.0	9.7
Babadag (OLUK, 1999)	23.7	5.3	3.6	15.1
Bozdog (BEKAT, 1992)	25.8	9.4	4.1	18.5
Cokelez Dagi (CICEK, 2001)	25.5	7.6	4.5	5.0
Sandras Dagi (OZHATAY, 1981)	27.0	3.2	1.0	11.7

and nearby areas in the region are shown in Tab. 4. The proportion of endemism in the study area is quite low (9.7%), far below the average for Turkey (34.5%) (OZHATAY, 2002). One of the reasons for this is that the region does not exhibit as large a variety of edaphic, climatic and topographic factors as the whole of Turkey does (SECMEN, 1998). Endemic taxa are found in larger proportion in the nearby regions (Akdag, Bozdog, Honaz and Babadag mountains etc.) near Denizli (TUZLACI, 1977; GEMICI, 1986; BEKAT, 1992; OLUK, 1999). The main reason for this is that the edaphic, climatic and topographic properties of these mountains exhibit greater variation between the altitudes ranging from 800 to 2200 meters (TOKTAS, 1970). This is typical of endemic species that are found mostly on high mountains and in places where there are high ecological diversity.

The species which are endangered are listed as follows: 32 (56.1%) of the endemic taxa belong to LR-lc, 9 (15.7%) of the endemic taxa belong to LR-nt, 8 (14.0%) of the endemic taxa belong to LR-cd, 5 (8.7%) of the endemic taxa belong to VU, 3 (5.2%) of the endemic taxa belong to EN. (GIVEN, 1994; EKIM *et al.*, 2000; ANON, 2001). According to threatened categories, *O. strigosissimum* Boiss., *Alyssum caricum* Dudley & Hub.-Mor., *Hesperis pisidica* Huber-Morath. are EN; *Minuartia recurva* (All.) Schinz & Thell. subsp. *carica* McNeill, *Glycyrrhiza asymmetrica* Hub.-Mor., *Crocus baytopiorum* Mathew, *Gladiolus micranthus* Stapf. and *Delphinium cinereum* Boiss. are VU. The populations of endemic plants in the research area have been extensively destroyed by anthropogenic effects; therefore, plants have to survive under unsuitable conditions.

The Mediterranean elements rank first and the Irano-Turanian elements second in the entire study area (Tab. 4). This is because the study area is located in the transition zone between the Mediterranean region and Central Anatolia. Turkish red pine (*Pinus brutia* Ten.) forest and kermes oak (*Quercus coccifera* L.) are the dominant vegetation type in the area. As is known, the Turkish red pine has been used as an indicator plant to determine the borders of the Mediterranean region in Turkey (ZOHARY, 1973). *Quercus coccifera* is a common evergreen shrub occurring in the Mediterranean Basin (e.g., North Africa, Spain, south of France, Greece and Turkey) with a very high resprouting capacity (MALANSON & TRABAUD, 1988; TRABAUD, 1990). However, some parts of the study area where climatic and edaphic conditions suit this species' requirements well are almost free of it. The Euro-Siberian ele-

ments mainly thrive either in wet areas of the steppe or in shady places of the *Quercus* L. scrub. Because of the specific location of the study area, various floristic data which contribute to the Flora of Turkey were represented in the area.

ACKNOWLEDGEMENTS

We gratefully acknowledge financial support from Foundation for the Protection of Nature, Governorship of Denizli, Turkey. We would like to thank Professor Dr. Kani ISIK (Akdeniz University-Turkey) for checking the English manuscript, Ozge TUFAN (Akdeniz University-Turkey) for drawing the map of the study area and the two anonymous referees for their valuable comments on the manuscript.

Received December 2, 2004

REFERENCES

- AKMAN, Y., 1990: İklim ve Biyoiklim. Palme Yay. Ankara.
- ALADAG, C., 1997: Tavas Havzası'nın Jeomorfolojisi. Selcuk Univ. Sos. Bil. Enst. Coğrafya Egitimi Anabilim Dalı, Seçilmiş Jeomorfoloji Konuları, Konya.
- ALTINLI, E., 1954: Denizli Gueyinin Jeolojik İncelenmesi. MTA Raporları. No. 2794, Ankara.
- ANONYMOUS, 1999a: Ortalama ve Ekstrem Degerler. Met. Gen. Mud. Yay. Ankara.
- ANONYMOUS, 1999b: Denizli İli Arazi Varlığı. T. C. Koy Hizmetleri Genel Mudurlugu Yayinlari. Ankara.
- ANONYMOUS, 2000: Denizli İli Toprak Kaynagi Envanter Raporu. Ankara.
- ANONYMOUS, 2001: IUCN Red List Categories: Ver. 3.1. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.
- BEKAT, L., 1992: Denizli-Acipayam Bozdag'in Flora ve Vejetasyonu. Ege Univ. Arastirma Fonu Projesi. Izmir.
- BISBY, F.A., J. BUCKINGHAM & J. B. HARBORNE, 1994: Phytochemical Dictionary of the *Leguminosae*. Chapman and Hall, London.
- BOISSIER, E. P., 1867–1888: Flora Orientalis. Vol I-V and suppl. Reg. Acad. Scient. Genève et Basel.
- BRUMMITT, R. K. & C. E. POWELL, (eds.) 1992: Authors of Plant Names. Royal Botanic Gardens, Kew.
- CICEK, M., 2001: Cokelz Dagi'nin (Denizli) Florasi. Pamukkale Univ. Fen Bil. Enst. Biyoloji Anabilim Dalı, Yuksek Lisans Tezi, Denizli.
- CLEVELAND, R. W., 1985: Reproductive cycle and cytogenetics. In: N. L. TAYLOR (ed.) Clover Science and Technology. ASA, Madison, WI. p. 71–110.
- DAVIS, P. H., 1965–1985: Flora of Turkey and the East Aegean Islands. Vol. I-IX, Edinburgh Univ. Press, Edinburgh.
- DAVIS, P. H., R. R. MILL & K. TAN, 1988: Flora of Turkey and East Aegean Islands. (Suppl.) Vol. X, Edinburgh Univ. Press, Edinburgh.
- DUSEN, O. D. & H. SUMBUL, 2000: *Glycyrrhiza asymmetrica* Hub.-Mor. The Karaca Arboretum Magazine. Vol. V, Part 3, 137–139 pp.
- DUSEN, O. D. & I. G. DENIZ, 2005: *Ornithogalum sumbulianum* (*Hyacinthaceae*), A New Endemic Species from South-West Anatolia. Pak. J. Bot., 36 (4), 33–36.
- EKİM, T., 1990: Bitkiler. In: Türkiye'nin Biyolojik Zenginlikleri, Türkiye Çevre Sorunları Vakfı Yayını, Ankara. p. 69–92.

