

Check-List of Additional Taxa to the Supplement Flora of Turkey II

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Abstract: This checklist contains a total of 168 taxa published as additions to the Flora of Turkey. It includes details of taxa neither recorded by P.H.Davis' "Flora of Turkey and the East Aegean Islands" or its Supplement, nor in the first of this series of checklists. The records in this list are based on data given in nearly 100 publications published up to the end of 1998.

Key Words: Turkish flora, new species, additional taxa.

Türkiye Florasına İlave Edilen Türlerin Listesi II

Özet: Türkiye florasına ilave edilen 168 taksonun yeraldığı bir liste hazırlanmıştır. Liste 1998 yılı sonuna kadar yayımlanan yaklaşık 100 çalışma ile P.H. Davis'in Türkiye Florası ve ek cildinde ayrıca Özhatay ve arkadaşları tarafından hazırlanan Check-List de yer almayan taksonları içermektedir.

Anahtar Sözcükler: Türkiye florası, yeni türler, ilave taksonlar.

Introduction

The first checklist of taxa additional to the Turkish flora, yet unrecorded in P.H.Davis' "Flora of Turkey and the East Aegean Islands" (1) and its 1988 Supplement (2), was published at the end of 1994 (3). It listed a total of 178 new records/taxa (including 8 new combinations of previously recorded taxa). Since 1994 nearly 100 further papers regarding the flora of Turkey have been published (and in one or two instances traced) and these detail many additional taxa recorded either new to science or as new additions to the Turkish flora. This literature-published in a wide range of journals and other publications – has been drawn together, by the authors and are now housed as a collection in the library of the Department of Pharmaceutical Botany at the University of Istanbul.

This present survey aims to present all the published taxa added to the Turkish flora since the publication of the Flora, its Supplement and the first checklist of additional taxa (the predecessor to this paper). The families and genera are presented in the systematic order presented by the Flora, but species are given in alphabetical order and in an identical format as is given in the Supplement (2). References to the original literature sources are given in bold parentheses at the end of the

taxon name. The list is simply an inventory: the authors have in no way sought to assess the taxonomic status and credibility of new taxa described. Records for new taxa from the East Aegean islands but currently under Greek jurisdiction are not included in the listing.

The list contains a total of 163 taxa, the majority of which are completely new to the flora. This figure comprises 109 taxa new to science (77 species, 26 subspecies, 5 varieties and 1 hybrid) and a further 51 taxa previously unrecorded from Turkey (42 species, 4 subspecies, 4 varieties and 1 hybrid). In addition, 8 taxa previously recorded from the flora have been presented as new combinations and are included here. The following table summarises the statistics of additions to the Turkish flora during the period 1988 to 1998.

We have endeavoured to trace all additional taxa to the flora published before the end of 1998. We recognize that we may have overlooked certain taxa and are fully aware that subsequent to the publications of this paper, further additions will be made to Turkey's exceptionally rich flora. For this reasons, the authors see this checklist as part of a series, with new contributions published every few years. Accordingly we should welcome any additions or comments for inclusion within future issues.

	Check-List I (1988-1994)	Check-List I (1995-1998)	Total (1988-1998)
Taxa new to science			
species	96	77	171
subspecies	16	26	42
variety	11	5	16
hybrid	1	1	2
Total	124	109	233
Taxa new to Turkey			
species	36	42	78
subspecies	8	4	12
variety	2	4	6
hybrid	-	1	1
Total	46	51	97
Previously known taxa			
comb.nov.	3	4	7
stat.nov.	4	3	7
nom.nov.	1	1	2
Total	8	8	16
TOTAL	178	168	346

The list of additional taxa

e = endemic species

* = new genus for Turkish flora

PTERIDOPHYTA

19. MARSILEACEAE (1: 62)

* *PILULARIA* L. (1:62)

P. globulifera L., in Sp. Pl. 1100 (1753). [4]

The following information is recorded in the unpublished Flora of Constantinople which is a study by Wladyslaw Jablonowski "1841-1890" [4], as "*Pilularia globulifera* L. from the Asiatic side A2(A) İstanbul in the vicinity of the so-called Sweet Waters of Asia".

P. minuta Durieu ex A.Braun, in Monatsber. Koenigl. Akad. (Berlin) 1863: 435 (1864). [5]

(Turkey) W. Anatolia. B1 İzmir: Mares du Mont-Pagus pres Smyrne, v.1866, Balansa 1559 (E).

This specimen is cited by Boissier (1884) in Flora Orientalis [6] but *Pilularia* is not mentioned at all in the Flora of Turkey and the Eastern Aegean Islands [1 & 2]

AZOLLACEAE

* *AZOLLA* Lam.

A. filiculoides Lam., in Encycl. Meth. Bot. 1: 343 (1783). [7, 8]

European Turkey. A1(E) Kırklareli: Babaeski, Karahalil village, Tekke river, ca. 180-200 m, 22.v.1994, M.Ünal.

This alien species is recorded first time in by Akyar [7] without any locality data, then Ünal & Üzen [8] published with detailed information.

SPERMATOPHYTA

GYMNOSPERMAE

21. PINACEAE (1: 67)

4. PINUS L. (1: 72)

P. brutia Ten., in Prodr. Fl. Nap., 1:57 (1811).

e var.*densifolia**, in İ.Ü. Orman Fak. D., Seri A, 39(2): 46 (1989). [9] **nom.nud.**

Type: (Turkey) C4 Mersin: Gülnar-Pembecik-Karakaya, 400 m. s.n.

P. nigra Arnold., in Reise nach Mariazell 8 (1785).

subsp. *pallasiana* (Lamb.) Holmboe, in Bergens Mus. Skr. 2, 1 (2): 29 (1914).

e var. *columnaris-pendula**, in İ. Ü. Orman Fak. D., Seri A, 39(1): 122 (1989). [10] nom.nud.

Type: (Turkey) C3 Antalya: Alanya Orman İşletmesi, Söğüt İşletme Şefliği, Baloğlu Deresi, Ballı su mevki, 26.viii.1983, 1400 m. s.n.

* these new taxa not published as valid

23. CUPRESSACEAE (1: 76)

2. JUNIPERUS L. (1: 78)

J. communis L., in Sp. Pl. 1040 (1753). subsp. *communis* [11]

European Turkey. A2(E) İstanbul: sur la route de Kalfaköy, ca.1 km de la route principale, 170 m, 7.viii.1969, A.Baytop, ISTE 14902!

ANGIOSPERMAE

DICOTYLEDONES

2. PAEONIACEAE (1: 204)

PAEONIA L. (1: 204)

P. mascula (L.) Miller, in Gard. Dict. No.1 (1768).

e subsp. *bodurii* N.Özhatay, in Karaca Arboretum Magazine, 3(1), 21-22 (1995). [12]

Type: NW Turkey: A1(A) Çanakkale: Çan-Çanakkale, above Çamyayla, 760 m, 29.iv.1992, S.Bodur, ISTE 64073 (holo. ISTE; iso. MARA).

5. PAPAVERACEAE (1: 213)

6. CORYDALIS Medik. (1: 238)

C. caucasica DC., in Syst. 2: 119 (1821).

e subsp. *abantensis* Liden, in Willdenowia, 26: 26 (1996). [13]

Holotype: (Turkey) Anatolia, A3 Bolu: Bolu-Gerede, 1050 m, beech scrub facing N, flowers pink, 31.iii.1957, Davis & Hedge 26286 (K: isotypus:E).

e *C. lydica* Liden, in Willdenowia, 26: 32 (1996). [13]

Holotype: (Turkey) Anatolia, Boz Dağ, 1700-1800 m, 24.iv.1991, J. & K.Persson 91-96, cultivated in Göteborg Botanic Garden (GB; isotypus: B).

C. wendelboi M.Liden, in Notes Roy. Bot. Gard. Edinburgh 45(2): 355 (1988).

e subsp. *congesta* Liden & Zetterlung, in Willdenowia, 26: 26 (1996). [13]

Holotype: (Turkey) Anatolia, A2(A) Bursa: Ulu Dağ, Brian Mathew, s.n. cultivated in Göteborg Botanic Garden (GB).

6. CRUCIFERAE (1: 248)

24. AETHIONEMA R.Br. (1: 314)

e *A. acarii* Gemici & Leblebici, in Candollea 50(1): 41 (1995). [14]

Type: (Turkey) B2 Kütahya: Gediz, Şaphane Dağı, N part of summit, rocky limestone slopes, 1800-2100 m, 17.vi.1993, Gemici, Y. & G.Görk 7694 (Holo, EGE).

e *A. alanyae* Duman, in Karaca Arboretum Magazine, 2: 172 (1994). [15]

Type: (Turkey) C4 Antalya: Alanya, Gökbel yaylası doğusu, 1600 m, 1.ix.1993, H.Duman and Z.Aytaç 5500 (fl.), (holo-GAZI; iso-ANK, HUB).

e *A. dumanii* M.Vural & N.Adıgüzel, in Doğa Tu Botanik D., 19(4): 481-82 (1995). [16]

Type: (Turkey) B3 Eskişehir: Polatlı to Sivrihisar, 25. km, 870 m, 10.vii.1993, Duman 5011 (holo GAZI; iso ANK).

e *A. karamanicus* Ertuğrul & Beyazoğlu, in Doğa Tu Botanik D., 21(2): 99 (1997). [17]

Type: (Turkey) C4 Karaman: Ayrancı, 2 km W. of Kayaönü (Küçükkoraş) Köyü, 1300 m, 6.vii.1988, Ertuğrul 1201 (fl.) (holo. KNYA).

25. THLASPI L. (1: 330)

e *T. leblebicii* Gemici & Görk, in Candollea 50(1): 43 (1995). [14]

Type: (Turkey) Muğla: Köyceğiz, summit of Sandras Dağı, rocky peridotite slopes, 2000-2100 m, 7.vi.1992, Y. Gemici, et al. 6656 (Holo, EGE).

