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THE FLORA OF STEPPE SURROUNDING AKYURT AND KALECİK (ANKARA)*

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ABSTRACT

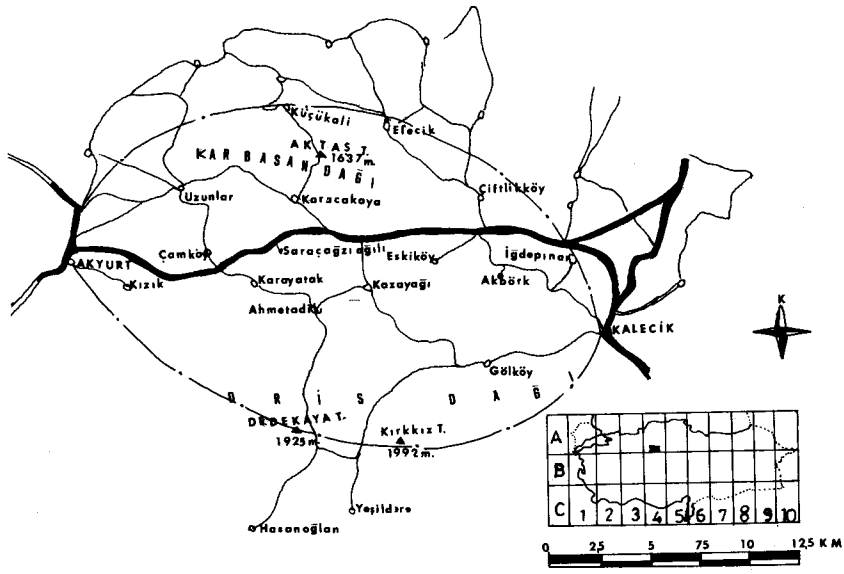
The study area, occurs in Ankara Province. During the period 1992-1994, by evaluating the collected 620 herbarium specimens, 50 families, 169 genera, 326 species, 4 subspecies and 1 varieties were identified. The number of different taxa is 331. Twenty-four of the 331 taxa are new records for the A4 square. The number of endemic plant is 65 (19.6%). Aproximately one third, 79 (23.8 %) of the identified species are Irano-Turanian elements, 21 (6.34 %) are Mediterranean elements and 17 (5.13 %) are Euro-Siberian elements, while the remaning 214 (64.6 %) species are cosmopolitan or species whole phytogeographical region is undetermined.

INTRODUCTION

Turkey was divided in to three floristic region under the light of floristic study, which has been done in 1965 (Davis, 1965). These regions are Europe- Siberian, Irano- Turanian and Mediterranean. Among them, the Irano- Turanian is the largest and distinctive region. Steppe plants are the characteristic of the Irano-Turanian region.

The study was carried out on the flora between Akyurt and Kalecik region that belongs to Ankara. In addition, the area is restricted to Şabanözü from north, Çubuk from north west and, Hasanoğlan and Elmadağ from south in terms of geographical location. According to grid system that is used in these Flora of Turkey, our region belongs to A4 square. It is bordered with B4 square in the south (Map 1.)

* This study is a quotation from the M. Sc. Thesis



Map. 1 Geographical map of the research area

According to Emberger (Akman,1990)'s pluviometric quotient mediterranean climate effects the research area. This result is supported by finding 2. variable (I.K.S.Y.) of east mediterranean precipitation regime is shown, interms of precipitation regime furthermore, according to the Emberger (Akman,1990)'s annual xeriaty index, the area belongs to dry region. In conclusion, we believe that our research helps people who study on the flora of Turkey.

MATERIAL AND METHOD

The research material consist of about 620 plant specimens collected at all times of year for two years. The collected specimens were dried and then, mounted on herbarium sheets. After they had been dried, the specimens were first classified at family level and then classification at the generic and species levels was carried out. The majority of the specimens were idendified with the help of Flora of Turkey (Davis,1965). In cases of uncertainty, Flora Europaea (Heywood,Tutin, 1964-1981), Flora Orientalis (Boissier,1882) were used.

The list of plants is set out according to the order ın flora of Turkey. In the appendix of this paper the following details are stated : Family name, species name and, taxon name & author(s),altitude, collection date the name of the collector and its number. In the list of the location of plants given as down. The

phytogeographical region is cited unless the species has a cosmopolitan, multiregional distribution or is of unknown phytogeographical origin.

The findings of this study were examined and then compared with the results of other research carried out in near locations, according to phytogeograph and the ten families and five genera containing the greatest number of species. This research has been compared with the results of research carried out on Karagüney Mountain (Dönmez,1993) and Dumanlı Mountain (Duran,Duman,1996).

Twenty-four plant samples which identified were first time collected from A4 square, and they were presented to the science world in Ot Systematic Botanic Journal (Aydoğdu, Varol 1994).

The plant specimens prepared for herbarium collection have been stored in the Department of Biology, Science and Arts Faculty at the Muğla University.

The location of plants in the research area

1. Side N at the opposite of a military barraks of the slope of a hill on the way to İdris Mountain .
2. The red soils in the area of meadow land on the way of Hasayaz.
3. The red soils in the slopy land on the left side of the road in the region of Karaağaç of Akyurt departure points.
4. The hills of the *Quercus* community area in the above at the of Ağılönü fountain.
5. The jibs rock land the left side of the road around Akbörk village 2 km.
6. The side SE of the rock land on the İdris Mountain.
7. The rock land at the hill of Aktaş.
8. The flat areas in the region where Saraçağzı sheep hold exists.
9. The hills of left side of road on the way from Çankırı to Kalecik.
10. The slopy land on the left side of road on the way Akbörk village.
11. On the way from Kalecik to Akyurt, the slopy land on the left side of road at the distance of 4 km.
12. On the way from Akyurt to Kalecik the left side of road at the distance of 2.5km
13. The hill of Aktaş on the upper side of Karacakaya village.
14. The side N of red soils the left side of road at the distance of 2.5 km. Akyurt departure points.
15. The brown soils in the upper side of Karacakaya village.
16. The right side of road on the way from Kalecik to Gölköy.
17. The right side of road on the way from Çamköy to Uzunlar village.
18. Çiftlik Village locale.
19. The upper side of Küçükali Village.
20. The red soils in the hill at the upper sides of Karacakaya village.
21. The sides SW at the upper side of Uzunlar Village.

22. The brown soils the upper side of Ahmetadil Village.
23. The left sides of the road on the way to Kazayağı village.
24. The Tekahlat hill locale.
25. The red soils in the area of meadow land on the way of Çiftlikköy.
26. Çamköy local, red soils.
27. The brown and red soils the upper side of Gölköy.
28. The brown soils at the hill of Aktaş.
29. The Eskiköy local, brown soils.
30. The Karayatak local, brown soils.

RESULT AND DISCUSSION

This study was carried out with approximately 620 plant specimens collected a period of two years. As a result of the identification of the plant specimens, 50 families, 169 genera, 326 species, 4 subspecies and one varieties were determined. The total number of taxa is 331. Twenty-four of the 331 taxa are new records for the A4 square (Aydoğdu,Varol,1994; Yurdakulol at all. 1987).Of the species collected, 65 are endemic.