- EKİM, T., M. KOYUNCU, M. VURAL, H. DUMAN, Z. AYTAC & N. ADIGUZEL, 2000: Türkiye Bitkileri Kırmızı Kitabı (The Red List of Turkish Plants). Türkiye Tabiatını Koruma Derneği ve Yüzüncü Yıl Univ., Ankara.
- GEMİCİ, Y., 1986: Akdag (Afyon-Denizli) ve Çevresinin Flora ve Vegetasyonu. Ege Univ. Fen Bil. Enst. Botanik Anabilim Dalı, Doktora Tezi, İzmir.
- GIVEN, D. R., 1994: Principles and Practice of Plant Conservation. Timber Press, London.
- GÜNER, A., N. ÖZHATAY, T. EKİM, K. H. C. BASER, 2000: Flora of Turkey and East Aegean Islands. Vol. XI. Edinburgh Univ. Press, Edinburgh.
- HEYWOOD, V. H., 1978: Flowering Plants of the World. Oxford University Press, Oxford.
- İLARSLAN, R., 1996: A Revision of the Genus *Delphinium* L. (*Ranunculaceae*) in Turkey. Turk J Bot., **20**, 133–161.
- KESKİN, M., 2001: A Contribution to the Genus *Trifolium* in Turkey. J. Fac. Pharm. Istanbul, **34** (2), 1–8.
- KOCAHARZEN, A., 2000: Guzelpinar Koyu (Denizli) ve Yakın Çevresinin Jeolojisi. Pamukkale Univ. Muh. Fak. Jeoloji Muh. Bol. Lisans Tezi, Denizli.
- LEBLEBİCİ, E., 1990: The Genus *Polygonum* L. in Turkey. Turk J Bot., **14**, 203–214.
- MALANSON, G. P. & L. TRABAUD, 1988: Vigour of post-fire resprouting by *Quercus coccifera* L. J. Ecol. **76**, 351–365.
- OLUK, S., 1999: Babadag'ın (Denizli) Flora ve Vegetasyonu. Ege Univ. Fen Bil. Enst., Botanik Anabilim Dalı, Doktora Tezi, İzmir.
- ÖZCELİK, H., 2000: Studies on protections of endemic and rare plants of lakes region. Bull. of Pure and Appl. Sci. **19** (2), 93–116.
- ÖZHATAY, E., 1981: Sandras Dagi'nin (Muğla) Florası ve Bazı Endemik Türleri Üzerinde Paleontolojik, Sitolojik Araştırmalar. İstanbul Univ. Fen Fak. Doçentlik Tezi, İstanbul.
- ÖZHATAY, N., 2002: Diversity of bulbous monocots in Turkey with special reference. Chromosome numbers. Pure Appl. Chem. **74**, 547–555.
- PEDERSON, G. A., K. H. QUESENBERRY, G. R. SMITH & Y. K. GUTEVA, 1999: Collection of *Trifolium* sp. and other forage legumes in Bulgaria. Gene. Res. & Crop Evol. **46**, 325–330.
- SECMEN, O., Y. GEMİCİ, G. GÖRK, L. BEKAT, E. LEBLEBİCİ, 1986: Tohumlu Bitkiler Sistematigi. Ege Univ. Fen Fak. Yay. No: 116, Bornova, İzmir, p. 27–63.
- SECMEN, O. & E. LEBLEBİCİ, 1996: Türkiye Sulak Alan Bitkileri ve Bitki Ortusu. Ege Univ. Fen Fak. Yay. No: 158, İzmir.
- SECMEN, O., 1998: Türkiye Florası (Ders Notları). Ege Univ. Fen Fak. Yay. No: 120, İzmir.
- TOKTAS, M., 1970: Tavas-Aydıoğdu Çevresinin Fiziki Coğrafyası. Ankara Univ. Dil Tarih Coğrafya Fakültesi, Fiziki Coğrafya ve Jeoloji Kursusu, Lisans Tezi, Ankara.
- TRABAUD, L., 1990: Fire resistance of *Quercus coccifera* L. garrigue. In: GOLDAMMER, J. G. & JENKINS, M. J. (eds), Fire in Ecosystem Dynamics. Mediterranean and northern perspective. SPB Academic Publishing, The Hague. p. 21–32.
- TUTIN, T. G., V. H. HEYWOOD, N. A. BURGESS, D. M. MOORE, D. H. VALENTINE, S. M. WALTERS, & D. A. WEBB, 1964–1980: Flora Europaea. Vol. I–V, Cambridge University Press, Cambridge.
- TUZLACI, E., 1977: Honaz Dagi'nin Bitkileri-II. İstanbul Univ. Ecz. Fak. Mec., **13**, 47–61.
- YALTIKIRIK, F., 1984: Türkiye'nin Meseleri Teshis Kilavuzu. Yenilik Basımevi, İstanbul.
- ZOHARY, M., (ed.) 1966–1986: Flora Palaestina. Vol. I–IV., Academic Press, Jerusalem.
- ZOHARY, M., 1970: *Trifolium* L. In: DAVIS P. H. (ed.) Flora of Turkey and the East Aegean Islands, Vol: III. Edinburgh University Press, Edinburgh. p. 384–448
- ZOHARY, M., 1973: Geobotanical Foundation of the Middle East. Gustav Fischer Verlag, Stuttgart, p. 740.
- ZOHARY, M. & D. HELLER, 1984: Taxonomic part. In: The genus *Trifolium*. The Israel Academy of Sciences and Humanities, Jerusalem. p. 33–587.

APPENDIX-I

A- Sub-areas (localities) in the Study Area, Mt Aydogdu:

No	Description
1	C2, Denizli. The vicinity of Pinarlar village, (I. 850–1200 m, II. 1250–1650 m, III. 1700–2000 m), 11.04.2001, 1–79 (I); 27.05.2001, 541–589 (II); 09.03.2002, 628–634 (I, II); 15.03.2002, 635–657 (II); 04.05.2002, 700–705 (III); 26.05.2002, 806–831 (II, III).
2	C2, Denizli. The vicinity of Tekkekoy village, (800–1200 m), 11.04.2001, 80–104; 28.04.2001, 105–176; 27.05.2001, 413–431; 15.06.2001, 564–609; 04.05.2002, 716–727.
3	C2, Denizli. The vicinity of Tavas town, (900–1250 m), 26.05.2002, 758–805; 20.07.2002, 917–963.
4	C2, Denizli. The vicinity of Aydogdu village, (I. 1100–1500 m, II. 1550–1700 m, III. 1750–2050 m), 27.05.2001, 432–521 (I); 09.03.2002, 635 (II); 17.04.2002, 659–691 (III); 04.05.2002, 706–715 (III); 26.05.2002, 856–878 (I); 20.07.2002, 879–916 (I); 23.08.2002, 964–995 (II); 30.08.2002, 996–1112 (II).
5	C2, Denizli. The vicinity of Kizilca village, (1000–1500 m), 27.05.2001, 522–540.
6	C2, Denizli. The vicinity of Serinhisar town, (1000–1500 m), 19.05.2001, 277–412; 09.03.2002, 619–627; 15.03.2002, 658; 20.04.2002, 692–699;

B- Habitats:

Code	Description
a	Forest understony, forest openings or maquis
b	Slopes and rocky areas (between the rocks or their openings)
c	Damp places or wet lands
d	Agricultural fields, other cultural lands or their vicinities
e	Roadsides
f	Plantation lands
g	Steppes

APPENDIX-II

Floristic List

PTERIDOPHYTA

ADIANTACEAE

Adiantum capillus-veneris L., 6-b; GSE., 621

ASPLEANIACEAE

Ceterach officinarum DC., 1-a; GSE., 639

EQUISETACEAE

Equisetum palustre L., 6-c; GSE., 832

SPERMATOPHYTA

GYMNOSPERMAE

CUPRESSACEAE

Cupressus sempervirens L., 1-b; GSE., 77

Juniperus communis L. subsp. *nana* Syme, 4-b; GSE., 691

J. excelsa Bieb., 2, 4-a; GSE., 220, 274, 950

J. foetidissima Willd., 1, 2, 6-a; GSE., 68, 658, 752

J. oxycedrus L. subsp. *oxycedrus*, 1, 2-a; GSE., 75, 224, 275

EPHEDRACEAE

Ephedra major Host., 1-b; GSE., 69

PINACEAE

Cedrus libani A. Rich, 1, 4-a; GSE., 78, 944, E. Medit.

Pinus brutia Ten., 6-a; GSE., 290, E. Medit.

P. nigra J. F. Arnold subsp. *nigra* var. *caramanica* (Loudon) Rehder, 2-a; GSE., 272

ANGIOSPERMAE

DICOTYLEDONES

ACANTHACEAE

Acanthus hirsutus Boiss., 4-b; GSE., 947, End., LR (lc)

ANACARDIACEAE

Pistacia atlantica Desf., 4-e; GSE., 11

P. terebinthus L. subsp. *palaestina* (Boiss.) Engler, 4-a; GSE., 512, E. Medit.

Rhus coriaria L., 1-a; GSE., 563

APIACEAE (UMBELLIFERAE)

Ammi visnaga (L.) Lam., 1-f; GSE., 573, Medit.

Bifora testiculata (L.) Sprengel ex Schultes, 2-d; GSE., 144, Medit.

