

New floristic records in the Balkans: 26*

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Abstract: New chorological data are presented for 263 species and subspecies from Bulgaria (202-216, 235-257), Greece (17-187, 191-201, 217-234, 258-263) and Turkey-in-Europe (1-16, 188-190). The taxa belong to the following families: *Agavaceae* (59), *Aizoaceae* (17, 70), *Alliaceae* (147, 148), *Amaranthaceae* (18-22, 71, 72), *Amaryllidaceae* (60, 149), *Anacardiaceae* (222), *Apiaceae* (23, 73, 191, 207, 219-221, 258), *Araceae* (61), *Arecaceae* (62, 63), *Asclepiadaceae* (24), *Asteraceae* (1, 25-33, 74-83, 192-194, 202-204, 208, 209, 223-226, 237-239, 259), *Balsaminaceae* (195), *Boraginaceae* (84-86, 242), *Brassicaceae* (4, 5, 11, 87-89, 196, 210, 227, 228, 245), *Campanulaceae* (211, 240), *Caryophyllaceae* (8, 12, 13, 34, 35, 90-96), *Chenopodiaceae* (36, 97-103, 205), *Convolvulaceae* (37, 104, 260), *Crassulaceae* (38), *Cucurbitaceae* (105, 206), *Cyperaceae* (150-152), *Dipsacaceae* (197), *Euphorbiaceae* (39, 106-111), *Fabaceae* (7, 40, 41, 112-115, 243), *Fagaceae* (14), *Fumariaceae* (42, 116, 117, 244), *Hyacinthaceae* (153-155, 200), *Illecebraceae* (9), *Iridaceae* (156-160, 214, 263), *Juncaceae* (64, 161-164), *Lamiaceae* (43, 118, 119, 212, 229, 230, 241), *Loranthaceae* (198), *Malvaceae* (10, 231), *Meliaceae* (44), *Myrtaceae* (45), *Nyctaginaceae* (46, 120), *Orchidaceae* (215, 235, 236), *Orobanchaceae* (47, 121, 122), *Paeoniaceae* (201), *Papaveraceae* (2, 6, 188-190), *Pinaceae* (217), *Plantaginaceae* (123), *Plumbaginaceae* (48, 124), *Poaceae* (3, 65-69, 165-186, 216, 252-257), *Polygalaceae* (246), *Polygonaceae* (125-127), *Ranunculaceae* (15, 49, 128-131), *Rosaceae* (16, 51, 132-134, 213, 247, 248), *Rhamnaceae* (50), *Rubiaceae* (135, 249, 250), *Ruscaceae* (187), *Rutaceae* (136), *Salicaceae* (137), *Santalaceae* (199, 251), *Scrophulariaceae* (52, 138, 232, 233, 261, 262), *Solanaceae* (53-55, 139-141), *Taxaceae* (218), *Tropaeolaceae* (56), *Typhaceae* (234), *Valerianaceae* (57, 142-145) and *Verbenaceae* (58, 146).

The publication includes contributions by: M. Aybeke (1-3), M. Aybeke & F. Dane (4-6), M. Aybeke & G. Dalgıç (7), M. Aybeke, C. Kurt & A. Semerci (8-10), M. Aybeke & C. Yarı (11-16), B. Biel & Kit Tan (17-69), B. Biel & Kit Tan (70-187), F. Dane, M. Aybeke & V. Altay (188-190), K. Giannopoulos, Kit Tan & G. Vold (191-200), D. Katsiotis & Kit Tan (201), A. Petrova, D. Sopotlieva & I. Apostolova (202-206), A. Petrova & D. Venkova (207-216), K. Polymenakos & Kit Tan (217-234), A. Popatanasov (235-236), A. Tashev (237-241), A. Tashev, K. Koev & N. Tashev (242-244), K. Vassilev (245-251), K. Vassilev & H. Pedashenko (252-257), G. Zarkos, V. Christodoulou, Kit Tan & G. Vold (258-263).

This is an ongoing report in the series dealing with the new chorological data on vascular plants in the Balkans. For details on the presentation of information see *Phytologia Balcanica*, vol. 12(1), pp. 107-108 and vol. 12(2), p. 279.

*Reports for Bulgaria have been reviewed by V. Vladimirov, for Greece by Kit Tan, and for Turkey-in-Europe by F. Dane.

Reports 1–3

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Asteraceae

1. *Bellis perennis* L.

Tu(E) A1(E) Edirne: Uzunköprü, Çiftlikköy fountain environs, in open fields, 167 m, 40°40'60"N, 26°33'00"E, 05.04.1992, coll. B. Çamur, det. M. Aybeke (EDTU 5290).

— A1(E) Tekirdağ: Ferhadanlı village, in a pasture, 176 m, 40°59'39"N, 27°18'52"E, 28.05.1990, coll. B. Akman, det. M. Aybeke (EDTU 5239).

A new species for A1(E) Edirne and Tekirdağ in European Turkey. It has been known from A1(E) Kırklareli (Grierson 1975).

Papaveraceae

2. *Corydalis solida* (L.) Swartz subsp. *solida*

Tu(E) A1(E) Edirne: 1.5 km from Süloğlu by the road to Edirne, 156 m, 41°46'02"N, 26°54'43"E, 23.03.1989, coll. N. Başak, det. V. Altay, conf. M. Aybeke (EDTU 3080); Lalapaşa, Vaysal village, 378 m, 41°56'31"N, 26°52'23"E, 21.04.1993, coll. A. Alturfan, det. V. Altay, conf. M. Aybeke (EDTU 5560); Edirne Keşan, Maharız, 27 m, 40°38'17"N, 26°27'15"E, 21.04.1997, coll. G. Dalgıç, det. V. Altay, conf. M. Aybeke (EDTU 6302).

— A1(E) Kırklareli: Soğucak, 316 m, 41°38'60"N, 27°38'60"E, 05.03.1994, coll. G. Dalgıç, det. V. Altay, conf. M. Aybeke (EDTU 1946); Vize, in a forest, 186 m, 41°34'21"N, 27°45'57"E, 03.04.1989, coll. G. Dalgıç & A. Dalgıç, det. V. Altay, conf. M. Aybeke (EDTU 3169); İğneada, 0 m, 41°52'28"N, 27°59'02"E, 04.04.1993, coll. G. Özcanlar, det. V. Altay, conf. M. Aybeke (EDTU 5618).

A new species for European Turkey. According to Davis & Cullen (1965), this taxon was reported for most of Europe.

Poaceae

3. *Trachynia distachya* (L.) Link.

Tu(E) A1(E) Edirne: Centre, between Büyükdöllük and Değirmenyeni villages, in a gently sloping area, on a pasture edge, 50 m, 41°45'43.94"N, 26°35'19.96"E, 06.06.2010, coll. & det. M. Aybeke (EDTU 176).

A new species for A1(E) Edirne in European Turkey. It has been known from A1(E) Çanakkale (Davis 1985).

Reports 4–6

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Brassicaceae

4. *Eruca sativa* Mill.

Tu(E) A1(E) Çanakkale: Eceabat, Eceabat-Anafartalar, 97 m, 40°11'02"N, 26°21'23"E, 10.05.1987, coll. & det. F. Dane (EDTU 645);

— A(1) Edirne: Keşan, Mecidiye, 156 m, 40°41'20"N, 26°27'49"E, 26.03.1988, coll. N. Başak & G. Dalgıç (EDTU 1875).

A new species for A1(E) Çanakkale and Edirne in European Turkey. It has been known from A1(E) Tekirdağ, A2(E) Istanbul (Hedge 1965).

5. *Cakile maritima* Scop.

Tu(E) A1(E) Edirne: Keşan, Mecidiye, at the seaside, on a sand dune, 0 m, 40°41'20"N, 26°27'49"E, 13.10.2009, coll. & det. G. Dalgıç (EDTU 10364).

— A1(E) Kırklareli: Vize, in the lake Saka environs, 186 m, 41°34'21"N, 27°45'57"E, 12.06.1991, coll. F. Dane & G. Dalgıç (EDTU 4662).

— A1(E) Tekirdağ: Şarköy, 0 m, 40°36'58"N, 27°06'03"E, 16.08.1989, coll. & det. F. Dane (EDTU 4026).

A new species for A1(E) Tekirdağ, Kırklareli, Edirne in European Turkey. So far the species has been known from A2(E) Istanbul (Hedge 1965).

Papaveraceae

6. *Fumaria densiflora* DC.

Tu(E) A1(E) Edirne: Süloğlu, in the dam environs, 156 m, 41°46'02"N, 26°54'43"E & 196 m, 41°49'00"N, 26°49'00"E, 04.04.1990, coll. A. Uyar, det. F. Dane (EDTU 4371).

A new species for A1(E) Edirne in European Turkey. So far this species has been known from A1(E) Tekirdağ, A2(E) Istanbul (Cullen 1965).

Report 7

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Fabaceae

7. *Coronilla emerus* subsp. *emeroides* (Boiss. & Sprun.) Uhrova

Tu(E) A1(E) Tekirdağ: Şarköy, Uçmakdere, 33 m, 40°47'49"N, 27°21'55"E, 11.06.1999, coll. & det. G. Dalgıç, appr. M. Aybeke (EDTU 5372).

A new species for European Turkey. According to Chamberlain (1970), this taxon was encountered mainly in Anatolian localities: A1(A) Çanakkale, B2 Uşak, etc. and in Greece, the Aegean, Cyprus, Crimea, and W. Caucasus. In this new report, this taxon is reported for the first time for European Turkey.

Reports 8–10

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Caryophyllaceae

8. *Gypsophila linearifolia* (Fisch. & C.A. Mey.) Boiss.

Tu(E) A1(E) Edirne: Esetce Koyu (04-H-01), 87 m, 40°52'00"N, 26°25'60"E, 01.07.2004, coll. C. Kurt, A. Semerci & M. Aybeke, det. M. Aybeke (TTAE 1014); Lalapaşa, in the Hamzabeyli pasture (04 G 03), 391 m, 41°57'50"N, 26°38'39"E, 16.06.2004, coll. C. Kurt, A. Semerci & M. Aybeke, det. M. Aybeke (TTAE 1096); Centre, Orhaniye village, in a pasture, 99 m, 41°31'00"N, 26°38'60"E, 02.06.2004, coll. C. Kurt, A. Semerci & M. Aybeke, det. M. Aybeke (TTAE 1345).

This is the first record of this species for European Turkey and for the Balkans. This taxon was reported for S. Russia, Transcaspiya (Huber-Morath 1967).

Illecebraceae

9. *Paronychia polygonifolia* (Vill.) DC.

Tu(E) A1(E) Edirne: Lalapaşa, Kalkansöğüt village, at Takımyanı-Kulealtı locality, on stony ground, 378 m, 41°56'31"N, 26°52'23"E, 17.07.2003, coll. C. Kurt, A. Semerci & M. Aybeke, det. M. Aybeke (TTAE 1205).

This is the first record of this species for European Turkey and for the Balkans. This taxon was reported from A2 Bursa in Turkey, and in the mountains of S & SW Europe & Morocco (Chaudhri 1967).

Malvaceae

10. *Lavatera cretica* L.

Tu(E) A1(E) Edirne: Lalapaşa, Hacilar village (03 H),

in a grassland, 460 m, 41°55'60"N, 26°46'60"E, 08.07.2003, coll. C. Kurt, A. Semerci & M. Aybeke, det. M. Aybeke (TTAE 1084).

A new species for A1(E) Edirne in European Turkey. So far the species has been known from A2(E) Istanbul (Cullen 1967).

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Reports 11–16

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Brassicaceae

11. *Diplotaxis muralis* (L.) DC.

Tu(E) A1(E) Kırklareli: between Kocayazı and Kula villages, 5th km, in an open field, 535 m, 42°00'00"N, 27°16'60"E, 09.07.1997, coll. & det. C. Yarcı (EDTU 7219).

A new species for A1(E) Kırklareli in European Turkey. So far the species has been known from A2(E) Istanbul (Hedge 1965).

Caryophyllaceae

12. *Moencihia mantica* (L.) Bartl. subsp. *mantica*

Tu(E) A1(E) Edirne: Lalapaşa, between Çalidere-Donköy, at the 3rd km, 337 m, 41°55'60"N, 26°43'60"E, 21.05.1992, coll. F. Toksöz, det. C. Yarcı (EDTU 4803).

— A1(E) Kırklareli: Demirköy, between Demirköy-Pınarhisar, 2nd km, 206 m, 41°37'27"N, 27°31'12"E, 26.05.1990, coll. & det. C. Yarcı (EDTU 5499); Demirköy, 244 m, 41°49'17"N, 27°45'38"E, 21.05.1989, coll. & det. C. Yarcı (EDTU 2948); ca. 5 km from Dereköy to Bulgarian frontier, in an open forest, 446 m, 41°55'58"N, 27°22'00"E, 02.06.1996, coll. & det. C. Yarcı (EDTU 6909).

A new species for A1(E) Kırklareli and Edirne in European Turkey. So far the species has been known from A2(E) Istanbul (Cullen 1967).

13. *Saponaria officinalis* L.

Tu(E) A1(E) Kırklareli: Demirköy, between Demirköy and Pınarhisar, 12 km, 206 m, 41°37'27"N, 27°31'12"E, 03.09.1989, coll. & det. C. Yarcı (EDTU 4232).

A new species for A1(E) Kırklareli in European Turkey. So far the species has been known from A2(E) Istanbul (Hedge 1967).

Fagaceae

14. *Quercus frainetto* Ten.

Tu(E) A1(E) Kırklareli: Demirköy, between Balanban and Demirköy villages, 5th km, 478 m, 41°50'08"N, 27°40'34"E, 03.09.1989, coll. & det. C. Yarcı (EDTU 4230); Demirköy, 244 m, 41°49'17"N, 27°45'38"E, 21.09.1989, coll. C. Yarcı, det. C. Yarcı & M. Aybeke (EDTU 2953); in Ahmetler village environs, in mixed forest areas, 42°01'60"N, 27°11'60"E, 678 m, 27.06.1997, coll. & det. C. Yarcı (EDTU 7077); Demirköy, 244 m, 41°49'17"N, 27°45'38"E, 21.05.1989, coll. & det. C. Yarcı (EDTU 2949).

A new species for A1(E) Kırklareli in European Turkey. So far the species has been known from A1(E) Tekirdağ, Edirne, Çanakkale, and A2(E) Istanbul (Hedge & Yaltırık 1982).

Ranunculaceae

15. *Ranunculus muricatus* L.

Tu(E) A1(E) Kırklareli: Demirköy, İğneada, along lake Mert coast, 03.06.1990, coll. & det. C. Yarcı (EDTU 5052).

A new species for A1(E) Kırklareli in European Turkey. So far the species has been known from A2(A) Istanbul (Davis 1965).

Rosaceae

16. *Crataegus monogyna* Jacq. subsp. *monogyna*

Tu(E) A1(E) Kırklareli: Demirköy, at lake Mert, in a longos forest, 03.09.1989, coll. & det. C. Yarcı (EDTU 4224); Demirköy, between İğneada and Limanköy, 0.5 km, 0 m, 41°52'28"N, 27°59'02"E, 03.09.1989, coll. & det. C. Yarcı (EDTU 4226); Demirköy, between Demirköy and İğneada, 6th km, 244 m, 41°49'17"N, 27°45'38"E, 03.09.1989, coll. & det. C. Yarcı (EDTU 4228); Demirköy, between Karanlık and Karadere villages, 3rd km, 561 m, 41°55'16"N, 27°26'25"E, 03.09.1989, coll. C. Yarcı (EDTU 4236); Demirköy, between Demirköy and Pınarhisar, 1st km, 244 m, 41°49'17"N, 27°45'38"E, 02.07.1989, coll. & det. C. Yarcı (EDTU 4192).

A new species for A1(E) Kırklareli in European Turkey. So far the species has been known from A1(E) Tekirdağ and A2(E) Istanbul (Browicz 1972).

Reports 17–69

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This is the third report of new plant-records for the island of Amorgos (phytogeographical region Kiklades, Nomos Kikladon, Eparchia Thiras) based on three visits carried out in February, May-June and October-November 2014. Our floristic investigations were challenged by a veteran botanist who predicted that we would surely be unable to record more than 100 new taxa from the island or even any from the Kiklades. Well, we soon surpassed this number in 40 days of fieldwork during the three visits. The records listed are new to the island unless otherwise stated, and 24 species were found to be new for the floristic region Kiklades (Kik) as circumscribed in *Flora Hellenica* (Strid & Tan 1997). Occurrence on the other Kikladean islands is also briefly mentioned.

Aizoaceae

17. *Lampranthus roseus* (Willd.) Schwantes

Gr Amorgos: N of Egiali, beach and waste ground near houses, 3 m, 36°54'19"N, 25°58'38"E, 30.10.2014, *Biel* 14.278.

An established ornamental originating from S Africa.

Amaranthaceae

18. *Amaranthus albus* L.

Gr Amorgos: SE of Katapola, bottom of dry reservoir and pools within gorge, 30 m, 36°49'06"N, 25°52'09"E, 05.11.2014, *Biel* 14.312.

On most of the larger islands in N and Central Kiklades.

19. *Amaranthus blitoides* S. Watson

Gr Amorgos: E of Katapola, vineyards, gardens and road margins, 10 m, 36°49'29"N, 25°52'08"E, 03.06.2014, *Biel* 14.216a.

Also noted near Katapola and Kolofana. Reported mainly on islands of the C Kiklades.

20. *Amaranthus blitum* L.