The species of the study area, categorized according to phytogeographic region, can be listed as follows: Irano-Turanian elements 79 (23,86 %), Mediterranean elements 21(6.34 %) Euro-Siberian elements 17 (5,13 %) ; the remaining 214 (64,65 %) species are multi-regional or of unknown phytogeographic origin. The result of the studies conducted near our study area and in similar areas, together with the species distribution in the study area are presented inTable 1.

Table 1. Phytogeographic spreading of species and endemism from compared researches.

Researcher and Research area		Varol (1994) Akyurt-Kalecik	Dönmez (1993) Karagüney Mountain	Duran-Duman (1996) Dumanlı Mountain
Phytogeographic region				
Irano - Turanian	%	23,86	24.40	15.20
Mediterranean	%	6,34	8.80	6.60
Euro -Siberian	%	5,13	7.20	13.40
Multi-regional or unknown	%	64,65	57.40	64.70
Endemic	%	19.63	12.3	8.5

As can be seen from Table 1, Irano - Turanian floristic region elements are much more than the other region elements. The whole of our study area is belong to Irano - Turanian region which is support the idea mentioned above. One of the greatest reason for this finding is that, pirecipitation region of the area is East - Mediterranean (I.K.S.Y) and climate type is semiarid cold Mediterranean climate.

The family *Asteraceae* is the largest family in the study area with 44 species. Following *Asteraceae*, the family *Fabaceae* is represented by 35 species; *Lamiaceae* by 31 species; *Boraginaceae* by 20 species; *Poaceae* by 19 species; *Rosaceae* by 17 species; *Apiaceae* by 14 species; *Caryophyllaceae* by 14 species; *Brassicaceae* by 14 species and *Scrophulariaceae* by 12 species.

The ten largest families according to number of species in this study and the studies mentioned above are compared in Table 2.

Table 2. The richest families within the areas being compared

Researches Done	Akyurt-Kalecik (Varol, 1994)	Karagüney Mountain (Dönmez, 1993)	Dumanlı Mountain (Duran-Duman,1996)
Families %			
Asteraceae	12,99	12,90	13,70
Fabaceae	10,57	11,23	9,50
Lamiaceae	9,36	6,32	7,10
Poaceae	5,74	6,74	6,40
Boraginaceae	5,43	1,96	4,90
Rosaceae	5,13	3,51	5,40
Apiaceae	4,22	3,93	4,90
Caryophyllaceae	4,22	5,19	4,20
Brassicaceae	4,22	5,75	4,90
Scrophulariaceae	3,92	2,38	5,60

Asteraceae, Fabaceae, Lamiaceae and *Poaceae* families takes first four places it is seen that in the table 2. Because these families are the most wealthy families of our country, results are accepted as normal when compared to the research that are done at close environment, the order of families that come after first four families approximately the same except these two differences. These small differences are caused by different habitat and vegetation characteristics of the research fields.

The genera containing the highest number of species in this and the other 2 studies are listed in Table 3.

Table 3. The richest genera in researches compared

Researches Done	Akyurt-Kalecik (Varol, 1994)	Karagüney Mountain (Dönmez, 1993)	Dumanlı Mountain (Duran-Duman,1996)
Salvia	10	11	5
Centaurea	8	7	7
Astragalus	8	22	3
Trifolium	6	7	11
Euphorbia	6	5	3

In our study field, first three orders are shared by *Salvia, Centaurea* and *Astragalus*. Because of our study fields showing phytogeogrophich features of the Irano-Turanian, and almost the whole areas being covered with step formations support that the categories indicated above have a great amount. As it is indicated above,a large part of the study area is formed by step formations, as shrub formations are *Juniperus* taxa that show a poor distribution. A large part of that area our study area is used for agricultural purposes. Due to over grazing and opening agriculturals areas the primer structure of natural environment has been disconserted and ıt has turned to it's view today.

Acknowledgement

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APPENDIX
THE FLORISTIC LIST
Divisio: SPERMATOPHYTA
Subdivisio: GYMNOSPERMAE

1. *CUPRESSACEAE*

1. *J. oxycedrus* L. subsp. *oxycedrus* ; Station number 1,1400 m., 11 VI 1994, *Varol 379.*

2. *J. excelsa* Bieb. ; Station number 1,1400 m. , 23 VI 1994, *Varol 210.*

Subdivisio: ANGIOSPERMAE
Classis: DICOTYLEDONES

2. *RANUNCULACEAE*

3. *Nigella segetalis* Bieb.; Station number 2, 1150 m., 05 VII 1992,*Varol 1.*

4. *N. arvensis* L. var. *glauca* Boiss. Station number 3, 1100 m., 05 VII 1992, *Varol 2.*

5. *N. nigellastrum* (L.) Willk. ; Sta. no. 3, 1100 m., 05 VII 1992, *Varol 3.*

6. *Consolida aconiti* (L.) Lindley ; Sta. no. 5, 1040 m., 05 VII 1992, *Varol 4,* Endemic.

7. *C. orientalis* (Gay) Schröd.; Sta. no. 25, 1150 m., 05 VII 1992, *Varol 381.*

8. *C. regalis* S. F. Gray subsp. *paniculata* (Host) Soo var. *paniculata* ; Sta. no.3, 1100 m., 05 VII 1992,*Varol 382.*

9. *C. raveyi* (Boiss.) Schröd.; Sta. no.5,1040 m.,05 VII 1992,*Varol 6,* Endemic

10. *C. hellospontica* (Boiss.) Chater; Sta. no.3, 1100 m., 05 VII 1992,*Varol 5.*

11. *Adonis aestivalis* L. subsp. *aestivalis;* Sta. no. 5,1040 m., 05 VII 1992,*Varol 380.*

12. *A. flammea* Jacq.; Sta. no.5, 1040 m.,05 VII 1992,*Varol 8.*

13. *Ranunculus reuterianus* Boiss. ; Sta. no.6, 1600-1850 m., 11 V1994,*Varol 383,* Endemic.

14. *R. illyricus* L. subsp. *illlyricus* ; Sta. no.6, 1600-1850 m. 11 V 1994,*Varol 203.*

15. *Ceratocephalus falcatus* (L.) Pers. ; Sta. no. 7, 1600 m., 24 III 1994,*Varol 199.*

3. *BERBERIDACEAE*

16. *Berberis crataegina* DC.; Sta. no. 5, 1040 m.,05 VII 1992,*Varol 9.*

4. *PAPAVERACEAE*

17. *Glaucium corniculatum* (L.) Rud. subsp. *refractum* (Nab.) Cullen ; Sta. no. 5, 1040 m., 05 VII 1992, *Varol 10.* Ir-Tur elements.

18. G. leiocarpum Boiss. ; Sta. no. 8,1200-1300 m., 23 VI 1994, *Varol 250.*

19. G. flavum Crantz ; Sta. no. 6, 1600-1850 m., 23 VI 1994, *Varol 388.*

20. *Papaver pilosum* Sibth. & Sm. ; Sta. no. 6, 1600-1850 m., 23 VI 1994, *Varol 390,* Endemic.