Daucus carota L., 4-d; GSE., 974

- Echinophora tenuifolia* L. subsp. *sibthorpiana* (Guss.) Tutin, 3-g; GSE., 802, Ir.-Tur.
Eryngium campestre L. var. *campestre*, 3-g; GSE., 900
E. campestre var. *virens* Link., 4-b; GSE., 489, 954
E. creticum Lam., 3, 6-c; GSE., 619, 901, E. Medit.
Falcaria vulgaris Bernh., 4-b; GSE., 930
Ferulago humilis Boiss., 1-a; GSE., 70, End., E. Medit., LR (lc)
Hippomaranthum cristatum (DC.) Boiss., 3-d; GSE., 759, E. Medit.
Huetia cynapiodes (Guss.) P. W. Ball. subsp. *macrocarpa* (Boiss. & Spruner) P. W. Ball., 1-f; GSE., 37
Lagoecia cuminoides L., 2, 3-e; GSE., 165, 775, Medit.
Laser trilobum (L.) Borkh., 4-a; GSE., 987
Myrrhoides nodosa (L.) Cannon, 1-c; GSE., 553
Scandix australis L. subsp. *grandiflora* (L.) Thell., 2-g; GSE., 167
S. pecten-veneris L., 1, 2-b; GSE., 163
S. stellata Banks & Sol., 4-b; GSE., 720
Smyrniium connatum Boiss. & Kotschy, 5-b; GSE., 540, E. Medit.
Tordylium aegaeum Runem., 2-d; GSE., 596, E. Medit.
Torilis arvensis (Huds) Link subsp. *arvensis*, 2-d; GSE., 732
T. nodosa (L.) Gaertner, 2-d; GSE., 139
Turgenia latifolia (L.) Hoffm., 1-c; GSE., 577
Zosima absinthifolia (Vent.) Link, 3-g; GSE., 914, 915
- APOCYNACEAE**
Nerium oleander L., 6-c; GSE., 315, E. Medit.
- ARALIACEAE**
Hedera helix L., 4-a; GSE., 966
- ASCLEPIADACEAE**
Vincetoxicum canescens (Willd.) Decne subsp. *canescens*, 1-a; GSE., 564
- ASTERACEAE (COMPOSITAE)**
Achillea falcata L., 1-g; GSE., 585, Ir.-Tur.
A. grandifolia Friv., 1-a; GSE., 581
Anthemis auriculata Boiss., 4-d; GSE., 436, E. Medit.
A. austriaca Jacq., 6-g; GSE., 343
A. cretica L. subsp. *anatolica* (Boiss.) Grierson, 2-g; GSE., 426, 612
A. cretica subsp. *tenuiloba* (DC.) Grierson, 4-e; GSE., 504
A. tinctoria L. *tinctoria*, 1-g; GSE., 557
A. tomentosa L. subsp. *tomentosa*, 6-d; GSE., 316, E. Medit.
A. wiedemanniana Fisch. & Mey., 1-b; GSE., 573, End., LR (lc)
Artemisia campestris L., 3-b; GSE., 889
A. scoparia Waldst. & Kit., 6-d; GSE., 344

- Atractylis cancellata* L., 2-d; GSE., 175, Medit.
Bellis perennis L., 3-a; GSE., 102, Euro-Sib.
Bidens tripartita L., 1-c; GSE., 815
Bombycilaena erecta (L.) Smolj., 1-e; GSE., 51
Calendula arvensis L., 1, 2-d; GSE., 28, 36, 260
Carduus acicularis Bertol., 1-b; GSE., 65, Medit.
C. pycnocephalus L. subsp. *albidus* (Bieb.) Kazmi, 6-b; GSE., 369
Carlina corymbosa L., 4-a; GSE., 963, Medit.
C. lanata L., 4-g; GSE., 923, Medit.
Centaurea cadmea Boiss., 3-b; GSE., 761, End., LR (lc)
C. cariensis Boiss. subsp. *maculiceps* (O. Schwarz) Wagenitz, 3-a; GSE., 899
C. depressa Bieb., 4-e; GSE., 475
C. iberica Trev., 1-d; GSE., 558
C. reuterana Boiss. ex Sprengel var. *phrygia* Bornm., 4-b; GSE., 516, End., E. Medit., LR (lc)
C. reuterana var. *reuterana*, 1-b; GSE., 584
C. solstitialis L. subsp. *solstitialis*, 3-c; GSE., 887, 910, E. Medit.
C. thirkei Schultz Bip., 6-b; GSE., 361, E. Medit.
Cephalorrhynchus tuberosus (Stev.) Schchian, 6-a; GSE., 332
Chondrilla juncea L. var. *juncea*, 4-b; GSE., 851, E. Medit.
Chrysanthemum coronarium L., 1, 4, 5-c; GSE., 64, 464, 530, Medit.
C. segetum L., 4-d; GSE., 440, Medit.
Cichorium intybus L., 3-d; GSE., 894, 895
Cirsium arvense (L.) Scop. subsp. *vestitum* (Wimmer & Grab.) Petrak, 3-e; GSE., 902
C. creticum (Lam.) d'Urv subsp. *creticum*, 4-c; GSE., 840
Crepis alpina L., 1, 2-g; GSE., 190, 543
C. foetida L. subsp. *commutata* (Spreng.) Babcock, 1, 4-a; GSE., 56, 339
C. reuterana Boiss. subsp. *reuterana*, 1, 2-a; GSE., 30, 198, E. Medit.
C. sancta (L.) Babcock, 1-b; GSE., 23, 561
Crupina vulgaris Cass., 3-g; GSE., 774
Echinops ritro L., 4-g; GSE., 932
E. viscosus DC. subsp. *viscosus*, 4-b; GSE., 506, E. Medit.
Filago pyramidata L., 1, 4-a; GSE., 532, 552
Geropogon hybridus (L.) Schultz Bip., 4-b; GSE., 854, Medit.
Hedypnois cretica (L.) Dum.-Cours., 2-b; GSE., 252, Medit.
Helichrysum stoechas (L.) Moench. subsp. *barrelieri* (Ten.) Nyman, 2-a; GSE., 200
Jurinea consanguinea DC., 3-g; GSE., 764
J. mollis (L.) Reichb., 2, 4-a; GSE., 177, 450, E. Medit.
Lactuca intricata Boiss., 4-b; GSE., 868, E. Medit.

- Lapsana communis* L. subsp. *pisidica* (Boiss. & Heldr.) Rech. fil., 4-a; GSE., 452
Leontodon oxylepis Boiss. & Heldr. var. *oxylepis*, 4-g; GSE., 451, E. Medit.
Logfia arvensis (L.) Holub, 1-e; GSE., 39, 40
Matricaria chamomilla L. subsp. *recutita* (L.) Grierson, 1, 2-e; GSE., 3, 32, 33, 208
Myselis muralis (L.) Dum., 4-c; GSE., 488, Euro-Sib.
Onopordum boissieri Willk., 6-a; GSE., 412, End., E. Medit, LR (nt)
O. bracteatum Boiss. & Heldr., 4-e; GSE., 933
O. illyricum L., 3-e; GSE., 908
Picris pauciflora Willd., 6-b; GSE., 341, Medit.
Pilosella × *auriculoides* (A. F. Láng) Sell & West, 2-a; GSE., 255
Ptilostemon chamaepeuce (L.) Less., 2-a; GSE., 266, E. Medit.
Rhagadiolus stellatus (L.) Gaertner var. *edulis* (Gaertner) DC., 1-b; GSE., 25
R. stellatus var. *stellatus*, 2-b; GSE., 94
Scariola viminea (L.) F. W. Schmidt, 2-d; GSE., 147
Scolymus hispanicus L., 3-c; GSE., 906, Medit.
Scorzonera cana (C. A. Meyer) Hoffm. var. *cana*, 4-b; GSE., 441
S. elata Boiss., 4-a; GSE., 459
S. eriophora DC., 3-a; GSE., 779, End., LR (lc)
Senecio eriospermus DC. var. *eriospermus*, 4-b; GSE., 922, Ir.-Tur.
Streptorhamphus tuberosus (Jacq.) Grossh., 6-b; GSE., 305
Tanacetum cadmeum (Boiss.) Heywood subsp. *cadmeum*, 1-a; GSE., 831, End., LR (lc)
T. parthenium (L.) Gaertner var. *stellatus*, 2-c, GSE., 82
Taraxacum aleppicum Dahst., 2-b; GSE., 97
T. hellenicum Dahlst., 2-c; GSE., 244, Medit.
Tragopogon longirostris Bisch. ex Schultz Bip. var. *longirostris*, 2-d; GSE., 108
Tussilago farfara L., 1-c; GSE., 48, Euro-Sib.
Urospermum picrioides (L.) F. W. Schmidt, 1-c; GSE., 24, E. Medit.

