

New floristic records in the Balkans: 21*

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Abstract: New chorological data are presented for 153 species and subspecies from Bulgaria (52-102, 122-129, 133-146), Greece (17-42, 103-121, 130, 147-153) and Turkey-in-Europe (1-16, 43-51, 131, 132). The taxa belong to the following families: *Aizoaceae* (103), *Alismataceae* (150), *Alliaceae* (114, 140), *Amarylloidaceae* (119), *Apiaceae* (66), *Araceae* (120), *Aspidiaceae* (52), *Asteraceae* (13, 17-25, 53, 54, 67-69, 104, 115, 147), *Betulaceae* (105, 123), *Boraginaceae* (26, 70), *Brassicaceae* (10-12, 27, 71, 72, 124), *Cactaceae* (145), *Campanulaceae* (116), *Caryophyllaceae* (28, 55-58, 73-79, 133, 141), *Chenopodiaceae* (98-102), *Convolvulaceae* (106), *Crassulaceae* (14, 46-48, 59, 125, 142), *Cucurbitaceae* (29), *Cuscutaceae* (30), *Cyperaceae* (40, 93), *Ericaceae* (107, 134), *Euphorbiaceae* (108), *Fabaceae* (1-9, 31, 80-84, 135, 143), *Globulariaceae* (126), *Illecebraceae* (15), *Iridaceae* (94, 144, 151, 152), *Juncaceae* (41, 61, 62), *Lamiaceae* (32, 85, 136-138, 146), *Liliaceae* s.l. (121, 153), *Linaceae* (43-45, 86, 117), *Loranthaceae* (148), *Lythraceae* (109), *Malvaceae* (49), *Papaveraceae* (33, 87), *Plantaginaceae* (139), *Pinaceae* (122), *Plumbaginaceae* (110), *Poaceae* (16, 42, 63-65, 95-97, 128, 129), *Polygalaceae* (149), *Polygonaceae* (34, 35), *Primulaceae* (111), *Rafflesiaceae* (112), *Ranunculaceae* (60, 88), *Rosaceae* (89, 90, 113), *Rubiaceae* (50), *Santalaceae* (91), *Saxifragaceae* (127), *Scrophulariaceae* (36, 92, 131), *Solanaceae* (37, 38, 130), *Tamaricaceae* (132), *Valerianaceae* (39), *Verbenaceae* (51), and *Zygophyllaceae* (118).

First report for a country is: Greece – *Taraxacum capricum* (21).

The publication includes contributions by: M. Aybeke & F. Dane (1, 2), M. Aybeke, F. Dane, G. Dalgıç & N. Başak (3-9), M. Aybeke, C. Kurt & A. Semerci (10-12), M. Aybeke & C. Yarcı (13-16), B. Biel & Kit Tan (17-42), F. Dane & S. Tütüncü Konyar (43-45), F. Dane, S. Tütüncü Konyar & G. Dalgıç (46-48), F. Dane, S. Tütüncü Konyar, G. Dalgıç & İ. Uysal (49-51), D. Dimitrov (52-65), D. Dimitrov & V. Vutov (66-97), N. Grozeva & B. Petkov (98-102), K. Polymenakos & Kit Tan (103-114), G. Sfikas & Kit Tan (115-121), A. Tashev, K. Koev & N. Tashev (122-129), I. Tsialtas, I. Eleftherohorinos, G. Zarkos, V. Christodoulou & Kit Tan (130), S. Tütüncü Konyar (131, 132), K. Vassilev (133-140), K. Vassilev & H. Pedashenko (141-144), V. Vladimirov (145, 146), G. Zarkos, V. Christodoulou & Kit Tan (147-153).

This is the ongoing report in a 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 1–2

Mehmet Aybeke & Feruzan Dane

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Fabaceae

1. *Chamaecytisus eriocarpus* (Boiss.) Rothm.

Tu(E) A1(E) Kırklareli: Soğucak, 316 m,
41°38'60"N, 27°38'60"E, 22.07.1995, coll. G.
Dalgıç, det. M. Aybeke (EDTU 5831).

New for European Turkey. So far the species has been known from B1 Balıkesir (Gibbs 1970). According to *Flora Europaea*, this taxon is distributed in Bulgaria, Greece and former Yugoslavia. Recording of the species in European Turkey is not surprising because of the proximity of Kırklareli to the frontier.

2. *Lupinus albus* subsp. *graecus* (Boiss. & Spruner) Franco & P. Silva

Tu(E) A1(E) Edirne: Uzunköprü, Değirmenci Dam, 20 m, 41°18'37"N, 26°42'02"E, 25.04.1989, coll. F. Dane & N. Polat, det. M. Aybeke (EDTU 3464).
— A2/E Istanbul: Küçükköy, Küçükköy Gazi Mahallesi, near Alibeyköy Dam, 0 m, 41°04'00"N, 28°55'60"E, 24.04.1990, coll. M. Gedik, det. M. Aybeke (EDTU 4982).