51. ALYSSUM L. (1: 362)

A. dasycarpum Stephen ex Willd., in Sp. Pl. 3(1): 469 (1800).

var. *minus* Bornm. ex Dudley, in Notes Roy. Bot. Gard. Edinb., 23(2): 157, fig. 1A (1962). [18]

W. Anatolia. B3 Eskişehir: Seyitgazi, Aslanbeyli, stony slopes, 1050 m alt., 10.v.1992, Orcan 6846 (AUF).

A. minus (L.) Rothm., in Feddes. Rep. 50: 77 (1941).

var. *collinum* (Brot.) Townsend, in Taxon 16: 467 (1967). [18]

W. Anatolia. A3 Eskişehir: Sarıcakaya, Dağküpü-Mayıslar, 1 km to Dağküpü, fields, 550 m alt.,

22.v.1990, Orcan 4961 (AUF); *ibid.*, Orcan 4962 (AUF); B1 Balıkesir: Burhaniye, roadside, 50 m alt., 20.iv.1991, Orcan 5813 (AUF), B3 Eskişehir: Eskişehir to Sarıcakaya, 2 km to Yarımca village, roadside, 1100 m alt., 19.v.1991, Orcan 5947 (AUF); *ibid.*, Orcan 5950 (AUF).

73. *ERYSIMUM* L. (1: 466)

E. rhodium Snogerup, in Opera Bot. 13: 41 (1967). [19]

SW. Anatolia: The Marmaris Peninsula.

* *LUNARIA* L.

L. annua L., in Sp. Pl. 653 (1753).

subsp. *annua* [20]

European Turkey. Al(E) Kırklareli: Karataş mahallesi, pastures, 250 m, 25.iv.1990, Ş. Yıldırımli 13445 F. Nayır (HUB; Herb. Yıldırımli).

Alien species.

10. *VIOLACEAE* (1: 524)

VIOLA L. (1: 524)

V. bocquetiana Yıldırımli, in Ot Sistematiik Botanik D., 1(1): 2 (1994). [21]

Type: (Turkey) B7 Tunceli: Ovacık, Karagöl valley, rock crevices in stony slopes, 1800 m, 30.vi.1983, Ş. Yıldırımli 5418 (Holo-HUB; iso. Herb.Yıldırımli).

13. *CARYOPHYLLACEAE* (2: 15)

2. *MINUARTIA* L. (2:38)

M. asiyeae Duman, in The Karaca Arboretum Magazine, 4(4): 159 (1998). [22]

Type: Turkey C4 Antalya: Alanya, Elmalısı-Gökbey yaylası, limestone rocks, 1250 m, 18.vii.1995, H.Duman, K.H.C.Başer & A. Altıntaş, HD 5836 (holo.GAZI, iso.E, ESSE, HUB, AIBU).

18. *DIANTHUS* L. (2: 99)

e *D. akdaghensis* Gemici & Leblebici, in Candollea 50(1): 43 (1995). [14]

Type: (Turkey) C2 Muğla: Fethiye, Akdağ, W side, above Camialanı, 2200 m, rocky limestone slopes, 8.vii.1993, Y. Gemici, G.Görk & N.Özel 6928 (Holo, EGE).

D. elegans d'Urv., in Enum. Pl. Ins. Pont. Eux., 46 (1822).

e var. *gramineus* R.M.Burton, in The Karaca Arboretum Magazine, 3(4): 184-185 (1997). [23]

Holotype: (Turkey) C2 Muğla: Asar, shady cliff above north side of Ködürümsü Limanı, 14 km south of Fethiye,

28.v.1991, R.M.Burton An. 206 (Leafy branch with dead flowering shoot of previous year) (AIBU).

24. *GYPSOPHILA* L. (2: 149)

G. glomerata Pallas ex Bieb., in Fl. Taur.-Cauc. 1: 321 (1808). [24]

European Turkey. A1(E) Edirne: 1 km from Süloğlu to Lalapaşa, 7.viii.1975, N. and E.Özhatay, ISTE 33122.

29. *SILENE* L. (2: 179)

S. caryophylloides (Poirt.) Otth., in DC., Prodr. 1: 369 (1824).

e subsp. *binbogaense* Duman et Vural, in Doğa Tu Botanik D., 19(4): 478 (1995). [25]

Type: (Turkey) B6 Kahramanmaraş: Göksun, Doğankonak köyü, Binboğa Dağı, Kapıkaya batı sırtları, 1800-2150 m, step, 2.vii.1992, Duman et Aytaç 4567 (holo-GAZI, iso-ANK, HUB).

e *S. denizliense* Aytaç, in Thaiszia, J.Bot., Kosice, 8: 7-11 (1998). [26]

Type: Turkey. C2 Denizli: Çamlık, around taşocağı, 830 m, 6.vi.1995, on a calcareous rocky site (Aytaç 6927), (holo. GAZI, iso. ANK, HUB). Para.: *ibid.* Aytaç 6764 & Karavelioğulları, 27.ix.1994.

15. *POLYGONACEAE* (2: 265)

6. *POLYGONUM* L. (2: 269)

e *P. ekimianum* Leblebici, H.Duman & Aytaç, in Willdenowia 23: 163-165 (1993). [27]

Type: (Turkey) C6 Kahramanmaraş: Ahır Dağı, Karagöl mevki, step, 1650 m, 19.x.1990, Duman et Aytaç 3411 (Holo-EGE; iso-ANK, B, GAZI, HUB).

7. *RUMEX* L. (2: 281)

R. arifolius All., in Melang. Phlos. Math. Soc. Roy. Turin (Misc. Taur) 5: 94 (1774). [28]

N. E. Turkey. A6 Sivas: Şerefiye, Köse Dağı, Cehennemdere, su kenarı ve çayırliklar, 1800 m, 11.viii.1984, B.Yıldız 5005, N.Çelik. A7 Sivas: Suşehri, Aksu köyü, Köse Dağı, yaprak dökten orman, 1700-1800 m, 26.vi.1985, B.Yıldız 5703.

16. *CHENOPODIACEAE* (2: 294)

8. *CERATOCARPUS* L. (2: 313)

C. turkestanicus Sav.-Rydz., in Addenda, V. p.874. [29]

E. Turkey. B10 Ağrı: Doğubeyazıt, Gürbulak, Iran frontier, steppes, 1550 m, 21.vii.1990, Ş. Yıldırımli 13752 (HUB, Hb. Yıldırımli); *ibid.*, 20.vi.1991, Ş.Yıldırımli 14538 (HUB; Hb. Yıldırımli).

22. SALSOLA L. (2: 328)

14. *S. canescens* (Moq.) Spach, in Fl. Or. 4: 963 (1879).

e subsp. *serpentinicola* Freitag & E.Özhatay, in Willdenowia, 27: 185-187 (1997). [30]

Holotype: Turkey, C2 Muğla: distr. Köyceğiz, Sandras Dağı, Serçe Gediği, 1650 m, open *Pinus nigra* forest, serpentinic rock, 6.ix.1978, N. & E.Özhatay (ISTE 51122; iso. ISTO 20668, KAS).

22. TAMARICACEAE (2: 348)

2. TAMARIX L. (2: 349)

T. tetragyna Ehrenb., in Linnaea, 2: 247-258 (1827). Syn: *T. brachystachys* Bunge, *T. meyeri* Boiss. [31]

Southern Turkey.

27. GUTTIFERAE (2: 355)

1. HYPERICUM L. (2:355)

e *H. kazdaghensis* Gemici & Leblebici, in Candollea, 50(1): 46 (1995). [14]

Type: (Turkey) B1 Balıkesir: Edremit, Kazdağı, NE of Sarıkız Tepe, scree, 1500 m, 23.ix.1993, Y. Gemici, et al. 15259 (Holo, EGE).

e *H. peshmenii* Yıldırımli, in Ot Sistematiik Botanik D., 2(2): 12 (1995). [32]

Type: Türkiye. B7 Erzincan: Kemaliye, Başpınar, Armağan Köyü, Karlık çeşme, around Toptaş, crevices of limestone rock, 1750 m, 21.viii.1980, Ş.Yıldırımli 3902 (Holo. HUB, iso. Herb. Yıldırımli).

30. LINACEAE (2: 425)

1. LINUM L. (2: 425)

L. maritimum L., in Sp. Pl. 280 (1753). [33]

S.W. Anatolia. C2 Muğla: Köyceğiz, Hamitköy, 10 m, 17.vii.1991, A. Güner 9626.

31. GERANIACEAE (2: 450)

3. ERODIUM L'Hérit. (2: 475)

e *E. birandianum* İlarıslan & Yurdakulol, in Flora Mediterranea 4: 167 (1994). [34]

Type: Turkey (A5 Kastamonu): Devrekani, Yaralıgöz Mountain, subalpine limestone rocks, 1900 m, 9.vii.1991, E.Yurdakulol 3552 (holo. HUB, GAZI; iso. ANK).

e *E. hendrikii* K.Alpınar, in Edinb. Jour. Bot., 51(1): 68-69 (1994). [5]

Type: (Turkey) A7 Gümüşhane: Yağmurdere, 1800 m, 10.viii.1989, K.Alpınar et H.t Hart, ISTE 61049 (holo. ISTE; iso.E).

e *E. olympicum* Gemici & Leblebici, in Candollea, 50(1): 46 (1995). [14]

Type: A2 Bursa: Uludağ, N part of Zirve Tepe, limestone cliff crevices, 2300 m, 5.viii.1993, Y. Gemici, et al. 8280-b (Holo, EGE).

45. LEGUMINOSAE (3: 1)

11. CHAMAECYTISUS Link (3: 16)

e *C. gueneri* Duman, Başer & Malyer, in Karaca Arboretum Magazine, 4(1): 13-15 (1997). [35]

Type: Turkey. C2 Muğla: Köyceğiz, Sandras Dağı, Ağla-Eskere, 1700 m, 25.vii.1992, open *Pinus nigra* forest, serpentine slopes, A. Güner 10760-A.A. Dönmez & H. Şağban (holo. HUB, iso. GAZI, E).