BORAGINACEAE

- Alkanna areolata* Boiss. subsp. *areolata*, 2-b; GSE., 191b, End., E. Medit., LR (lc)
A. tinctoria (L.) Tausch subsp. *tinctoria*, 1-b; GSE., 638, E. Medit.
A. tubulosa Boiss., 2-b; GSE., 721, End., E. Medit., LR (lc)
Anchusa barrelieri (All.) Vitman var. *orientalis* Gusuleac, 3-a; GSE., 776
Arnebia densiflora (Nordm.) Ledeb., 2-b, GSE., 146, Ir.-Tur.
Asperugo procumbens L., 6-d; GSE., 328, Euro-Sib.
Echium italicum L., 3, 5-c; GSE., 529, 804, Medit.
Lappula barbata (Bieb.) Gürke, 4-g; GSE., 433, Ir.-Tur.
Lithospermum purpureoaceruleum L., 6-a; GSE., 277, 288, Euro-Sib.
Moltkia aurea Boiss., 3-g; GSE., 903, End., E. Medit., LR (lc)
Myosotis cadmea Boiss., 6-a; GSE., 291b, E. Medit.

- M. ramosissima* Rochel ex Schultes subsp. *ramosissima*, 6-a; GSE., 291a
M. refracta Boiss. subsp. *refracta*, 6-b; GSE., 296, 297, Medit.
Onosma albo-roseum Fisch. & Mey. subsp. *albo-roseum* var. *albo-roseum*, 2-b; GSE., 204b, Ir.-Tur.
O. isauricum Boiss. & Heldr., 2-a; GSE., 204a, End., Ir.-Tur., LR (lc)
O. strigosissimum Boiss., 1-b; GSE., 41, End. E. Medit., EN
O. tauricum Pallas ex Willd. var. *brevifolium* DC., 2, 6-b; GSE., 149, End., LR (lc)
Paracaryum lithospermifolium (Lam.) Grande subsp. *cariense* (Boiss.) R. Mill var. *cariense*, 6-a; GSE., 324, 358, E. Medit.
Rochelia cancellata Boiss. & Bal., 6-g; GSE., 300, Ir.-Tur.
R. disperma (L. fil.) C. Koch. var. *disperma*, 1-b; GSE., 575
- BRASSICACEAE (CRUCIFERAE)**
- Aethionema arabicum* (L.) Andrz. ex DC., 2-d; GSE., 88
Alyssum caricum Dudley & Hub.-Mor., 1-b; GSE., 544, 545, End., E. Medit., EN
A. dasycarpum Steph. ex Willd., 1-g; GSE., 47, 54
A. huetii Boiss., 2-g; GSE., 196, End., E. Medit., LR (lc)
A. macropodum Boiss. & Bal. var. *macropodum*, 2-d; GSE., 118, End., E. Medit., LR (lc)
A. murale Waldst. & Kit. var. *murale*, 1, 2-b; GSE., 417, 430, 568
A. sibiricum Willd., 1, 4, 5-g; GSE., 53, 517, 528
A. umbellatum Desv., 2-d; GSE., 106, E. Medit.
Arabis nova Vill., 2-a; GSE., 243, 268
Aubrieta canescens (Boiss.) Bornm. subsp. *canescens*, 2-b; GSE., 227, End., LR (lc)
A. deltoidea (L.) DC., 2, 6-b; GSE., 186, 699
Calepina irregularis (Asso) Thellung, 2-e; GSE., 178
Camelina microcarpa Andrz., 4-d; GSE., 514
Capsella bursa-pastoris (L.) Medik., 1-c, 2-d; GSE., 44, 226, 309
Cardaria draba (L.) Desv. subsp. *chalapensis* (L.) O. E. Schulz., 2-d; GSE., 145, 606
C. draba subsp. *draba*, 1-d; GSE., 644
Conringia perfoliata (C. A. Mey.) Busch, 1, 6-c; GSE., 58, 317
C. planisiliqua Fisch. & Mey., 6-b; GSE., 313, Ir.-Tur.
Descurainia sophia (L.) Webb. ex Prantl., 2-c; GSE., 126, 127, 142
Diplotaxis tenuifolia (L.) DC., 2-e; GSE., 110, 124
Draba muralis L., 2-a; GSE., 253
Erophila verna (L.) Chevall. subsp. *macrocarpa* (Boiss. & Heldr.) Walters, 2-a; GSE., 269
Erysimum repandum L., 2-b; GSE., 117, 133
Hesperis pendula DC., 6-d; GSE., 308
H. pisidica Huber-Morath., 4-b; GSE., 435, End., EN
Isatis pinnatiloba Davis, 2-a; GSE., 597, End., E. Medit., LR (cd)

- Lepidium campestre* (L.) R. Br., 2-c; GSE., 228
Malcomia africana (L.) R. Br., 2-e, GSE., 150
Maresia nana (DC.) Batt., 2-e; GSE., 262
Matthiola longipetala (Vent.) DC. subsp. *longipetala*, 2-a; GSE., 254, Ir.-Tur.
Raphanus raphanistrum L., 2-d; GSE., 90, 607
Rapistrum rugosum (L.) All., 2-d; GSE., 603
Rorippa sylvestre (L.) Bess., 4-c; GSE., 442, 479
Sinapis alba L., 2-c; GSE., 737
S. arvensis L., 1, 4-e; GSE., 10, 101, 448
Sisymbrium altissimum L., 1, 2-d; GSE., 156, 211, 569
S. loeselii L., 1-e; GSE., 21b
S. officinale (L.) Scop., 2-e; GSE., 193
S. orientale L., 1, 2, 6-c; GSE., 9a, 60, 180, 311
S. septulatum DC., 1-e; GSE., 9b
Teesdalia coronopifolia (Berg.) Thellung, 4-c; GSE., 502, E. Medit.
Thlaspi perfoliatum L., 1, 2-c; GSE., 31, 95, 135
Turritis laxa (Sibth. & Sm.) Hayek, 1-b; GSE., 21

CAMPANULACEAE

- Campanula erinus* L., 1-b; GSE., 808, Medit.
C. lyrata Lam. subsp. *lyrata*, 11, 2, 6-a; GSE., 373, 429, 810, End., LR (lc)

CAPPARACEAE

- Capparis ovata* Desf. var. *herbacea* (Willd.) Zoh., 6-d; GSE., 392
C. spinosa L. var. *spinosa*, 4-d; GSE., 1004

CAPRIFOLIACEAE

- Lonicera etrusca* Santi var. *etrusca*, 4-e; GSE., 977, Medit.

CARYOPHYLLACEAE

- Arenaria deflexa* Dec. subsp. *microsepala* McNeill, 6-b; GSE., 338, End., E. Medit., LR (nt)
A. sepyllifolia L., 4-d; GSE., 973
A. rotundifolia Bieb. subsp. *rotundifolia*, 4-b; GSE., 983
Cerastium gracile Duf., 2-b; GSE., 416
Dianthus anatolicus Boiss., 1-b; GSE., 827, End., LR (lc)
D. calocephalus Boiss., 4-g; GSE., 490
D. elegans d'Urv. var. *actinopetalus* (Fenzl) Reeve, 4-b; GSE., 938
D. zonatus Fenzl var. *zonatus*, 2, 3-b; GSE., 413, 762
Gypsophila perfoliata L., 4-d; GSE., 968, Ir.-Tur.
G. pilosa Hudson, 4-e; GSE., 995, Ir.-Tur.
Holosteum umbellatum L. var. *umbellatum*, 4, 6-f; GSE., 298, 471
Minuartia juniperina (L.) Maire & Petitm., 4-b; GSE., 984

- M. mediterranea* (Ledeb.) K. Maly, 4-c; GSE., 877, *Medit.*
M. recurva (All.) Schinz & Thell. subsp. *carica* McNeill, 2-b; GSE., 590, *End.*, VU
Saponaria pumilio Boiss., 4-b; GSE., 454
Silene behen L., 4-d; GSE., 920
S. dichotoma Ehrh. subsp. *dichotoma*, 4-g; GSE., 437, 482
S. cariensis Boiss., 1-b; GSE., 583, *End.*, *E. Medit.*, LR (cd)
S. gigantea L. var. *incana* (Griseb.) Chowdh., 4-b; GSE., 850, *E. Medit.*
S. heldreichii Boiss., 1-b; GSE., 576, *E. Medit.*
S. lydia Boiss., 4-a; GSE., 438, *E. Medit.*
S. subconica Friv., 3-g, 4-e; GSE., 499, 758
S. supina Bieb. subsp. *prusinosa* (Boiss.) Chowdh., 4-d; GSE., 876
Velezia rigida L., 1-f; GSE., 541, *Medit.*