Gr Amorgos: Arkesini, waste ground by paved steps above church, 210 m, 36°47'11"N, 25°48'10"E, 11.11.2014, *Biel* 14.327; Egiali-Laki, waste ground and gardens near houses, 15 m, 36°54'24"N, 25°58'42"E, 30.10.2014, *Biel* 14.279.

Recorded from Andros.

21. *Amaranthus cruentus* L.

Gr Amorgos: Kato Potamos, waste ground by steps to lower part of village, 80 m, 36°53'50"N, 25°58'38"E, 01.06.2014, *Biel* obs.

Recorded from Andros, Kithnos and Naxos.

22. *Amaranthus hybridus* L.

Gr Amorgos: Chora, road margins and ruderal places in village, 310 m, 36°49'53"N, 25°53'52"E, 23.02.2014, *Biel* 14.075; NE of Egiali, grassy olive grove near Kambos, 10 m, 36°54'31"N, 25°59'03"E, 30.10.2014, *Biel* 14.281.

Recorded from Kea, Milos, Naxos, Paros, Sikinos and Thira.

Apiaceae

23. *Eryngium maritimum* L.

Gr Amorgos: SW of Aghia Thekla, beach at estuary, 2 m, 36°48'33"N, 25°50'45"E, 05.06.2014, *Biel* obs.; W-WN of Kalotaritisa, sandy beach, 2 m, 36°47'36"N, 25°44'34"E, 07.06.2014, *Biel* obs.

On most islands.

Asclepiadaceae

24. *Cynanchum acutum* L. subsp. *acutum*

Gr Amorgos: Egiali, marshy coastal area with waste-deposits, 2 m, 36°54'14"N, 25°58'42"E, 30.10.2014, *Biel* 14.274.

On most of the larger islands.

Asteraceae

25. *Artemisia pontica* L.

Gr Amorgos: on slope below cemetery SE of Kato Potamos, 80 m, 36°53'48"N, 25°58'43"E, 31.10.2014, *Biel* 14.290.

Established remnant of former cultivation. In SE Europe, aromatic flavouring used in production of absinthe and vermouth.

26. *Erigeron canadensis* L.

Gr Amorgos: Egiali-Laki, waste ground and gardens near houses, 15 m, 36°54'24"N, 25°58'42"E, 30.10.2014, *Biel* obs.

Reported from Anafi, Andros, Kimolos, Naxos, Serifos, Sikinos, etc.

27. *Helminthotheca echioides* (L.) Holub

Gr Amorgos: N of Lagadha, in phrygana above Ag. Irini, 210 m, 36°54'45"N, 25°59'53"E, 28.05.2014, *Biel* obs.

Reported on Andros, Kimolos, Milos and Paros.

28. *Lactuca tuberosa* Jacq. (≡ *Steptorhamphus tuberosus* (Jacq.) Grossh.)

Gr Amorgos: E-NE of Lagadha near Ag. Varvara, terraced uncultivated fields with *Spartium* and *Quercus coccifera*, 480 m, 36°54'51"N, 26°01'19"E, 29.05.2014, *Biel* obs.; NE of Egiali, olive grove near Kambos, 10 m, 36°54'31"N, 25°59'03"E, 30.10.2014, *Biel* obs. (photo).

Also noted near Katapola. Mainly islands of Central and S Kiklades.

29. *Lactuca viminea* subsp. *ramosissima* (All.) Arcang.

Gr Amorgos: Egiali-Laki, olive terraces by dirt road, 15 m, 36°54'28"N, 25°58'38"E, 27.05.2014, *Biel* obs. Also noted near Chora and Lagadha. Recorded at species rank from Milos, Naxos and Serifos.

30. *Senecio leucanthemifolius* Poir.

Gr Amorgos: N-NW of Egiali, Levrosos, coastal *Sarcopoterium-phrygana* slope, 40 m, 36°54'31"N, 25°58'12"E, 14.02.2014, *Biel* 14.061; *loc. ibid.*, 27.05.2014, *Biel* 14.108.

Also noted near Ag. Pavlos, Katapola, Kato Potamos and Lagadha. Recorded from Gaidaronisi, Naxos, Ofidoussa, Paros and Sifnos.

31. *Senecio tamoides* DC.

Gr Amorgos: Egiali, road margins and ruderal places in village, 10 m, 36°54'01"N, 25°58'36"E, 25.02.2014, *Biel* 14.083.

Garden escape; native to S Africa.

32. *Symphyotrichum squamatum* (Spreng.) G.L. Nesom (≡ *Aster squamatus* (Spreng.) Hieron.)

Gr Amorgos: Egiali-Laki, waste ground and gardens near houses, 15 m, 36°54'24"N, 25°58'42"E, 30.10.2014, *Biel* obs.

Also noted at Katapola. Recorded from Andiparos, Andros, Kea, Milos, Naxos and Paros.

33. *Taraxacum minimum* (Guss.) N. Terracc. (Fig. 1)

Gr Amorgos: N of Egiali, beach and waste ground near houses, 3 m, 36°54'19"N, 25°58'38"E, 30.10.2014, *Biel* 14.275 & 14.276; SE of Kato Potamos, rocky slopes of lower gorge, in *Sarcopoterium phrygana*, 120 m, 36°53'43"N, 25°58'55"E, 31.10.2014, *Biel* 14.292; E-NE of Lagadha, rocky slopes above chapel, 505 m, 36°55'02"N, 26°01'27"E, 02.11.2014, *Biel* 14.304; S of Katapola, *Spartium-Sarcopoterium* slopes by path, 200 m, 36°48'45"N, 25°51'60"E, 07.11.2014, *Biel* 14.318.



Fig. 1. *Taraxacum minimum* (photo B. Biel).

Recorded from Folegandros, Kea, Kimolos, Naxos and Paros.

Caryophyllaceae

34. *Sagina procumbens* L.

Gr Amorgos: NW of Tholaria, W of Vigla, narrow stream gorge with phrygana, 60 m, 36°55'12"N, 25°58'38"E, 15.02.2014, *Biel* obs.; Katapola-Xilokeratidi, road margins and waste ground in village, 5 m, 36°49'53"N, 25°51'48"E 17.02.2014, *Biel* obs.

New for the Kiklades.

35. *Stellaria neglecta* Weihe

Gr Amorgos: SW of Tholaria, uncultivated terraces at N-exposed slope below road, 200 m, 36°54'59"N, 25°58'55"E, 15.02.2014, *Biel* 14.010.

Also noted at Katapola-Rachidi. New for the Kiklades.

Chenopodiaceae

36. *Bassia scoparia* (L.) A.J. Scott

Gr Amorgos: Egiali-Laki, waste ground and gardens near houses, 15 m, 36°54'24"N, 25°58'42"E, 30.10.2014, *Biel* 14.271.

Also noted at Katapola-Xilokeratidi. New for the Kiklades.

Convolvulaceae

37. *Dichondra micrantha* Urban

Gr Amorgos: S of Egiali village, small park with trees and waste ground, 30 m, 36°53'56"N, 25°58'34"E, 30.10.2014, *Biel* 14.285.

New for the Kiklades.

Crassulaceae

38. *Aeonium arboreum* (L.) Webb & Berthel.

Gr Amorgos: Tholaria, road margins and waste

ground in village, 210 m, 36°55'01"N, 25°58'59"E, 15.02.2014, *Biel* obs.

Reported from S Kiklades (Anafi and Thira). Locally naturalized in ruderal places.

Euphorbiaceae

39. *Ricinus communis* L.

Gr Amorgos: S of Egiali, dry stream bed and road margins, 35 m, 36°53'55"N, 25°58'38"E, 30.10.2014, *Biel* 14.284.

Several localities noted near Egiali, Katapola and Lagadha. Reported from Andros, Naxos, Sifnos and Siros. Escape from cultivation, naturalized.

Fabaceae

40. *Ononis diffusa* Ten.

Gr Amorgos: N-NW of Egiali, Levrosos, coastal *Sarcopoterium*-phrygana slope, 40 m, 36°54'31"N, 25°58'12"E, 27.05.2014, *Biel* 14.107.

Also noted E of Chora. On most of the larger islands.

41. *Vicia monantha* Retz.

Gr Amorgos: Egiali-Laki, *Sarcopoterium*-phrygana slope, 20 m, 36°54'27"N, 25°58'32"E, 14.02.2014, *Biel* 14.002.

Also noted near Egiali, Katapola and Chora. Central Kiklades including Dilos, Ios, Kithnos, Mikonos, Paros and Thira.

Fumariaceae

42. *Hypocoum imberbe* Sm.

Gr N-NE of Chora, rocky SW slope of Profitis Ilias, phrygana, 520 m, 36°50'31"N, 25°54'18"E, 23.02.2014, *Biel* 14.077.

Recorded from Milos, Sifnos and Siros.

Lamiaceae

43. *Lavandula dentata* L.

Gr Amorgos: Egiali-Laki, waste ground and gardens near houses, 15 m, 36°54'24"N, 25°58'42"E, 30.10.2014, *Biel* 14.280.

First report for the Kiklades; in Greece, recorded from the Ionian islands as a non-established ornamental.

Meliaceae

44. *Melia azedarach* L.

Gr Amorgos: W of Egiali village, rocky coastal phrygana slope, at hotel entrance, 10 m, 36°54'01"N, 25°58'31"E, 30.10.2014, *Biel* obs.

Also noted near Apano Potamos and Lagadha. Non-established introduction.

Myrtaceae**45. *Eucalyptus camaldulensis* Dehnh.**

Gr Amorgos: Katapola-Rachidi, small park with palms, 2 m, 36°49'40"N, 25°51'57"E, 05.11.2014, *Biel* 14.310.

Planted, also noted near Chora and Katapola. Reported from S Kiklades (Anafi).

Nyctaginaceae**46. *Mirabilis jalapa* L.**

Gr Amorgos: Kato Potamos, waste ground by steps to lower part of village, 80 m, 36°53'50"N, 25°58'38"E, 30.05.2014, *Biel* obs.

Also noted near Katapola. Established ornamental, also recorded from Andros, Kea, Naxos and Sifnos.

Orobanchaceae**47. *Phelipanche mutelii* (F.W. Schultz) Pomel**
(≡ *Orobanche mutelii* F.W. Schultz)

Gr Amorgos: Egiali-Laki, waste ground and gardens near houses, 15 m, 36°54'24"N, 25°58'42"E, 26.02.2014, *Biel* obs.; Egiali-Laki, olive terraces by dirt road, 27.05.2014, *Biel* obs.; NW of Kalotaritisa, field margins and uncultivated ground by road, 07.06.2014, *Biel* obs. (photo).

Occurring on most of the islands.

Plumbaginaceae**48. *Plumbago auriculata* Lam.**

Gr Amorgos: Katapola-Rachidi, small park with palms adjacent to road, 2 m, 36°49'40"N, 25°51'57"E, 05.11.2014, *Biel* 14.309.

Not previously documented for the Kiklades. Garden escape, native to S Africa.



Fig. 2. *Prunus webbii* (photo B. Biel).

Ranunculaceae**49. *Ranunculus trichophyllus* Chaix**

Gr Amorgos: SE of Katapola, concrete outlet of water reservoir below dam, 25 m, 36°49'15"N, 25°52'11"E, 18.02.2014, *Biel* 14.035.

Recorded from Andros and Naxos.

Rhamnaceae**50. *Rhamnus lycioides* subsp. *graeca* (Boiss. & Reuter) Tutin**

Gr Amorgos: N of Egiali-Laki, phrygana with olive trees near Ag. Theologi, 30 m, 36°54'35"N, 25°58'41"E, 01.11.2014, *Biel* 14.301.

Recorded from several islands including Andros, Giaros, Iraklia, Kithnos, Naxos, Siros and Thira.

Rosaceae**51. *Prunus webbii* (Spach) Vierh. (Figs. 2 & 2a)**

Gr Amorgos: NE of Egiali, at dirt road near Kambos, in phrygana at foot of slope, 20 m, 36°54'19"N, 25°59'01"E, 24.02.2014, *Biel* 14.081 (conf. J. Zieliński, March 2015).

Also noted W of Lagadha. New for the Kiklades. The nearest geographical locality would be on the E Aegean island of Kos (Nomos Dodekanisou, Eparchia Ko) where the collected voucher is in non-flowering or fruiting state (Browicz 1994: 45).

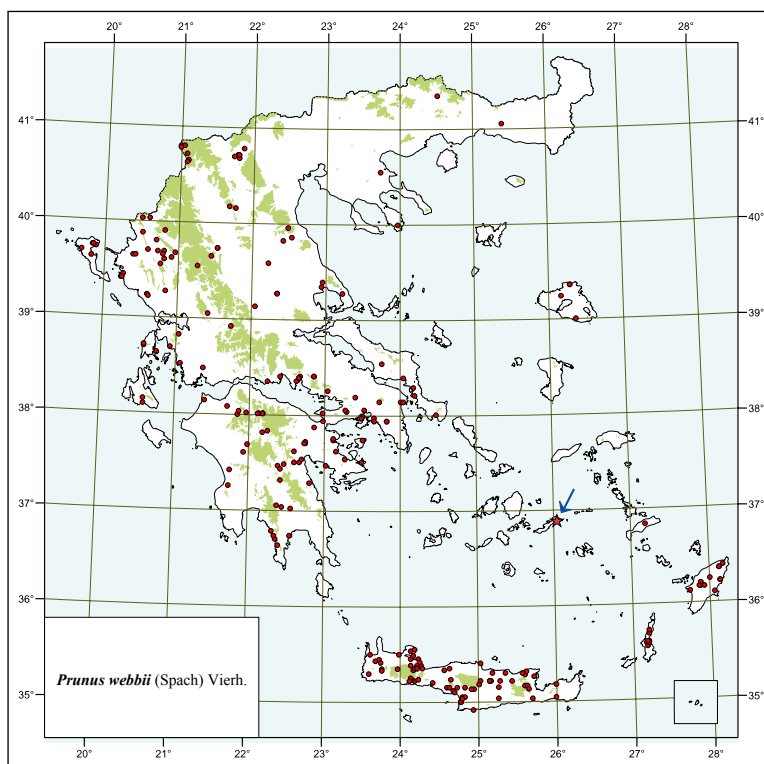


Fig. 2a. Distribution of *Prunus webbii* in Greece; new record indicated by arrow.

Scrophulariaceae**52. *Veronica anagalloides* Guss.**

Gr Amorgos: SE of Katapola, bottom of dry reservoir and pools within gorge, 30 m, 36°49'06"N, 25°52'09"E, 03.06.2014, *Biel* 14.221; *loc. ibid.*, 05.11.2014, *Biel* 14.313.

This species has also been collected on the island of Kithnos (04.05.2003, *Biel* 03.253) and both records are new for the Kiklades.

Solanaceae**53. *Datura innoxia* Mill.**

Gr Amorgos: Egiali-Laki, waste ground and gardens near houses, 15 m, 36°54'24"N, 25°58'42"E, 30.10.2014, *Biel* 14.270.

Also noted near Apano and Kato Potamos. Naturalized, reported from Andros, Kea, Milos, Sifnos and Thira.

54. *Datura stramonium* L.

Gr Amorgos: Katapola, road margins and other ruderal places in village, 10 m, 36°49'34"N, 25°51'49"E, 05.11.2014, *Biel* obs. (photo).

Also noted E and NE of Katapola. Established in ruderal places. Reported from Andros, Milos, Naxos and Sifnos.

55. *Solanum nigrum* L. subsp. *nigrum*

Gr Amorgos: Egiali, marshy coastal area with reed and waste-deposits, 2 m, 36°54'14"N, 25°58'42"E, 31.10.2014, *Biel* 14.272a.

Also noted NE of Katapola. Reported from Andros, Naxos, Paros and Serifos.

Tropaeolaceae**56. *Tropaeolum majus* L.**

Gr Amorgos: Tholaria, road margins and waste ground in village, 210 m, 36°55'01"N, 25°58'59"E, 15.02.2014, *Biel* obs.

Also noted at Lagadha. First observation for Amorgos, but established occurrences in Greece are rarely documented. Garden escape; an edible ornamental originating from S America.

Valerianaceae**57. *Centranthus ruber* (L.) DC.**

Gr Amorgos: Lagadha, road margins and waste ground in village, 200 m, 36°54'23"N, 25°59'51"E, 28.05.2014, *Biel* obs.

Also noted at Chora and Kato Potamos. Recorded from Andros, Sifnos, Tinos and Thira.

Verbenaceae**58. *Lantana camara* L.**

Gr Amorgos: NE of Katapola, terraced slopes with *Pistacia lentiscus*, 40 m, 36°49'58"N, 25°52'01"E, 19.02.2014, *Biel* 14.051.

Also noted near Egiali and Katapola. Neo-tropical garden ornamental, escape from planting.

Agavaceae**59. *Agave americana* L.**

Gr Amorgos: N of Egiali, beach and waste ground near houses, 3 m, 36°54'19"N, 25°58'38"E, 30.10.2014, *Biel* obs.

Also noted NW of Egiali, partly naturalized escape from cultivation. Recorded from Anafi, Kimolos and Naxos.

Amaryllidaceae**60. *Narcissus obsoletus* (Haw.) Steud. (= *N. serotinus* auct. fl. graec., non L.) (Fig. 3)**

Gr Amorgos: W of Egiali, rocky coastal phrygana slope, at hotel entrance, 10 m, 36°54'01"N, 25°58'31"E, 30.10.2014, *Biel* 14.287.

Observed in 76 different localities on the island. On most islands in the Kiklades, including Andros, Astipalea, Folegandros, Kimolos, Mikonos, Naxos, Paros, Rinia, Siros and Tinos.