New for European Turkey. So far the species has been known from A2/A Istanbul (Chamberlain 1970). According to *Flora Europaea*, this taxon was recorded in the Balkan Peninsula and Aegean Region, but not in European Turkey.

Reports 3–9

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Fabaceae

3. *Calicotome villosa* (Poir.) Link

Tu(E) A1(E) Kırklareli: Soğucak, 316 m,
41°38'60"N, 27°38'60"E, 25.05.1993, coll. G.
Dalgıç, det. G. Dalgıç, conf. M. Aybeke (EDTU
5587).

New for A1(E) Kırklareli in European Turkey. So far the species has been known from Çanakkale and Istanbul (Gibbs 1970).

4. *Chamaecytisus austriacus* (L.) Link

Tu(E) A1(E) Edirne: Lalapaşa, Donköy, 334 m,
41°55'60"N, 26°41'60"E, 02.06.1992, coll. F. Dane
& N. Başak, conf. M. Aybeke (EDTU 5078).

New for A1(E) Edirne in European Turkey. So far the species has been known from Kırklareli and Istanbul (Gibbs 1970).

5. *Colutea cilicica* Boiss. & Balansa

Tu(E) A1(E) Edirne: Keşan, between İbrice-Gökçetepe, in a forest, 626 m, 40°39'50"N, 26°37'53"E, 22.07.1995, coll. G. Dalgıç, det. G. Dalgıç, conf. M. Aybeke (EDTU 6006).
— A(1)E Tekirdağ: Şarköy, Uçmakdere, on coast ridges, 33 m, 40°47'49"N, 27°21'55"E, 11.06.1999, coll. G. Dalgıç, det. G. Dalgıç, conf. M. Aybeke (EDTU 7386).

New for A1(E) Edirne and Tekirdağ in European Turkey. So far the species has been known from Çanakkale and Istanbul (Chamberlain 1970).

6. *Galega officinalis* L.

Tu(E) A1(E) Edirne: Centre, Karaağaç, in the fields, 23 m, 41°39'28"N, 26°31'25"E, 11.10.2009, coll. F. Dane (EDTU 10320).
— A1(E) Kırklareli: Demirköy, İğneada, 0 m, 41°52'28"N, 27°59'02"E, 25.06.1991, coll. G. Kasapoğlu, det. M. Aybeke (EDTU 5209).

New for A1(E) Edirne and Kırklareli in European Turkey. So far the species has been known from A1(E) Tekirdağ and Istanbul (Chamberlain 1970).

7. *Genista lydia* Boiss. var. *lydia*

Tu(E) A1(E) Tekirdağ: Saray, Kastro 152 m,
41°26'26"N, 27°55'19"E, 10.05.1992, coll. H. Çetin,
det. M. Aybeke (EDTU 5233); Saray, Bahçeköy,
Kastro coast, in a forest, 12 m, 41°26'26"N,
27°55'19"E, 24.04.1999, coll. N. Güler, det. M.
Aybeke.

New for A1(E) Tekirdağ in European Turkey. So far the species has been known from A1(E) Kırklareli and A2(E) Istanbul (Gibbs 1970).

8. *Lupinus angustifolius* L. subsp. *angustifolius*

Tu(E) A1(E) Edirne: Süleoğlu, 156 m, 41°46'02"N,
26°54'43"E, 26.03.1989, coll. G. Dalgıç, det. M.
Aybeke (EDTU 3867); Edirne, 26 m, 41°40'28"N,
26°33'39"E, 1991, coll. F. Dane, det. M. Aybeke
(EDTU 5230).

New for A1(E) Edirne in European Turkey. So far the species has been known from A1(E) Çanakkale, A2(E) Istanbul (Chamberlain 1970).

9. *Spartium junceum* L.

Tu(E) A1(E) Edirne: Keşan, Korudağı Recreation Complex, 112 m, 40°43'60"N, 26°43'00"E, 07.07.1987, coll. G. Dalgıç & al., det. C. Yarcı, conf. M. Aybeke (TTAE 1707); Centre, Acar Park, Binevler, 26 m, 41°40'28"N, 26°33'39"E, 25.05.2005, coll. S. Tütüncü Konyar, det. G. Dalgıç (EDTU 9313).

New for A1(E) Edirne in European Turkey. So far the species has been known from A1(E) Çanakkale (Chamberlain 1970).

Reports 10–12**Mehmet Aybeke, Cengiz Kurt & Arif Semerci**

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Brassicaceae**10. *Lepidium campestre* (L.) R. Br.**

Tu(E) A1(E) Edirne: Lalapasa, Çömlekakpınar vilage (04-G-01), 152 m, 41°49'60"N, 26°38'60"E, 16.06.2004, coll. C. Kurt & al., det. M. Aybeke (TTAE 955); Kesan, Kilickoy (04-B-01), 24 m, 40°46'60"N, 26°33'00"E, 05.05.2004, coll. C. Kurt & al., det. M. Aybeke (TTAE 292).