CHENOPODIACEAE

- Chenopodium album* L. subsp. *album* var. *album*, 4-c; GSE., 445
C. foliosum (Moench) Aschers, 2-g; GSE., 609
C. vulvaria L., 6-c; GSE., 306
Salsola ruthenica Iljin, 4-c; GSE., 878

CISTACEAE

- Cistus creticus* L., 2, 6-a; GSE., 295, 424, *Medit.*
C. laurifolius L., 2-a; GSE., 427, *Medit.*
Fumana aciphylla Boiss., 4-g; GSE., 1006, *Ir.-Tur.*
F. procumbens (Dun.) Gren. & Godr., 4-g; GSE., 1005

CLUBIACEAE (GUTTIFERAE)

- Hypericum perforatum* L., 3-a; GSE., 882
H. triquetrifolium Turra, 3-c; GSE., 891

CONVOLVULACEAE

- Calystegia sepium* (L.) R. Br. subsp. *sepium*, 6-c; GSE., 387
Convolvulus arvensis L., 4, 6-g; GSE., 391, 463
C. cantabrica L., 6-a; GSE., 380
C. persicus L., 4-c; GSE., 511
C. siculus L. subsp. *siculus*, 3-b; GSE., 787, *Medit.*

CRASSULACEAE

- Sedum amplexicaule* DC., 1, 4-a; GSE., 515, 565
S. pallidum Bieb. var. *pallidum*, 4-b; GSE., 965
Rosularia libatonica (Lab.) Muirhead, 4-b; GSE., 981

CUCURBITACEAE

- Ecballium elaterium* (L.) A. Rich, 2-e; GSE., 593, *Medit.*

DATISCAEAE

- Datisca cannabina* L., 4-c; GSE., 518, 1000

DIPSACEAE

Knautia integrifolia (L.) Bert. var. *bidens* (Sm.) Borbás, 1, 4-b; GSE., 567, 978, E. Medit.

Scabiosa argentea L., 4-c; GSE., 937, 940

S. polykratis Rech. fil., 3-b; GSE., 913, End., E. Medit., LR (cd)

S. sicula L., 3-d; GSE., 916, Medit.

Tremastelma palaestinum (L.) Janchen, 3-e; GSE., 885, E. Medit.

ELAEAGNACEAE

Elaeagnus angustifolia L., 6-c; GSE., 381

EUPHORBIACEAE

Euphorbia herniariifolia Willd. var. *glaberrima* Hal., 2-b; GSE., 206, 273

E. falcata L. subsp. *macrostegia* (Bornm.) O. Schwarz, 2-a, GSE. 104, End. E. Medit., LR (lc)

E. stricta L., 1-d; GSE., 15, Euro-Sib.

E. terracina L., 2-e; GSE., 608, Medit.

FABACEAE (LEGUMINOSAE)

Astragalus asterias Stev ex Ledeb., 4-d, g; GSE., 508

A. hamosus L., 2-d, e; GSE., 91

A. oxytropifolius Boiss., 6-a; GSE., 366

A. pelliger Fenzl., 4-g; GSE., 969, End., LR (lc)

A. prusianus Boiss., 4-a; GSE., 985, E. Medit.

A. stella Gouan, 4-f; GSE., 509, Medit.

Coronilla emerus L. subsp. *emeroides* (Boiss. & Sprun.) Uhrova, 1-a; GSE., 71

Ebenus barbiger Boiss., 4-b; GSE., 439, End., E. Medit., LR (cd)

Genista acanthoclada DC., 1-a, b; GSE., 59, E. Medit.

G. lydia Boiss. var. *lydia*, 4-a; GSE., 496

Glycyrrhiza asymmetrica Hub.-Mor., 4-a; GSE., 959, End., E. Medit., VU

Gonocytisus angulatus (L.) Spach., 1-f; GSE., 586, E. Medit.

Hedysarum varium Willd., 1- 6-g; GSE., 401, 549, Ir.-Tur.

Hippocrepis unisiliqua L. subsp. *unisiliqua*, 2-a, GSE., 92

Lathyrus aphaca L. var. *pseudoaphaca* (Boiss.) Davis, 6-a; GSE., 376

L. digitatus (Bieb.) Fiori & Paol., 2-a; GSE., 225,234, E. Medit.

L. laxiflorus (Desf.) O. Kuntze subsp. *laxiflorus*, 6-a; GSE., 294

Lens orientalis (Boiss.) Hand.-Mazz., 2-a; GSE., 140

Lotononis genistoides (Fenzl) Benth., 4, 6-a; GSE., 284, 964, Ir.-Tur.

Lotus aegaeus (Gris.) Boiss., 1-f; GSE., 837, Ir.-Tur.

L. corniculatus L. var. *corniculatus*, 4-b; GSE., 980

Medicago lupulina L., 1-c, d, e; GSE., 551, 728, 858

M. coronata (L.) Bart., 4-a; GSE., 884

M. orbicularis (L.) Bart., 4-d, f; GSE., 961

- M. polymorpha* L. var. *vulgaris* (Benth.) Shinnars, 3-c; GSE., 892
M. radiata L., 4, 6-g; GSE., 406, 962, Ir.-Tur.
M. turbinata (L.) All. var. *chiotica* Urb., 2-c; GSE., 414
Melilotus alba Desr., 3-f; GSE., 883, 893
M. indica (L.) All., 1-c; GSE., 555
M. italica (L.) Lam., 3-c; GSE., 879, Medit.
M. neapolitana Ten, 4-c; GSE., 507
M. officinalis (L.) Desr., 4-d; GSE., 928
Onobrychis caput-galli (L.) Lam, 6-e; GSE., 342, Medit.
O. gracilis Besser, 4-c; GSE., 1003
Ononis adenotricha Boiss. var. *adenotricha*, 4-a; GSE., 976, E. Medit.
O. viscosa L. subsp. *breviflora* (DC.) Nyman, 1-f; GSE., 587
Ornithopus compressus L., 1-e; GSE., 546, 559, Medit.
Pisum fulvum Sibth. & Sm., 1-b; GSE., 560, E. Medit.
P. sativum L. subsp. *elatius* (Bieb.) Aschers & Graebn. var. *elatius*, 1, 2-a; GSE., 212, 554, Medit.
Prosopis farcta (Banks & Sol.) Macbride, 2-c; GSE., 222
Robinia pseudoacacia L., 2-d; GSE., 755
Spartium junceum L., 4, 6-e; GSE., 378, 473, Medit.
Trifolium arvense L. var. *arvense*, 6-c; GSE., 363
T. boissieri Guss. ex Boiss., 2, 4-e; GSE., 137, 485, E. Medit.
T. campestre Schreb., 2-c, d; GSE., 115
T. glanduliferum Boiss. var. *glanduliferum*, 1, 2-a; GSE., 138, 580, E. Medit.
T. lucanicum Gasp., 4-b; GSE., 993, Medit.
T. mesoginatum Boiss., 4-b; GSE., 480, E. Medit.
T. physodes Stev. var. *physodes*, 6-a; GSE., 411, Medit.
T. pratense L. var. *pratense*, 4-e; GSE., 476
T. resupinatum L. var. *resupinatum*, 6-d; GSE., 359
T. scabrum L., 2-a; GSE., 418
T. spumosum L., 2-c; GSE., 600, Medit.
T. stellatum L. *stellatum*, 6-e; GSE., 330
T. tomentosum L., 1-a; GSE., 579
Trigonella capitata Boiss., 6-d; GSE., 319, Ir.-Tur.
T. coerulescens (Bieb.) Hal, 2-b; GSE., 161, Ir.-Tur.
T. strangulata Boiss., 4-b; GSE., 992, Ir.-Tur.
T. velutina Boiss., 4-b, g; GSE., 991, Ir.-Tur.
Vicia anatolica Turrill, 3-g; GSE., 896, Ir.-Tur.
V. cassia Boiss., 2-a; GSE., 136, E. Medit.
V. cracca L. subsp. *stenophylla* Vel., 1-d; GSE., 26