Araceae**61. *Arum concinatum* Schott**

Gr Amorgos: Egiali-Laki, olive terraces by dirt road, 15 m, 36°54'28"N, 25°58'38"E, 14.02.2014, *Biel* obs.



Fig. 3. *Narcissus obsoletus* (photo B. Biel).

Also noted near Katapola and Lagadha. Recorded from Andros, Kea, Naxos, Paros and Tinos.

Areaceae

62. *Phoenix canariensis* Chabaud

Gr Amorgos: Katapola-Rachidi, small park with palms, 2 m, 36°49'40"N, 25°51'57"E, 02.06.2014; S of Egiali, small parks with trees and waste ground, 30 m, 30.10.2014; E of Chora, slope at steps to Chozoviotisa monastery, 250 m, 10.11.2014, *Biel* obs. (photo).

Planted, not naturalized although with numerous seedlings.

63. *Phoenix theophrasti* Greuter (Fig. 4)

Gr Amorgos: N-NE of Kolofana, beach at Kato Kambos with reed area, 1–2 m, 36°48'19"N, 25°46'58"E, 22.02.2014, *Biel* obs.; N of Lagadha, slope with olive trees near Ag. Nikitas, 210 m, 36°54'39"N, 25°59'58"E, 01.06.2014; S-SW of Aghia Thekla, gravelly edge of Ag. Sarandha beach, 5 m, 36°48'30"N, 25°50'44"E, 05.06.2014; NW of Egiali, beach at Psili Amos, 5 m, 36°54'29"N, 25°57'58"E, 04.11.2014; N-NW of Katapola, at spring 'To Nero' by dirt road, 40 m, 36°50'13"N, 25°51'30"E, 09.11.2014, *Biel* obs. (photo).



Fig. 4. *Phoenix theophrasti* (photo B. Biel).

Recorded from Anafi and Milos in S Kiklades. Apparently well-established with numerous seedlings and young plants.

Juncaceae

64. *Juncus acutus* L.

Gr Amorgos: S-SW of Katapola, steep phrygana slope E of Stavros, 250 m, 36°48'00"N, 25°51'14"E, 05.06.2014, *Biel* obs. (photo).

Recorded from several islands in N and Central Kiklades including Andiparos, Andros, Ios, Kimolos, Mikonos, Naxos, Paros and Siros.

Poaceae

65. *Bromus hordeaceus* L.

Gr Amorgos: Egiali, road margins and ruderal places in village, 10 m, 36°54'01"N, 25°58'36"E, 25.02.2014, *Biel* 14.086.

Also noted near Apano Potamos and Lagadha. Recorded from N, Central and S Kiklades (Andros, Kimolos, Naxos, Thira and Tinos).

66. *Digitaria sanguinalis* (L.) Scop.

Gr Amorgos: E of Egiali, rocky phrygana slope with seasonal spring, 30 m, 36°53'59"N, 25°58'40"E, 30.10.2014, *Biel* 14.283.

Also noted S of Egiali. Mainly N and Central Kiklades (Andros, Kithnos, Mikonos, Naxos, Serifos and Tinos).

67. *Micropyrum tenellum* (L.) Link

Gr Amorgos: S-SE of Katapola, phrygana slopes, damp depressions by path, 310 m, 36°48'19"N, 25°52'21"E, 18.02.2014, *Biel* 14.046.

New for the Kiklades, possibly overlooked.

68. *Poa annua* L. (≡ *Ochlopoa annua* (L.) H. Scholz)

Gr Amorgos: Katapola, road margins and ruderal places in village, 10 m, 36°49'34"N, 25°51'49"E, 24.02.2014, *Biel* 14.079.

Recorded from Anafi, Andros, Milos, Naxos and Sifnos.

69. *Setaria pumila* (Poir.) Roem. & Schult.

Gr Amorgos: Arkesini, waste ground by steps above church, 210 m, 36°47'11"N, 25°48'10"E, 11.11.2014, *Biel* 14.326.

In the Kiklades, apparently recorded only from Andros.

Cited vouchers are provisionally kept in the private herbarium of B. Biel at H6chberg (herb. Biel).

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This is the second report of new plant-records for the islands of Limnos and Agios Evstratios (N Aegean islands, Nomos Lesvou, Eparchia Limnou) based on fieldwork carried out between November 2010 and April 2014. The records listed are all new to the islands, or to the floristic region N Aegean (NAe) as circumscribed in *Flora Hellenica* (Strid & Tan 1997). The occurrence on the other N Aegean islands is also provided.

Aizoaceae

70. *Aptenia cordifolia* (L. f.) Schwantes

Gr Limnos: Myrina, road margins and waste ground, 10 m, 39°52'28"N, 25°03'42"E, 07.03.2013, *Biel* 13.051.

— Ag. Evstratios: beach and waste ground, 3 m, 39°32'18"N, 24°59'16"E, 06.10.2012, *Biel* 12.023.

Recently published for Limnos based on a field note made in August 2013 (Baliouis 2014).

Amaranthaceae

71. *Amaranthus hypochondriacus* L.

Gr Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.002.

New for N Aegean area.

72. *Amaranthus viridis* L.

Gr Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.003.

Recorded from Thasos.

Apiaceae

73. *Anthriscus caucalis* M. Bieb.

Gr Ag. Evstratios: waste ground in valley E-SE of village, 15 m, 39°32'02"N, 24°59'55"E, 05.04.2014, *Biel* 14.088.

Recorded from Samothraki, Thasos and Limnos.

Asteraceae

74. *Artemisia abrotanum* L.

Gr Ag. Evstratios: park behind beach, 3 m, 39°32'18"N, 24°59'16"E, 11.10.2012, *Biel* 12.062.

New for N Aegean area, apparently not documented

for Greece. Also noted on slope outside village cemetery, probably planted as ornamental or medicinal plant.

75. *Bellis sylvestris* Cirillo

Gr Limnos: S of Therma, pasture with wet depressions, 180 m, 39°53'06"N, 25°07'19"E, 05.03.2013, *Biel* 13.024; SW outskirts of Moudros, park near harbour, 3 m, 39°52'19"N, 25°15'56"E, 15.03.2013, *Biel* 13.053.

Recorded from Samothraki and Thasos.

76. *Crepis sancta* (L.) Bornm.

Gr Ag. Evstratios: park and waste ground in village, 3 m, 39°32'18"N, 24°59'16"E, 08.03.2013, *Biel* 13.018.

Recorded from all other N Aegean islands. Also noted NE of village.

77. *Senecio vernalis* Waldst. & Kit.

Gr Ag. Evstratios: E-SE of village, open phrygana by dirt track, 190 m, 39°32'10"N, 25°01'27"E, 29.03.2014, *Biel* 14.013.

Recorded from all other N Aegean islands. Also noted to the N and S of village.

78. *Tagetes minuta* L.

Gr Limnos: E of Kontias, road margins and waste ground, 20 m, 39°51'48"N, 25°09'07"E, 10.11.2010, *Biel* 10.028.

New for N Aegean area.

79. *Taraxacum hellenicum* Dahlst.

Gr Limnos: SW of Myrina, beach and roadside slopes with phrygana, 2 m, 39°52'08"N, 25°03'27"E, 04.03.2013, *Biel* 13.004; Moudros, road margins, 15 m, 39°52'27"N, 25°16'17"E, 17.03.2013, *Biel* 13.059.

— Ag. Evstratios: beach and waste ground, 3 m, 39°32'18"N, 24°59'16"E, 14.03.2013, *Biel* 13.064 & 13.065.

Recorded from Samothraki and Thasos.

80. *Taraxacum mediterraneum* Soest aggr.

Gr Limnos: N of Myrina, beach and park W of road, 3 m, 39°52'49"N, 25°03'42"E, 17.10.2012, *Biel* 12.042 & 12.043.

Recorded from Samothraki.

81. *Taraxacum minimum* (Guss.) N. Terracc.

Gr Limnos: N of Myrina, beach and park W of road, 3 m, 39°52'49"N, 25°03'42"E, 17.10.2012, *Biel* 12.043a.

— Ag. Evstratios: road margins and waste ground in

village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.008; beach and waste ground, 3 m, 39°32'18"N, 24°59'16"E, 06.10.2012, *Biel* 12.022; waste ground and pasture near cemetery N of village, 20 m, 39°32'29"N, 24°59'24"E, 07.10.2012, *Biel* 12.043; E-NE of village, pasture and phrygana by dirt road north of ridge, 160 m, 39°32'42"N, 25°00'41"E, 09.10.2012, *Biel* 12.053.

Recorded from Samothraki.

82. *Taraxacum scolopendrinum* Dahlst.

Gr Ag. Evstratios: SE of village, pasture on slope above valley, E of Keratas Bay, 65 m, 39°31'06"N, 25°02'37"E, 10.03.2013, *Biel* 13.033; E-SE of village, dunes and dry stream bed at Alonitsi Beach, 10 m, 39°31'56"N, 25°03'00"E, 29.03.2014, *Biel* 14.009.

Recorded from Samothraki.

83. *Tragopogon porrifolius* L.

Gr Ag. Evstratios: N of village, waste ground and pasture near heliport, 20 m, 39°32'29"N, 24°59'24"E, 31.03.2014, *Biel* 14.029.

Recorded from all other N Aegean islands.

Boraginaceae

84. *Echium diffusum* Sm.

Gr Ag. Evstratios: N of village, waste ground and pasture near cemetery, 20 m, 39°32'29"N, 24°59'24"E, 08.03.2013, *Biel* 13.009.

New for N Aegean area. Also noted to the E of village.

85. *Heliotropium europaeum* L.

Gr Ag. Evstratios: E of village, gardens and uncultivated ground, 10 m, 39°32'14"N, 24°59'35"E, 06.10.2012, *Biel* 12.031; E of village, dry stream bed, 15 m, 39°32'21"N, 24°59'35"E, 13.10.2012, *Biel* 12.069.

Recorded from all other N Aegean islands.

86. *Myosotis litoralis* Fisch.

Gr Limnos: N of Myrina, beach with small dunes S of estuary, 5 m, 39°53'36"N, 25°03'38"E, 06.03.2013, *Biel* 13.039.

Recorded from all other N Aegean islands. Also noted near Moudros.

Brassicaceae

87. *Bunias erucago* L.

Gr Ag. Evstratios: E of village, gardens and uncultivated ground, 10 m, 39°32'14"N, 24°59'35"E, 08.03.2013, *Biel* 13.002 & 14.018.

Recorded from all other N Aegean islands.

88. *Lobularia maritima* (L.) Desv.

Gr Limnos: SW of Myrina, waste ground at northern edge of the new harbour, 2 m, 39°52'12"N, 25°03'13"E, 04.03.2013, *Biel* 13.020.

New for N Aegean islands; naturalized (W Mediterranean taxon).

89. *Malcolmia maritima* (L.) R. Br.

Gr Limnos: SW of Myrina, beach and roadside slopes, 2 m, 39°52'08"N, 25°03'27"E, 04.03.2013, *Biel* 13.009.

Recorded from Samothraki.

Caryophyllaceae

90. *Cerastium semidecandrum* L.

Gr Ag. Evstratios: SW of village, rocky slope south of beach, 10 m, 39°32'07"N, 24°59'02"E, 08.03.2013, *Biel* 13.012.

Recorded from all other N Aegean islands. Also noted N of village.

91. *Silene dichotoma* Ehrh.

Gr Ag. Evstratios: NE of village, waste ground and pasture, 15 m, 39°32'18"N, 24°59'16"E, 04.04.2014, *Biel* 14.064.

Recorded from Limnos.

92. *Silene nocturna* L.

Gr Ag. Evstratios: waste ground in village, 3 m, 39°32'18"N, 24°59'16"E, 30.03.2014, *Biel* 14.016.

Recorded from Samothraki.

93. *Spergula pentandra* L.

Gr Ag. Evstratios: E of village, slope with *Sarcopoterium* dominant, 180 m, 39°32'14"N, 25°01'08"E, 29.03.2014, *Biel* 14.015.

Recorded from all other N Aegean islands.

94. *Spergularia marina* (L.) Besser

Gr Ag. Evstratios: E-SE of village, slopes with *Asphodelus* on both sides of dirt road SE of Panagia, 50 m, 39°32'02"N, 25°00'13"E, 10.03.2013, *Biel* 13.031; S of village, hill saddle with pool near dirt road, 150 m, 39°29'29"N, 24°59'09"E, 13.03.2013, *Biel* 13.060; N-NE of village, stream side in Megalo Mourouli Bay, 2 m, 39°32'45"N, 24°59'36"E, 04.04.2014, *Biel* 14.071.

Recorded from Samothraki and Limnos.

95. *Spergularia rubra* (L.) J. & C. Presl

Gr Ag. Evstratios: park and waste ground in village, 3 m, 39°32'18"N, 24°59'16"E, 08.03.2013, *Biel* 13.010.

Recorded from Samothraki and Thasos.

96. *Stellaria neglecta* Weihe

Gr Limnos: N of Myrina, ruderal places and roadside slopes, 10 m, 39°52'57"N, 25°03'47"E, 06.03.2013, *Biel* 13.032; Myrina, waste ground in port area, 2 m, 39°52'08"N, 25°03'27"E, 27.03.2014, *Biel* 14.020.

Recorded from Samothraki.

Chenopodiaceae**97. *Atriplex hortensis* L.**

Gr Limnos: Myrina, road margins and waste ground, 10 m, 39°52'28"N, 25°03'42"E, 12.11.2010, *Biel* 10.042.

Recorded from Thasos.

98. *Atriplex tatarica* L.

Gr Limnos: S of Myrina, beach at harbour and roadside slopes, 2 m, 39°52'08"N, 25°03'27"E, 07.11.2010, *Biel* 10.012.

Recorded from Thasos.

99. *Chenopodium album* L.

Gr Limnos: N of Myrina, ruderal places and roadside slopes, 10 m, 39°52'57"N, 25°03'47"E, 06.03.2013, *Biel* 13.033; S of Myrina, beach at harbour and roadside slopes, 2 m, 39°52'08"N, 25°03'27"E, 06.03.2013, *Biel* 13.043.

Recorded from Samothraki and Thasos; recently published for Limnos based on a gathering in August 2013 (Baliouis 2014).

100. *Chenopodium opulifolium* Schrad.

Gr Limnos: Myrina, edge of dirt road near concreted stream bed, 15 m, 39°52'37"N, 25°05'32"E, 06.11.2010, *Biel* 10.001; S of Myrina, beach at harbour and roadside slopes, 2 m, 39°52'08"N, 25°03'27"E, 07.11.2010, *Biel* 10.005 & 10.018; *loc. ibid.*, 05.10.2012, *Biel* 12.009.

— Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.017; beach, 3 m, 39°32'18"N, 24°59'16"E, 06.10.2012, *Biel* 12.026.

Recorded from Samothraki and Thasos. Also noted E of village.

101. *Dysphania ambrosioides* (L.) Mosyakin & Clemants

Gr Limnos: E-SE of Myrina, phrygana and waste ground by dirt road slopes, 80 m, 39°52'33"N, 25°05'19"E, 06.11.2010, *Biel* 10.003.

Recorded from Samothraki and Thasos; recently published for Limnos based on a gathering in August 2013 (Baliouis 2014). Also noted N of Myrina.

102. *Lipandra polysperma* (L.) S. Fuentes & al.

Gr Limnos: N of Myrina, ruderal places and roadside slopes, 10 m, 39°52'57"N, 25°03'47"E, 06.03.2013, *Biel* 13.034.

Recorded from Samothraki.

103. *Spinacia oleracea* L.

Gr Limnos: Myrina, waste ground and park in port area, 2 m, 39°52'08"N, 25°03'27"E, 07.11.2010, *Biel* 10.007.

New for N Aegean area.

Convolvulaceae**104. *Calystegia sepium* (L.) R. Br.**

Gr Ag. Evstratios: N-NE of village, streamside in Megalo Mourouli Bay, 2 m, 39°32'45"N, 24°59'36"E, 04.04.2014, *Biel* 14.070.

Recorded from Samothraki and Thasos.

Cucurbitaceae**105. *Citrullus lanatus* (Thunb.) Matsum. & Nakai**

Gr Limnos: beach with *Tamarix* near Diapori, SE of Kontias, 1 m, 39°51'15"N, 25°10'25"E, 10.11.2010, *Biel* 10.034.

Recorded from Samothraki; introduced casual.

Euphorbiaceae**106. *Euphorbia chamaesyce* L. subsp. *chamaesyce* (= *Chamaesyce canescens* (L.) Prokh. subsp. *canescens*)**

Gr Limnos: Myrina, park and waste ground in port area, 2 m, 39°52'08"N, 25°03'27"E, 05.10.2012, *Biel* 12.002.

— Ag. Evstratios: beach with park and waste ground, 3 m, 39°32'18"N, 24°59'16"E, 06.10.2012, *Biel* 12.024; E-SE of village, stream valley near Panagia chapel, 40 m, 39°31'56"N, 25°00'25"E, 06.10.2012, *Biel* 12.035; 2.5 km E-NE of village, phrygana slope by dirt road, 185 m, 39°32'42"N, 25°01'47"E, 07.10.2012, *Biel* 12.047.

Recorded from Samothraki and Thasos; recently published for Limnos without indication of subspecies rank, based on a gathering in August 2013 (Baliouis 2014).

107. *Euphorbia chamaesyce* subsp. *massiliensis* (DC.) Thell. (≡ *Chamaesyce canescens* subsp. *massiliensis* (DC.) Soják)

Gr Limnos: Myrina, waste ground and park in port area, 2 m, 39°52'08"N, 25°03'27"E, 05.10.2012, *Biel* 12.014.