21. *P. apokrinomenon* Fedde. ; Sta. no. 8, 1200-1300m., 23 VI 1994,*Varol 252,* Endemic.

22. *P. lacerum* Popov ; Sta. no. 4, 23 VI 1994,*Varol 288.*

23. *P. commutatum* Fisch. & Mey.; Sta. no. 3, 1100 m., 05 VII 1994, *Varol 11.*

24. *Fumaria cilicica* Hausskn.; Sta. no. 6, 1600-1850 m., 3 VI 1994,*Varol 84.*

25. F. vaillantii Lois.; Sta. no. 5, 1040 m., 05 VII 1992, *Varol 12.*

26. *F. parviflora* Lam.; Sta. no. 6, 1600-1850 m.,23 VI 1994,*Varol 389*

27. *Brassica elongata* Ehrh.; Sta. no. 5, 1040 m., 05 VII 1992,*Varol 13.*

28. *Cardaria draba* (L.) Desv. subsp. *chalepensis* (L.) O. E. Schulz ; Sta. no.5, 1040m., 05 VII 1992 ,*Varol 14.*

29. *Capsella bursa-pastoris* (L.) Medik. ; Sta. no.3, 1100 m., 05 VII 1992,*Varol 15.*

30. *Alyssum xanthocarpum* Boiss. ; Sta. no. 6, 1600-1850 m., 11 V 1994,*Varol 369.*

31. *A. pateri* Nyar. subsp. *pateri;* Sta. no. 8,1200-1300 m. 23 VI 1994, *Varol 253,* Endemic,Ir-Tur elements.

32. *A. sibiricum* Willd. ; Sta. no. 3, 1100 m., 05 VII 1992,*Varol 16.*

33. *A. murale* Waldst. & Kit. var. *murale;* Sta. no.6, 1600-1850 m., 23 VI 1994, *Varol 385.*

34. *Draba bruniifolia* Stev. subsp. *olympica* (Sibth. ex DC.) Coode & Cullen ; Sta. no. 6, 1600-1850 m., 23 VI 1994, *Varol 212.*

35. *D. hispida* Willd. ; Sta. no.6, 1600-1850 m., 23 VI 1994, *Varol 38*

36. *Aubrieta canescens* (Boiss.) Bornm. susp. *macrostyla* Cullen & Huber-Morath Sta. no.6, 1600-1850 m., 11 V 1994,*Varol 213.*

37. *Matthiola longipetala* (Vent.) DC. subsp. *longipetala* ; Sta. no.5,1040 m., 05 VII 1992,*Varol 18.*

38. *Hesperis bicuspidata* (Willd) Poiret ; Sta.no.6,1600,1850m.,11V1994,*Varol 214*

39. *Erysimum crassipes* Fisch. & Mey. ; Sta. no. 3, 1100m., 05 VII 1992,*Varol 19.*

40. *Descurainia sophia* (L.) Webb et Prantl; Sta. no. 5, 1040 m., 05 VII 1992, *Varol 20.*

6. *RESEDACEAE*

41. *Reseda lutea* L. ; Sta. no. 5, 1040 m., 05 VII 1992,*Varol 21.*

7. *CISTACEAE*

42. *Helianthemum germanicopolitanum* Bornm.; Sta. no.6, 1600-1850 m., 23 VI 1994, *Varol 254,* Endemic.

8. *VIOLACEAE*

43. *Viola odorata* L. Sta. no.,6, 1600 m.,11 V 1994,*Varol 386.*

44. V. occulta Lehm. ; Sta. no.6, 1600 m., 11 V 1994,*Varol 227.*

45. *Arenaria ledebouriana* Fenzl var *ledebouriana*; Sta. no.6, 1600 m.,23 VI 1994,*Varol 391,* Endemic.

46. *A. serpyllifolia* L.; Sta. no.5, 1040 m., 05 VII 1992,*Varol 27.*

47. *Minuartia juniperina* (L.) Maire & Petitm.; Sta. no.6,1600-1850 m., 21 V 1994, *Varol 232.*

48. M. multinervis (Boiss.) Bornm.; Sta. no.6,1600-1850 m., 21 V 1994, *Varol 394.*

49. M. *anatolica* (Boiss.) Woron. var. *lanuginosa;* Sta. no.3,1100m., 05 VII 1992, *Varol 23,* Endemic,Ir-Tur. elements.

50. *Dianthus micranthus* Boiss. & Heldr.; Sta. no.8,1200-1300m., 23 VI 1994, *Varol 255.*

51. *D. zederbaueri* Vierh.; Sta. no. 3,1100m., 05 VII 1992, *Varol 24,* Endemic, Ir-Tur elements.

52. *D. Balensae* Boiss.; Sta. no.5,1040m., 05 VII 1992, *Varol 25*, Endemic.

53. *D. lydus* Boiss.; Sta. no.5,1040 m., 05 VII 1992, *Varol 396,* Endemic.

54. *Saponaria viscosa* C. A. Meyer; Sta. no.5,1040 m., 05 VII 1992, *Varol 26,* Ir-Tur elements.

55. *S. olympica* Boiss.; Sta. no.6,1600 m., 23 VI 199, *Varol 397,* Endemic.

56. *S. sangaria* Coode & Cullen ; Sta. no.6,23 VI 1994, *Varol 256,* Endemic.

57. *S. vulgaris* (Moench) Garcke var *vulgaris*; Sta.no.25,1150 m., 05 VII 1992 , *Varol 27.*

58. *S. rhynchocarpa* Boiss.; Sta. no.6,1600-1850 m., 11 V 1994, *Varol 231.*

10. *POLYGONACEAE*

59. *R. acetosella* L.; Sta. no.6, 23 VI 1994, *Varol 398.*

60. *R. scutatus* L.; Sta. no.4, 1300 m., 23 VI 1994, *Varol 257.*

61. *R. crispus* L.; Sta. no. 3, 1100m., 05 VII 1992, *Varol 29.*

62. *R. pulcher* L.; Sta. no. 5, 1040 m., 05 VII 1992, *Varol 30.*

11. *HYPERICACEAE (GUTTIFERAE)*

63. H. linarioides Bosse ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 260.*

64. *H.montbretii* Spach ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 400.*

65. *H. perforatum* L. ; Sta. no.3, 1100 m., 05 VII 1992, *Varol 31.*

12. *MALVACEAE*

66. *A. pallida* Waldst. & Kit.; Sta. no.5, 1040 m., 05 VII 1992, *Varol 33.*

13. *LINACEAE*

67. *L. hirsutum* L. subsp. *anatolica* (Boiss.) Hayek var. *anatolica* ; Sta. no.5,1040 m., 05 VII 1992, *Varol 34,* Endemic, Ir-Tur elements.

68. L. usitatissimum L. ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 402.*

14. *GERANIACEAE*

69. *G. tuberosum* L. subsp. *tuberosum* ; Sta. no.6,1600-1850 m., 11 V 1994, *Varol 220.*

70. *G.macrostylum* Boiss. ; Sta. no.7, 1600 m., 24 III 1994, *Varol 392,* East Mediterranean elements.