C. wulfii (V.Krecz.) A. Klaskova, in Preslia 30: 214 (1958). [36]

C. Anatolia. A4 Ankara: Kızılcahamam; Çamçukuru Orman evi, *Pinus nigra* ormanı, 8.v.1966, A. Baytop (ISTE 9211); A4 Kastamonu: Ilgaz Da., 1700-750 m, 2.vii.1989, M.Koyuncu 15206 (AEF); A4 Kastamonu, Ilgaz Da., *P. nigra* ormanı, 1465 m, 19.v.1972, A. ve T. Baytop (ISTE 21726); A5 Kastamonu: Tosya, Dedem Da. around Dereseği, *P. nigra* ormanı, ca.1450 m, 31.vi.1976, M. Kılınc 6264 (ANK); B2 Kütahya: Murat Da., Kesik Söğüt Yaylası (Kızıloluk-Kurugöl), stony places, 1800-1900 m, 3.vii.1976, A. Baytop, K. Alpınar (ISTE 35065); B2 Kütahya: Yellice Da., stony places, 1550 m, 5.vi.1994, H. Malyer 9324 (BULU) and 7236 (ESSE); B3 Afyon: Bayat, north side of Köreoğlu Tepesi, ca.1300 m, 24.v.1975, M. Vural, 137 (ANK).

32. ASTRAGALUS L. (3: 49)

e *A.akmanii* Aytaç et Duman, in Doğa Tu Botanik D., 19(4): 477-478 (1995). [25]

Type: (Turkey) C6 Kahramanmaraş: Ahır Dağı, Karagöl mevkii, 1750-1800 m, 31.vii.1991, Aytaç et Duman 4219 (holo-GAZI, iso-ANK, HUB).

e *A. beypazaricus* Podlech & Aytaç, in Sendtnera, 5: 265-268 (1998). [37]

Holotype: Turkey. A4 Ankara: 12 km from Beypazarı to Nallıhan, 600 m, 2.vii.1997, Aytaç 7610 (GAZI; Iso: MSB).

e *A. nigrifructus* Podlech & Aytaç, in Sendtnera, 5: 265-268 (1998). [37]

Holotype: Turkey. C4 Konya: Ereğli, İvriz, 1200-1300 m, 22.vi.1997, Aytaç 7600 (GAZI !; Iso: MSB !).

e *A. serpentinicola* Duman & Ekim, in Willdenowia, 27: 181-183 (1997). [38]

Type: (Turkey) C2 Burdur, Yeşilova, S of Salda lake, clearings in *Pinus nigra* and *Quercus* forest, on serpentine, 1170-1200 m, 11.vii.1993, H.Duman 5078 & F.A. Karavelioğulları (GAZI; iso. ANK, B, ISTE).

41. *LENS* Miller (3: 325)

e *L. tomentosus* Ladizinsky, in Bot. Journal of Linnean Society, 123: 260 (1997). [39]

Type: (Turkey) C8 Mardin: 22 km north-west of Mardin, collected by G. Ladizinsky, accession No. 133, grows in Rehovot, Israel, Holo. HUJ, iso.E.

42. *LATHYRUS* L. (3: 328)

L. inconspicuus L., in Sp. Pl. 730 (1753).

var. *stenophyllus* (Boiss.) Rech. f., in Fl. Iranica 74 (1979). [40]

S.E. Anatolia. D8 Diyarbakır, Lice, Lice'den Kulp'a doğru 5 km, 850 m, 8.vi.1985, A.S. Ertekin, DUF 4730, Lice, Şeyhan köyü çevresi, 910 m, 8.v.1991, A.S. Ertekin, DUF 6847. C7 Ş.Urfa, Siverek, Bahser köyü, 900 m, 31.v.1986, A.S. Ertekin, DUF 5163, Siverek, TRT vericisinden Karabahçe'ye doğru 11 km, Karacadağ, 1500 m, 7.v.1981, Ö. Savaş, DUF 2457, 15.v.1984, A.S. Ertekin, DUF 4001, Siverek, TRT vericisi yol ayrımı çevresi, Karacadağ, 1260 m, 15.v.1984, A.S. Ertekin, DUF 3988, Siverek, Siverek'ten Diyarbakır'a doğru 13 km, 1060 m, 3.vi.1988, A.S. Ertekin, DUF 5322, Diyarbakır, Ş.Urfa'ya doğru 39 km, Karaca Dağın kuzey etekleri, 1100 m, 15.v.1984, A.S. Ertekin, DUF 3974, Çınar, Hatuni köyü çevresi, Karaca Dağ'ın doğu etekleri, 780 m, 19.v.1989, A.S. Ertekin, DUF 5882.

46. *TRIFOLIUM* L. (3: 384)

T. ornithopodioides (L.) Sm., in Fl. Brit. 2: 782 (1800). Syn: *Melilotus ornithopodioides* L., in Sp. Pl. 768 (1753). *Trigonella ornithopodioides* Desr., in Lam. Encycl. Meth. Bot. 4: 67 (1797). [41]

European Turkey. A1(E) Edirne: Keşan, SW of Mecidiye, at the eastern end of the beach extending east of lake Tuzla, 5 m, 19.iv.1994, A.J. Byfield & N. Özhatay (AJB 326), det. A.J. Byfield, ISTE 66433.

50. *MEDICAGO* L. (3: 483)

M. heyneana Greuter, in Candollea 25: 190 (1970). [19]

SW. Anatolia: The Marmaris Peninsula.

46. *ROSACEAE* (4:1)

21. *ALCHEMILLA* L. (4: 80)

e *A. ancerensis* Kalheber, in Sendtnera, 2: 412 (1994). [42]

Type: Turcia, prov. A8 Rize: İkizdere, Ballıköy (Anzer), 2150 m, pratum, 19.viii.1984, leg. M. Vural 3090. Herb. Univ. Hacettepensis, Ankara (holo, HUB).

e *A. cimilensis* Kalheber, in Sendtnera, 2: 404 (1994). [42]

Type: Turcia, prov. A8 Rize: İkizdere, Cimil, Basköy üstleri, 2100 m, pratum, 24.vii.1984, M. Vural 3220 B (HUB, holo).

A. daghestanica Juz., in Delect. Semin. Hort. Bot. Acad. Sc. URSS (1934) 5. [43]

N.E. Anatolia. A7 Trabzon: East slopes of Zigana Dağ Tesisleri (together with some species of *Pinus*, *Rhododendron ponticum*, *R.luteum* and *Delphinium*), 1750-1800 m, 10.vii.1994, S.Hayırlıoğlu 81, KTÜB.

e *A. elevitensis* Kalheber, in Sendtnera, 2: 406-407 (1994). [42]

Type: Turcia, prov. A8 Rize: Çamlıhemşin, Elevit, Cevizli vallis, ripa rupester rivi, 2100 m, 15.vii.1985, M. Vural 3512 (holo, HUB).

A. epipsila Juz., in Grossh., Fl. Kavk. IV (1934) 328. [43]

N.E. Anatolia. A8 Trabzon: on the road of Sürmene to Arpalı Köyü near stream (together with some species of *Carex*, *Achillea*, *Bromus*, *Secale*, among others), 2000 m, 1.viii.1994, S.Hayırlıoğlu 41, KTÜB.

e *A. hemsinica* Kalheber, in Sendtnera, 2: 408-409 (1994). [42]

Type: Turcia, prov. A8 Rize: Çamlıhemşin, Ortaköy, Vercenik Dagi, Alpinik küçük dere yatağı, 2700 m (tüylü), 13.viii.1985, M. Vural 3685 (holo, HUB).

A. holotricha Juz., in Addenda, Fl. USSR 10: 295 (1941). [43]

N.E. Anatolia. A7 Trabzon: East slopes of Zigana Dağ Tesisleri (together with some species of *Euphorbia*, *Rhododendron luteum* and *Pinus sylvestris*), 1750-1800 m, 10.vii.1994, S.Hayırlıoğlu 84, KTÜB.

e *A. ikizdereensis* Kalheber, in Sendtnera, 2: 405-406 (1994). [42]

Type: Turcia, prov. A8 Rize: İkizdere, Dereköy-Yerelma vicus, inclinatio vallis, pratum, 1000 m, 10.vi.1984, M.Vural 3008 (1) (holo, HUB).

e *A. kackarensis* Kalheber, in Sendtnera, 2: 407-408 (1994). [42]

Type: Turcia, prov. A8 Rize: Çamlıhemşin, Yukarı Kavrun, Kaçkar Dağı, *Nardus stricta caespes*, 2350 m, 7.viii.1985, M. Vural 3636 (holo, HUB).

A. smirnovii Juz., in Addenda, Fl. USSR 10: 295 (1941). [43]

N.E. Anatolia. A7 Trabzon: Along to Değirmendere valley above Zigana Dağ Tesisleri (together with some species of *Euphorbia*, *Rhododendron luteum* and *Pinus sylvestris*), 1750 m, 10.vii.1994, S. Hayırlıoğlu 110, KTÜB.

A. speciosa Buser apud Magnier, in Scrinia fl. Selectae (1893) 281. [43]

N.E. Anatolia. A7 Trabzon: Zigana Geçidi and surroundings together with some species of *Euphorbia*, *Malva sylvestris*, among others, 1800 m, 17.vii.1994, S. Hayırlıoğlu 87, KTÜB.

e *A. trabzonica* Hayırlıoğlu-Ayaz & Beyazoğlu, in Ann. Bot. Fennici, 34: 111-112 (1997). [44]

Holotype: (Turkey) A7 Trabzon: Zigana Pass, S and SW meadows, by streamside banks (together with some species of *Rhododendron*, among others), 1750 m, 20.vi.1995, S. Hayırlıoğlu (Ayaz) 190 (KTÜB).

34. PYRUS L. (4: 160)

e *P. serikensis* A.Güner & H.Duman, in Karaca Arboretum Magazine, 2: 166 (1994). Syn.: *Pyrus boissieriana* Buhse subsp. *crenulata* Browicz, in Notes Roy. Bot. Gard. Edinb., 31: 322 (1972). [45] **stat. et nom. nov.**

Type: (Turkey) C3 Antalya: 17 km S. of Serik, c. fr., 16.viii.1959, M. and D. Zohary 3092 (holo.HUJ).