Recorded from Samothraki.

108. *Euphorbia maculata* L. (\equiv *Chamaesyce maculata* (L.) Small)

Gr Limnos: NW of Therma, road margin and waste ground, 39°54'21"N, 25°07'13"E, 70 m, 08.11.2010, *Biel* 10.022; Myrina, paved steps to the castle, 60 m, 39°52'40"N, 25°03'10"E, 11.11.2010, *Biel* 10.036; E of Myrina, road margins and waste ground at foot of hill with Byzantine tower, 30 m, 39°52'26"N, 25°03'56"E, 15.10.2012, *Biel* 12.029; N of Myrina, beach and park W of road, 3 m, 39°52'49"N, 25°03'42"E, 17.10.2012, *Biel* 12.044.

Recorded from Samothraki and Thasos; recently published for Limnos based on a gathering in August 2013 (Baliouis 2014).

109. *Euphorbia prostrata* Aiton (\equiv *Chamaesyce prostrata* (Aiton) Small)

Gr Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.010; E of village, dry stream bed and waste ground, 15 m, 39°52'28"N, 25°03'42"E, 07.10.2012, *Biel* 12.045a.

Recorded from Samothraki.

110. *Euphorbia serpens* Kunth (\equiv *Chamaesyce serpens* (Kunth) Small)

Gr Limnos: Myrina, waste ground and trodden ground at eastern slope of castle, 40 m, 39°52'24"N, 25°03'28"E, 05.10.2012, *Biel* 12.019.

New for N Aegean area; the nearest reported locality is the airport on the W Aegean island of Skiros.

111. *Euphorbia helioscopia* L.

Gr Ag. Evstratios: E-NE of village, coastal phrygana slope below livestock farm, 40 m, 39°35'05"N, 25°01'12"E, 31.03.2014, *Biel* 14.032.

Recorded from all the other N Aegean islands, widespread in Greece. Also noted in several places S and E of village.

Fabaceae

112. *Medicago sativa* subsp. *sativa* \times *M. sativa* subsp. *falcata*

Gr Ag. Evstratios: E of village, dry stream bed, 15 m, 39°32'21"N, 24°59'35"E, 07.10.2012, *Biel* 12.045.

A fertile, partly stabilized hybrid recorded from Samothraki as *M. \times varia* Martyn, although Martyn originally published it as a species and not as a hybrid.

113. *Spartium junceum* L.

Gr Ag. Evstratios: S of village, roadside slope with phrygana and *Quercus*, 20 m, 39°32'19"N, 24°59'21"E, 14.03.2013, *Biel* 13.069.

Recorded from all other N Aegean islands.

114. *Sulla spinosissima* (L.) B.H. Choi & H. Ohashi (\equiv *Hedysarum spinosissimum* L.)

Gr Ag. Evstratios: E-SE of village, dunes and flysch slopes at Alonitsi Beach, 20 m, 39°32'01"N, 25°02'43"E, 29.03.2014, *Biel* 14.012.

Recorded from Limnos.

115. *Trifolium hirtum* All.

Gr Ag. Evstratios: E-SE of village, gravelly stream bed SE of Panagias, 25 m, 39°31'55"N, 25°00'18"E, 04.04.2014, *Biel* 14.084.

Recorded from Samothraki and Thasos.

Fumariaceae

116. *Fumaria gaillardotii* Boiss.

Gr Limnos: SW of Myrina, beach and roadside slopes with phrygana, 2 m, 39°52'08"N, 25°03'27"E, 04.03.2013, *Biel* 13.008.

New for N Aegean area.

117. *Hypecoum torulosum* Å.E. Dahl

Gr Ag. Evstratios: E-NE of village, terraced slope with open *Quercus* woodland and phrygana, 100 m, 39°32'58"N, 25°01'26"E, 09.03.2013, *Biel* 13.024; E-NE of village, coastal phrygana slope below livestock farm, 40 m, 39°35'05"N, 25°01'12"E, 09.03.2013, *Biel* 13.026.

Recorded from Thasos. Also noted E of village.

Lamiaceae

118. *Mentha \times piperita* L. (\equiv *M. aquatica* L. \times *M. spicata* L. subsp. *spicata*)

Gr Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.029.

New for N Aegean area.

119. *Salvia microphylla* Kunth

Gr Limnos: E of Myrina, low gravelly slope at foot of hill with Byzantine tower, 30 m, 39°52'26"N, 25°03'56"E, 15.10.2012, *Biel* 12.028.

New for N Aegean area; established ornamental native to Arizona and Mexico.

Nyctaginaceae

120. *Mirabilis jalapa* L.

Gr Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.030.

Recorded from Samothraki and Thasos; established ornamental.

Orobanchaceae**121. *Orobanche crenata*** Forssk. (Fig. 5)

Gr Limnos: E of Myrina, low gravelly slope at foot of hill with Byzantine tower, 30 m, 39°52'26"N, 25°03'56"E, 07.04.2014, *Biel* obs. (photo).

— **Ag.** Evstratios: E-SE of village, dunes and flysch slopes at Alonitsi Beach, 20 m, 39°32'01"N, 25°02'43"E, 29.03.2014, *Biel* 14.011 (conf. H. Uhlich).

New for N Aegean area.

122. *Orobanche pubescens* D'Urv.

Gr **Ag.** Evstratios: E-SE of village, rocky phrygana slopes on hill with chapel, 50–80 m, 39°31'35"N, 25°03'08"E, 01.04.2014, *Biel* 14.050 (det. H. Uhlich).

Recorded from all other N Aegean islands. Also noted E of village.

Plantaginaceae**123. *Plantago major*** subsp. *intermedia* (Gilib.) Lange

Gr Limnos: E-SE of Myrina, dirt road in hilly terrain, on stream bank, 30 m, 39°52'29"N, 25°04'27"E, 07.11.2010, *Biel* 10.017.

Recorded from Samothraki.



Fig. 5. *Orobanche crenata* (photo B. Biel).

Plumbaginaceae**124. *Limoniastrum monopetalum*** (L.) Boiss. (Figs. 6 & 6a)

Gr Limnos: rocky slopes above the coast N of Myrina, 10 m, 39°52'49"N, 25°03'42"E, 07.11.2010, *Biel* 10.013.
New for N Aegean area.



Fig. 6. *Limoniastrum monopetalum*, habit (photo B. Biel).



Fig. 6a. *Limoniastrum monopetalum* (photo B. Biel).

Polygonaceae**125. *Polygonum arenastrum* Boreau**

Gr Limnos: SW of Myrina, beach and road-side slopes with phrygana, 2 m, 39°52'08"N, 25°03'27"E, 07.11.2010, *Biel* 10.015.

— Ag. Evstratios: phrygana and *Quercus* along path ca. 2.7 km NE of village, 170 m, 39°32'54"N, 25°00'51"E, 09.10.2012, *Biel* 12.051.

Recorded from Samothraki and Thasos. Also noted near Myrina and Therma on Limnos.

126. *Polygonum bellardii* All.

Gr Limnos: Myrina, waste ground and park in port area, 2 m, 39°52'08"N, 25°03'27"E, 05.10.2012, *Biel* 12.006.

Recorded from Samothraki and Ag. Evstratios.

127. *Rumex scutatus* L.

Gr Limnos: SW of Myrina, beach and road-side slopes with phrygana, 2 m, 39°52'08"N, 25°03'27"E, 04.03.2013, *Biel* 13.005; N of Myrina, beach with small dunes, S of estuary, 5 m, 39°53'36"N, 25°03'38"E, 27.03.2014, *Biel* 14.017; N of Myrina, rocky slope near castle, 60 m, 39°52'40"N, 25°03'10"E, 10.04.2010, *Biel* 14.071.

— Ag. Evstratios: S of village, roadside slope with phrygana and *Quercus*, 20 m, 39°32'19"N, 24°59'21"E, 30.03.2014, *Biel* 14.017.

Recorded from Samothraki. Also noted in several places E of village.

Ranunculaceae**128. *Adonis annua* subsp. *cupaniana* (Guss.) C. Steinb.**

Gr Limnos: S-SW of Plati, phrygana slope near Prof. Ilias chapel, 50 m, 39°50'37"N, 25°04'47"E, 08.04.2014, *Biel* 14.054; S of Therma, pasture with wet depressions, 180 m, 39°53'06"N, 25°07'19"E, 09.04.2014, *Biel* 14.056a.

— Ag. Evstratios: E-SE of village, *Sarcopoterium*-phrygana with *Quercus* at dirt road junction, 140 m, 39°31'47"N, 25°02'16"E, 29.03.2014, *Biel* 14.007; E-SE of village, rocky phrygana slopes on hill with chapel, 50–80 m, 39°31'35"N, 25°03'08"E, 01.04.2014, *Biel* 14.049.

Recorded from Samothraki.

129. *Ranunculus paludosus* Poir.

Gr Ag. Evstratios: E of village, *Sarcopoterium*-phrygana slopes, 180 m, 39°32'14"N, 25°01'08"E, 29.03.2014, *Biel* 14.002; E-NE of village, pasture and phrygana at dirt road N of ridge, 160 m, 39°32'42"N, 25°00'41"E, 31.03.2014, *Biel* 14.031.

Recorded from all other N Aegean islands. Noted in several places N and S of village.

130. *Ranunculus peltatus* subsp. *baudotii* (Godr.)

Meikle ex C.D.K. Cook

Gr Ag. Evstratios: S-SE of village, pool in pasture at dirt road junction, 190 m, 39°29'34"N, 24°59'58"E, 06.04.2014, *Biel* 14.095.

Recorded from Limnos.

131. *Ranunculus psilostachys* Griseb.

Gr Ag. Evstratios: E-SE of village, slope above stream valley SE of Panagias, 30 m, 39°31'55"N, 25°00'18"E, 04.04.2014, *Biel* 14.081.

Recorded from Samothraki and Thasos.

Rosaceae**132. *Aphanes arvensis* L.**

Gr Ag. Evstratios: E-NE of village, terraced slopes with *Quercus* below livestock farm, 110 m, 39°31'44"N, 25°00'18"E, 09.03.2013, *Biel* 13.021; E of village, gravelly stream bed with *Vitex*, 30 m, 39°32'18"N, 25°00'13"E, 03.04.2014, *Biel* 14.062.

Recorded from all other N Aegean islands.

133. *Pyrus pyraster* (L.) Burgsd.

Gr Ag. Evstratios: E-SE of village, meadows in broad stream valley with old fruit trees, 15 m, 39°32'02"N, 24°59'55"E, 06.10.2012, *Biel* 12.032.

Recorded from Samothraki. Also noted E of village.

134. *Rosa sempervirens* L.

Gr Ag. Evstratios: E of village, slope above gardens, 15 m, 39°32'14"N, 24°59'35"E, 02.04.2014, *Biel* 14.054.

Recorded from all other N Aegean islands.

Rubiaceae**135. *Galium spurium* L.**

Gr Limnos: SW of Myrina, beach and road-side slopes with phrygana, 2 m, 39°52'08"N, 25°03'27"E, 04.03.2013, *Biel* 13.007; S of Myrina, open *Pinus* woodland above harbour, 20 m, 39°53'07"N, 25°03'48"E, 03.03.2013, *Biel* 13.045.

Recorded from Samothraki.

Rutaceae**136. *Ruta chalepensis* L.**

Gr Ag. Evstratios: NE of village, pasture slope below Seretenas Rachi, 60 m, 39°33'14"N, 25°00'42"E, 31.03.2014, *Biel* 14.036.

Recorded from Thasos. Also noted S and E of village.

Salicaceae**137. *Salix alba* L.**

Gr Ag. Evstratios: E-SE of village, stream valley near Panagia chapel, 40 m, 39°31'56"N, 25°00'25"E, 06.10.2012, *Biel* 12.034; *loc. ibid.*, 30.03.2014, *Biel* 14.023.

Recorded from all other N Aegean islands.

Scrophulariaceae**138. *Linaria simplex* Desf.**

Gr Limnos: E of Myrina, rocky slopes above hospital, 25 m, 39°52'26"N, 25°03'56"E, 07.04.2014, *Biel* 14.041.

— Ag. Evstratios: E-SE of village, coastal phrygana slopes NE of Keretas Bay, 80 m, 39°31'18"N, 25°03'02"E, 10.03.2013, *Biel* 13.035.

Recorded from Samothraki and Thasos. On Limnos, also noted SW of Plati.

Solanaceae**139. *Solanum luteum* subsp. *alatum* (Moench)**

Dostál (≡ *Solanum alatum* Moench)

Gr Limnos: S of Therma, grassy slopes by dirt road, 100 m, 39°54'03"N, 25°07'18"E, 10.11.2010, *Biel* 10.031.

Recorded from Samothraki and Ag. Evstratios.

140. *Solanum nigrum* subsp. *schultesii* (Opiz) Wessely

Gr Limnos: S of Therma, grassy slopes by dirt road, 100 m, 39°54'03"N, 25°07'18"E, 10.11.2010, *Biel* 10.030.

Recorded from Samothraki and Ag. Evstratios. Also noted near Myrina.

141. *Solanum pseudocaspicum* L.

Gr Limnos: Myrina, road margins and waste ground, 10 m, 39°52'28"N, 25°03'42"E, 04.03.2013, *Biel* 13.002.

New for N Aegean area.

Valerianaceae**142. *Valerianella discoidea* (L.) Loisel.**

Gr Ag. Evstratios: E-SE of village, *Sarcopoterium-phrygana* with *Quercus* at dirt road junction, 140 m, 39°31'47"N, 25°02'16"E, 29.03.2014, *Biel* 14.008.

Recorded from all other N Aegean islands.

143. *Valerianella hirsutissima* Link

Gr Ag. Evstratios: E of village, terraced slope with phrygana and *Quercus*, 190 m, 39°32'02"N, 25°02'12"E, 12.03.2013, *Biel* 13.053.

Recorded from Thasos.

144. *Valerianella locusta* (L.) Laterr.

Gr Ag. Evstratios: E-SE of village, stream valley near Panagia chapel, 40 m, 39°31'56"N, 25°00'25"E, 30.03.2014, *Biel* 14.025; E-SE of village, wet places and terraces SE of Panagias, 170 m, 39°31'39"N, 25°01'05"E, 01.04.2014, *Biel* 14.044.

Recorded from Samothraki and Thasos. Also noted E of village.

145. *Valerianella microcarpa* Loisel.

Gr Ag. Evstratios: E-SE of village, wet places and terraces SE of Panagias, 170 m, 39°31'39"N, 25°01'05"E, 01.04.2014, *Biel* 14.045.

Recorded from all the other N Aegean islands. Growing together with *V. locusta*.

Verbenaceae**146. *Phyla nodiflora* (L.) Greene**

Gr Limnos: N of Myrina, beach and park W of road, 3 m, 39°52'49"N, 25°03'42"E, 07.11.2010, *Biel* 10.016.

New for N Aegean area.

Alliaceae**147. *Allium neapolitanum* Cirillo**

Gr Limnos: Myrina, road margins and waste ground, 10 m, 39°52'28"N, 25°03'42"E, 12.11.2010, *Biel* 10.041.

New for N Aegean area.

148. *Allium sphaerocephalon* subsp. *arvense* (Guss.) Arcang.

Gr Ag. Evstratios: pasture E of cemetery to the N of village, 20 m, 39°32'29"N, 24°59'24"E, 04.04.2014, *Biel* 14.066 (bulbs collected, cultivated at Höchberg).

New for N Aegean area, possibly occurring on Limnos. *Allium sphaerocephalon* subsp. *sphaerocephalon* has been recorded from Thasos. Fruiting plants were noticed in several localities on the island in October 2012.

Amaryllidaceae**149. *Narcissus tazetta* L. subsp. *tazetta***

Gr Limnos: E of Myrina, waste ground at foot of hill with Byzantine tower, 30 m, 39°52'26"N, 25°03'56"E, 07.03.2013, *Biel* 13.050a.

Recorded from Thasos and Ag. Evstratios.

Cyperaceae**150. *Carex divulsa* Stokes**

Gr Ag. Evstratios: E-NE of village, wet places on

terraced slope below livestock farm, 40 m,
39°35'05"N, 25°01'12"E, 09.03.2013, *Biel* 13.028.

Recorded from all the other N Aegean islands.

151. *Cyperus badius* Desf.

Gr Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.014b.

Recorded from all the other N Aegean islands.

152. *Cyperus rotundus* L.

Gr Limnos: Myrina, waste ground and park in port area, 2 m, 39°52'08"N, 25°03'27"E, 05.10.2012, *Biel* 12.003.

— Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.014a.

Recorded from Samothraki and Thasos. Recently published for Limnos based on a gathering in August 2013 (Baliouis 2014).

Hyacinthaceae

153. *Muscari comosum* (L.) Mill.

Gr Ag. Evstratios: N-NE of village, phrygana slope SE of Mikro Mourouli Bay, 20 m, 39°32'37"N, 24°59'32"E, 31.03.2014, *Biel* 14.042; waste ground and slopes below cemetery N of village, 20 m, 39°32'29"N, 24°59'24"E, 02.04.2014, *Biel* 14.056.

Recorded from all the other N Aegean islands. Also noted S and E of village.

154. *Muscari neglectum* Ten.

Gr Limnos: E of Moudros, pasture slopes by small stream and dirt road, 80 m, 39°52'24"N, 25°17'18"E, 17.03.2013, *Biel* 13.058.