71. *G. pyrenaicum* Burm. ; Sta. no.7, 1600 m. 24 III 1994, *Varol 395.*

72. *E. cicutarium* (L.) L' Herit. subsp. *cicutarium*;Sta.no.3,100 m.,05 VII 1992,*Varol 35.*

15. *ZYGOPHYLLACEAE*

73. *Peganum harmala* L. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 36.*

16. *RHAMNACEAE*

74. *Paliurus spina - christi* Miller ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 37.*

17. *FABACEAE (LEGUMINOSAE)*

75. *Genista sessilifolia* DC. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 38,* Ir-Tur elements.

76. *Colutea cilicica* Boiss. & Bal. ; Sta. no.7, 1600 m., 11 V 1994, *Varol 239.*

77. *Astragalus densifolius* Lam. subsp. *densifolius ;* Sta. no.7, 1400-1500 m., 24 III 1994, *Varol 242,*Endemic, Ir-Tur. elements.

78. *A. tokatensis* Fischer ; Sta. no.3, 1100m., 05 VII 1992, *Varol 39,* Endemic, Ir-Tur. elements.

79. *A. plumosus* Willd. var *plumosus* ; Sta. no.3, 1100m., 05 VII 1992, *Varol 40,* Endemic, Ir-Tur. elements.

80. *A. wiedemannianus* Fischer ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 393,* Endemic, Ir-Tur elements.

81. *A. karamasicus* Boiss. & Bal. ; Sta. no.7, 1400-1500 m.,11 V 1994, *Varol 243,* Endemic, Ir-Tur. elements.

82. *A. hirsutus* Vahl ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 399,* Endemic.

83. *A. angustifolius* Lam. subsp. *angustifolius* var. *angustifolius* ; Sta. no.6,1600 m., 23 VI 1994, *Varol 241.*

84. *A. angustifolius* Lam. subsp. *pungens* (Willd.) Hayek ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 401.*

85. *Vicia cracca* L. subsp. *stenophylla* ; Sta. no.30, 1150 m.,05 VII 1992, *Varol 41.*

86. *V. sativa* L. subsp. *sativa* ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 404.*

87. *V. narbonensis* L. var. *narbonensis* ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 405.*

88. *Ononis spinosa* L. subsp. *leiosperma* (Boiss.) Sırj. ; Sta. no.6, 1600 m.,23 VI 1994, *Varol 263.*

89. *Trifolium repens* L. *repens ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 42.*

90. *T. patens* Schreb. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 43.*

91. *T. physodes* Stev. ex Bieb. var. *physodes ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 44,* East Medit. elements.

92. *T. pratense* L. var. *pratense* ; Sta. no.30, 1150m., 05 VII 1992, *Varol 45.*

93. *T. hirtum* All. ; Sta. no.30, 1150 m. 05 VII 1992, *Varol 407,* Medit. elements.

94. *T. arvense* L. var. *arvense* ; Sta. no.30, 1150m., 05 VII 1992, *Varol 409.*

95. *Melilotus officinalis* (L.) Desr. ; Sta. no.3, 1150m., 05 VII 1992, *Varol 46.*

96. *Trigonella lunata* Boiss. ; Sta. no.6, 1600m., 23 VI 1994, *Varol 411,*Ir-Tur elements.

97. *T. spruneriana* Boiss. var. *spruneriana ;* Sta. no.4, 1300 m., 23 VI 1994, *Varol 264,* Ir-Tur. elements.

98. *Medicago radiata* L. ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 413,*Ir-Tur elements.

99. *M. sativa* L. subsp. *sativa ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 47.*

100. *M. varia* Martyn ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 48.*

101. *Lotus corniculatus* L. var *corniculatus ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 49.*

102. L. uliginosus Schkuhr ; Sta. no.25, 1150 m., 05 VII 1992, *Varol 50.*

103. *L. aegaeus* (Gris.) Boiss. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 51.*

104. *Coronilla scorpioides* (L.) Koch ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 52.*

105. C. varia L. subsp. *varia ;* Sta. no.5, 1040 m., 05 VII 1992, *Varol 53.*

106. *Onobrychis cornuta* (L.) Desv. ; Sta. no.7, 1400-1500 m., 24 III 1994, *Varol 240,* Ir-Tur. elements.,

107. *O. fallax* Freyn & Sint. ; Sta. no.6, 1600 m.,23 VI 1994, *Varol 64,* Endemic.

108. *O. armena* Boiss. & Huet ; Sta. no.3, 1100m., 05 VII 1992, *Varol 54* Endemic.

109. *O. hypargyrea* Boiss. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 56.*

18. *ROSACEAE*

110. *Prunus spinosa* L. subsp. *dasyphylla* (Schur) Domin ; Sta. no.6, 1400 m., 11 V 1994, *Varol 234,* Euro-Sib. elements.

111. *P. divaricata* Ledep. subsp. *divaricata* ; Sta. no.6, 1400m.,11 V 1994, *Varol 238.*

112. *Armeniaca vulgaris* Lam. ; Sta. no.6,1400 m., 11 V 1994 , *Varol 236.*

113. *Rubus sanctus* Schreber ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 57.*

114. *R. discolar* Weihe & Nees ; Sta. no.6, 1300 m., 11 V 1994, *Varol 403.*

115. *Potentilla recta* L. Group A ; Sta. no.3, 1100m., 05 VII 1992, *Varol 58.*

116. *P.umbrosa* Stev. ex Bieb. ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 406,* Euro-Sib. elements.

117. *P. reptans* L. ; Sta. no.9, 1100-1200 m.,05 VII 1992, *Varol 59.*

118. *Agrimonia eupatoria* L. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 60.*

119. *Sanguisorba minor* Scop. subsp. *minor;* Sta. no.3, 1100m., 05 VII 1992, *Varol 61.*

120. *Rosa hemisphaerica* J. Herrm. ; Sta. no.10, 1050 m.,05 VII 1992, *Varol 456.* Ir-Tur. elements.

121. *R. gallica* L. ; Sta. no.10, 1050 m.,05 VII 1992, *Varol 408.*

122. *R. canina* L. ; Sta. no.11, 1080 m., 05 VII 1992, *Varol 239.*

123. *Cotoneaster nummularia* Fisch. & Mey. ; Sta. no.6, 1500 m., 21 V 1994, *Varol 237.*

124. *C. monogyna* Jacq. subsp. *monogyna ;* Sta. no.6, 1500 m., 21 V 1994, *Varol 410.*

125. *Pyrus elaeagnifolia* Pallas subsp. *kotschyana* (Boiss.) Browicz ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 62.*

126. *P. elaeagnifolia* Pallas subsp. *alaeagnifolia ;* Sta. no.6, 1400-1500 m., 11 V 1994, *Varol 233.*

19. *CRASSULACEAE*

127. *Sedum acre* L. ; Sta. no.6, 1700 m., 23 VI 1994, *Varol 372.*,

128. *S. album* L. ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 265.*

129. *S. subulatum* (C. A. Mey.) Boiss. ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 371.*

20. *APIACEAE (UMBELLIFERAE)*

130. *Actinolema macrolema* Boiss. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 63,* Ir-Tur. elements.