SW. Anatolia. (Turkey) C3 Antalya: 17 km S. of Serik, 16.viii.1959, M. and Zohary 3088, 3091. Aksu, Ortaköy çevresi, 100-150 m, 28.viii.1993, H. Duman 5411 (fr.) ! Serik, Dikmen Köyü, 10 m, 19.iii.1994, H. Duman 5556! *ibid.*, 24.x.1993, A. Güner 11641 (fr.)! Aksu, Serik arası, Aşağıkocayatak Köyü yol ayrımı, 20 m, 19.iii.1994, H. Duman 5558 !

49. LYTHRACEAE (4: 174)

1. LYTHRUM L. (4: 174)

e *L. anaticum* Leblebici & Seçmen, in Doğa Tu Botanik D., 19(5): 559-560 (1995). [46]

Type: (Turkey) A3 Bolu: Düzce, S. of Efteni (Melen) Gölü, aquatic marsh. ca.140 m, 27.vii.1985, E. Leblebici 6032, Ö. Seçmen (EGE 5102).

50. ONAGRACEAE (4: 180)

3. LUDWIGIA L. (4: 182)

L. peploides (Kunth) P.H. Raven, in Reinwardtia, 6: 393 (1963). [47]

South Turkey. C3 Antalya: Antalya-Kemer road, 10 km, Sarısu forest Camp, in rivers, 5 m, 19.vii.1997, R.S. Göktürk 4226. C3 Antalya: Sarısu, 5 m, H. Peşmen 4916.

Alien species.

55. CUCURBITACEAE (4:200)

* SICYOS L.

S. angulatus L., in Sp. Pl. 1013 (1753). [48]

N.E. Anatolia. A8 Artvin: Borçka, Maçahel (Camili) çevresi, bahçe kenarı, 370 m, 21.viii.1994, A. Güner 11700, H. Duman, F. Karavelioğulları, R.Disperati

Alien species.

58. CRASSULACEAE (4: 209)

4. SEDUM L. (4: 224)

e *S. aytacianum* J.Metzger, in Cactus & Succulent Journal (V.S), 66: 259-260 (1994). (Sect.Sedum L.; Sect. Eurasiatica *Kyphocarpia* Fröderström). [49]

Type: A7 Trabzon: from limestone rock on a mountain-range ca.3 km west of Maçka, 1800-1850 m, 21.v.1992, J. Metzger 2046.1 (holo GAZI, cult.J. Metzger from J. Metzger 2046.1; iso BASBG and Metzger herbarium, Basle. Cult. GAZI; Basle Botanic Garden; Vaclav Plestil in Turnov and Ladislav Hlavaty in Prerov, Czech Republic.

S. eriocarpum Sibthorp & Smith, in Fl. Graec. 1, 310 (1809).

e subsp. *caricum* (Carlström) 't Hart, Ot Sistematiik Botanik D., 2(2): 8 (1995). [50] **com. nov.**

Typus: Turkey, prov. C2 Muğla: Armutalanı, c.3 km W of Marmaris, open ground on serpentine, Carlström 9694, 23 Apr. 1983 (LD).

e *S. vuralianum* J.Metzg., in British Cactus & Succulent Society Journal, 11(4): 100-101 (1993). (Sect. *Sedum*) [51]

Type: A7 Trabzon: Zigana in open ascending terrain with limestone boulders strewn in, with some trees of *Pinus sylvestris*, 200 m, E of the N tunnel entrance, 2050 to 2070 m, 23.v.1992, J. Metzger 2012.1 (holo GAZI, cult. J. Metzger from J. Metzger 2021.1), Hb. Metzger, Basle; cult. GAZI, Basle Botanic Garden & Tumov, Czech Republic.

59. SAXIFRAGACEAE (4: 249)

1. SAXIFRAGA L. (4: 249)

S. graeca Boiss. et Heldr., in Boiss., Fl. Or. 2: 807 (1872). [52]

European Turkey. A1(E) Edirne: 2 km from Lalapaşa, Bağlık deresi, 25.iv.1974, N. and E. Özhatay, ISTE 27611, same place 22.v.1978, N. and E. Özhatay, ISTE 39506 (rev. V.A. Matthews); Kırklareli: Kırklareli to Dereköy, Koruköy, 400 m, 22.v.1978, N. and E. Özhatay, ISTE 39530.

This species (*S. graeca* Boiss.) is recorded in P.H. Davis "Flora of Turkey and East Aegean Island" vol.4, p.254 from East Aegean Islands (Samos, Icaria, Khios).

63. UMBELLIFERAE (4: 265)

1. HYDROCOTYLE L. (4: 288)

H. vulgaris L., in Sp. Pl. 234 (1753). [33]

S.W. Anatolia. C2 Muğla: Köyceğiz, Lambataklığı çevresi, 15 m, 20.v.1991, A. Güner 9137.

7. ECHINOPHORA L. (4: 306)

e *E. lamondiana* B. Yıldız & Z. Bahçecioğlu, in The Karaca Arboretum Magazine, 4: 7-8 (1997). (Sect. *Chrysophora* DC.) [53]

Type: Turkey B6 Malatya: 4-5 km from Hemikhan to Hasançelebi, eroded slopes, 1100 m, 26.ix.1992, B. Yıldız 9872 (holo GAZI, iso. ISTE).

31. SESELI L. (4: 367)

S. gummiferum Pallas ex Smith, in Sp. Pl. 251 (1753).

subsp. *gummiferum* [54]

C. Anatolia. A4 Ankara: İdris Dağı, Adilahmet köyü üstü, 1700 m, 9.ix.1988, M. Koyuncu (AEF 16347); Hasanoğlan, İdris Dağı, Hasanoğlan'ın üstü, 1500-1600 m, 27.vi.1989, Koyuncu et al. (AEF 16348).

42. PRANGOS Lindl. (4: 382)

P. longistylis (Boiss.) Pimenov & Kljuykov, in Candollea 52(2): 110 (1997). Syn.: *Ferulago longistylis* Boiss., in Ann. Sci. Nat. Bot. Ser. 3, 1: 321 (1844), *Prangos platychaena* Boiss. ex Tchich., Asie Min., Bot. 1: 457 (1860). [55] com. nov.

Holotype: B8 Erzurum: "Armeria: prope pagum Kale, haud procul am. Mille Lacuum (Bingoeldagh), alt. 1900-2000 m, 1858, Tchihatcheff 896 (P).

80. TORDYLIUM L. (4: 504)

e *T. ebracteatum* Al-Eisawii & Jury, in Bot Jour. of

Linnean Society, 97: 401-402 (1988). [56]

Type: (Turkey) Muğla, limestone sea-cliffs just before entrance of Bozburun Harbour, 50-100 m, 8.vi.1962, D. Dudley 35477 (E).

67. VALERIANACEAE (4: 550)

1. VALERIANA L. (4: 551)

V. montana L., in Sp. Pl. 32 (1753). [57]

N.E. Anatolia. A8 Rize: Çamlıhemşin, Yukarı Kavrun yaylası, Derebaşı mevki, çayırılık, 2750 m, 5.viii.1985, A. Güner-M. Vural (A. Güner 6705) (AEF 11895)

69. DIPSACACEAE (4: 582)

2. CEPHALARIA Schrader ex Roemer & Schultes (4: 585)

e *C. ekimiana* R.S. Göktürk & H. Sümbül, in Ann. Bot. Fennici 34: 153 (1997). [58]

Holotype: (Turkey) S. Anatolia, C4 Karaman, Ermenek, Tepebaşı village, roadside, on disturbed ground, 1100 m, 2.viii.1995, R.S. Göktürk 3479 (Akdeniz University Herbarium; isotypes HUB, ANK, GAZI). Paratype: (Turkey) S. Anatolia C4 Karaman: Ermenek, Tepebaşı village, roadside, on disturbed ground, 1100 m, 6.viii.1996, R.S. Göktürk 3892 (Akdeniz University Herbarium).

70. COMPOSITAE (5: 1)

5. AMBROSIA L. (5: 47)

A. elatior L., in Sp. Pl. 987 (1753). [59]

N.E. Anatolia. A7 Trabzon: 1 km W. of Çarşıbaşı, damp roadside grassland, 10-20 m, 23.viii.1995, A.J. Byfield and S. Atay (ISTE 69357).

Alien species.

16. HELICHRYSUM Gaertner (5: 80)

H. plicatum DC., in Prodr. 6: 183 (1838).

e subsp. *isauricum* Parolly, in Willdenowia, 25: 239-241 (1995). [60]

Type: (Turkey) C4 Karaman, Oyuklu Dağ bei Ermenek, Nordflanke, 36 51 N, 32 53 E, subalpine Grasflur mit *Senecio cilicicus*, 1900 m, feinerdereich, Ophiolitikh, 25-30, SE-exp., 11.vii.1992, Parolly 92-45 b-1 (BSB, iso-B).

20. LOGFIA Cass (5: 107)

L. minima (Sm.) Dumort, in Fl. Belg. 68 (1827). [61]

European Turkey. A1 (E) Kırklareli: Kırklareli to Kofçaz, at the turning to Kadıköy, edge of a *Helianthus annuus* field, 3.vii.1975, A. Baytop, ISTE 32501. A1(E)

Kırklareli: SW of İğneada, Longoz forest, dry acid grassland, on river terrace gravels, 10 m, vi.1993, A.J.Byfield B 2354, ISTE 69708. A1(E) Edirne: Enez, 4 km S of Küçük Evren toward sea, sandy tracks through young *Pinus* plantation, 20 m, 1.vi.1994, A.J.B yfield B 653, ISTE 66762. A1(E) Edirne: Enez to Ipsala, Karpuzlu, E of Siğirci Lake, short grazed sandy pasture, 30 m, 1.v.1994, A.J. Byfield B 662, ISTE 66771. C2 Denizli: 5 km above Babadağ, N dry shale slopes, light acid soils, 1300 m, 27.v.1995, İter Anatolicum 95/054, A.J. Byfield, s.n., ISTE 70344.