— Ag. Evstratios: E-SE of village, rocky phrygana slopes on hill with chapel, 50–80 m, 39°31'35"N, 25°03'08"E, 10.03.2013, *Biel* 13.040.

Recorded from Samothraki and Thasos. Also noted E of village on Ag. Evstratios.

155. *Ornithogalum exscapum* Ten.

Gr Ag. Evstratios: E of village, slopes with *Sarcopoterium* dominant, 180 m, 39°32'14"N, 25°01'08"E, 29.03.2014, *Biel* 14.005.

Recorded from Thasos.

Iridaceae

156. *Crocus laevigatus* Bory & Chaub. (Fig. 7)

Gr Ag. Evstratios: E-SE of village, sand dunes with *Quercus* at Alonitsi beach, 40 m, 39°31'56"N, 25°03'00"E, 10.10.2012, *Biel* 12.059.

New for N Aegean area and isolated from other localities in Greece, viz., Peloponnisos, Sterea Ellas, S and W Aegean islands. Also noted in several places E and SE of village.

157. *Crocus pallasii* Goldb. (Fig. 8)

Gr Limnos: S-SW of Myrina, open *Pinus* woodland on rocky slope, 60 m, 39°52'03"N, 25°03'23"E, 07.11.2010, *Biel* 10.011.



Fig. 7. *Crocus laevigatus* (photo B. Biel).



Fig. 8. *Crocus pallasii* (photo B. Biel).

New for N Aegean area. Occurring mainly on the E Aegean islands with an outlying station on Mt Imittos (Sterea Ellas, Nomos Attikis). Also noted in vicinity of Myrina and S of Therma.

158. *Freesia leichtlinii* subsp. *alba* (G.L. Mey.) J.C. Manning & Goldblatt (= *Freesia refracta* auct. fl. graec. non (Jacq.) Klatt.)

Gr Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 04.04.2014, *Biel* 14.074.

New for N Aegean area, naturalized.

159. *Romulea bulbocodium* (L.) Sebast. & Mauri

Gr Limnos: E of Myrina, phrygana slope by dirt road NW of Kakavos, 130 m, 39°52'31"N, 25°05'48"E, 05.03.2013, *Biel* 13.029.

Recorded from Samothraki and Ag. Evstratios.

160. *Romulea columnae* Sebast. & Mauri

Gr Limnos: S of Therma, pasture with wet depressions, 180 m, 39°53'06"N, 25°07'19"E, 05.03.2013, *Biel* 13.025.

New for the N Aegean area.

Juncaceae

161. *Juncus capitatus* Weigel

Gr Ag. Evstratios: E of village, gravelly stream bed with *Vitex*, 30 m, 39°32'18"N, 25°00'13"E, 03.04.2014, *Biel* 14.061.

Recorded from all the other N Aegean islands.

162. *Juncus inflexus* L.

Gr Limnos: E-SE of Myrina, stream bank by dirt road in hilly terrain, 30 m, 39°52'29"N, 25°04'27"E, 17.10.2012, *Biel* 12.040.

Recorded from Samothraki and Thasos.

163. *Juncus minutulus* V. Krecz. & Gontsch.

Gr Ag. Evstratios: E-SE of village, damp places near Panagia chapel, 30 m, 39°32'06"N, 24°59'56"E, 30.03.2014, *Biel* 14.021; E-SE of village, gravelly stream bed SE of Panagias, 25 m, 39°31'55"N, 25°00'18"E, 04.04.2014, *Biel* 14.080.

Recorded from Samothraki and Limnos.

164. *Juncus striatus* E. Mey.

Gr Limnos: E-SE of Myrina, stream bank by dirt road in hilly terrain, 30 m, 39°52'29"N, 25°04'27"E, 17.10.2012, *Biel* 12.041.

Recorded from Samothraki.

Poaceae

165. *Agrostis stolonifera* subsp. *scabriglumis* (Boiss. & Reut.) Maire

Gr Limnos: Myrina, waste ground at northern outskirts of the new port, 2 m, 39°52'08"N, 25°03'27"E, 04.03.2013, *Biel* 13.019.

Recorded from Samothraki.

166. *Arundo plinii* Turra

Gr Limnos: S of Karpasi, fenced area NE of airport building, 10 m, 39°55'28"N, 25°14'03"E, 18.03.2013, *Biel* 13.061.

New for N Aegean area.

167. *Avena sterilis* subsp. *ludoviciana* (Durieu) Gillet & Magne

Gr Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 02.04.2014, *Biel* 14.059.

Recorded from Samothraki and Limnos.

168. *Brachypodium distachyon* (L.) P. Beauv.

Gr Limnos: N of Myrina, pine wood with phrygana on small rocky hill E of road, 20 m, 39°53'07"N, 25°03'48"E, 06.03.2013, *Biel* 13.044.

Recorded from all the other N Aegean islands. Also noted in the vicinity of Myrina.

169. *Bromus hordeaceus* subsp. *mediterraneus* (H. Scholz & F.M. Vázquez) H. Scholz

Gr Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 04.04.2014, *Biel* 14.076.

Recorded from Samothraki.

170. *Bromus rubens* L.

Gr Ag. Evstratios: E-SE of village, rocky hill with phrygana and chapel, 50–80 m, 39°31'35"N, 25°03'08"E, 01.04.2014, *Biel* 14.052.

Recorded from Samothraki. Also noted E of village.

171. *Digitaria sanguinalis* (L.) Scop.

Gr Limnos: SW of Myrina, beach and road-side slopes with phrygana, 2 m, 39°52'08"N, 25°03'27"E, 11.11.2010, *Biel* 10.039.

— Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 07.10.2012, *Biel* 12.039.

Recorded from Samothraki and Thasos. Also noted NW of Myrina and E of Kontias on Limnos. Recently published for Limnos based on a gathering in August 2013 (Baliouis 2014).

172. *Echinochloa colonum* (L.) Link

Gr Limnos: SW of Myrina, beach and road-side slopes with phrygana, 2 m, 39°52'08"N, 25°03'27"E, 11.11.2010, *Biel* 10.038.

— Ag. Evstratios: beach and waste ground in village, 3 m, 39°32'18"N, 24°59'16"E, 06.10.2012, *Biel* 12.021.
Recorded from Samothraki and Thasos.

173. *Echinochloa crus-galli* (L.) P. Beauv.

Gr Limnos: Myrina, waste ground and park in port area, 2 m, 39°52'08"N, 25°03'27"E, 05.10.2012, *Biel* 12.013.

Recorded from Samothraki and Thasos. Recently published for Limnos based on a gathering in August 2013 (Baliouis 2014).

174. *Eragrostis cilianensis* (All.) Janchen

Gr Limnos: Myrina, waste ground and park in port area, 2 m, 39°52'08"N, 25°03'27"E, 05.10.2012, *Biel* 12.005.

Recorded from Samothraki and Thasos. Recently published for Limnos based on a gathering in August 2013 (Baliouis 2014).

175. *Eragrostis minor* Host

Gr Limnos: Myrina, waste ground and trodden ground at eastern slope of castle, 40 m, 39°52'24"N, 25°03'28"E, 16.10.2012, *Biel* 12.031.

— Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.028.

Recorded from Samothraki and Thasos.

176. *Hordeum geniculatum* All.

Gr Ag. Evstratios: N of village, waste ground and pasture near heliport, 20 m, 39°32'29"N, 24°59'24"E, 31.03.2014, *Biel* 14.028; waste ground and pasture E of cemetery to the N of village, 20 m, 39°32'29"N, 24°59'24"E, 04.04.2014, *Biel* 14.067.

Recorded from Samothraki and Thasos.

177. *Lolium rigidum* subsp. *lepturoides* Sennen & Mauricio

Gr Ag. Evstratios: waste ground and pasture E of cemetery, 20 m, 39°32'29"N, 24°59'24"E, 04.04.2014, *Biel* 14.069.

Recorded from Samothraki and Thasos.

178. *Melica minuta* L.

Gr Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 04.04.2014, *Biel* 14.075.

Recorded from all the other N Aegean islands.

179. *Micropyrum tenellum* (L.) Link

Gr Ag. Evstratios: E-SE of village, stream valley near Panagia chapel, 40 m, 39°31'56"N, 25°00'25"E, 30.03.2014, *Biel* 14.026.

Recorded from Samothraki.

180. *Paspalum distichum* L.

Gr Limnos: Myrina, waste ground and park in port area, 2 m, 39°52'08"N, 25°03'27"E, 05.10.2012, *Biel* 12.008; edge of dirt road near concreted stream bed, 15 m, 39°52'37"N, 25°05'32"E, 17.10.2012, *Biel* 12.034.

— Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.009.

Recorded from Samothraki. Recently published for Limnos based on a gathering in August 2013 (Baliouis 2014).

181. *Setaria adhaerens* (Forssk.) Chiov.

Gr Limnos: SW of Myrina, beach and roadside slopes with phrygana, 2 m, 39°52'08"N, 25°03'27"E, 07.11.2010, *Biel* 10.004.

Recently published for Limnos based on a gathering in August 2013 (Baliouis 2014).

182. *Setaria pumila* (Poir.) Roem. & Schult.

Gr Limnos: S of Tsimandiria, uncultivated field at the northeastern edge of swamp, 10 m, 39°51'38"N, 25°10'20"E, 10.11.2010, *Biel* 10.026.

Recorded from Samothraki and Thasos. Recently published for Limnos based on a gathering in August 2013 (Baliouis 2014).

183. *Setaria verticillata* (L.) P. Beauv.

Gr Limnos: Myrina, waste ground and park in port area, 2 m, 39°52'08"N, 25°03'27"E, 05.10.2012, *Biel* 12.011.

— Ag. Evstratios: road margins and waste ground in village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.015.

Recorded from Samothraki.

184. *Setaria viridis* (L.) P. Beauv.

Gr Limnos: NW of Therma, road margins and waste ground, 70 m, 39°54'21"N, 25°07'13"E, 08.11.2010, *Biel* 10.019; N of Myrina, small stream valley W of road, 20 m, 39°53'07"N, 25°03'48"E, 17.10.2012, *Biel* 12.047.

Recorded from Samothraki and Thasos. Also noted S of Myrina and E of Kontias.

185. *Sorghum halepense* (L.) Pers.

Gr Ag. Evstratios: beach and waste ground in village, 3 m, 39°32'18"N, 24°59'16"E, 06.10.2012, *Biel* 12.020.

Recorded from all the other N Aegean islands.

186. *Vulpia myuros* (L.) C.C. Gmel.

Gr Ag. Evstratios: E-SE of village, stream valley near Panagia chapel, 40 m, 39°31'56"N, 25°00'25"E, 30.03.2014, *Biel* 14.024.

Recorded from Samothraki and Thasos.

Ruscaceae**187. *Ruscus hypophyllum* L. (Fig. 9)**

Gr Limnos: Myrina, road margins and waste ground, 10 m, 39°52'28"N, 25°03'42"E, 06.03.2013, *Biel* 13.042.

— Ag. Evstratios: stony rampart in waste ground near village, 10 m, 39°32'19"N, 24°59'21"E, 06.10.2012, *Biel* 12.019.

New for N Aegean area. A W Mediterranean species, locally naturalized or grown as garden ornamental. Also noted near Moudros on Limnos.

Cited vouchers are provisionally kept in the private herbarium of B. Biel at Höchberg (herb. Biel). We thank Holger Uhlich (Dresden) and John A. Richards (Hexham, UK) for kindly identifying or confirming respectively, our *Orobanche* and *Taraxacum* material.

Reports 188–190**Feruzan Dane, Mehmet Aybeke & Volkan Altay**

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Fig. 9. *Ruscus hypophyllum* (photo B. Biel).

Papaveraceae**188. *Fumaria parviflora* Lam.**

Tu(E) A1(E) Çanakkale: Eceabat, between Eceabat and Anafartalar, 0 m, 40°11'02"N, 26°21'23"E, 10.05.1987, coll. *F. Dane*, det. C. Yarıcı (EDTU 954).

— A1(E) Edirne: Centre, at Yıldırım Cemetery, 26 m, 41°40'28"N, 26°33'39"E, 15.04.1989, coll. *F. Dane*, det. V. Altay, conf. M. Aybeke (EDTU 2976); Süloğlu, between Domurcalı and Taşlımüsellim, 196 m, 41°49'00"N, 26°49'00"E, 01.06.1987, coll. *G. Dalgıç* & *F. Dane*, det. V. Altay, conf. M. Aybeke (EDTU 876).

A new species for A1(E) Çanakkale and Edirne in European Turkey. So far the species has been known from A2(E) Istanbul (Cullen 1965).

189. *Hypecoum imberbe* Sibth. & Sm.

Tu(E) A1(E) Edirne: Centre, at Musabeyli village pasture, 109 m, 34°40'60"N, 26°40'00"E, 03.1989, coll. *F. Dane* & *N. Aktaş*, det. F. Dane (EDTU 3516).

A new species for A1(E) Edirne in European Turkey. So far the species has been known from A1(E) Tekirdağ (Cullen 1965).

190. *Hypecoum procumbens* L.

Tu(E) A1(E) Edirne: Lalapaşa, between Domurcalı and Taşlımüsellim, 2nd km, 196 m, 41°49'00"N, 26°49'00"E, 14.05.1989, coll. *G. Dalgıç* & *F. Dane*, det. V. Altay, conf. M. Aybeke (EDTU 939); Lalapaşa, between Lalapaşa and Donköy, 334 m, 41°55'60"N, 26°41'60"E, 06.06.1987, coll. *N. Polat*, det. V. Altay, conf. M. Aybeke (EDTU 956); Centre, 26 m, 41°40'28"N, 26°33'39"E, 05.05.1987, coll. *F. Dane*, det. V. Altay, conf. M. Aybeke (EDTU 2835); Centre, in the Medicinal Faculty environs, 26 m, 41°40'28"N, 26°33'39"E, 23.05.1985, coll. *F. Dane*, *G. Dalgıç* & *N. Başak*, det. V. Altay, conf. M. Aybeke (EDTU 117); Centre, in Tunca environs, 26 m, 41°40'28"N, 26°33'39"E, 07.04.1987, coll. *F. Dane*, det. V. Altay, conf. M. Aybeke (EDTU 615, 4117); Keşan, Mecidiye, 156 m, 40°41'20"N, 26°27'49"E, 23.04.1987, coll. *G. Dalgıç* & *F. Dane*, det. V. Altay, conf. M. Aybeke (EDTU 607).

A new species for A1(E) Edirne in European Turkey. So far the species has been known from A1(E) Tekirdağ, A2(E) Istanbul (Cullen 1965).

Reports 191–200

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Continuing a series of new plant records based on further floristic investigations in the prefecture of Ili-ia in western Peloponnese, and on Mt Likeo. The records listed are new for Eparchia Ilias or Olimbias, or for both eparchies in Nomos Ilias. Those reported as new for Mt Likeo have not been included in the recently published work by Baliouis (2013). The floristic regions adopted follow those circumscribed in *Flora Hellenica* (Strid & Tan 1997).

Apiaceae

191. *Angelica sylvestris* L.

Gr Nomos & Eparchia Ilias: at the source of Enipeas river near village Neraida, dripping wet, mossy rock face near small waterfall, 380 m, 37°44'N, 21°40'E, 23.11.2014, *Kit Tan, G. Vold & Giannopoulos* 31810 (herb. Giannopoulos).
New for nomos and eparchia. Plants luxuriant, ca. 1.5 m tall on the upper rock ledges.

Asteraceae

192. *Centaurea iberica* subsp. *holzmanniana* (Bois.) Dostál

Gr Nomos & Eparchia Ilias: near village Tsipliana, 820 m, 37°53'N, 21°45'E, 17.08.2014, *Kit Tan, G. Vold & Giannopoulos* 31767 (herb. Giannopoulos).

New for nomos and eparchia.

193. *Cirsium hypopsilum* Boiss. & Heldr.

Gr Nomos Messinias, Eparchia Trifilias: SW slopes of Mt Likeo, near village Ag. Sostis, 880 m, 37°26'N, 21°57'E, 16.08.2014, *Kit Tan, G. Vold & Giannopoulos* 31749 (herb. Giannopoulos).

New for Mt Likeo, nomos and eparchia.

194. *Eupatorium cannabinum* L.

Gr Nomos & Eparchia Ilias: at the source of Enipeas river near village Neraida, 380–390 m, 37°44'N, 21°40'E, 17.08.2014, *Kit Tan, G. Vold & Giannopoulos* 31775 (herb. Giannopoulos).

New for Peloponnese. Native, occurring in damp habitats on mainland Greece and islands.

Balsaminaceae

195. *Impatiens balfourii* Hook. f. (Fig. 10)

Gr Nomos & Eparchia Ilias: near village Kriovrisi, 990 m, 37°55'N, 21°48'E, 17.08.2014, *Kit Tan, G. Vold & Giannopoulos* 31768 (herb. Giannopoulos).
New for Peloponnese; native to the Himalayas. Naturalized in wet places, on pavements and damp walls with seeping water within village and at the outskirts.

Brassicaceae

196. *Nasturtium officinale* R. Br.

Gr Nomos Ilias, Eparchia Olimbias: temporary pool behind Lake Kaiafas at beginning of track to Mt Lapithas, 5 m, 37°31'N, 21°31'E, 06.12.2014, *Kit Tan, G. Vold & Giannopoulos* obs. (photo).
New for eparchia. Growing together with dense floating mat of *Lemna minor*.

Dipsacaceae

197. *Cephalaria ambrosioides* (Sm.) Roem. & Schult. (Fig. 11)

Gr Nomos & Eparchia Ilias: near village Tsipliana, 893 m, 37°52'N, 21°45'E, 17.08.2014, *Kit Tan, G. Vold & Giannopoulos* 31765 (herb. Giannopoulos).