131. *Eryngium bithynicum* Boiss. ; Sta. no.6, 1600 m.,23 VI 1994, *Varol 412,* Endemic, Ir.-Tur. elements.

132. *E. campestre* L. var. *virens;* Sta. no.3, 1100m., 05 VII 1992, *Varol 64.*

133. *Scandix iberica* Bieb. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 65.*

134. *S. pecten-veneris* L. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 66.*

135. *S. macrorhyncha* C. A. Mey. ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 414.*

136. *Bifora radians* Bieb. ; Sta. no.2, 1150 m., 05 VII 1992, *Varol 67.*

137. *Bupleurum sulphureum* Boiss. & Bal. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 68,* Endemic, Ir.-Tur. elements.

138. *B. gerardii* All. ; Sta. no.6, 1650 m., 23 VI 1994, *Varol 415*

139. *Malabaila secacul* Benks & Sol. Group B ;Sta.no.25,1150 m.,05 VII 1992, *Varol 69.*

140. *Torilis nodosa* (L.) Gaertner ; Sta. no.3, 1100m., 05 VII 1992, *Varol 266.*

141. *T. latifolia* (L:) Hoffm. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 70.*

142. *Daucus carota* L. Group B. ; Sta. no.25, 1150 m., 05 VII 1992, *Varol 72.*

143. *Artedia squamata* L. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 73.*

21. *RUBIACEAE*

144. *Crucianella angustifolia* L. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 166,* Medit. elements.

145. *Asperula bornmuelleri* Velen ; Sta. no.7, 1500m., 23 VI 1994, *Varol 167,* Endemic, Ir.-Tur. elements.

146. *A. arvensis* L. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 443,* Medit. elements.

147. *Galium verum* L. subsp. *glabrescens* Ehrend. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 168,* Euro.-Sib. elements.

148. *G. tricornutum* Dandy ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 446.*

149. *G. floribundum* Sm. subsp. *floribundum ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 169,* Endemic, East Medit. elements.

150. *Cruciata taurica* (Pallas ex Willd.) Ehrend. ; Sta. no.22, 1350 m.,23 VI 1994, *Varol 228.* Ir.-Tur. elements.

151. *C. articulata* (L.) Ehrend. ; Sta. no.22, 1400 m., 23 VI 1994, *Varol 445,*Ir.-Tur. elements.

22. *VALERIANACEAE*

152. *Valeriana tuberosa* L. ; Sta. no.7, 1400 m. 11 V 1994, *Varol 207.*

23. *MORINACEAE*

153. *Morina persica* L. ; Sta. no.11, 1100 m., 05 VII 1992, *Varol74,* Ir.-Tur. elements.

24. *DIPSACACEAE*

154. *Scabiosa argentea* L. ; Sta. no.12, 1100m., 05 VII 1992, *Varol 75.*

155. *S. micrantha* Desf. ; Sta. no.12, 1100 m., 05 VII 1992, *Varol 374.*

156. *S. rotata* Bieb. ; Sta. no.11, 1150 m., 05 VII 1992, *Varol 76,* Ir.-Tur.elements.

157. *Pterocephalus plumosus* (L.) Coulter ; Sta. no.12, 1100 m., 05 VII 1994, *Varol 77.*

25. *ASTERACEAE (COMPOSITAE)*

158. *Inula montbretiana* DC. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 79,* Ir.-Tur. elements.

159. *Senecio vernalis* Waldst. & Kit. ; Sta. no.11, 1150 m., 05 VII 1992, *Varol 82.*

160. *Tussilago farfara* L. ; Sta. no.13, 1500 m.,05 VII 1992, *Varol 244.* Euro.-Sib. elements.

161. *Anthemis cretica* L. subsp. *umblicata* (Boiss. & Huet) Grierson ; Sta. no.3, 1100m., 05 VII 1992, *Varol 83,* Endemic, Ir.-Tur. elements.

162. *A. kotschyana* Boiss. var. *kotschyana ;* Sta. no.5, 1040 m., 05 VII 1992, *Varol 84.*

163. *A. tinctoria* L. var. *tinctoria ;* Sta. no.25, 1150 m., 05 VII 1992, *Varol 85.* Endemic, East Medit. elements.

164. *A. wiedemanniana* Fisch. & Mey. ; Sta. no.13, 1400 m., 05 VII 1992, *Varol 417,* Endemic.

165. *Achillea lycaonica* Boiss. & Heldr. ; Sta. no.13, 1400 m.,05 VII 1992, *Varol 453,* Endemic, Ir.-Tur. elements.

166. *A. phrygia* Boiss. & Bal; Sta. no.13, 1400 m., 05 VII 1992, *Varol 420,* Endemic, Ir.-Tur. elements.

167. *A. teretifolia* Willd. ; Sta. no.6, 1600 m., 23 VI 1994, *Varol 418,* Endemic, Ir.-Tur. elements.

168. *A. setacea* Waldst. & Kit. ; Sta. no.14, 1150 m., 05 VII 1992, *Varol 86,* Euro- Sib. elements.

169. *A. biebersteinii* Afan. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 87,* Ir.-Tur. elements.

170. *Tripleurospermum sevanense* (Manden.) Pobed. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 89.*

171. *T. oreades* (Boiss.) Rech. var. *oreades ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 245.*

172. *T. decipiens* (Fisch. & Mey.) Bornm. ; Sta. no.13, 1400 m.,05 VII 1992, *Varol 421.*

173. *Artemisia austriaca* Jacq. ; Sta. no.7, 23 VI 1994, *Varol 416.*

174. *A. absinthium* L. ; Sta. no.7, 1500 m., 23 VI 1994, *Varol 452.*

175. *A. santonicum* L. ; Sta. no.4, 1200 m., 23 VI 1994, *Varol 267.*

176. *Cousinia stapfiana* Freyn & Sint. ; Sta. no.3, 1100 m.,05 VII 1992, *Varol 90,* Endemic, Ir.- Tur. elements.

177. *Cirsium sintenisii* Freyn ; Sta. no.3, 1100 m., 05 VII 1992, *Varol 451,* Endemic.

178. *C. arvense* (L.) Scop. subsp. *arvense ;* Sta. no.12, 1150 m., 23 VI 1994, *Varol 453.*

179. *Carduus nutans* L. subsp. *nutans* , Sta. no.3, 1100m., 05 VII 1992, *Varol 91.*

180. *Jurinea consanguinea* DC. ; Sta. no.13, 1400 m.,23 VI 1994, *Varol 419.*

181. *J. pontica* Hausskn. ; Sta. no.4, 1300 m., 23 VI 1994, *Varol 348,* Endemic, Ir.-Tur. Elements.

182. *Acroptilon repens* (L.) DC. ; Sta. no.5, 1080m., 05 VII 1992, *Varol 93,* Ir.-Tur. elements.

183. *Centaurea virgata* Lam. Group B ; Sta. no.5, 1080 m., 05 VII 1992, *Varol 94,* Ir.-Tur. elements.

184. *C. solstitialis* L. subsp. *solstitialis ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 95,* Endemic, East Medit. elements.