New for European Turkey. So far the species has been known from A2(A) Istanbul (Hedge 1965). According to *Flora Europaea*, this taxon is distributed across Europe, but there is no record for European Turkey (Carvalho e Vasconcellos & al. 1964).

11. *Raphanus raphanistrum* L.

Tu(E) A1(E) Edirne: Kesan, Yenimuhacir vilage (04-B-05), 121 m, 40°51'29"N, 26°41'36"E, 05.05.2004, coll. C. Kurt & al., det. M. Aybeke (TTAE 353).

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

12. *Rapistrum rugosum* (L.) All.

Tu(E) A1(E) Edirne: Kesan, Altintas village (04-C-02), 141 m, 41°01'00"N, 26°41'60"E, 12.05.2004, coll. C. Kurt & al., det. M. Aybeke (TTAE 381); Kesan, Kilickoy (04-B-01), 24 m, 40°46'60"N, 26°33'00"E, 05.05.2004, coll. C. Kurt & al., det. M. Aybeke (TTAE 301); Enez, Beykoy (04-B-03), 65 m, 41°16'00"N, 26°51'00"E, 05.05.2004, coll. C. Kurt & al., det. M. Aybeke (TTAE 320).

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

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Asteraceae**13. *Anthemis tinctoria* L. var. *discoidea* (All.) DC.**

Tu(E) A1(E) Kırklareli: Demirköy, 244 m, 41°49'17"N, 27°45'38"E, 02.07.1988, coll. & det. C. Yarcı (EDTU 2257).

New for A1(E) Kırklareli in European Turkey. So far the species has been known from A1(E) Tekirdağ and A2(E) Istanbul (Grierson & Yavin 1975).

Crassulaceae**14. *Sedum pallidum* M. Bieb. subsp. *pallidum***

Tu(E) A1(E) Kırklareli: Demirköy, 244 m, 41°49'17"N, 27°45'38"E, 02.07.1988, coll. & det. C. Yarcı, conf. K. Alpınar (EDTU 2244).

New for A1(E) Kırklareli in European Turkey. So far the species has been known from A2(E) Istanbul (Chamberlain 1972).

Illecebraceae**15. *Scleranthus perennis* subsp. *marginatus* (Guss.) Arcang.**

Tu(E) A1(E) Edirne: Süleoğlu, in the environs of the dam, 156 m, 41°46'02"N, 26°54'43"E, 04.04.1990, coll. D. Gözener, det. C. Yarcı, conf. M. Aybeke (EDTU 4313).

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

Poaceae**16. *Elymus repens* (L.) Gould subsp. *repens* [Syn.: *Agropyron repens* (L.) P. Beauv]**

Tu(E) A1(E) Kırklareli: Demirköy, 244 m, 41°49'17"N, 27°45'38"E, 02.07.1988, coll. & det. C. Yarcı (EDTU 2244).

New for A1(E) Kırklareli in European Turkey. So far the species has been known from A2(E) Istanbul (Melderis 1985).

Reports 17–42

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This is the twentieth report of new plant-records for the island of Samothraki (N Aegean islands, Nomos Evrou, Eparchia Samothrakis) based on field-work carried out over several years. The records listed are all new to the island, 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.

Asteraceae

17. *Geropogon hybridus* (L.) Sch. Bip. (= *Tragopogon hybridus* L.)

Gr Samothraki: S of Chora, walled cemetery surrounded by old trees, on basalt/porphy, 280 m, 40°28'48"N, 25°31'32"E, 04.05.2010, *Biel* 10.132; E of Kamariotissa, limestone slopes and uncultivated fields, 40 m, 40°28'34"N, 25°28'48"E, 08.05.2010, *Biel* 10.339.

Recorded from the island of Limnos in the N Aegean area. Already noted near Kamariotissa in 2001 and at Alonia and Ano Karyotes in 2010.

18. *Onopordum tauricum* Willd.

Gr Samothraki: SW of Kamariotissa, coastal limestone slope, 10 m, 40°28'09"N, 25°27'33"E, 27.06.2011, *Biel* 11.213.

Recorded from the islands of Thasos, Limnos and Ag. Evstratios. Occurring in fields and on waste-ground (several collections).

19. *Taraxacum aleppicum* Dahlst. (Fig. 1)

Gr Samothraki: SW of Xiropotamos, pasture with olive trees, on basalt and porphy, 100 m, 40°26'27"N, 25°31'08"E, 07.02.2011, *Biel* 11.010; E of Alonia, in *Quercus* scrub, on basalt and porphy, 200 m, 40°27'30"N, 25°31'31"E, 07.02.2011, *Biel* 11.011; *loc. ibid.*, *Biel* 11.012.