V. hirsuta (L.) S. F. Gray, 6-a; GSE., 408

V. sativa L. subsp. *sativa*, 2-c; GSE., 188, Cos.

V. villosa Roth. subsp. *eriocarpa* (Hauskn.) P. W. Ball, 1-c; GSE., 582

FAGACEAE

Quercus cerris L. var. *cerris*, 1-a; GSE., 49

Q. coccifera L., 1, 2-a; GSE., 72, 76, 223, E. Medit.

Q. ithaburensis Decne subsp. *macrolepis* (Kotschy) Hedge & Yalt., 2-a; GSE., 419, E. Medit.

Q. pubescens Willd., 1-g; GSE., 52

GENTIANACEAE

Centaurium pulchellum (Swartz) Druce, 6-b; GSE., 375

C. tenuifolium (Hoffmans. & Link) Fritsch. subsp. *tenuifolium*, 1-a; GSE., 542

GERANIACEAE

Erodium ciconium (L.) L' Hérit., 1, 2-a; GSE., 112, 114, 637

E. gruinum (L.) L' Hérit., 2-b; GSE., 179, E. Medit.

E. leucanthum Diagn., 6-b; GSE., 333, End., E. Medit., LR (nt)

E. malacoides (L.) L' Hérit., 1-b; GSE., 27, Medit.

E. moschatum (L.) L' Hérit., 1, 2-c; GSE., 7, 105, Medit.

Geranium cinereum Cav. subsp. *subcaulescens* (L' Hérit. ex DC.) Hayek var. *subcaulescens*, 6-b; GSE., 400

G. hoefftianum C. A. Meyer, 1-d; GSE., 38

G. macrostylum Boiss., 2-a; GSE., 235, E. Medit.

G. tuberosum L. subsp. *tuberosum*, 2-b; GSE., 80, 187, 250

GLOBULARIACEAE

Globularia trichosantha Fisch. & Mey., 6-g; GSE., 386

ILLECEBRACEAE

Herniaria hirsuta L., 2-b; GSE., 591

H. incana Lam., 4-b; GSE., 990

Paronychia chionaea Boiss., 4-b; GSE., 982

JUGLANDACEAE

Juglans regia L., 5-d; GSE., 535

LAMIACEAE (LABIATAE)

Ajuga reptans L. subsp. *bombicina* Boiss., 2-b; GSE., 264, End., E. Medit., LR (nt)

A. chamaepitys (L.) Schreber subsp. *chia* (Schreber) Arcangeli var. *chia*, 2-b; GSE., 201

A. chamaepitys subsp. *mesoginata* (Boiss.) Bornm., 2-b; GSE., 103, E. Medit.

Lallemantia iberica (Bieb.) Fisch. & Mey., 6-e; GSE., 310, Ir-Tur.

Lamium amplexicaule L., 2-d, e; GSE., 107, 199, 246, Euro-Sib.

L. ehrenbergii Boiss. & Reuter, 1-b; GSE., 574, E. Medit.

L. moschatum Miller var. *moschatum*, 1, 6-e; GSE., 55, 697

- Lavandula stoechas* L. subsp. *stoechas*, 2-f; GSE., 247, *Medit.*
Marrubium vulgare L., 4-e; GSE., 491
Mentha pulegium L., 4-e; GSE., 498
Micromeria myrtifolia Boiss. & Hohen., 1, 2-b; GSE., 571, *E. Medit.*
Phlomis bourgaei Boiss., 2-a; GSE., 148, *End.*, *E. Medit.*, LR (nt)
P. carica Rech. fil., 6-g; GSE., 282, *End.*, *E. Medit.*, LR (cd)
P. pungens Willd. var. *hirta* Velen, 4-g; GSE., 942
Prunella laciniata (L.) L., 6-a; GSE., 402, *Euro-Sib.*
Salvia bracteata Banks & Sol., 4-b; GSE., 492, 493
S. frigida Boiss., 3-a; GSE., 898, *Ir.-Tur.*
S. fruticosa Miller, 2, 4-a; GSE., 143, 521, *E. Medit.*
S. pinnata L., 2-d; GSE., 415
S. virgata Jacq., 1, 2-d; GSE., 191a, 550, *Ir.-Tur.*
Scutellaria orientalis L. subsp. *pinnatifida* Edmondson, 2, 6-g; GSE., 219, 403
Stachys cretica L. subsp. *mersinaea* (Boiss.) Rech., 4-b; GSE., 495, *End.*, *E. Medit.*, LR (lc)
S. cretica subsp. *smyrnaea* Rech. fil., 6-a; GSE., 286, *End.*, *E. Medit.*, LR (lc)
Teucrium polium L., 2-g; GSE., 592
T. scordium L. subsp. *scordiodies* (Schreber) Maire & Petitmengin, 4-c; GSE., 500, *Euro-Sib.*
Thymbra spicata L. var. *spicata*, 6-b; GSE., 337
Thymus longicaulis C. Presl. subsp. *chaubardii* (Boiss. & Heldr.) Jalas var. *alternatus* Jalas, 6-b; GSE., 370, 425
Ziziphora tenuior L., 6-g; GSE., 331, 405, *Ir.-Tur.*
- LAURACEAE**
Laurus nobilis L., 6-a; GSE., 384, *Medit.*
- LINACEAE**
Linum bienne Miller, 4-a; GSE., 520
L. strictum L. var. *strictum*, 4-b; GSE., 472
L. tenuifolium L., 6-a; GSE., 336
- LORANTHACEAE**
Viscum album L. subsp. *album*, 1-d, 2-e; GSE., 79, 270
- LYTHRACEAE**
Lythrum junceum Banks & Sol., 4-c; GSE., 453, *Medit.*
L. salicaria L., 4-c; GSE., 998, *Euro-Sib.*
- MALVACEAE**
Lavatera punctata Guss. ex Bertol., 1-c; GSE., 648
Malva neglecta Wallr., 6-e; GSE., 292, 368
M. parviflora L., 6-d; GSE., 352

M. sylvestris L., 2, 3-f; GSE., 153, 194, 793

MORACEAE

Ficus carica L. subsp. *carica*, 2-a; GSE., 134

Morus alba L., 1-d; GSE., 813

M. nigra L., 5-d; GSE., 526

MYRTACEAE

Myrtus communis L. subsp. *communis*, 2-b; GSE., 604

OLEACEAE

Jasminum fruticans L., 1, 5, 6-a; GSE., 279, 523, 818, Medit.

Olea europaea L. var. *europaea*, 2-d; GSE., 240, 613, 739, Medit.

ONAGRACEAE

Epilobium angustifolium L., 2-b; GSE., 602

E. hirsutum L., 4-c; GSE., 999

E. parviflorum L., 2-c; GSE., 611

OROBANCHACEAE

Orobanche fluginosa Reuter, 4-d; GSE., 849, Medit.

O. oxyloba (Reuter) G. Beck, 4-d; GSE., 449

PAPAVERACEAE

Corydalis solida (L.) Swartz subsp. *solida*, 2-b, GSE., 96

Fumaria asepalata Boiss., 2, 4, 6-d; GSE., 128, 288, 470, Ir.-Tur.

F. densiflora DC., 2-d; GSE., 249

F. parviflora Lam., 1, 6-d; GSE., 17, 20, 374

F. vaillantii Lois., 2, 4-e; GSE., 141, 192, 843

Glaucium leiocarpum Boiss., 1, 2, 6-b; GSE., 45, 285, 753, Ir.-Tur.

Hypocoum imberbe Sibth. & Sm., 1-d; GSE., 4,5,6

H. procumbens L., 1, 6-c; GSE., 362, 628, Medit.

Papaver argemone L., 2-d,e; GSE., 83, 98

P. dubium L., 2-c; GSE., 172, 176

P. lacerum Popov, 1-b; GSE., 14

P. virchowii Aschers & Sint. ex Boiss., 1-d; GSE., 29, End., LR (cd)

PEDALIACEAE

Sesamum indicum L., 4-d; GSE., 1007

PLANTAGINACEAE

Plantago major L. subsp. *intermedia* (Gilib.) Lange, 4-a; GSE., 1008

P. media L., 4-g; GSE., 951

PLATANACEAE

Platanus orientalis L., 2-d, 3-e; GSE., 181, 610, 853

PLUMBAGINACEAE

Acantholimon acerosum (Willd.) Boiss. var. *acerosum*, 4-g; GSE., 952, Ir.-Tur.