42. *ANTHEMIS* L. (5: 174)

A. *melanolepis* Boiss., in Fl. Or. Suppl. 297 (1888). [33]

S.W. Anatolia. C2 Muğla: Köyceğiz, Yangı Köyü sırtları, 70 m, 20.iv.1991, A. Güner 8947.

60. *ONOPORDUM* L. (5: 356)

O. *majori* Beauverd, in Bull. Soc. Bot. Genève ser. 2, 6: 152 (1914). [33]

S.W. Anatolia. C2 Muğla: Köyceğiz, Ekincik, Sandallı tepe, 700 m, 16.vii.1991, A. Güner 9598. Dalyan, Eskiköy, 20 m, 15.vii.1991, A. Güner 9634.

O. *sirsangense* Rech. f., in Fl. Iranica, 139 a: 164 (1979). [62]

E. Anatolia. C9 Van: 15 km from Çatak to Narlı, river banks, 1450 m, 14.viii.1984, E.Tuzlacı, ISTE 54964!

62. *CIRSİUM* Miller (5: 370)

e C. *dirmilense* R.M. Burton, in Karaca Arboretum Magazine, 3(3): 123-124 (1996). [63]

Holotype: (Turkey) C2 Burdur: Altınyayla side of Dirmil Geçidi, c. 1500 m, serpentine, 23.x.1993, R.M.Burton An. 902 (ABANT).

115. *HIERACIUM* L. (5: 696)

e H. *nydeggerorum* Gottschlich, in Bauhinia, 11/4: 243-244 (1996). [64]

Holotype: (Turkey) A9 Erzurum: Olur, Karadağ, Föhrenwald, 1700 m, 21.vii.1984, M. Nydegger 19343 (G).

118. *PRENANTHES* L. (5:763)

e P. *oyukludaghensis* Parolly, in Willdenowia, 25: 242-244 (1995). [60]

Type: (Turkey) C4 Karaman, Oyuklu Dağ bei Ermenek, Nordostflanke, Kar, 36 51 N, 32 53 E, subalpine steinschuttflur mit *Scrophularia myriophylla* und *Ferulago trachycarpa*, 2000 m, feinerdereicher,

ruhender Mittelschutt, Dolomit, 30, SE-exp., 23.vii.1992, Parolly A354-1 (BSB, iso-B, herb. Parolly).

72. *CAMPANULACEAE* (6: 2)

1. *CAMPANULA* L. (6: 2)

e C. *damboldtiana* Davis & Sorger, in Notes RBG, 37(2): 265 (1979). (Sect. *Dictyocalyx* (Fed.) Damboldt). [65]

Type: (Turkey) A4 Ankara: 16 km E. Ayaş, sandiger Steppenhang, 1190 m, 7.vii.1977, F. Sorger 77-56-9 (holo. Hb. Sorger; iso. E).

C. *latiloba* A. DC., in DC., Prodr., 7: 478 (1839).

e subsp. *rizeensis* A. Güner, in Candollea, 39: 348 (1984). [66]

Type: (Turkey) A8 Rize: Çamlıhemşin çevresi, sarp kayalık, c.250 m, 21.v.1981, A. Güner 3547 (Holotype HUB; isotype ANK).

e C. *kirikkaleensis* A.A. Dönmez & A. Güner, in Karaca Arboretum Magazine, 2: 115-118 (1993). (Sect. *Rupestres* (Boiss.) Charadze) [67]

Type: (Turkey) B5 Kırıkkale: Delice çevresi, cipsli yamaçlar, bozkır, 720 m, 17.viii.1993, A.A. Dönmez 3924, M. Açıkgöz, C. Uyanık (holo. HUB, iso.GAZI, ANK.)

C. *rotundifolia* L., in Sp. Pl. 163 (1753). [5]

European Turkey. A1(E) Kırklareli: 2 km from Demircihalil Village to Dereköy, 200 m, 21.viii.1988, K.Alpınar & H.'t Hart (ISTE 59685).

73. *ERICACEAE* (6: 89)

1. *RHODODENDRON* L. (6: 90)

R. *ponticum* L., in Sp. Pl. ed. 2:562 (1762). subsp. *ponticum*

e var. *heterophyllum* Anşın, in Tr. J. of Agricultural and Forestry, 18: 139 (1994). [68]

Holotype: (Turkey) A8 Trabzon: Trabzon-Of, Kumludere Köyü, 50-100 m, *Quercus-Carpinus* yapraklı ormanlarında, *Laurocerasus*, *Rhododendron* ve *Corylus* çalılıkları ile birlikte bulunmaktadır. S. Terzioğlu, 10.xi.1992 (KATO:9884).

87. *BORAGINACEAE* (6: 237)

18. *BUGLOSSOIDES* Moench (6: 315)

B. *glandulosum* (Velen) R.Fernandez, in Bot.J.Linn. Soc., 64: 379 (1971). [69]

Type: (Turkey) A4 Ankara: Kızılcahamam, Çamkoru, Kadınboğazı, moist meadows, 1400-1450 m, 8.v.1986, Ş. Yıldırım, 9193 (HUB, Herb. Yıldırım).

20. **ECHIUM** L. (6: 318)
e. **E. arenarium** Guss., in Ind. Sem.Horto Boccad. 5 (1826). [19]
S.W. Anatolia: The Marmaris Peninsula
88. **SOLANACEAE** (6: 437)
4. **PHYSALIS** L. (6: 444)
P. pubescens L., in Sp. L. 183 (1753). [59]
N.E. Anatolia. A8 Artvin: Kemalpaşa, beach W. of river mouth, sandy dry grassland behind beach, 5 m, 17.viii.1995, A.J. Byfield and S. Atay (ISTE 69309).
Alien species.
89. **SCROPHULARIACEAE** (6: 458)
17. **VERONICA** L. (6: 689)
V. peregrina L., in Spec. Pl. 14 (1753). [70]
S.E. Anatolia. C5 Adana: Seyhan Dam Lake, Karaömerli village, shorelines, wet places, 60-70 m, 16.xii.1990, H. Çakan 2338 (ADA).
94. **LABIATAE** (7: 36)
2. **TEUCRIUM** L. (7: 53)
e. **T. ekimii** Duman, (Sect. *Teucrium* Benth.), in The Karaca Arboretum Magazine, vol. 4(3): 125-130 (1998). [71]
Type: Turkey. C2 Antalya: between Beldibi and Kemer, Kuruçay Dere, 40-50 m, shady limestone cliffs, 10.vi.1996, H. Duman 6423, N. & E. Özhatay (holo-GAZI, iso. E, ISTE, ANK).
16. **BALLOTA** L. (7: 156)
e. **B. sechmenii** Gemici & Leblebici, in Candollea, 50(1): 50 (1995). [14]
Type: (Turkey) C4 Antalya: N part of Anamur, Çamyayla, Limestone cliff crevices, 1600 m, 25.viii.1993, Y. Gemici, & Ö. Seçmen 8491 (Holo, EGE).
18. **SIDERITIS** L. (7: 178)
e. **S. akmanii** Z.Aytaç, M.Ekici & A. Dönmez, in Flora Mediterranea, 5: 221-224 (1995). [72]
Type: (Turkey) B3 Afyon: Sandıklı-Şuhut yolu, Kumalar Yaylası, 1520-1550 m, step, 4.viii.1993, Aytaç (6515), Ekici & Dönmez (Holo-GAZI, iso-ANK, HUB).
e. **S. caesarea** Duman, Aytaç et Başer, in Doğa Tu Botanik D., 22(1): 51-53 (1998). (Sect. *Empedoclia* (Rafin.) Benth.) [73]
Type: Turkey. B6 Kayseri: Sakız, Yalak (Yeşilkent), Binboğa Dağı, Tekkekayası mevkii, 1800-2200 m, yüksek dağ stebi, 4.viii.1991, Z. Aytaç 4310 - H. Duman (holo-GAZI; iso-ESSE, ANK).
e. **S. gulendamii** H. Duman & F.A. Karavelioğulları, in Flora Mediterranea, 5: 224-226 (1995). [72]
Type: (Turkey) B3 Eskişehir: Sivrihisar-Afyon, Aşağıkepen köyü güneydoğusu, jipsli step, 900-950 m, 20.vii.1993, Duman 5219 & Aytaç (Holo-GAZI, iso-ANK, HUB).
S. scardica Griseb., in Spicil Flor. Rumel. 2: 144 (1844). subsp. *scardica* [74]
European Turkey. A1(E) Kırklareli: Demirköy, around Sarpdere village, 800 m, 15.vii.1992, ESSE 9967.
e. **S. ozturkii** Z. Aytaç et A. Aksoy [75]
Type: B3 Konya: Derebucak, Kızıldağ, 3 km N of Çamlık town, 1450-1700 m, serpentine rocky place and clearings of *Pinus nigra* forest, 14.vii.1997, Aytaç 7719 & A.Aksoy, para. Aksoy 2312 (holo-GAZI, iso. ANK, HUB).
e. **S. vuralii** Duman et Başer, in Doğa Tu Botanik D., 22(1): 53-55 (1998) (Sect. *Empedoclia* (Rafin.) Benth.). [73]
Type: Turkey. C4 İçel: Anamur, Kazancı-Abanoz, 1300 m, clearing forest and calcareous rocky place, 19.viii.1994, M. Vural 7165, N.Adıgüzel & A. Dönmez (holo-GAZI; iso-ESSE, ANK).
19. **STACHYS** L. (7: 199)
e. **S. cydni** Kotschy ex Gemici & Leblebici (Sect. *Ambleia* Benth.), in Doğa Tu Botanik D., 22(5): 359-360 (1998). [76]
Type: C5 İçel: Arslanköy, Çocakdere, Şahinkaya region, 1560 m, crevices of calcareous rocks, 7.vi. 1995, Gemici 16079 (Holo and Iso EGE); İçel: Çamlıyayla, Payam, Manastır area rocky calcareous crevices, 1450 m, 26.vii.1997, Gem. 8730 (seed).
21. **NEPETA** L. (7: 264)
e. **N. anamurensis** Gemici & Leblebici, in Candollea, 50(1): 50 (1995). [14]
Type: (Turkey) C4 Antalya: Anamur, Abanoz Yaylası, limestone cliff crevices, 1400 m, 25.viii.1993, Y. Gemici & Ö. Seçmen 8498 (Holo, EGE).
N. humilis Benth., in DC., Prodr., 12: 382 (1858). [77]
E. Anatolia. C10 Hakkari: Yüksekova-Varagöz, 2150 m, 1.vii.1983, wet places, Koyuncu 6263 & Coşkun (AEF and GAZI).