185. *C. iberica* Trev. ex Sprengel ; Sta. no.6, 1500m., 23 VI 1994, *Varol 423.*

186. *C. urvillei* DC. subsp. *stepposa* Wagenitz ; Sta. no.3, 1100m., 05 VII 1992, *Varol 97,* East Medit. elements.

187. *C. pichleri* Boiss. subsp. *pichleri ;* Sta. no.13, 1300 m.,23 VI 1994, *Varol 426.*

188. *C. triumfettii* All. Group B ; Sta. no.5, 1100 m., 05 VII 1992, *Varol 99.*

189. *C. triumfettii* All. Group A ; Sta. no.5, 1100 m., 05 VII 1992, *Varol 246.*

190. *C. depressa* Bieb. ; Sta. no.14, 1150m.,23 VI 1994, *Varol 455.*

191. *Crupina crupinastrum* (Moris) Vis. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 100.*

192. *Xeranthemum annuum* L. ; Sta. no.14, 1100 m., 05 VII 1992, *Varol 101.*

193. *Cichorium intybus* L. ; Sta. no.16, 1100 m., 23 VI 1994, *Varol 309.*

194. *Tragopogon dubius* Scop. , Sta. no.7, 1500 m., 23 VI 1994, *Varol 425.*

195. *T. pratensis* L. ; Sta. no.14, 1100 m.,23 VI 1994, *Varol 103,* Euro-Sib. elements.

196. *Leontodon asperrimus* (Willd.) J. Bal. ; Sta. no.14,1100 m.,23 VI 1994, *Varol 104,* Ir.-Tur. elements.

197. L. crispus Vill. subsp. *asper* var. *asper;* Sta. no.3, 1100m., 05 VII 1992, *Varol 105.*

198. *Taraxacum microcephaloides* Van Soest ; Sta. no.13, 1450 m., 23 VI 1994, *Varol 424.*

199. *T. buttleri* Van Soest ; Sta. no.13, 1450 m., 23 VI 1994, *Varol 247.*

200. *Crepis macropus* Boiss. & Heldr. ; Sta. no.13, 1450 m.,23 VI 1994, *Varol 422,* Endemic.

201. *C. foetida* L. subsp. *commutada* (Spreng.) Babcock ; Sta. no.3, 1150m., 05 VII 1992, *Varol 106.*

26 . *CAMPANULACEAE*

202. *Campanula lyrata* Lam. subsp. *lyrata;* Sta. no.5, 1050m., 05 VII 1992, *Varol 375,* Endemic..

203. *C. argaea* Boiss. & Bal. ; Sta. no.15, 1100m., 05 VII 1992, *Varol 271,* Endemic, Ir.- Tur. elements.

204. *Asyneuma limonifolium* (L.) Janchen subsp. *limonifolium;* Sta. no.16, 1200m., 23 VI 1994, *Varol 107.* Endemic.

27. *PRIMULACEAE*

205. *Androsace maxima* L. ; Sta. no.16, 1400 m., 23 VI 1994, *Varol 457.*

206. *A. arvensis* L. var. *caerulea ;* Sta. no.16, 1100m., 23 VI 1994, *Varol 108,* Medit. elements.

207. *Jasminum fruticans* L. ; Sta. no.16, 1400 m., 23 VI 1994, *Varol 208,* Medit. elements.

28. *OLEACEAE*

208. *Fraxinus angustifolia* Vahl subsp. *oxycarpa* (Bieb. ex Willd.) Franco & Rocha ;Sta. no.16, 1400 m., 23 VI 1994, *Varol 427,* Euro-Sib. elements.

29. *APOCYNACEAE*

209. *Vinca herbacea* Waldst. & Kit. ; Sta. no.17, 1450 m.,23 VI 1994, *Varol 206.*

30. *GENTIANACEAE*

210. *Centaurium erythraea* Rafn subsp. *turcicum* (Velen.) Melderis ; Sta. no.17, 23 VI 1994, 1100m., *Varol 108,* Medit. elements.

31. *CONVOLVULACEAE*

211. *Convolvulus lineatus* L. ; Sta. no.18, 1200 m., 23 VI 1994, *Varol 273.*

212. *C. holosericeus* Bieb. subsp. *holosericeus;*Sta.no.18,1250 m., 23 VI 1994, *Varol 110.*

213. *C. arvensis* L. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 111.*

32. *BORAGINACEAE*

214. *Lappula barbata* (Bieb.) Gürke ; Sta. no.12, 1100 m.,23 VI 1994, *Varol 112,* Ir.- Tur. elements.

215. *Asperugo procumbens* L. ; Sta. no.12, 1400 m., 23 VI 1994, *Varol 215,* Euro.-Sib. elements.

216. *Myosotis incrassata* Guss. ; Sta. no.19, 1500 m., 23 VI 1994, *Varol 216,* EastMedit. elements.

217. M. sicula Guss. ; Sta. no.19, 1500 m., 23 VI 1994, *Varol 458.*

218. *M. propinqua* Fisch. & Mey. ex DC. ; Sta. no.7, 1600 m., 23 VI 1994, *Varol 434.*

219. *Buglossoides arvensis* (L.) Johnston ; Sta. no.7, 1600 m. ,23 VI 1994 ,Ö. V. 217.

220. *Echium italicum* L. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 113,* Medit. elements.

221. *Moltkia coerulea* (Willd.) Lehm. ; Sta. no.5, 1050 m., 05 VII 1992, *Varol 114,* Ir.- Tur. elements.

222. *Onosma isauricum* Boiss. & Heldr. ; Sta. no.5, 1050 m., 05 VII 1992, *Varol 115,* Endemic, Ir.-Tur. elements.

223. *O. lycaonicum* Hub.-Mor. ; Sta. no.15, 1450 m., 05 VII 1992, *Varol 218.* Endemic, Ir.-Tur. elements.

224. *O. hebebulbum* DC. ; Sta. no.15, 1450m., 05 VII 1992, *Varol 431,* Ir.-Tur. elements.

225. *Cerinthe minor* L. subsp. *auriculata* (Ten.) Domac ; Sta. no.25, 1150 m., 05 VII 1992, *Varol 117.*

226. *Anchusa leptophylla* Roemer & Schultes subsp. *leptophylla ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 119.*

227. *A. leptophylla* Roemer & Schultes subsp. *incana* (Ledeb.) Chamb. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 428,* Endemic, Ir.-Tur. elements.

228. *A. azurea* Miller var. azurea ; Sta. no.25, 1150 m., 05 VII 1992, *Varol 121.*

229. *A. stylosa* Bieb. ; Sta. no.25, 1150 m., 05 VII 1992, *Varol 429.*

230. *Nonea macrosperma* Boiss. & Heldr. ; Sta. no.7, 1300m., 23 VI 1994, *Varol 219,* Endemic, Ir.-Tur. elements.

231. *N. ventricosa* (Sm.) Griseb. ; Sta. no.5, 1050 m., 05 VII 1992, *Varol 122,* Medit. elements.

33. *SOLANACEAE*

232. *Solanum nigrum* L. subsp. *schultesii* (Opiz) Wessely ; Sta. no.7,1500 m.,23 VI 1994 ,*Varol 376.*

233. *Hyoscyamus reticulatus* L. ; Sta. no.5, 1050 m., 05 VII 1992, *Varol 123,* Ir.-Tur. elements.