New for nomos and eparchia; rarely collected in W Peloponnisos.

Loranthaceae

198. *Loranthus europaeus* Jacq.

Gr Nomos Messinias, Eparchia Trifilias: SW slopes of Mt Likeo, near village Ag. Sostis, 880 m, 37°26'N, 21°57'E, 07.12.2014, *Kit Tan, G. Vold & Giannopoulos* 31812 (herb. Giannopoulos).

New for Mt Likeo; hemi-parasitic on deciduous oak and *Castanea sativa*.



Fig. 10. *Impatiens balfourii* (photo K. Giannopoulos).



Fig. 11. *Cephalaria ambrosioides* (photo K. Giannopoulos).

Santalaceae

199. *Viscum album* L. subsp. *album* on *Prunus mahaleb* L. (Fig. 12)

Gr Nomos Arkadias, Eparchia Gortinias: Mt Likeo, 1190 m, 37°26'N, 21°59'E, 07.12.2014, Kit Tan, G. Vold & Giannopoulos 31759 (herb. Giannopoulos).



Fig. 12. *Viscum album* subsp. *album* on *Prunus mahaleb* (photo K. Giannopoulos).

This taxon was reported in December 2013 as new for Mt Likeo and first record for the Peloponnese where it was found to be hemi-parasitic in large quantities on *Crataegus monogyna* (Giannopoulos & al. 2013). Further exploration of the area in August 2014 revealed it was also parasitizing *Prunus mahaleb* (Kit Tan & al. 31761). As far as we know the occurrence of *Viscum album* on *Prunus mahaleb* has never been documented before in Greece. Other species of *Prunus*, e.g., *P. cerasifera*, *P. padua*, have been reported as host plants in Central Europe. The known hosts in Greece are *Crataegus*, deciduous oaks, *Populus* and *Pyrus*. Thus this is the first report of *P. mahaleb* as a host for *Viscum album* not only for Greece but possibly also for Europe.

Hyacinthaceae

200. *Muscari neglectum* Ten.

Gr Nomos Ilias, Eparchia Olimbias: near village of Lepreo, 310 m, 37°26'N, 21°43'E, 14.02.2015, Giannopoulos s.n. (herb. Giannopoulos).
New for eparchia.

Report 201

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The Mani and Malea peninsulas which form the southern and southeastern prongs of the Peloponnese are areas with a surprisingly high concentration of rare and interesting plants, some of them only recently discovered. This begins a series of new plant records from the area based on further floristic investigation. The phytogeographical regions adopted follow those circumscribed in *Flora Hellenica* (Strid & Tan 1997).

The dry and barren-looking Sangias range (1218 m) in southern or Deep Mani is a continuation of the southern 50 km or so of the Taigetos range which forms the backbone of northern or Outer Mani. There are several caves in the area, the largest and most visited being Glyfada at Pyrgos Dirou on the rocky west coast; this is at sea level and accessible by small boats. Our interest was stimulated by the discovery of *Paeonia mascula* subsp. *hellenica* on the Sangias range; this is the southernmost occurrence of a spectacular endemic portrayed so beautifully in an illustration by Niki Goulandrakis (Stearn & al. 2012: Plate 10). It is rare in S Greece (Mts Taigetos, Parnitha)

but more abundant on the Aegean islands (Evia, Andros, Ikaria).

Paeoniaceae

201. *Paeonia mascula* subsp. *hellenica* Tzanoud.
(Figs. 13–15)

Gr Nomos Lakonias, Eparchia Itilou: rocky limestone at summit of Sangias ridge, east of the village Pyrgos Dirou, 1217 m, 36°36'N, 22°25'E, 16.05.2009, Katsiotis & Betsioanidis obs., *loc. ibid.*, 05.05.2014, Katsiotis & Betsioanidis obs. (photos; conf. Kit Tan, March 2015).

First discovered in May 2009 and subsequent populations were found the following years on the east side

of the ridge (ten individuals), central ridge (twenty plants) and on the northern slopes (*ca.* thirty plants). Most of the plants have white petals but, as on Mts Ochi and Dhirfi in Evvia, some individuals occasionally have white petals suffused pink at the base and at the margin (Fig. 15). Peak flowering is at the end of April and early May. The underground waters supplying the Glyfada Cave spring from the area where the photographs were taken (Fig. 13). The healthy populations are being monitored but do not seem under any threat at the moment in a grey limestone landscape of shallow dolines surrounded by sheer cliff and deep, concealing rock fissures (Fig. 13). However, there are state-approved plans for the installation of wind farms



Fig. 13. *Paeonia mascula* subsp. *hellenica* on the Sangias range (photo A. Betsioanidis).



Fig. 14. *Paeonia mascula* subsp. *hellenica*: petals white (photo A. Betsioanidis).



Fig. 15. *Paeonia mascula* subsp. *hellenica*: petals white suffused pink (photo A. Betsioanidis).

and wind turbines on the range so the peony populations might one day be affected. Amateur resident botanists are urged to explore such areas and realise the importance of research extending beyond the mere determination of species. The flora of Greece has surely become better known because of their efforts.

Reports 202–206

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The issue of alien species and biological invasions is presently very important (e.g. Lambdon & al. 2008). A review for Bulgaria was completed recently (Petrova & al. 2012a, b). Here are presented some new data for aliens, including such with invasive abilities. If not otherwise stated, the taxon is a new one for the floristic region.

Asteraceae

202. *Ambrosia artemisiifolia* L.

Bu Black Sea Coast (*Southern*): Sunny Beach Resort, along the road Burgas–Varna, in a lawn around an OMV petrol station, NH52, 42.692992°N, 27.700417°E, 18.08.2014, coll. A. Petrova (SOM 170518).

The species has been already published for the Black Sea Coast (*Southern*) from Burgas city (Vladimirov 2011). This is a second locality for this floristic region demonstrating the further spread of the species.

203. *Senecio inaquidens* DC.

Bu Tracian Lowland: along Trakia Motorway, in a parking area to the northeast after the fork to Stara Zagora, LG98, 42.346940°N, 25.721051°E, 13.10.2014, coll. D. Sopotlieva, A. Petrova & I. Apostolova (SOM 170819). Two flowering and fruiting individuals were observed.

The South African *S. inaquidens* was introduced to West Europe in the first half of 20th century (Heger & Böhmer 2006), in different areas with wool-processing factories. Since the 1970s, it has been spreading across Europe, particularly along the railway lines and motorways. According to the European and Mediterranean

Plant Protection Organization, it has been considered an invasive alien species since 2004 (EPPO List of invasive alien plants). In Bulgaria, the species was reported from several localities in Sofia and neighbouring areas (Vladimirov & Petrova 2009, Vladimirov 2014). Our data demonstrate a wider distribution in Sofia (e.g. Sofia City, near the Iskar Railway Station, 42.665646°N, 23.412351°E, 17.09.2014, coll. A. Petrova (SOM 170821, 170822 & 170823); in the Sofia Airport area, 42.684935°N, 23.405157°E, 27.10.2014, A. Petrova obs.; Sofia, near the ‘The Earth and the People’ hotel, FN82, 42.652649°N, 23.287620°E, 03.12.2014, coll. D. Sopotlieva & A. Petrova (SOM 170815). This is the first observation report along a motorway. In some places, the plants were obviously repeatedly mown and developed flowers and fruits again and again, as late as December.

204. *Symphotrichum squamatum* (Spreng.) G.L. Nesom

Bu Black Sea Coast (*Southern*): Burgas town, along a road in the Southern Industrial Area, close to the seacoast, NH30, 42.469303°N, 27.445598°E, 17.10.2014, coll. A. Petrova, D. Sopotlieva & I. Apostolova (SOM 170814).

A new species for this floristic subregion. Native to Central and South America, the species has a wide distribution as an alien. In Europe, it has naturalized mostly in the Mediterranean region (Greuter 2006+). A tolerant species, inhabits disturbed habitats (roadsides, abandoned lands, etc.), coastal halophytic communities, edges of marshy areas, or invades the arable lands as weed. Dimitrov & Assyov (2003) have reported the species as new for Bulgaria from the Black Sea Coast (*Northern*) and Valley of River Struma.

Also, we have noted another locality in the Tracian Lowland floristic region – along the Trakia Motorway, between the forks to Stara Zagora town, NG78, 42.286564°N, 25.463231°E, 13.10.2014, coll. D. Sopotlieva, A. Petrova & I. Apostolova (SOM 170818). The species has already been published for this floristic region by Vladimirov (2011). Its occurrence along motorways increases the probability for a further spreading of this so far comparatively rare alien in Bulgaria.

The population in the Burgas Industrial Zone was numerous, dense, with plants up to 80–90 cm high, profusely branched, and with high seed production. The population in the parking area at the motorway

was not so numerous. There, along the ditch, vegetation was rich in aliens, including also *Erigeron annuus*, *E. bonariensis*, *E. canadensis*, *E. sumatrensis*, *Euphorbia maculata*, *Sorghum halepense*, etc.

Chenopodiaceae

205. *Chenopodium pumilio* R. Br.

Bu Sofia region: in a parking area near the Iskar Railway Station, in the breaks of a gridded pavement, FN92, 42.664464°N, 23.411826°E, 17.09.2014, coll. A. Petrova (SOM 170812).

A population of about 25 small-size plants was observed. This is a second record from West Bulgaria (cf. Vladimirov 2012).

Cucurbitaceae

206. *Sicyos angulatus* L.

Bu Black Sea Coast (*Southern*): in the Zlatna Ribka coastal area, westwards of Sozopol town, NG59, 42.407642°N, 27.665730°E, 17.10.2014, coll. A. Petrova, D. Sopotlieva & I. Apostolova (SOM 170817).

Only one individual of this invasive species (EPPO 2010) was observed. In Bulgaria, the species has a wide distribution along the Danube River and some of its tributaries (Petrova & al. 2012b). This is the first reported locality along the Bulgarian Black Sea Coast, but there are reports of it from the neighbouring countries (Anastasiu & al. 2011; Brundu & al. 2011).

Acknowledgements. This report is part of the continuing work under the projects “Conspectus of the Bulgarian Vascular Flora” and “Flora and vegetation of Bulgaria: diversity, distribution, biosystematics, dynamics and conservation”. Some data were obtained during the work on cadastral mapping of the dune habitats in 2014. Financial support of the Ministry of Environment and Water, Bulgaria is gratefully acknowledged.

Reports 207–216

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Apiaceae

207. *Seseli annuum* L.

Bu Northeast Bulgaria: at the northern foothills of Taushan Tepe hill, northwards of Nevsha village, Varna district, NH29, 43.28650°N, 27.31601°E,

04.09.2011 & 01.09.2014, with flowers and fruits, coll. A. Petrova (SOM).

Peev (1982) maintained that the species was distributed at altitudes above 900 m. This and the scarce distribution data have prompted the authors (Assyov & Petrova 2012) not to mention the species in regions within a lower altitude range, such as Northeast Bulgaria. At Taushan Tepe hill the species grows at about 200 m.

Asteraceae

208. *Jurinea stoechadifolia* (M. Bieb.) DC.

Bu Northeast Bulgaria: on the southwestern slope of the Harman Kaya hill near Poveyanovo village, Varna district, NH58, 43.210497°N, 27.628651°E, 01.07.2014, with flowers, coll. A. Petrova (SOM).

Confirming the taxon for this floristic region. The species is found locally in the steppe grasslands on limestone and marls. It is one of the diagnostic species for a subtype of the habitat ‘62C0* Ponto-Sarmatic steppes – Western Pontic wormwood steppes’ (Kavrakova & al. 2009). In Bulgaria, the species is found mainly on marl slopes and hills in the coastal area between Varna and Kavarna towns, part of the Black Sea Coast floristic region. In fact, material from Northeast Bulgaria floristic region – Mogilata locality, Reka Devnya village, Varna district, NH58 (SOM 120941 & 120942) – was published (Ganchev & Kochev 1968) but before the current floristic division of the country was adopted.

209. *Solidago canadensis* L.

Bu Northeast Bulgaria: Neikovo village, Dobrich district, at the eastern outskirts of the village, PJ12, 31.07.2014, with flowers, coll. A. Petrova (SOM 170506).

In Bulgaria, *S. canadensis* has a limited distribution, as compared to related *S. gigantea* (Petrova & al. 2012a). The species is registered from the Balkan Range (*Western*) and Sofia region. This is the third floristic region in the country for this species. Here people grow it as an ornamental, but it is also found in wet spots nearby and around farm buildings and fences.

Brassicaceae

210. *Conringia orientalis* (L.) Dumort.

Bu Balkan Range (*Eastern*): Sinite Kamani Nature Park near Sliven town, on the limestone slopes at Enyova Bulka locality, MH53, 27.04. 2014, coll. A. Petrova (SOM 170442).

A new species for this floristic region.

Campanulaceae

211. *Asyneuma anthericoides* (Janka) Bornm.

Bu Rhodopi Mts (*Eastern*): in stony pastures SW of Belopolyane village, MF28, 41.447701°N, 26.141914°E, 30.05.2014, coll. A. Petrova & D. Venkova (SOM 170398).

A new species for this floristic subregion.

Lamiaceae

212. *Salvia nutans* L.

Bu Rhodopi Mts (*Eastern*): in stony pastures SW of Belopolyane village, MF28, 41.447701°N, 26.141914°E, 30.05.2014, coll. A. Petrova & D. Venkova (SOM 170402).

A new species for the Rhodopi Mts floristic region.

Rosaceae

213. *Potentilla emilii-popii* Nyár. (Fig. 16)

Bu Black Sea Coast (*Northern*): in the Kaliakra Nature Reserve, 43.38308°N, 28.45984°E, 14.05.2014, coll. A. Petrova (SOM 170403).

Potentilla emilii-popii is an endemic of the Dobrudzha region (Bulgaria & Romania). It is included in Annex

2 of the Directive 92/43 EEC (the Habitats Directive). Its Global IUCN status is Data Deficient, because of insufficient data on population numbers and trends (Bilz 2013).

Markova (1973, 1992) and Meshinev (2012) have reported the species only for the Northeast Bulgaria floristic region. Delipavlov & al. (1997) included it in the list of rare taxa found in the Kaliakra Nature Reserve, but subsequently (Popova 2011) it was mentioned as distributed only in Northeast Bulgaria. Thus, our data confirm the distribution of this rare species in the Black Sea Coast floristic region. The observed population covered an area of about 1 ha, with uneven spatial structure and numbers above 500 individuals.

Also, we report another locality in the Northeast floristic region: NE of Vidno village, 43.57979°N, 28.14090°E, 31.07.2014, coll. A. Petrova (SOM). The locality lies in the Special Area of Conservation 'BG0000130 Kraimorska Dobrudzha' and is the first record for this SAC. About 50 individuals were observed on an area of 0.05 ha.



Fig. 16. *Potentilla emilii-popii* (photo A. Petrova).

Iridaceae**214. *Crocus pulchellus* Herbert (Fig. 17)**

Bu Black Sea Coast (*Southern*): among shrubs W of the road between Primorsko and Kiten towns, NG67, 16.10.2014, coll. A. Petrova (SOM 170813).

It is a Balkan-Anatolian geoelement distributed in the southern areas of Bulgaria. Distribution along the Southern Black Sea Coast was apparently overlooked in the floras (Delipavlov 2011; Assyov & Petrova 2012).

Orchidaceae**215. *Orchis papilionaceae* L.**

Bu Northeast Bulgaria: Tepichkite locality near Nevsha village, Varna district, NH29, 43.28815°N, 27.31768°E, 01.05.2014, with flowers, A. Petrova & D. Venkova obs.

A new species for this floristic region. Only one plant was found in a small, almost barren of vegetation marl disclosure. The hills northwards of Nevsha village are a refuge of the Pontic steppe flora and vegetation (Petrova 2007; Petrova & al. 2012c, etc.) and the presence of eight *Orchidaceae* species (incl. *Orchis simia*, *O. tridentata*, *O. purpurea*, *Ophrys cornuta*, *Himantoglossum jankae*,



Fig. 17. *Crocus pulchellus* (photo A. Petrova).

Anacamptis pyramidalis, *Cephalanthera damasonium*, the first two with numerous populations) is an interesting phenomenon.

Poaceae**216. *Poa timoleontis* Boiss.**

Bu Northeast Bulgaria: in a pasture northwards of Vidno village, PJ12, 15.05.2012, coll. D. Venkova (SOM 170501).

The species has a scattered distribution in Bulgaria.

Acknowledgements. This report is part of the continuing work under the project “Conspectus of the Bulgarian Vascular Flora”. Some data were obtained during field work for the project N 2370/13.06.2013, Position 5: “Field studies of vascular plants, mosses and fungi” of the ExEA.

Reports 217–234**Kostas Polymenakos¹ & Kit Tan²**

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Continuing a series of new plant records based on further floristic investigations in Greece. The floristic regions adopted follow those circumscribed in *Flora Hellenica* (Strid & Tan 1997).

Pinaceae**217. *Abies borisii-regis* Mattf.**

Gr Nomos & Eparchia Kastorias: Mt Gramos, 1600 m, 40°18'N, 20°50'E, 17.08.2014, Polymenakos obs.

New for Mt Gramos; a few trees were noted in *Fagus sylvatica* forest. A record purporting to be from Mt Gramos (Hartvig & al. 10765, C) actually originates from Bouchetsi, a mountain some distance to the southeast.