28. *ORIGANUM* L. (7: 297)

e *O. x adanense* Başer et Duman, in Doğa Tu Botanik D., 22(1): 55 (1998). (*O. bargyli* Mouterde x *O. laevigatum* Boiss.) [73]

Type: Turkey. C6 Osmaniye: Amanos Dağı, Yarpuz-Ağulu, 1190 m, *P. nigra* forest, 20.vii.1995, H.Duman 5881, K.H.C. Başer and A. Altıntaş (holo-GAZI; iso-ESSE, ANK).

e *O. husnucan-baserii* H. Duman, Z. Aytaç & A. Duran, in Flora Mediterranea, 5: 226-228 (1995). [72]

Type: (Turkey) C4 Antalya: Alanya, Çökele-Gökbek, *Pinus nigra* açıklığı, kalkerli alanlar, 1350 m, 9.viii.1994, Duman 5602 Aytaç & Duran (Holo-GAZI, iso-ANK, HUB, ESSE, GAZI).

36. *THYMUS* L. (7: 349)

T. syriacus Boiss., in Boiss. Diagn. Ser., 1, 12. p.47. [74]

S.E. Anatolia. C6 Gaziantep: Beylerbeyi village around *Pistachia* plantations, 10.viii.1993, ESSE 10087.

39. *MENTHA* L. (7: 384)

M. x dumetorum Schultes, in Obs. Bot. 108 (1809). (*M. aquatica* L. x *M. longifolia* (L.) Hudson.) [78]

N.W. Anatolia. A3 Sakarya: Between Sakarya and Karasu, around Limandere, waterside, 70 m, 29.ix.1995, G. Tarımcılar, BULU 9428. A3 Bolu: In vicinities of the Abant Lake, 1350 m, 1.x.1995, G. Tarımcılar, BULU 9431. A4 Zonguldak: Between Karabük and Eskipazar, around Çay village, streamside, 1450 m, 21.viii.1994, G. Kaynak and G. Tarımcılar, BULU 8837; Safranbolu, 1.5 km from Safranbolu to Akören village, damp and shady places, 1310 m, 22.viii.1994, G. Tarımcılar and G. Kaynak, BULU 8899; Ereğli, parts of Kızılcapınar, streamside, 40 m, 30.ix.1995, G. Tarımcılar, BULU 9429; Hisarönü, around Şahnalar village, 20 m, 30.ix.1995, G. Tarımcılar, BULU 9430; Türkeli, around Ömerdüzü village, 310 m, 26.viii.1994, G. Kaynak and G. Tarımcılar, BULU 9048. A4 Kastamonu: Çiftlik, 1090 m, roadside, 23.viii.1994, G. Tarımcılar and G. Kaynak, BULU 8955. A8 Rize: Çamlıhemşin, roadside, 440-520 m, 28.viii.1993, G. Kaynak and G. Tarımcılar, BULU 7875-7876.

42. *SALVIA* L. (7: 400)

e *S. aytachii* M.Vural & N. Adıgüzel, in Doğa Tu Botanik D., 20(6): 531-533 (1996). [79]

Type: (Turkey) B3 Ankara: Polatlı-Sivrihisar, 18. km Acıkır, 840 m, 6.vi.1990, Aytaç 3071, Duman & Adıgüzel (holo.: GAZI; iso.: ANK).

103. *ARISTOLOCHIACEAE* (7: 551)2. *ARISTOLOCHIA* L. (7: 552)

e *A. baseri* Malyer et Erken, in Doğa Tu Botanik D., 21(6): 381-382 (1997). [80]

Type: (Turkey) C2 Antalya: Elmalı: Sütleğen, Kazanpınar mevkii, 1300 m, 21.v.1993, H.Malyer ESSE 11592 (Holo ESSE, ISO, BULU).

104. *EUPHORBIACEAE* (7: 566)5. *EUPHORBIA* L. (7: 571)

E. nutans Lag., in Gen. et Sp. Nov. 17 (1816). [81]

S.E. Anatolia. C5 Adana: Ceyhan-Sirkeli village in corn field, 3.viii.1995 (O.G. 1062) 40 m, O. Gönen. C5 Adana: Kozan and C6 Adana: Kadirli districts in cotton, corn and soybean fields, 1996, 30-40 m, O. G. obs.

* *FLUEGGEA* Willd.

e *F. anatolica* Gemici, in Edinb. Jour. Botany, 50(1): 75 (1993). [82]

Type: (Turkey) C5 Mersin (İçel): N of Tarsus, valley of Kadıncık II Dam, W of the dam, limestone slopes and among *Ceratonia siliqua* trees, 340 m, 14.vi.1990, Y.Gemici 6330 (holo. EGE, iso.E).

115. *BETULACEAE* (7:688)2. *ALNUS* Miller (7: 691)

A. glutinosa (L.) Gaertn., in Fruct. & Sem., 2: 54, t. 90 (1790).

e subsp. *betuloides* Anşin, in Karaca Arboretum Magazine, 2: 48-49 (1993). [83]

Type: (Turkey) B8 Erzurum: Hınıs, environment of Acar (Şıhbırdere) and Hisarcık villages, 1500-1750 m, by streams, 10.vi.1990, Z. Özder (KATO.9886).

116. *SALICACEAE* (7: 694)1. *SALIX* L. (7: 694)

S. myrsinifolia Salisb., in Stirp. Allert.: 394 (1796). [84]

N. Turkey. A4 Kastamonu: N of Ilgaz mountains, Dibeyrek valley, *Abies bornmuelleriana* forests, river banks, 1750 m, 18.viii.1992, M. Avcı, s.n., *ibid.*, 15.viii.1995, M. Avcı, ISTO 27492! *ibid.*, 15.vi.1997, M.Avcı, ISTO 27607! ISTE 74659! KOR 39201, 39205!

S. purpurea L., in Sp. Pl. 1017 (1753).

e subsp. *leucodermis* Yalt., in Jour. of Facul. of Forestry of Ist. Univ., 38(2): 95 (1988). [85]

Holotype: (Türkiye) C2 Denizli: Kale, Eskere, Çiçekli Büyük Kızıllıdağ (Sandras Dağı), Yumaklı Uluca Deresi,

1200-1400 m, *Pinus nigra* ormanı, 23.v.1989, F. Yaltırık (ISTO 26660); massif of Sandras Dağı (Çiçekli Büyük Kızıldağ), stony bank of Uluca Dere, 1400-1500 m, 29.vi.1989, Borantynski, Karaca, Zielinski, KOR 516, 517.

118. RUBIACEAE (7:722)

6. GALIUM L. (7:767)

e *G. aladaghense* Parolly, in Willdenowia, 25: 244-246 (1995). [60]

Type: (Turkey) C5 Niğde, Aladağları, Yalak Deresi, 37 50 N, 35 10 E, 2640 m, steinschuttflur mit *Lamium eriocephalum* und *Anthriscus kotschyi*, 45 ENE-exp, 24.viii.1992, Parolly A 836 (B).

G. recurvum Req. ex DC., in Prodr., 4: 609 (1830). [86]

W. Anatolia. B1 Balıkesir: Ayvalık, NNE of Alibey Island, Çataltepe, igneous rock crevices, 40 m, 9.v.1995, K. Alpınar, ISTE 67870; W of Alibey Island, Karaada, southern point, 20 m, 30.iv.1997, K. Alpınar, ISTE 74047.

MONOCOTYLEDONES

135. LILIACEAE (8: 67)

9. ASPHODELINE Reichb. (8:88)

e *A. sertachae* Tuzlacı, in Candollea 53: 424 (1998). [87]

Type: (Turkey) C4 Antalya: Gazipaşa, Toros Mountains near Çiğlik Village, 2 km above Aşarbaşı, 1820 m, 26.vi.1996, E. Tuzlacı MARE 4961 (Holo-, MARE).

e *A. turcica* Tuzlacı, in Candollea 53: 426 (1998). [87]

Type: (Turkey) C3 Antalya: Gebiz, west of Bozburun Mountain, Boğaz Ağızı, Sanlı Beli, 1470 m, 28.vi.1996, E.Tuzlacı MARE 5000 (Holo-, MARE).

11. ALLIUM L. (8: 98)

e *A. anatolicum* N. Özhatay & B. Mathew, in Kew Bulletin, 50(4): 723-724 (1995). [88]

Type: (Turkey) C3 Antalya: province, Çobanisa to Korkuteli, 1050 m, 1.vi.1988, N. & E. Özhatay, ISTE 58856 (holotype ISTE !)

e *A. enginii* N. Özhatay & B. Mathew, in Kew Bulletin, 50(4): 724-726 (1995). [88]

Type: (Turkey) C5 İçel: Mut to Kirobasi, 15.vi.1990, N. & E.Özhatay, ISTE 61830 (holotype ISTE !, isotype K !).

e *A. fethiyense* N. Özhatay & B. Mathew, in Kew Bulletin, 50(4): 726-728 (1995). [88]

Type: (Turkey) C2 Muğla: province, 28.v.1988, N. & E. Özhatay, ISTE 58655 (holotype ISTE !, isotype K !).