34. *SCROPHULARIACEAE*

234. *Verbascum thapsus* L. ; Sta. no.25, 1150 m., 05 VII 1992, *Varol 124,* Euro.-Sib. elements.

235. *V. glomeratum* Boiss. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 125,* Ir.-Tur. elements.

236. *Scphularia scopolii* (Hoppe ex) Pers. var. *scopolii ;* Sta. no.7, 1600 m., 23 VI 1994, *Varol 276.*

237. *S. umbrosa* Dum. ; Sta. no.7, 1500m., 23 VI 1994, *Varol 377,* Euro.-Sib. elements.

238. *Linaria corifolia* Desf. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 430,* Endemic, Ir.-Tur. Elements.

239. *L. iconia* Boiss. & Heldr. ; Sta. no.5, 1040m., 05 VII 1992, *Varol 127,* Endemic, Ir.-Tur. Elements.

240. *Veronica bornmuelleri* Hausskn. ; Sta. no.19, 1500 m., 23 VI 1994, *Varol 433,* Ir.-Tur. elements.

241. *V. oxycarpa* Boiss. ; Sta. no.7, 1600 m., 23 VI 1994, *Varol 459,* Ir.-Tur. elements.

242. *V. thymoides* P. H. Davis subsp. *pseudocinerea* M. A. Fischer ; Sta. no.7, 1600 m., 23 VI 1994, *Varol 435,*Endemic, Ir.-Tur. elementi.

243. *V. orientalis* Miller subsp. *orientalis ;* Sta. no.21, 1450m., 23 VI 1994, *Varol 460,*Ir.-Tur. elements.

244. *V. multifida* L. ; Sta. no.21, 1450m., 23 VI 1994, *Varol 211,* Endemic.

245. *Pedicularis comosa* L. var. *acmodonta* (Boiss.) Boiss. ; Sta. no.25, 1150 m., 05 VII 1992, *Varol 128.*

35. *OROBANCHACEAE*

246. *Orobanche ramosa* L. ; Sta. no.5, 1050 m., 05 VII 1992, *Varol 129.*

247. *O. purpurea* Jacq. ; Sta. no.16, 1100 m., 23 VI 1994, *Varol 432.*

36. *ACANTHACEAE*

248. *Acanthus hirsutus* Boiss. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 130,* Endemic.

37. *GLOBULARIACEAE*

249. *Globularia orientalis* L. ; Sta. no.12, 1100m., 05 VII 1992, *Varol 131,* Ir.-Tur. elements.

250. *G. trichosantha* Fisch. & Mey. ; Sta. no.22, 1150 m., 05 VII 1992, *Varol 209.*

38. *VERBENACEAE*

251. *Verbena officinalis* L. ; Sta. no.3, 1100m., 05 VII 1992, Varol 133.

39. *LAMIACEAE (LABIATAE)*

252. *Ajuga chamaepitys* (L.) Schreber subsp. *chia* (Schreber) Arcangeli var. *chia ;* Sta. no.5,1040 m., 05 VII 1992, *Varol 134.*

253. *Teucrium chamaedrys* L. subsp. *chamaedrys ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 135,* Euro.-Sib. Elements

254. *T. polium* L. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 137.*

255. *Scutellaria orientalis* L. subsp. *pinnatifida* Edmondson ; Sta. no.3, 1100m., 05 VII 1992, *Varol 138.*

256. *Phlomis pungens* Willd. var. *pungens ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 140.*

257. *P. armeniaca* Willd. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 141,* Endemic, Ir.- Tur. elements.

258. *Lamium garganicum* L. subsp. *reniforme* (Montbret & Aucher ex Bentham) R. Mill Sta. no.19, 1300 m., 11 V 1994, *Varol 205.*

259. *Wiedemannia orientalis* Fisch. & Mey. ; Sta. no.5, 1040m., 05 VII 1992, *Varol 142,* Endemic, Ir.-Tur. elements.

260. *Marribium parviflorum* Fisch. & Mey. subsp. *oligodon* (Boiss.) Seybold ; Sta.no.12,1100 m.,05 VII 1992, *Varol 461,* Endemic.

261. *M. parviflorum* Fisch. & Mey. subsp. *parviflorum ;* Sta. no.26, 1100 m., 05 VII 1992, *Varol 143,* Endemic, Ir.-Tur. elements.

262. *M. astracanicum* Jacq. subsp. *astracanicum ;* Sta. no.22, 1300 m., 23 VI 1994, *Varol 436.*

263. *Sideritis montana* L. subsp. *remota* (d' Urv.) P. W. Ball ex Heywood ; Sta. no.26, 1100m., 05 VII 1992, *Varol 144.*

264. *S. galatica* Bornm. ; Sta. no.5, 1040m., 05 VII 1992, *Varol 146,* Endemic.

265. *S. byzantina* C. Koch ; Sta. no.3, 1100m., 05 VII 1992, *Varol 147,* Euro.-Sib. elements.

266. *S. lavandulifolia* Vahl ; Sta. no.27, 1250m., 23 VI 1994, *Varol 280,* Ir.-Tur. elements.

267. *Nepeta italica* L. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 148.*

268. *N. nuda* L. subsp. *nuda ;* Sta. no.27, 1300 m., 23 VI 1994, *Varol 438.*

269. *Thymus sipyleus* Boiss. subsp. *sipyleus* var. *sipyleus ;* Sta. no.23, 1150 m., 23 VI 1994, *Varol 462,* Endemic.

270. *T. sipyleus* Boiss. subsp. *rosulans* (Borbas) Jalas ; Sta. no.8, 1200 m.,23 VI 1994, *Varol 277.*

271. *T. leucostomus* Hausskn. & Velen. var. *leucostomus;* Sta. no.5, 1040m., 05 VII 1992, *Varol 149,* Endemic, Ir.-Tur. elements.

272. *Ziziphora capitata* L. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 150,* Ir.-Tur. elements.

273. *Salvia cryptantha* Montbret & Aucher ex Bentham ; Sta. no.3, 1100m., 05 VII 1992, *Varol 152,* Endemic, Ir.-Tur. elements.

274. *S. sclarea* L. ; Sta. no.25, 1400m., 05 VII 1992, *Varol 154.*

275. *S. aethiopis* L.; Sta. no.5, 1040 m., 05 VII 1992, *Varol 156.*

276. *S. frigida* Boiss. ; Sta. no.24, 1400 m., 11 V 1994, *Varol 204,* Ir.-Tur. elements.

277. *S. yosgadensis* Freyn & Bornm. ; Sta. no.24, 1400 m., 11 V 1994, *Varol 204,* Endemic, Ir.-Tur. elements.

278. *S. candidissima* Vahl subsp. *occidentalis* Hedge ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 157,* Ir.-Tur. elements.

279. *S. scyanescens* Boiss. & Bal. ; Sta. no.24, 1400 m., 11 V 1994, *Varol 439,* Endemic, Ir.-Tur. elements.

280. *S. virgata* Jacq. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 158.*

281. *S. dichroantha* Staph ; Sta. no.24, 1400 m., 11 V 1994, *Varol 444,* Endemic, Ir.-Tur. elements.