Taxaceae**218. *Taxus baccata* L.**

Gr Nomos Attikis/Viotias, Eparchia Megaridos/Thivon: near summit of Mt Kitheronas, 1335 m, 38°11'N, 23°14'E, 10.09.2014, Polymenakos s.n. (photo; conf. Kit Tan, August 2014).

New for Mt Kitheronas, not recorded by Constantinidis (1997). A single tree noted, growing in rocky, open *Abies cephalonica* woodland.

Apiaceae**219. *Angelica sylvestris* L.**

Gr Nomos Evvias, Eparchia Chalkidos: Mt Dirfis, dry stream banks outside Steni, 485 m, 38°35'N, 23°50'E, 12.08.2014, *Polymenakos* obs. (photo).
New for Mt Dirfis, island of Evvia and the W Aegean region. Plants however, unusually small in stature.

220. *Ferula communis* L. subsp. *communis*

Gr Nomos Attikis, Eparchia Attikis/Pireos: above Papagou on Imittos (Mt Hymettus), road margins and openings of *Pinus* forest which is probably planted, 330 m, 37°59'N, 23°48'E, 07.01.2015, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015).

New for Mt Imittos.

221. *Oenanthe pimpinelloides* L.

Gr Nomos Viotias, Eparchia Thivon: Mt Pastra, by stream west of village Panakto, 380 m, 38°11'N, 23°28'E, 25.10.2014, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015).

New for Mt Pastra, not recorded by Constantinidis (1997). In Nomos Attikis, recorded from Mts Pendeli, Gerania and Pateras.

Anacardiaceae**222. *Rhus coriaria* L.**

Gr Nomos Attikis, Eparchia Megaridos: Mt Pateras, openings in *Abies* forest on N slopes of Megali Kolosoura, 995 m, 38°06'N, 23°17'E, 02.11.2014, *Polymenakos* s.n. (photo; conf. Kit Tan, February 2015).

New for Mt Pateras, not recorded by Constantinidis (1997).

Asteraceae**223. *Bellis sylvestris* Cirillo**

Gr Nomos Attikis, Eparchia Megaridos: Mt Kitheronas, stony slopes above Villia, 730 m, 38°10'N, 23°19'E, 16.11.2014, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015); Mt Pateras, in *Pinus* forest N of Mikro Vathychori, 585 m, 38°10'N, 23°19'E, 23.11.2014, *Polymenakos* s.n.

New for Mts Kitheronas and Pateras, not recorded for both mountains by Constantinidis (1997).

224. *Echinops microcephalus* Sm.

Gr Nomos Viotias, Eparchia Thivon: Mt Pastra, common in uncultivated fields around village Panakto, 570 m, 38°11'N, 23°30'E, 13.07.2014, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015).

New for Mt Pastra, not recorded by Constantinidis (1997).

225. *Inula graveolens* (L.) Desf.

Gr Nomos Viotias, Eparchia Thivon: Mt Pastra, stream west of village Panakto, 380 m, 38°11'N, 23°28'E, 25.10.2014, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015).

New for Mt Pastra, not recorded by Constantinidis (1997).

226. *Lactuca intricata* Boiss. (= *L. graeca* Boiss.) (Fig. 18)

Gr Nomos Achaïas, Eparchia Kalavriton: Mt Chelmos, limestone rock crevices, 2200 m, 37°58'N, 22°11'E, 04.08.2014, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015).

New for Peloponnese, previously recorded only from mountains of mainland Greece (N and Central) and the E Aegean island of Samos (Mt Kerkis). Easily recognized by its blue ligules and intricately branched stems. Only a few plants were found.

Brassicaceae**227. *Diplotaxis viminea* (L.) DC.**

Gr Nomos & Eparchia Attikis: southern foothills of Mt Pendeli, in cultivated field between Pikermi and Kallitechnoupoli, 100 m, 38°00'N, 23°57'E, 29.11.2014, *Polymenakos* s.n. (photo; conf. Kit Tan, February 2015).

New for Mt Pendeli. On disturbed ground together with *Roemeria hybrida* and *Garidella nigellastrum* which are also reported as new for the area (see Polymenakos & Tan 2014). A few taxa from Pendeli had been erroneously recorded as new in previous floristic reports as they were not listed for the area in Baliousis & Yannitsaros (2011) but in an unpublished thesis submitted by



Fig. 18. *Lactuca intricata* (photo K. Polymenakos).

Baliouisis in the same year. These are *Cephalanthera longifolia* and *Hornungia petraea*. However, these taxa have been independently collected by Polymenakos.

228. *Enarthrocarpus arcuatus* Labill.

Gr Nomos Kikladon, Eparchia Sirou: Mikonos, dry field in Ano Mera, 85 m, 37°26'N, 25°24'E, 17.08.2010, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015).

New for Mikonos; reported from several islands in the Central and S Kiklades.

Lamiaceae

229. *Ajuga iva* (L.) Schreb.

Gr Nomos Attikis, Eparchia Megaridos: Mt Kitheronas, stony slopes above Villia, 730 m, 38°10'N, 23°19'E, 16.11.2014, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015).

New for Mt Kitheronas and eparchia Megaridos; not recorded by Constantinidis (1997).

230. *Mentha suaveolens* Ehrh.

Gr Nomos Attikis, Eparchia Megaridos: Mt Pastra, stream south of Osios Meletios, 325 m, 38°10'N, 23°27'E, 25.10.2014, *Polymenakos* s.n. (photo; conf. Kit Tan, February 2015).

New for Mt Pastra, not recorded by Constantinidis (1997). In nomos Attikis, apparently only reported from Mt Parnitha.

Malvaceae

231. *Malva parviflora* L.

Gr Nomos Attikis, Eparchia Megaridos: Mt Pateras, stony slope above Psatha, 320 m, 38°10'N, 23°13'E, 15.05.2014, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015).

New for Mt Pateras, not recorded by Constantinidis (1997).

Scrophulariaceae

232. *Chaenorhinum minus* (L.) Lange

Gr Nomos Pellis, Eparchia Almopias: Mt Kajmakčalan, road margins on way to Ski centre, 1995 m, 40°54'N, 21°48'E, 19.08.2014, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015).

New for the Voras range.

233. *Veronica triloba* (Opiz) Opiz (Fig. 19)

Gr Nomos & Eparchia Attikis: Mt Pendeli, crevices of marble rock, 365 m,

38°04'N, 23°56'E, 03.03.2014, *Polymenakos* s.n. (photo; conf. Kit Tan, March 2015).

New for Mt Pendeli. In Nomos & Eparchia Attikis, recorded only for Mt Parnitha (see Polymenakos & Tan 2012).

Typhaceae

234. *Typha shuttleworthii* W.D.J. Koch & Sonder (Fig. 20)

Gr Nomos Ioanninon/Kastorias, Eparchia Kastorias/Konitsis: Mt Gramos, by a small pool in the alpine area, 1820 m, 40°19'N, 20°50'E, 17.08.2014, *Polymenakos* obs. (photo; conf. Kit Tan, February 2015).

New for Mt Gramos. The species is rare in Greece and has only been reported from Kato Olimbias (N Central) and NW of Metsovon (N Pindos). However, it is quite distinctive and cannot be mistaken for any other *Typha* species.



Fig. 19. *Veronica triloba* (photo K. Polymenakos).



Fig. 20. *Typha shuttleworthii* (photo K. Polymenakos).

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Orchidaceae

235. *Epipactis pontica* Hudson (Fig. 21)

Bu Balkan Range (*Central*): on NE-facing steep slope, in a mixed (mostly beech) closed forest, near the road from Gabrovo to Uzana Resort (road 5006), 1120 m a.s.l., 42°46'23.07"N, 25°14'19.60"E, 23.08.2014, with flowers and fruits, coll. A. Popatanasov (SO 107626).

Only twelve plants were found spread unevenly in groups of 1–3 shoots on an area of 4 ha in the beech forest along the road from Gabrovo to Uzana Resort. Typically for this cleistogamic species, the flowers remained mostly unopened or half opened. Other species from this family found in this locality are *Epipactis helleborine*, *E. purpurata*, *Dactylorhiza saccifera*, and *Cephalanthera damasonium*.



Fig. 21. *Epipactis pontica* (photo A. Popatanasov).

A new species for this floristic region (cf. Petrova & Venkova 2006; Assyov & Petrova 2012). This is a relatively recently established taxon for the Bulgarian flora and because of its rarity, specific ecological demands and inconspicuousness of its distribution, it still needs further exploration and protection. Having two very local populations of species as *E. pontica* and *E. purpurata* with IUCN category EN (Petrova 2009) in this forest, care should be taken if plans of enlargement of the nearby skiing and tourist complexes occur.

236. *Orchis papilionacea* L. (Fig. 22)

Bu Mt Slavyanka: in a calciferous meadow, on a west-facing slope, inclination approx. 8 degrees, 895 m, 41°24'15.73"N, 23°34'35.93"E, 04.05.2014, with flowers, A. Popatanasov obs.

This is a new species for this floristic region, according to Assyov & Petrova (2012). In the location, nine plants were found near the road from Petrovo to Goleshovo villages (road 1906), separated from each other by a distance of several tens of meters. Other



Fig. 22. *Orchis papilionacea* (photo A. Popatanasov).

species from this family found in this meadow are *Dactylorhiza sambucina*, *Orchis morio*, *Ophrys mammosa*, and *O. cornuta*.

Some individuals from the population have shorter and thicker labellum, with unusual pattern, and other flower parts also show some differences. Such plants might be of hybrid origin with presumable parents *Orchis papilionacea* and *O. morio* but this needs to be studied further.

Location of this vulnerable species (Gerasimova & al. 2003) is outside the buffer zone of the Alibotush Reserve. Besides this species, in the same meadow grew some rarely seen nowadays abundant populations of other endangered taxa, such as *Ophrys mammosa* and *O. cornuta*, with probably thousands of shoots, on an area of several hectares. The habitat is of special importance for Orchid species. Therefore, it will be sensible if these adjoining habitats are included in the protected area, since this is one of the few grassland places with minimal anthropogenic influence and pollution, which is important for the conservation of this family with a peculiar prolonged ontogenesis and delicate mycosymbiotic dependence.

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Asteraceae

237. *Artemisia alba* L.

Bu Valley of River Mesta: in the lands of Godeshevo village, Babel locality, on a stony crest with calcareous rocks, close to the frontier with Greece – frontier milestone 175, 929 m, KF59, 41°29'02.7"N, 24°03'39.8"E, 27.06.2010, coll. A. Tashev (SOM 169685; SO 107557; SOA 059799).

So far this sub-Mediterranean species has been reported in Bulgaria for the North Black Sea Coast, Northeast Bulgaria, Forebalkan, Balkan Range, Sofia region, Znepole region, Pirin Mts, Mt Slavyanka, and Central Rhodopes, at altitudes of 0 to 1500 m (Vassilev & al. 2007; Delipavlov 2011: 405; Assyov & Petrova 2012: 80).

238. *Inula aschersoniana* Janka

Bu Valley of River Mesta: in the lands of Godeshevo village, Diamantska Stena locality, on calcareous

rocks in the central part of a slope with eastern exposition and inclination of 30°, 651 m, KF59, 41°27'59.9"N, 24°03'35.2"E, 25.07.2010, coll. A. Tashev (SOM 169657; SOA 059796); in the lands of Godeshevo villahe, Babel locality, on calcareous rocks in a meadow among *Chrysopogon gryllus*, *Juniperus deltooides*, *Quercus pubescens* etc., on a slope with southern exposition and inclination of 25°, 918 m, KF59, 41°29'00.1"N, 24°03'38.4"E, 25.07.2010, coll. A. Tashev (SOM 169658); in the lands of Godeshevo villahe, Pelkovitsa locality, in fissures of calcareous rocks in the central part of a slope with southern exposition and inclination of 15°, KF59, 41°27'N, 24°03'E, 27.06.2010, coll. A. Tashev (SO 107558).

The individuals of *Inula aschersoniana* occur in the fissures of dry calcareous rocks, in an open xerophytic grassy community, along with *Micromeria juliana*, *Asyneuma limonifolium*, *Teucrium polium*, *Thymus* sp., *Euphorbia myrsinites*, *Andropogon ischaemum*, etc.

So far this Balkan-Anatolian species has been reported in Bulgaria for the Black Sea Coast, Northeast Bulgaria, Eastern Forebalkan, Central and Eastern Balkan Range, Znepole region, Valley of River Struma, Pirin Mts (*Southern*), Mt Slavyanka, Mt Sredna Gora (*Western*), the Rhodope Mts, Thracian Lowland, Tundzha Hilly Country, and Mt Strandzha, at altitudes from 0 up to 1000 a.s.l. (Tashev 2009; Delipavlov 2011: 388; Assyov & Petrova 2012: 237).

239. *Jurinea mollis* subsp. *anatolica* (Boiss.) Stoj. & Stef.

Bu Valley of River Mesta: in the lands of Godeshevo village, Babel locality, on a stony crest with calcareous rocks, close to the frontier with Greece – frontier milestone 175, 928 m, KF59, 41°29'02.5"N, 24°03'37.2"E, 27.06.2010, coll. A. Tashev (SOM 169722); Godeshevo village, Babel locality, on the stony crest of a slope with calcareous rocks, close to shrubbery of *Quercus pubescens*, in proximity to the frontier with Greece – frontier milestone 175, with southern exposition and inclination of 15°, 928 m, KF59, 41°29'02.9"N, 24°03'41.2"E, 25.07.2010, coll. A. Tashev (SOM 169723).

So far this Pontic-Mediterranean species in Bulgaria has been reported only for the Eastern Balkan Range, Mt Belasitsa, Pirin Mts, Mt Slavyanka, and Eastern Rhodopes, at altitudes from 0 up to 2400 a.s.l. (Delipavlov 2011: 405; Assyov & Petrova 2012: 244).

*Campanulaceae***240. *Asyneuma limonifolium* (L.) Rchb. subsp. *limonifolium***

Bu Valley of River Mesta: in the lands of Godeshevo village, Dimanskata Stena locality, on calcareous rocks in the central part of a slope with eastern exposition and inclination of 30°, 651 m, KF59, 41°27'59.9"N, 24°03'35.2"E, 25.07.2010, coll. A. Tashev (SOM 169692; SO 107555; SOA 059793).

Several individuals of *Asyneuma limonifolium* have occurred on dry calcareous rocks, in an open xerophytic grassy community, rich in endemic species, along with *Micromeria juliana*, *Inula aschersoniana*, *Teucrium polium*, *Thymus* sp., *Euphorbia myrsinites*, *Andropogon ischaemum*, etc.

So far this Appeninian-Balkan species has been reported in Bulgaria only for the Eastern Balkan Range, Znepole region, Pirin Mts, Mt Slavyanka, Rhodope Mts, Thracian Lowland, and Tundzha Hilly Country, at altitudes from 900 up to 2100 a.s.l. (Cheshmedzhiev 2011: 375; Assyov & Petrova 2012: 89).

*Lamiaceae***241. *Micromeria juliana* (L.) Rchb.**

Bu Valley of River Mesta: in the lands of Godeshevo village, Dimanskata Stena locality, on calcareous rocks in the central part of a slope with eastern exposition and inclination of 30°, 651 m, KF59, 41°27'59.9"N, 24°03'35.2"E, 25.07.2010, coll. A. Tashev (SOM 169691; SO 107554).

Several individuals of *Micromeria juliana* have occurred on dry calcareous rocks, in an open xerophytic grassy community, rich in endemic species, along with *Inula aschersoniana*, *Teucrium polium*, *Asyneuma limonifolium*, *Thymus* sp., *Euphorbia myrsinites*, *Andropogon ischaemum*, etc.

This is the second locality of this very rare Mediterranean species of high conservation importance for the flora of Bulgaria. It is protected by the Act for Amendment and Supplementing of the Biological Diversity Act (2007) and is included in the *Red List of Bulgarian Vascular Plants* in the category Threatened by Extinction. So far it has been reported in Bulgaria only for the eastern Rhodopes – Kaleto locality near Gugutka village and Buruna locality at Zhelezino village, Ivailovgrad district, at altitudes from 100 m up to 900 m a.s.l. Distribution of this species in the Central Balkan Range needs to be confirmed (Baden 1991: 132-135; Cheshmedzhiev 2011: 334; Stoyanov 2012: 551; Assyov & Petrova 2012: 277).

Reports 242–244**Alexander Tashev¹, Koycho Koev² & Nikolay Tashev³**

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*Boraginaceae***242. *Alkanna stribrnyi* subsp. *intermedia* Kozuharov**

Bu Rhodopi Mts (*Central*): in the Chervenata Stena Reserve, Kalnishevoto locality, between Bachkovo village and Bahkovo monastery, on calcareous rocks in the lower part of a slope with southwestern exposition and inclination of 30°, 510 m, LG24, 41°56'31.2"N, 24°51'35.9"E, 16.05.2014, coll. A. Tashev & K. Koev (SOM 170669; SOA 060246); in the lands of Bachkovo village, eastwards above the road between Asenovgrad town and Bachkovo village, Tisovitsa locality, close to a location of *Juniperus exelsa*, on calcareous rocks in the lower part of a slope with western exposition and inclination of 30°, 504 m, LG24, 41°57'59.8"N, 24°52'18.1"E, 17.05.2014, coll. A. Tashev & K. Koev (SOA 060245).

This is the second location of this endemic subspecies in Bulgaria. So far it has been reported only for the Thracian Lowland (Kozuharov 1989: 141).