A. hymenorrhizum Ledeb., in Fl. Altaica, 2: 12 (1830). [89]

E. Anatolia. A9 Kars: Göle, 55078, N.Demirkuş.

e *A. karacae* M.Koyuncu (Sect. Scorodon C. Koch), in Karaca Arboretum Magazine, 2(4): 177-179 (1994). [90]

Type: (Turkey) C4 Konya: between Hadim-Taşkent, open forest and step, 1450 m, 22.vii.1993, H. Karaca, T. Ekim, M. Koyuncu and A. Güner (holo. AEF 18200).

e *A. pseudoalbidum* Friesen & Özhatay, in Feddes Repertorium 109(1-2): 25-27 (1998). [91]

Type: A9 Kars: Tractus Susuz Hasköy, in itinere ad montem versus fontis (ISTE 33484 !, isotypus GAT !).

e *A. tuncelianum* (Kollmann) N. Özhatay, B. Mathew & Şiraneci, in Kew Bulletin, 50(4): 723 (1995). [88] stat. nov.

Type: (Turkey) B7 Tunceli: province, Munzur Dağ, Aksu Dere above Ovacık, 1800 m, 21.vii.1957, Davis 31498 (holotype E, isotype K !).

e *A. turcicum* N. Özhatay & Cowley (Sect. Codonoprasum), in Kew Bulletin, 49(3): 481 (1994). [92]

Type: (Turkey) B8 Batman (formerly Siirt), Sason, Halkis Dağ, 1152 m, v/vi.1990, steep stony slopes under mixed trees, N.Stevens, 74 A (holo-type K; isotype ISTE).

18. MUSCARI Miller (8: 245)

e *M. anatolicum* Cowley & N. Özhatay, in Kew Bulletin, 49(3): 485-487 (1994). [92]

Type: S Turkey. C5 İçel: 17 km from Arslanköy, above Dümbelek Pass, 2150-2200 m, 14.vi.1990, calcareous, open rocky slopes, beside cemetery, İter Anatolicum 63/90-267 (ISTE 61781, PI 689/90) (holotype ISTE; isotype K).

20. BELLEVALIA Lapeyr. (8: 264)

e *B. anatolica* B. Mathew & N. Özhatay, in Kew Bulletin, 49(3): 483-485 (1994). [92]

Type: (Turkey) B7 Elazığ: N. of Elazığ near Pertek, on road to Tunceli, rocky hillside, 4.vi.1987, fl. cult. Kew, 10 April 1990, B.Mathew 11033 (holotype K).

22. LILIUM L. (8: 279)

e *L. akkusianum* R. Gämperle, in Bulletin of the Alpine Garden Society, 66, 380-382 (1998). [93]

Holotype: A6 Ordu: 25.6.1996, in Anatolia, secundum viam ab Ünye ad Niksar, 6.7 km ab coemeterio Akkuş vici, Niksar versus, in clivo viae, inter frutices fagorum, altitudo 1100-1500 m, leg. René Gämperle. Conservatur in herbario horti botanici turicensis (Z).

23. FRITILLARIA L. (8: 284)

e *F. sororum* J. Persson & K. Persson, in New Plantsman, 5(2): 114-115 (1998). [94]

Type: (Turkey) C5 İçel: Taurus mountains, 500 m, meadow fragments adjoining brook ravine in *Pinus brutia* forest, on limestone, coll. 30.iv.1987, cult. 20.v.1995, J.Persson & K.Persson 87-89 (holo-type, GB).

F. sibthorpiana (Smith) Baker, in J.Linn. Soc. (Bot.), 14: 275 (1874).

e subsp. *enginiana* Byfield & N. Özhatay, in Karaca Arboretum Magazine, 3: 9-11 (1995). [95]

Type: SW Turkey. C2 Muğla: Köyceğiz, Sandras Dağı, Pankuduz Tepe, under woodland, rocky and moist slopes, 1000 m, 6.iv.1977, E.Özhatay 1077 (Holotype ISTE 36685, isotypes ISTO 19211 and MARA 0181).

30. COLCHICUM L. (8: 329)

e *C. davisii* C.D. Brickell, in The New Plantsman, 5(1): 15-18 (1998). [96]

Type: (Turkey) C5 Adana: d. Bahçe Dumanlı Dağ, 1300 m, edge of beech forest, 19.iv.1957, Davis 26938. Cult. R.B.G. Edinburgh, 29.ix.1984 (fl) (Holotypus E; isotypus Wisley).

136. AMARYLLIDACEAE (8: 358)

5. GALANTHUS L. (8: 365)

G. byzantinus Baker, in Gard. Chron. Ser.3, 13: 226 (1893).

e subsp. *braunerii* N. Zeybek, in Doğa Tu Botanik D., 12(1): 101 (1988). [97]

Type: (Turkey) A3 Bolu: Abant Gölü Orman Bölge Şefliği Tomruk Deposu çevresi, 1400 m, N. Zeybek (holo. IZEF 942, iso. ISTE) !

G. byzantinus Baker, in Gard. Chron. Ser.3, 13: 226 (1893).

e subsp. *sauerii* N. Zeybek, in Doğa Tu Botanik D., 12(1): 101 (1988). [97]

Type: (Turkey) A3 Bolu: Abant Gölü yolu, 1250 m, 12.iv.1978, E. Sauer (holo. BRD. Saarland Univ. Herb. 18643, iso. IZEF) !

G. byzantinus Baker, in Gard. Chron. Ser.3, 13: 226 (1893).

e subsp. *tughrulii* N. Zeybek, in Doğa Tu Botanik D., 12(1): 100 (1988). [97]

Type: (Turkey) A3 İzmit: Keltepe, 1050 m, 8.ii.1985, L.Tuğrul (holo. IZEF 926, iso. ISTE) !

G. elwesii Hook., in Bot. Mag., 101: t. 6166 (1875).

e subsp. *akmanii* N. Zeybek, in Doğa Tu Botanik D., 12(1): 99 (1988). [97]

Type: (Turkey) A4 Ankara: Uruş, Örencik Köyü, kayalık step yamaçlar, 1500 m, 7.iii.1981, N. Zeybek, M. Koyuncu, M. Aydoğdu (holo. IZEF 409, iso. ISTE) !

G. elwesii Hooker fil., in Bot. Mag., 101: t. 6166 (1875).

e subsp. *baytopii* N. Zeybek & E.Sauer, in Doğa Tu Botanik D., 12(1): 96-97 (1988). Syn.: *G.gracilis* Celak. subsp. *baytopii* N.Zeybek [97] **com. nov.**

Type: (Turkey) C3 Antalya, Akseki, Çimi Köyü Yaylası, Toptaş Mevkii, ca.1400 m, 6.ii.1984, U. Zeybek (IZEF 1810).

G. elwesii Hook., in Bot. Mag., 101: t. 6166 (1875).

e subsp. *melihae* N. Zeybek, in Doğa Tu Botanik D., 12(1): 98 (1988). [97]

Type: (Turkey) A3 İzmit: Kaynarca civarı, tarla kenarları, 5.ii.1983, N. Zeybek (holo, IZEF 944, iso. ISTE) !

G. elwesii Hooker, in Bot. Mag., 101: t. 6166 (1875).

e subsp. *tuebitaki* N. Zeybek, in Doğa Tu Botanik D., 12(1): 98 (1988). [97]

Type: (Turkey) A4 Ankara: Kızılcahamam Milli Park, 1350 m, 16.iii.1983, N. Zeybek (holo. IZEF 912, iso. ISTE)!

G. elwesii Hooker, in Bot. Mag., 101: t. 6166 (1875).

e subsp. *yayintaschii* N. Zeybek, in Doğa Tu Botanik D., 12(1): 98 (1988). [97]

Type: (Turkey) B2 Manisa: Demirci-Simav (Kütahya) yolu, 4-5 km de tarla içleri, 5.iii.1979, A. Yayintaş (holo. IZEF 401, iso. ISTE) !

G. elwesii Hook., in Bot. Mag., 101: t. 6166 (1875).

e subsp. *wagenitzii* N. Zeybek, in Doğa Tu Botanik D., 12(1): 98 (1988). [97]

Type: (Turkey) C5 Mersin: Yavca Köyü, 1250 m, elma

bahçeleri, 11.ii.1982, N. Zeybek (holo. IZEF 905, iso. ISTE) !

G. fosteri Bakeri, in Garden. Chron. Ser. 3(5): 458 (1889).

e var. **antepensis***, in Türkiye Kardelenleri (*Galanthus* L.), I: 72 (1995). [98] nom. nud.

Type: (Turkey) C6 Gaziantep: Gaziantep-Bahçe, Gaziantep'ten 30 km uzakta, Acarobası Köyü makilikleri, kalker kayalar arasında humuslu topraklarda, ca.1200 m, 16.ii.1994, N. Zeybek (IZEF 2155).

* This new taxon not published as valid.

G. gracilis Celak, in Sitz.-Ber. Böhm. Ges. Wiss. 1891: 195, t. 9 (1891).

e subsp. **baytopii** N. Zeybek, in Doğa Tu Botanik D., 12(1): 96 (1988). [97]

Type: (Turkey) C3 Antalya: Akseki, Çimi Köyü Yaylası, Toptaş, 1400 m, 6.ii.1984, U. Zeybek (holo. IZEF 922, iso. ISTE) !

e **G. melihæ** (N. Zeybek) E. Sauer & N. Zeybek (*G. elwesii* Hooker subsp. *melihæ* N. Zeybek, in Doğa Tu Botanik D., 12(1): 98 (1988) [97], in Türkiye Kardelenleri (*Galanthus* L.), I: 54 (1995). [98]

Type: (Turkey) A3 Kocaeli, Kaynarca civarı ve Adapazarı, Karaçalı Köyü civarlarında çok bol, 5.ii.1983, N. Zeybek (IZEF 1784).

G. nivalis L., in Sp. Pl. 288 (1753).

e subsp. **humboldtii** N. Zeybek, in Doğa Tu Botanik D., 12(1): 97 (1988). [97]

Type: (Turkey) A1(E) Kırklareli: İğneada, Eski Orman Kampı, 1-2 m, 19.ii.1982, M.A. Önür (holo. IZEF 906, iso. ISTE) !