POLYGONACEAE

- Polygonum pulchellum* Lois., 6-d; GSE., 303
P. bellardii All., 4-c; GSE., 494
P. cognatum Meissn., 4-e; GSE., 979
Rumex pulcher L., 1-e; GSE., 556
R. acetocella L., 2, 4-f, 6-c; GSE., 353, 407, 649

PORTULACACEAE

- Portulaca oleracea* L., 4-d; GSE., 972

PRIMULACEAE

- Cyclamen trochopteranum* O. Schwarz, 1-a; GSE., 632, 634, End., E. Medit., LR (lc)

PUNICACEAE

- Punica granatum* L., 1-d; GSE., 73

RANUNCULACEAE

- Adonis aestivalis* L. subsp. *aestivalis*, 2, 4-g; GSE., 210, 314
A. flammea Jacq., 2-g; GSE., 86, 132, 236
A. microcarpa DC., 2-d; GSE., 119, 120
Ceratocephalus falcatus (L.) Pers., 2-b; GSE., 215
Clematis viticella L., 4-d; GSE., 513, 986
Consolida orientalis (Gay) Schröd., 2-d; GSE., 595
C. raveyi (Boiss.) Schröd., 2-g; GSE., 605, End., Ir.-Tur., LR (lc)
C. regalis S. F. Gray subsp. *paniculata* (Host) Soó var. *paniculata*, 4-g; GSE., 958
Delphinium cinereum Boiss., 4-b; GSE., 956, End., VU
D. peregrinum L., 4, 5-b; GSE., 524, 957, E. Medit.
Nigella arvensis L. var. *involutrata* Boiss., 2-d; GSE., 184
Ranunculus argyreus Boiss., 2-a; GSE., 239
R. damascenus Boiss. & Gaill., 2-a; GSE., 238
R. ficaria L. subsp. *ficariiformis* Raub. & Fouc., 2-d; GSE., 209
R. neapolitanus Ten., 2, 6-c; GSE., 158, 304
R. paludosus Poir., 2-d; GSE., 202
R. repens L., 2, 4-c; GSE., 154, 468
R. reuterianus Boiss., 1-a; GSE., 22, 66, End., LR (lc)

RESEDACEAE

- Reseda lutea* L. var. *lutea*, 6-d; GSE., 299

RHAMNACEAE

- Rhamnus oleoides* L. subsp. *graecus* (Boiss. & Reut.) Holmboe, 1-b; GSE., 50, E. Medit.

ROSACEAE

- Crataegus arania* (L.) Bosc ex DC. var. *aranica*, 1-b; GSE., 35
C. monogyna Jacq. subsp. *azarella* (Gris.) Franco, 2-e; GSE., 259
C. monogyna subsp. *monogyna*, 1-f; GSE., 74

- C. orientalis* Pallas ex Bieb. var. *orientalis*, 6-a; GSE., 280
C. pentagyna Waldst. & Kit ex Willd., 6-f; GSE., 350, Euro-Sib.
Cotonaster nummularia Fisch. & Mey., 4, 6-g; GSE., 283, 351, 462
Malus sylvestris Miller, 2-d; GSE., 601
Pyrus amygdaliformis Vill. var. *amygdaliformis*, 1, 2, 6-a; GSE., 43, 267, 347
P. communis L. subsp. *communis*, 1-a; GSE., 547
Potentilla astracanica Jacq., 4-c; GSE., 483, Euro-Sib.
P. calabra Ten., 1-b; GSE., 811, Medit.
P. inclinata Vill., 5, 6-c; GSE., 355, 531
P. recta L., 4-c; GSE., 486
Prunus divaricata Ledeb. subsp. *divaricata*, 2-b; GSE., 170
P. x domestica L., 1-d; GSE., 12
Rosa canina L., 4-b; GSE., 457, 945
R. foetida J. Herrm., 6-e; GSE., 281, Ir.-Tur.
R. sempervirens L., 5-b; GSE., 534, Medit.
Rubus canescens DC. var. *canescens*, 4-a; GSE., 967
R. sanctus Schreber, 4-c; GSE., 997
Sanguisorba minor Scop. subsp. *magnolii* (Spach.) Briq., 6-c; GSE., 289, 367
Sorbus kusnetzovii Zinserl, 2-b; GSE., 99
S. umbellata (Desf.) Fritsch var. *cretica* (Lindl.) Schneider, 4-b; GSE., 925

RUBIACEAE

- Callipeltis cucullaria* (L.) Steven, 2-g; GSE., 197, 237, Ir.-Tur.
Crucianella angustifolia L., 1, 6-a; GSE., 13, 302, Medit.
Cruciata taurica (Willd.) Ehrend., 2-b; GSE., 423
Galium adhaerens Boiss. & Bal., 6-a; GSE., 301, End., E. Medit., LR (lc)
G. heldreichii Hal., 6-b; GSE., 334, E. Medit.
G. mite Boiss. & Hohen., 2, 4-b; GSE., 421, 871, Ir.-Tur.
G. murale (L.) All., 4, 6-e; GSE., 346, 409, Ir.-Tur.
G. peplidifolium Boiss., 1, 6-a; GSE., 19, 348, E. Medit.
G. tricornutum Dandy, 2-c; GSE., 230, E. Medit.
G. verum L. subsp. *verum*, 4-b; GSE., 921, Euro-Sib.
Sherardia arvensis L., 6-a; GSE., 327, Medit.
Rubia tinctorum L., 6-a; GSE., 385

SALICACEAE

- Populus alba* L., 4-c; GSE., 667, Euro-Sib.
P. tremula L., 3-a; GSE., 794, Euro-Sib.
Salix alba L., 1-c; GSE., 833, Euro-Sib.

SANTALACEAE

- Osyris alba* L., 2-b; GSE., 89, Medit.

Thesium bergeri Zucc., 2-b; GSE., 616, E. Medit.

SAXIFRAGACEAE

Saxifraga cymbalaria L. var. *huetiana* (Boiss.) Engler & Irmscher, 4-c; GSE., 487

SCROPHULARIACEAE

Linaria simplex (Willd.) DC., 1-a; GSE., 562, Medit.

Scrophularia cryptophila Boiss. & Heldr., 1-c; GSE., 823, End., E. Medit., LR (lc)

S. rimarum Bornm., 1-b; GSE., 822

Verbascum cariense Hub.-Mor., 2-b; GSE., 431, End., E. Medit., LR (nt)

V. glomeratum Boiss., 3-g; GSE., 780

V. napifolium Boiss., 3-a; GSE., 897, End., E. Medit., LR (cd)

V. orgyale Boiss. & Heldr., 3-a; GSE., 805, End., E. Medit., LR (nt)

V. pinardii Boiss., 4-b; GSE., 927, End., E. Medit., LR (cd)

V. pycnostachyum Boiss. & Heldr., 2-g; GSE., 152, End., E. Medit., LR (lc)

V. splendidum Boiss., 1-d; GSE., 589, End., E. Medit., LR (lc)

Veronica chamaedrys L., 6-a; GSE., 382, Euro-Sib.

V. cymbalaria Bodard., 1-c; GSE., 57, Medit.

V. grisebachii S. M. Walters, 2-f; GSE., 185, 251, E. Medit.

V. multifida L. subsp. *orientalis* (Miller) Elevinsky, 1-a; GSE., 62, Ir.-Tur.

V. pectinata L. var. *pectinata*, 6-b; GSE., 410

V. persica Poir., 6-d; GSE., 329

V. polita Fries, 2, 4-e; GSE., 229, 327, Cos.

V. trichodena Jordan & Fourr., 2-a; GSE., 248, Medit.

V. verna L., 1, 6-a; GSE., 16, 625, Euro-Sib.

SOLANACEAE

Datura stramonium L., 2-d; GSE., 594, Cos.

Hyoscyamus niger L., 2, 6-b; GSE., 121, 122, 617

Nicotiana tabacum L., 6-d; GSE., 318

TAMARICACEAE

Tamarix hampaena Boiss. & Heldr., 4-c; GSE., 447, 519

ULMACEAE

Celtis australis L., 2-d; GSE., 159, Medit.

URTICACEAE

Parietaria judaica L., 4-b; GSE., 949

Urtica dioica L., 2-a; GSE., 155, Euro-Sib.

U. membranacea Poir., 4-c; GSE., 1009

VALERIANACEAE

Valeriana alliarifolia Adams, 4-c; GSE., 989

V. balansae Matthews, 6-b; GSE., 340, E. Medit.

V. carinata L., 6-b; GSE., 321

- V. coronata* (L.) DC., 1, 2-b; GSE., 183, 578
V. echinata (L.) DC., 2-b; GSE., 111, Medit.
V. lasiocarpa (Stev.) Betcke, 6-d; GSE., 320, Ir.-Tur.
V. orientalis (Schlecht.) Boiss. & Bal., 2-a; GSE., 116, E. Medit.