*Fabaceae***243. *Laburnum anagyroides* Medik.**

Bu Vitosha region: above the villa zone of the Simeonovo Residential District, in a thinned out patch and close to a forest trail, among 60-year-old culture of *Pinus nigra*, *P. sylvestris* and *Quercus rubra*, in the lower part of a slope with eastern exposition and inclination of 20°, 871 m, 42°36'43.3"N, 23°19'22.4"E, 29.05.2014, coll. A. Tashev & N. Tashev (SOM 170632; SO 107616; SOA 060428).

Groups of several to several scores of individuals of different age have been observed, different in height and up to 3 meters. The age of the undergrowth was up to 10–15 years. Mass unregrowth was also found in the thinned-out patch of the culture, along with the undergrowth of *Laburnum anagyroides*, young undergrowth of *Quercus rubra*, *Q. dalechampii*, *Carpinus*

betulus, *Acer platanoides*, *A. pseudoplatanus*, *A. hyrcanum*, *Fagus sylvatica*, *Prunus avium*, *P. cerasifera*, and *Populus tremula* was also indentified. Of the shrubs were found: *Acer tataricum*, *Corylus avellana*, *Cornus mas*, *C. sanguinea*, *Galeopsis* sp., *Ligustrum vulgare*, *Viburnum lantana*, *Crataegus monogyna*, *Rosa canina* and *Rubus* sp. *Poa nemoralis* and *Dactylis glomerata* prevailed in the herbaceous floor; *Calamagrostis arundinaceae*, *Phleum pratense*, *Aremonia agrimonoides*, *Clinopodium vulgare*, *Euphorbia cyparissias*, *Festuca heterophylla*, *Fragaria vesca*, *Hieracium* sp., *Hypericum perforatum*, *Potentilla mycrantha*, *Helleborus odoratus*, *Pteridium aquilinum*, *Lathyrus niger*, *Viola odorata*, *V. hirta*, *V. riviniana*, etc. were also found.

So far there have been reports of natural reproduction in other floristic regions of Bulgaria: Northeast Bulgaria, Western Balkan Range, Sofia region, Znepole region, and the Tundzha Hilly Country (Petrova & al. 2012b: 211).

Fumariaceae

244. *Fumaria kralikii* Jord.

Bu Rhodopi Mts (*Western*): on the territory of Pashovi Skali natural highlight, under the canopy of *Pinus sylvestris*, along with *Viola parvula*, in the central part of a slope with southern expositon and inclination of 20°, 1363 m, 42°03'06.4"N, 23°50'39.5"E, 28.04.2013, coll. A. Tashev (SOM 170666).

This sub-Mediterranean species is new for the Western Rhodopes. So far it has been known for the Black Sea Coast, West Frontier Mts, Southern Pirin Mts, Mt Slavyanka, Central and Eastern Rhodopes, Thracian Lowland, and Tundzha Hilly Country (Delipavlov 2011: 56; Assyov & Petrova 2012: 199).

Reports 245–251

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Brassicaceae

245. *Alyssum tortuosum* Willd.

Bu Balkan Range (*Western*): Mt Sofiyska, in the calcareous grasslands above Kremikovtsi village, in the territory of an old quarry, GN04, 19.07.2007, coll. D. Dimitrov (SOM 163687).

- Valley of River Struma (*Northern*): in the dry grasslands of Zemen Gorge, FM39, 42.43726°N, 22.70153°E, 15.10.2010, coll. K. Vassilev (SOM 168777); on the rocks eastwards of Rila town, at 390 m, FM76, 19.09.2012, coll. D. Dimitrov (SOM 169116); in the mixed forest eastwards of Rila town, 500 m, 07.04.2012, FM76, coll. D. Dimitrov (SOM 168900); in sandy places in the Stobski Piramidi Protected Area above Stob village, Kyustendil district, FM76, 04.09.2004, coll. D. Stoyanov (SOM 160424); Zemen Gorge, before the first tunnel to Kyustendil town, FM76, 13.10.2004, coll. D. Stoyanov (SOM 161033).
- Valley of River Struma (*Southern*): Kozhuha hill, Rupite locality, FL87, 01.08.2007, coll. D. Dimitrov (SOM 164855).
- Mt Svavyanka: Hambar Dere, GL28, 10.06.2005, coll. D. Dimitrov (SOM 167393).
- Thracian Lowland: in meadows on the periphery of the Kenana planted beech forest near Haskovo town, GL74, 22.06.1978, coll. D. Peev & N. Valyovska (SOM 137233).

According to Assyov & Petrova (2012), this species is distributed in seven floristic regions – Danubian Plain, Northeast Bulgaria, Balkan Range (*Eastern*), Rhodope Mts (*Western*), Valley of River Mesta, Znepole region, and Western Frontier Mts. *Alyssum tortuosum* has wider distribution in dry grassland communities in the country and was found in six new floristic regions.

Polygalaceae

246. *Polygala sibirica* L.

Bu Northeast Bulgaria: in dry grassland communities near Dve Mogili town, MJ12, 43.58837°N, 25.91576°E, 14.07.2014, coll. K. Vassilev (SOM 169236).

So far this species has been known with one locality on the territory of the country: the calcareous rocks around Koshov village, Rusenski Lom National Park (Stoyanov 1998). The locality near Dve Mogili town is the second one. The species is determined as Critically Endangered, according to the *Red Data Book of the Republic Bulgaria* and the *Red List of the Bulgarian Vascular Plants* (Stoyanov 2009, 2012).

Polygala sibirica participates in calcareous grassland communities as a companion species. Dominants are *Festuca valesiaca* agg., *Dichanthium ischaemum* and *Satureja coerulea*.

Rosaceae**247. *Potentilla pilosa* Willd.**

Bu Danubian Plain: in grasslands near Pleven town, LJ00, 16.06.1924, coll. K. Urumov (SOM 39337).

— Rhodopi Mts (*Central*): around St. Petka Monastery near Asenovgrad, LG34, 29.06.1966, coll. M. Marinova (SOM 127275).

So far this species has not been known for these floristic regions.

248. *Potentilla pirotensis* (Borbás) Markova

Bu Mt Sredna Gora (*Western*): in dry grasslands between Smolsko and Petrich villages, GN42, 42.60641°N, 23.98813°E, 10.07.2011, coll. K. Vassilev (SOM 169157).

It is found as a companion species in dry grassland communities of the alliance *Festucion valesiaca* around Smolsko and Petrich villages. It is a new species for this floristic region.

Rubiaceae**249. *Galium lucidum* All.**

Bu Northeast Bulgaria: in a dry grassland near Sveshtari village, MJ84, 43.75615°N, 26.75722°E, 04.06.2011, coll. K. Vassilev (SOM 169148).

— Valley of River Mesta: under Bukovo village, Gotse Delchev district, GM22, 18.08.2012, coll. D. Dimitrov (SOM 169286); on stones in Momina Kula locality, GM22, 18.08.2013, coll. A. Tashev & D. Dimitrov (SOM 170644).

It is a new species for these floristic regions.

250. *Galium rhodopeum* Velen.

Bu Rhodopi Mts (*Eastern*): in dry grasslands of peak Iranov, near Chal village, LF98, 41.40591°N, 25.74411°E, 16.06.2012, coll. K. Vassilev (SOM 169182).

This species is a Balkan endemic distributed in the Rhodope Mts (*Western & Central*) and Thracian Lowland (Anchev & Goranova 2009, 2012; Petrova & Vladimirov 2010). It is determined as Endangered, according to the *Red Data Book of the Republic Bulgaria* and the *Red List of Bulgarian Vascular Plants* (Anchev & Goranova 2009, 2012). This is a new species for the eastern part of the Rhodope Mts. It is found on eroded terrains with shallow and dry soil. The population consists of approximately 20 individuals distributed on some 20 m².

Santalaceae**251. *Thesium linophyllum* L.**

Bu Mt Belasitsa: in the shrub communities of

Kongura Reserve, FL87, 41.34112°N, 23.18567°E, 11.08.2014, coll. K. Vassilev & Hristo Pedashenko (SOM 171032).

This species is included in the the *Red List of Bulgarian Vascular Plants* and is determined as Data Deficient (Dimitrova 2009). *Thesium linophyllum* is mainly distributed in the mountainous areas of the country. In Mt Belasitsa, this species is found near the trail from Belasitsa challet to peak Kongura. The population consists of 15 individuals distributed on about 15 m².

Reports 252–257**Kiril Vassilev & Hristo Pedashenko**

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Poaceae**252. *Agropyron brandzae* Panțu & Solacolu**

Bu Danubian Plain: in dry grasslands around Delyanovtsi village, LJ41, 43.43155°N, 25.13854°E, 14.07.2014, coll. K. Vassilev & H. Pedashenko (SOM 171073).

— Mt Sredna Gora (*Eastern*): Mt Sarnena Sredna Gora, Karabair hill, on the southern stony slopes in grasslands and shrubs, MH21, 06.10.1965, coll. I. Ganchev & S. Denchev (SOM 127559).

This species has not been reported for these floristic regions so far. It is found in the xerothermic communities of the alliance *Festucion valesiaca*.

253. *Festuca dalmatica* (Hack) K. Richt.

Bu Northeast Bulgaria: in the dry grasslands near Blagoevo village, Razgrad district, MJ51, 43.45328°N, 26.38705°E, 15.07.2014, coll. K. Vassilev & H. Pedashenko (SOM 171070); in xerothermic grasslands near Trastuka village, MJ50, 43.41928°N, 26.42171°E, 15.07.2014, coll. K. Vassilev & H. Pedashenko (SOM 171069).

— Danubian Plain: in the dry grasslands around Delyanovtsi village, LJ41, 43.43155°N, 25.13854°E, 14.07.2014, coll. K. Vassilev & H. Pedashenko (SOM 171074); in the grasslands near Delyanovtsi village, LJ41, 43.42866°N, 25.13552°E, 14.07.2014, coll. K. Vassilev & H. Pedashenko (SOM 171071).

This species has not been reported for these floristic regions so far. According to Assyov & Petrova (2012), it is known from 16 floristic regions. In the Danubian Plain and Northeast Bulgaria, *Festuca dalmatica* forms grassland communities together with *Festuca valesiaca*, *F. rupicola*, *Dichantium ischaemum*, *Thymus* spp., and *Dorycnium herbaceum* belonging to the alliance *Festucion valesiaca*.

254. *Festuca hirtovaginata* (Acht.) Markgr.-Dann.

Bu Balkan Range (*Central*): in stony places above Chelopek village on shallow soils, GN17, 23.06.1957, coll. I. Bondev & V. Velchev (SOM 181041).

— Mt Svavyanka: in calcareous grassland communities of the Ali Botush Reserve, GL28, 41.41119°N, 23.67417°E, 30.07.2014, coll. K. Vassilev & H. Pedashenko (SOM 171091).

It is a Balkan endemic distributed in Greece, Macedonia and Bulgaria (Petrova & Vladimirov 2010). *Festuca hirtovaginata* is a new species for these floristic regions and is found in xerothermic grasslands.

255. *Koeleria pyramidata* (Lam.) P. Beauv.

Bu Mt Svavyanka: in subalpine calcareous grassland communities of the Ali Botush Reserve, GL28, 41.40734°N, 23.64534°E, 31.07.2014, coll. K. Vassilev & H. Pedashenko (SOM 171103).

This species has been so far known from four floristic regions (Assyov & Petrova 2012). *Koeleria pyramidata* is found for the first time on Mt Slavvanka and participates in subalpine grassland communities.

256. *Poa angustifolia* L.

Bu Tundzha Hilly Country: in xerothermic grassland communities near Melnitsa village, MG65, 42.04227°N, 26.56254°E, 04.06.2014, coll. K. Vassilev & H. Pedashenko (SOM 169228).

This species has been not known so far from this floristic region.

257. *Sesleria coerulans* Friv.

Bu Mt Slavvanka: in subalpine grassland communities of the Ali Botush Reserve, GL28, 41.39949°N, 23.65878°E, 30.07.2014, coll. K. Vassilev & H. Pedashenko (SOM 171102); under peak Gotsev Vrah, on calcareous rocks, 2100 m, GL28, 07.2008, coll. D. Dimitrov (SOM 169668).

This species is found in subalpine and alpine grassland and shrub communities in the high mountains of the country. It is a new species for this floristic region.

Reports 258–263

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Continuing a series of new plant records based on floristic investigations in the prefecture of Korinthias in north central Peloponnese.

Apiaceae

258. *Pimpinella rigidula* (Boiss. & Orph.) H. Wolff (Fig. 23)

Gr Nomos & Eparchia Korinthias: near the village Kefalari, 700–800 m, 37°58'N, 22°31'E, 14.08.2014, Kit Tan, G. Vold, Zarkos & Christodoulou 31747 (flowering); along the road from Kesari to Asprokambos, 740 m, 37°55'N, 22°33'E, 06.08.2012, Zarkos & Christodoulou obs. (flowering); *loc. ibid.*, 08.11.2014, Zarkos & Christodoulou s.n. (fruiting).

A Greek endemic restricted to the Peloponnese and Sterea Ellas, seldom collected as it flowers late. More than a century has passed since Heldreich collected it in Nomos Korinthias (near Trikalitika, sub nom. *Reutera rigidula* Boiss. & Orph.). However, we found



Fig. 23. *Pimpinella rigidula* (photo G. Zarkos).

it was very common along the road from Kiato to Stymfalia and throughout the valley of the villages Klimenti, Kesari and Kefalari. The syntype of *Reutera rigidula* was collected by Orphanides on Mt Chelmos on 17 July 1851 (C! LD).

Asteraceae

259. *Cirsium italicum* DC. (Fig. 24)

Gr Nomos & Eparchia Korinthias: N and NW of Lake Stymfalia, 610 m, 37°51'N, 22°27'E, 14.08.2014, Kit Tan, G. Vold, Zarkos & Christodoulou 31746 (flowering and fruiting); *loc. ibid.*, 22.07.2009, 23.08.2013 & 01.09.2013, Zarkos & Christodoulou obs.; by Lake Stymfalia, SE of village, 600 m, 37°52'N, 22°28'E, 09.08.1974, Stamatiadou 18063a (ATH); Mt Killini, Skafidia plateau, edge of seasonal lake drying out in the summer, 1300 m, 37°54'N, 22°21'E, 30.07.2014, Zarkos & Christodoulou obs.

New for Mt Killini, with numerous plants on the plateau. More than 30 plants were noted in small populations on the whitish marl of the pastures and adjacent grassy slopes at Lake Stymfalia. The peak flowering period is late August and early September. The stems are erect, unwinged, weakly white arachnoid-pilose and leafy throughout. Descriptions of *C. italicum* in Floras provide the impression that the species has winged stems, i.e., the stems appear winged due to decurrent leaf bases.

Convolvulaceae

260. *Convolvulus mairei* Halácsy

Gr Nomos & Eparchia Korinthias: Mt Killini, Skafidia plateau, edge of seasonal lake drying out in the summer, 1300 m, 37°54'N, 22°21'E, 30.07.2014, Zarkos & Christodoulou obs.

New for Mt Killini. Numerous plants on plateau. The other locality in the Peloponnese is the receding edge of Lake Stymfalia where it grows in great quantities as prostrate mats on the damp ground. The flowers are white, or sometimes, pale pink.

Scrophulariaceae

261. *Cymbalaria longipes* (Boiss. & Heldr.) A. Cheval.

Gr Nomos & Eparchia Korinthias: stony beach, 0 m, 37°50'N, 23°01'E, 10.05.2014, Zarkos & Christodoulou obs. (photos; confirmed Kit Tan, March 2015).

New for nomos and eparchia. In the Peloponnese recorded only from the coastal areas of Methana and Malea Peninsulas.

262. *Cymbalaria muralis* G. Gaertn., B. Mey. & Scherb.

Gr Nomos & Eparchia Korinthias: walls of buildings in town of Kiato, 0 m, 38°01'N, 22°44'E, 31.03.2007, 02.06.2012 & 30.05.2014, Zarkos & Christodoulou obs. (photos; confirmed Kit Tan, March 2015); stone walls in village of Kesari, 880 m, 37°57'N, 23°34'E, 09.04.2010, Zarkos & Christodoulou obs. (photos; observed every year till 2015).

In Korinthias, this was first reported by E. Willing (in an unpublished list of species received in 2011), as occurring SW of Korfos.

Iridaceae

263. *Romulea bulbocodium* (L.) Sebast. & Mauri (Figs. 25 & 25a)

Gr Nomos & Eparchia Korinthias: grassy places S of Lake Stymfalia, 37°51'N, 22°27'E, 18.03.2007, Zarkos & Christodoulou obs.; Kryoneri village, grassy places near Lehova monastery, 37°56'N, 22°36'E, 29.03.2010, Zarkos & Christodoulou obs.; near Katakali village, in openings of *Pinus halepensis* woodland and *Juniperus phoenicea* scrub, 37°49'N, 23°02'E, 23.01.2015, Zarkos



Fig. 24. *Cirsium italicum* (photo G. Zarkos).



Fig. 25. *Romulea bulbocodium*, yellow-throated flowers (photo V. Christodoulou).



Fig. 25a. *Romulea bulbocodium*, white-throated flowers (photo V. Christodoulou).

& Christodoulou obs.; loc. *ibid.*, Zarkos & Christodoulou s.n. (photos; confirmed Kit Tan, January 2015).

Surprisingly for a species widely distributed in S Greece, this is a first report for Nomos Korinthias. Although flowers with a clear yellow throat is the norm (Fig. 25) plants found near Katakali village (in eastern Korinthia near village Almyri, on the road from Korinthos to Epidavros) had flowers with a white throat (Fig. 25a). The latter populations are currently under investigation.

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