G. nivalis L., in Sp. Pl. 288 (1753).

e subsp. **subplicatus** N. Zeybek & E. Sauer (syn. *G. plicatus* Bieb. subsp. *subplicatus* N.Zeybek in Doğa Tu Botanik D., 12(1): 99 (1988) [97], in Türkiye Kardelenleri (*Galanthus* L.), I: 84 (1995). [98] com. nov.

Type: (Turkey) A2(E) İstanbul: Bahçeköy, Belgrat Ormanı, Kurtkemer, *Carpinus betulus* ağaçları altı, 31.iii.1980, N. Zeybek (IZEF 1833).

e **G. peshmenii** A.P. Davis & C.D. Brickell, in The New Plantsman, 1(1): 17 (1994). [99]

Type: S.W. Turkey, Prov. C3 Antalya: Kemer, Kesmeboğazi-Gedelma köyü arası, c.300 m, maki-orman topluluğu, 3.xi.1978, Peşmen, Yıldız et Güneş 4125 (holotypus HUB, isotypus E).

G. plicatus M. Bieb., in Fl. Taur.-Cauc. 2: 255 (1819).
e subsp. **karamanoghluensis** N. Zeybek, in Doğa Tu Botanik D., 12(1): 100 (1988). [97]

Type: (Turkey) A4 Ankara: Kızılcahamam, Akyarma Geçidi, 1550 m, 15.iv.1973, K. Karamanoğlu, M. Koyuncu (holo. AE 4708, iso. IZEF) !

G. plicatus M.Bieb., in Fl. Taur.-Cauc. 2: 255 (1819).
e subsp. **sublicatus** N. Zeybek, in Doğa Tu Botanik D., 12(1): 99 (1988). [97]

Type: (Turkey) A2(E) İstanbul: Bahçeköy, Belgrat ormanı, Kurt Kemer, *Carpinus betulus* ağaçları altı, 31.iii.1980, N. Zeybek (holo. IZEF 406, iso. ISTE) !

G. plicatus M.Bieb., in Fl. Taur.-Cauc. 2: 255 (1819).
e subsp. **vardarii** N. Zeybek, in Doğa Tu Botanik D., 12(1): 100 (1988). [97]

Type: (Turkey) C8 Trabzon: Sürmene, Arpalı Köy, 24.iii.1983, N. Zeybek (holo. IZEF 917) !

137. IRIDA CEAE (8: 381)

4. CROCUS L. (8: 413)

C. biflorus Miller, in Gard. Dict. ed. 8, no 4 (1768).
e subsp. **albo-coronatus** H. Kerndorff, in Herbertia, 49(1-2): 79 (1993). [100]

Type: (Turkey) Central Taurus Mountains, H. Kerndorff HKEP 9009 (holotypus, K).

C. biflorus Miller, in Gard. Dict. ed. 8, no 4 (1768).
e subsp. **fibroannulatus** H. Kerndorff & E.Pasche, in Linzer Biol. Beitr. 29(1): 594-595 (1997). [101]

Type: (Turkey) A8 Artvin: Provinz Artvin, H. Kerndorff & E. Pasche, HKEP 9361 (holo. K).

C. biflorus Miller, in Gard. Dict. ed. 8, no 4 (1768).
e subsp. **wattiorum** B. Mathew, in The New Plantsman, 2(3): 183-184 (1995). [102]

Type: SW Turkey, C3 Antalya: province, Tahtalı Dağ, 6.xi.1986, P. & P. Watt s.n.; cult. B. Mathew, florendi 20.x.1994 (holotypus K).

e **C. kerndorffiorum** E. Pasche, in Herbertia, 49(1-2): 67-68 (1993). [103]

Type: (Turkey) Central Taurus Mountains, E.Pasche HKEP 9010 (holotypus, K).

e **C. mathewii** Kerndorff & Pasche, in The New Plantsman, 1(2): 102-105 (1994). [104]

Type: (Turkey) Antalya: Lycian Taurus Mountains, 400-1100 m, 16.xi.1992, HKEP 9291 (holotypus, K).

e *C. paschei* H. Kerndorff, in *Herbertia*, 49(1-2): 76-77(1993). [100]

Type: (Turkey) Eastern Taurus Mountains, H. Kerndorff HKEP 9034 (holotypus, K)

144. CYPERACEAE (9: 32)

1. CYPERUS L. (9: 34)

C. glomeratus L., in *Cent. Pl.*, 2: 5 (1756). [105]

European Turkey. A1(E) Edirne: Uzunköprü, Çakmak köyü, çeltik tarlası, 28.viii.1995, S. Sönmez, ISTE 68563.

145. GRAMINEAE (Poaceae) (9: 158)

23. BROMUS L. (9: 272)

B. tomentellus Boiss. (Sect. *PNigma* Dum.), in *Diagn. Pl. Or. Nov.*, 1(7): 126 (1846).

subsp. *nivalis* (Bornm.) H. Scholz et Byfield, in *Doğa Tu Botanik D.* (1998). [106] *stat. nov.*

N.E. Anatolia. A9 Çoruh: 23 km from Şavşat to Ardahan, before Çam pass, 2350 m, alpine pasture grassland on igneous rocks, abundant, 4.vii.1994, A.J. Byfield & D. Pearman B 1289 (ISTE 67154).

75. POA L. (9: 470)

e *P. akmanii* Soreng, P.Hein & Scholz, in *Willdenowia*, 27: 196-197 (1997). [107]

Holotype: Turkey, prov. C2 Isparta: Isparta, BarlaDağı, Gelincikdağ, ca.5 km W of Barla (W of Eğirdir Gölü and c.35 km NE of Isparta) 38° 08' N, 30° 45' E, 2287 m, alpine, tall, shady, NE facing limestone cliffs, on mossy ledges protected from marauding goats, above snow field, 21.vii.1993, R.J. Soreng, J.I. Davis, K. Güney & Ü. Bingöl 4140 (US; iso. ANK, B, E, ISTE, LIV).

P. asiae-minoris H.Scholz & Byfield, in *Doğa Tu Botanik D.* -baskıda-. [106]

Holotype: N.W.Anatolia. A3 Bolu: Abant Lake, S.W. end of lake, 1450 m, wet peat fen, extremely local, 14.vi.1995, A.J. Byfield & R. Fitzgerald B 2351 (ISTE 69705).

116. SPOROBOLUS R.Br. (9: 581)

S. fertilis (Steud.) W.D. Clayton, in *Kew Bull.* 19(2): 291 (1965). [59]

N.E. Anatolia. A8 Artvin: Kemalpaşa, beach W. of river mouth, sandy dry grassland behind beach, 5 m, 17.viii.1995, A.J.Byfield and S.Atay (ISTE 69298). Det. T.Cope (Kew).

Alien species.

* *MIBORA* Adanson

M. minima (L.) Desv., in *Obs. Pl. Angers* 48 (1818). [41]

European Turkey. A1(E) Edirne: Pehlivan köyü, elevated commonland a few kilometres from Pehlivan köyü towards Kircasali, 25.ii.1994, A.J.Byfield et al. (AJB 295), det. A.J.Byfield, conf. T.A.Cope, ISTE 66249.

* *MICROSTEGIUM*

M. vimineum (Trin.) A.Camus, in *Ann. Soc. Linn. Lyon*, 68: 201 (1921). [106]

(Turkey). N.E. Anatolia. A7 Giresun: Espiye River, immediately E. of Espiye town, wet, seasonally-flooded river margin on gravels & sands, 5m, 11.x.1994, A.J. Byfield B 1334 (ISTE 67575).

Additional List

13. CARYOPHYLLACEAE (2:15)

13. SPERGULARIA (Pers.) J. & C.Presl (2:93) [108]

S. sezer-zenginii Yıldırım, in *Ot Sistematiği Botanik Dergisi*, 4(2): 4 (1997).

Type: Turkey. B9 Ağrı: Hamur, Murat river, sandy places, 1650 m, 2.vii.1998, Ş.Yıldırım 23037 (Holo: Herbarium Yıldırım, iso: GAZI, HUB, UPA).

45. LEGUMINOSAE (3:1)

40. VICIA L. (3:274)

V. erzurumica N.Demirkuş & S. Erik (sect. *Cracca* S.F.Gray), in *Willdenowia* 28: 154 (1998). [109]

Holotypus: (Turkey). A8 Erzurum. Tortum, Azort Yaylası, orman yolu, taşlık alanlar, 1900 m, 20.vii.1995, Demirkuş 4481 (HUB: isotypi: GAZI, B).

63. UMBELLIFERAE (4: 265)

10. CHAEROPHYLLUM L.(4:312)

C. posofianum S. Erik & N. Demirkuş, in *Willdenowia* 28: 153 (1998). [109]

Holotypus: (Turkey) A9 Ardahan (Kars): Posof, fields between Al village and Posof river, 1500-1700 m, 27.vii.1985, Demirkuş 2960 (HUB).

70. COMPOSITAE (5:1)

79. CENTAUREA L. (5:465)

C. hadimensis Wagenitz, K.Ertuğrul & H.Dural, in *Willdenowia* 28: 157 (1998). [110]

Holotypus: (Turkey). C4 Konya: Konya-Hadim, Gevne Valley, SW of Tosmur Yurdu, rocky places, 1500 m,

30.vi.1996, Ertuğrul & Dural 1715 (KNYA: isotypus: GOET).

CARDUNCELLUS

C. caeruleus (L.) C. Presl, in Flora Sicula, 1:30 (1826).

var. *incisus* DC., in Prodr., 6: 615 (1837). [111]

W. Anatolia. B1 Balıkesir: Ayvalık, Alibey adası, Patriça civarı, 10 m, 7.v.1996, K. Alınar, ISTE 71692! Pınar Adası'nın doğu kıyısı, hafif eğilimli, güneşli yerler, 5 m,

10.v.1996, K. Alınar, ISTE 71768! Dolap Adası-Mitralyöz Burnu arası, d.s., 26.iv.1997, K. Alınar, ISTE 73872! Alibey Adası, Alibey Tepe, Pinus brutia orman açıklığı, 120 m, 26.v.1997, K. Alınar, ISTE 74209!

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