282. *S. verticillata* L. subsp. *amasiaca* (Freyn & Bornm.) Bornm. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 159,* Ir.-Tur. elements.

40. *PLUMBAGINACEAE*

283. *Acantholimon acerosum* (Willd.) Boiss. var. *acerosum* ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 160,* Ir.-Tur. elements.

284. *A. caesareum* Boiss. & Bal. ; Sta. no.2, 1250 m., 23 VI 1994, *Varol 437,* Endemic, Ir.-Tur. elements.

41. *PLANTAGINACEAE*

285. *Plantago coronopus* L. subsp. *coronopus;*Sta. no.24, 1550 m.,23 VI 1994, *Varol 378.*

286. *P. lanceolata* L. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 161.*

42. *LORANTHACEAE*

287. *Viscum album* L. subsp. *album ;* Sta. no.5, 1040 m., 05 VII 1992, *Varol 162.*

43. *EUPHORBIACEAE*

288. *Euphorbia stricta* L. ; Sta. no.19, 1100 m., 05 VI 1992, *Varol 440,* Euro.-Sib. elements.

289. *E. aleppica* L. ; Sta. no.5, 1040m., 05 VII 1992, *Varol 163.*

290. *E. falcata* L. subsp. *falcata* var. *falcata ;* Sta. no.5, 1040 m., 05 VII 1992, *Varol 164.*

291. *E. anacampseros* Boiss. var. *anacampseros ;* Sta. no.15, 1200 m., 23 VI 1994, *Varol 226,* Endemic.

292. *E. myrsinites* L. ; Sta. no.24, 1400 m., 23 VI 1994, *Varol 442.*

293. *E. macroclada* Boiss. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 165,* Ir.-Tur.elements.

44. *FAGACEAE*

294. Quercus pubescens Willd. ; Sta. no.4, 1300 m., 23 VI 1994, *Varol 249.*

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45. *ARACEAE*

295. *Arum elongatum* Steven subsp. *elongatum* ; Sta. no.28, 1500 m., 23 VI 1994, *Varol 225,* Euro.-Sib. elements.

46. *LILIACEAE*

296. *Allium rupestre* Steven ; Sta. no.29, 1200 m., 23 VI 1994, *Varol 448,* Euxine elements.

297. *A. huber-morathii* Kollmann ; Sta. no.3, 1100m., 05 VII 1992, *Varol 170,* Endemic, Ir.-Tur. elements.

298. *A. astroviolaceum* Boiss. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 171.*

299. *A. scorodoprasum* L. subsp. *rotundum* (L.) Stearn ; Sta. no.3, 1100m., 05 VII 1992, *Varol 172,* Euro.-Sib.elements.

300. A. vineale L. ; Sta. no.30, 1200 m., 23 VI 1994, *Varol 463.*

301. *A. lycaonicum* Siehe ex Hayek ; Sta. no.30, 1200 m., 23 VI 1994, *Varol 450.*

302. *Ornithogalum sphaerocarpum* Kerner ; Sta. no.20, 1400 m.,05 VII 1992,*Varol 174.*

303. *O. narbonense* L. ; Sta. no.20, 1400 m., 05 VII 1992, *Varol 449,* Medit. elements.

304. *O. oligophyllum* E. D. Clarke ; Sta. no.30, 1300 m., 23 VI 1994, *Varol 221.*

305. *Muscari aucheri* (Boiss.) Baker ; Sta. no.7, 1500 m., 23 VI 1994, *Varol 224.* Endemic.

306. *M. neglectum* Guss. ; Sta. no.7, 1500 m.,23 VI 1994 ,*Varol* 447.

307. *Gagea villosa* (Bieb.) Duby var. *villosa* ; Sta. no.7, 1500 m., 24 VI 1994, *Varol 22,* Medit. Elements.

308. *Colchicum triphyllum* G. Kunze ; Sta. no.7, 1500 m., 24 VI 1994, *Varol 223,* Medit. elements.

47. *IRIDACEAE*

309. *Crocus ancyrensis* (Herbert) Maw ; Sta. no.7, 1500 m., 24 VI 1994, *Varol 202,* Endemic, Ir.-Tur. Elements.

48. *ORCHIDACEAE*

310. *Orchis palustris* Jacq. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 175.*

49. *CYPERACEAE*

311. *Scirpoides holoschoenus* (L.) Sojak ; Sta. no.3, 1100m., 05 VII 1992, *Varol 176.*

312. *Carex acutiformis* Ehrh. ; Sta. no.5, 1040m., 05 VII 1992, *Varol 178,* Euro.-Sib. elements.

50. *POACEAE (GRAMINEAE)*

313. *Elymus elongatus* (Host) Runemark subsp. *ponticus* (Podp.) Meideris ; Sta. no.5, 1040m., 05 VII 1992, *Varol 179.*

314. *Aegilops umbellulata* Zhukovsky ; Sta. no.3, 1100m.,05 VII 1992, *Varol 180,* Ir.-Tur elements.

315. *A. triuncialis* L. subsp. *triuncialis ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 182.*

316. *Hordeum murinum* L. subsp. *glaucum* (Steudel) Tzvelev ; Sta. no.3, 1100m., 05 VII 1992, *Varol 183.*

317. *H. bulbosum* L. ; Sta. no.30, 1150m., 05 VII 1992, *Varol 184.*

318. *Taeniatherum caput-medusae* (L.) Nevski subsp. *crinitum* (Schreber) Melderis ; Sta. no.3, 1100m., 05 VII 1992, *Varol 185,* Ir.-Tur. elements.

319. *Bromus commutatus* Schrader ; Sta. no.3, 1100m., 05 VII 1992, *Varol 186.*

320. *B. tectorum* L. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 187.*

321. *B. cappadocious* Boiss. & Bal. subsp. *cappadocious ;* Sta. no.3, 1100m., 05 VII 1992, *Varol 188.*

322. *Avena sterilis* L. subsp. *sterilis ;* Sta. no.5, 1040 m., 05 VII 1992, *Varol 189.*

323. *Koeleria cristata* (L.) Pers. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 190.*

324. Poa bulbosa L. ; Sta. no.3, 1100m., 05 VII 1992, *Varol 248.*

325. *Dactylis glomerata* L. subsp. *hispanica ;* Sta. no.25, 1150 m., 05 VII 1992, *Varol 191,* Euro.-Sib. elements.

326. *Melica penicillaris* Boiss. & Bal. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 192,* Ir.-Tur. elements.

327. *M. ciliata* L. subsp. *ciliata ;* Sta. no.3, 1100m.,05 VII 1992, *Varol 193.*

328. *Stipa arabica* Trin. & Rupr. ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 194,* Ir.-Tur. elements.

329. *Pennisetum orientale* L. C. M. Richard ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 195,* Ir.-Tur. elements.

330. *Chrysopogon gryllus* (L.) Trin. subsp. *gryllus ;* Sta. no.5, 1040m., 05 VII 1992, *Varol 196.*

331. *Bothriochloa ischaemum* (L.) Keng ; Sta. no.5, 1040 m., 05 VII 1992, *Varol 197.*