VERBENACEAE

- Vitex agnus-castus* L., 2-a; GSE., 615, Medit.
Verbena officinalis L., 4-c; GSE., 948

VIOLACEAE

- Viola heldreichiana* Boiss., 4-b; GSE., 680, E. Medit.
V. parvula Tineo, 5-b; GSE., 527

VITACEAE

- Vitis sylvestris* Gmelin, 6-d; GSE., 323

ZYGOPHYLLACEAE

- Peganum harmala* L., 6-c; GSE., 322

MONOCOTYLEDONES

ALISMATACEAE

- Alisma lanceolatum* With., 2-c; GSE., 599

ARACEAE

- Arum elongatum* Steven subsp. *detruncatum* (C. A. Meyer ex Schott) H. Riedl, 2-b;
 GSE., 756, 757

CYPERACEAE

- Cyperus fuscus* L., 4-c; GSE., 1011, Euro-Sib.
C. rotundus L., 4-c; GSE., 994

IRIDACEAE

- Crocus baytopiorum* Mathew, 4-b; GSE., 635, End., E. Medit., VU
C. biflorus Miller subsp. *crewei* (Hooker fil.) Mathew, 6-b; GSE., 621, 622, E. Medit.
C. chrysanthus (Herbert) Herbert, 1-b, GSE., 642
C. fleischeri Gay, 18; GSE. 623, 6-a, End., E. Medit., LR (lc)
Gladiolus micranthus Stapf., 30; GSE. 834, 4-a, End., E. Medit., VU

LILIACEAE

- Allium cassium* Boiss., 4-a; GSE., 960, E. Medit.
A. cupani Rafin. subsp. *hirtovaginatatum* (Kunth) Stearn., 5-a; GSE., 525, Medit.
A. scorodoprosom L. subsp. *rotundum* (L.) Stearn, 4-b; GSE., 917, Medit.
Asparagus acutifolius L., 1-a; GSE., 46, 650, Medit.
A. apyllus L. subsp. *orientalis* (Baker) P. H. Davis, 4-b; GSE., 34, E. Medit.
Colchicum burttii Meikle, 4-b; GSE., 663, End., E. Medit., LR (lc)
C. triphyllum G. Kunze, 6-g; GSE., 620, Medit.
Fritillaria carica Rix. subsp. *carica*, 2, 4-b; GSE., 81, 666, End. E. Medit., LR (nt)

- F. pinardii* Boiss., 4-a; GSE., 661, Ir.-Tur.
Gagea peduncularis (J. & C. Presl) Pascher, 4-b; GSE., 684, Medit.
G. villosa (M. Bieb.) Duby subsp. *villosa*, 6-g; GSE., 626, Medit.
Hyacinthella lineata (Steudel) Chouard, 6-a; GSE., 357, End., E. Medit., LR (lc)
Muscari armeniacum Leichtlin ex Baker, 1, 2-a; GSE., 1, 265
M. aucheri (Boiss.) Baker, 2-b; GSE., 100, 618, End., LR (lc)
M. comosum (L.) Miller, 5-c; GSE., 538, Medit.
M. neglectum Guss., 2, 5-a; GSE., 151, 536
M. tenuiflorum Tausch, 2-a; GSE., 113
Ornithogalum alpigenum Stapf., 1-g; GSE., 61, End., E. Medit., LR (nt)
O. montanum Cyr., 1, 4-c; GSE., 469, 806, E. Medit.
O. narbonense L., 2-e; GSE., 85, Medit.
O. nutans L., 2-d, e; GSE., 203, E. Medit.
O. oligophyllum E. D. Clarke, 1, 2-b; GSE., 2, 263, Ir.-Tur.
O. platyphyllum Boiss., 6-c; GSE., 287, Ir.-Tur.
O. pyrenaicum L., 1-f; GSE., 67
O. refractum Kit ex Schlecht, 1-c; GSE., 42
O. umbellatum L., 2-d; GSE., 160, 189
Scilla bifolia L., 4-b; GSE., 671, Medit.

ORCHIDACEAE

- Anacamptis pyramidalis* (L.) L. C. M. Richard, 6-a, GSE., 396
Comperia comperiana (Steven) Aschers. & Graebn., 4-a; GSE., 844, 845, Ir.-Tur.
Orchis mascula (L.) L. subsp. *pinetorum* (Boiss. & Kotschy) E. G. Kamus, 4-a; GSE., 846, E. Medit.
O. purpurea Huds., 4-a; GSE., 848, Euro-Sib.
O. spitzelii Sauter ex W. Koch, 4-a; GSE., 836, Medit.
O. tridentata Scop. var. *chersonensis* Turrill., 4-a; GSE., 432

POACEAE (GRAMINEAE)

- Aegilops geniculata* Roth, 2-g; GSE., 130, Medit.
A. triuncialis L. subsp. *triuncialis*, 4-g; GSE., 460
Agrostis stolonifera L., 4-c; GSE., 860, Euro-Sib.
Alopecurus textilis Boiss., 4-b; GSE., 936, Ir.-Tur.
Arundo donax L., 4-c; GSE., 1001
Avena barbata Pott ex Link subsp. *barbata*, 4-c; GSE., 443, Medit.
A. wiestii Steudel, 4-c; GSE., 478
Briza humilis Bieb., 2-a; GSE., 420
Bromus intermedius Guss., 4-d; GSE., 477
B. japonicus Thunb. subsp. *japonicus*, 6-d; GSE., 345
B. lanceolatus Roth, 4-c; GSE., 444

- B. scoparius* L., 4-c; GSE., 461
B. squarrosus L., 4-c; GSE., 446
B. tectorum L., 6-d; GSE., 349
Calamagrostis pseudophragmites (Haller fil.) Koeler, 3-c; GSE., 881, Euro-Sib.
Cynosurus echinatus L., 2-e; GSE., 422, Medit.
Dactylis glomerata L. subsp. *hispanica* (Roth) Nyman, 4-a; GSE., 458
Echinochloa crus-galli (L.) P. Beauv., 4-c; GSE., 996
Elymus tauri (Boiss. & Bal.) Melderis, 2-b; GSE., 129, Ir.-Tur.
Festuca valesiaca Schleicher ex Gaudin, 4-c; GSE., 873
Gaudiniopsis macra (Bieb.) Eig subsp. *macra*, 4-b; GSE., 484, Ir.-Tur.
Glyceria plicata (Fries) Fries, 4-c; GSE., 456
Holcus annuus Solzm ex C. A. Meyer, 2-a; GSE., 242, Medit.
Hordeum bulbosum L., 6-b; GSE., 335
H. murinum L. subsp. *glaucum* (Steudel) Tzvelev, 6-g; GSE., 293
H. murinum subsp. *leporinum* (Link) Arc. var. *leporinum*, 6-d; GSE., 312
Lolium temulentum L. var. *temulentum*, 5-e; GSE., 533
Melica minuta L., 2-a; GSE., 173, Medit.
Phalaris truncata Guss ex Bertol, 1-d; GSE., 647, Medit.
Phleum montanum C. Koch subsp. *serrulatum* (Boiss.) M. Dogan, 4-b; GSE., 874, E. Medit.
Phragmites australis (Cav.) Trin. ex Steudel, 4-c GSE., 1002, Euro-Sib.
Piptatherum coerulescens (Desf.) P. Beauv., 1-g; GSE., 566
Poa angustifolia L., 4-g; GSE., 455
P. annua L., 4-c; GSE., 481, Cos.
P. bulbosa L., 2, 4-g; GSE., 510, 730, 743
P. trivalis L., 4-d; GSE., 465
Secale cereale L. var. *cereale*, 2-d; GSE., 131
Setaria verticillata (L.) P. Beauv. var. *verticillata*, 2-d; GSE., 109
S. viridis (L.) P. Beauv., 4-d; GSE., 971
Stipa bromoides (L.) Dörfler, 4-a; GSE., 505, Medit.
Trachynia distachya (L.) Link., 2-a; GSE., 123, Medit.

TYPHACEAE

- Typha angustifolia* L., 4-c, GSE., 1012
T. latifolia L., 4-c; GSE., 1010