New for the N Aegean area.

20. *Taraxacum calocephalum* Dahlst. (Fig. 2)

Gr Samothraki: Pachia Ammos, sandy beach with *Vitex* scrub, 7 m, 40°23'45"N, 25°34'46"E, 07.05.2010, *Biel* 10.298a.

New for the N Aegean area and first record for the Greek islands.



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



Fig. 2. *Taraxacum calocephalum* (photo B. Biel).

21. *Taraxacum capricum* van Soest (Figs. 3 & 3a)

Gr Samothraki: SW of Therma, near OTE station, along dirt track in *Erica-Arbutus* macchie, 210 m, 40°29'29"N, 25°35'33"E, 09.06.2008, *Biel* 08.069.

Apparently new for Greece, recorded from France and Italy. Belonging to *Taraxacum* sect. *Erythrocarpa* Hand.-Mazz. which has 24 species in Europe (50–80 species from the Mediterranean to Central Asia). The OTE station is easily accessible by car and often visited.

22. *Taraxacum copidophylloides* A.J. Richards

Gr Samothraki: N-NE Pachia Ammos, rocky stream bed of Kousianda, wet meadow slopes, 880 m, 40°25'41"N, 25°36'17"E, 29.06.2007, *Biel* 07.307.

New for the N Aegean area and first record for the Greek islands.

23. *Taraxacum hellenicum* Dahlst.

Gr Samothraki: SW of Xiropotamos, gravelly stream bed with olive trees and scrub, 30 m, 40°26'31"N, 25°31'34"E, 07.02.2011, *Biel* 11.003; Pachia Ammos,

eastern part of sandy beach with *Vitex* scrub, 10 m, 40°23'44"N, 25°34'55"E, 09.02.2011, *Biel* 11.029. Recorded from Thasos.



Figs. 3 & 3a. *Taraxacum capricum* (photo B. Biel).

24. *Taraxacum minimum* (Briq.) Terracc. (Fig. 4)
Gr Samothraki: SW of Kamariotissa, grazed uncultivated ground outside village, on coastal limestone, 5 m, 40°28'11"N, 25°28'00"E, 02.04.2006, *Biel* 06.006; Pachia Ammos, low rocky ridge with phrygana east of beach, 30 m, 40°23'32"N, 25°35'05"E, 02.11.2008, *Biel* 08.320; Pachia Ammos, sandy beach with *Vitex* scrub, 7 m, 40°23'45"N, 25°34'46"E, 07.05.2010, *Biel* 10.298; S-SE of Therma, ravine above Aetos, rocky slope with *Pteridium*, 850 m, 40°27'55"N, 25°37'16"E, 09.05.2010, *Biel* 10.394; SW of Therma, mountain saddle with phrygana on NW ridge of Fengari, rocky basalt and granite, 1470 m, 40°28'01"N, 25°34'52"E, 13.05.2010, *Biel* 10.537; N-NE of Pachia Ammos, gorge and slopes of Kousianda stream, 800 m, 40°25'21"N, 25°36'30"E, 30.06.2010, *Biel* 10.792; W of Xiropotamos, source of spring, with planted *Juglans* and *Olea* at foot of slope, 90 m, 40°26'44"N, 25°31'31"E, 07.02.2011, *Biel* 11.009a; roadsides and waste ground in Kamariotissa, 15 m, 40°28'45"N, 25°28'32"E, 10.02.2011, *Biel* 11.049.

New for the N Aegean area.



Fig. 4. *Taraxacum minimum* (photo B. Biel).

25. *Taraxacum scaturiginosum* Hagl.

Gr Samothraki: NE of Therma, large coastal wetland in alluvial forest, 3 m, 40°29'57"N, 25°37'23"E, 05.05.2010, *Biel* 10.207; *loc. ibid.*, 06.05.2010, *Biel* 10.244; E-SE of Chora, rocky hill slopes with *Quercus* and phrygana, 960 m, 40°27'46"N, 25°33'33"E, 11.02.2011, *Biel* 11.055.

New for the N Aegean area and first record for the Greek islands.

Boraginaceae

26. *Myosotis alpestris* subsp. *suaveolens* Waldst. & Kit.

Gr Samothraki: E of Chora, open phrygana on steep rocky slope, on porphyry, 1170 m, 40°28'13"N, 25°33'49"E, 11.06.2008, *Biel* 08.136.

New for the N Aegean area and first record for the Greek islands.

Brassicaceae

27. *Alyssum murale* Waldst. & Kit. s.str.

Gr Samothraki: SW of Profitis Ilias, rocky hill slopes near cemetery, 320 m, 40°25'53"N, 25°32'36"E, 11.05.2010, *Biel* 10.437.

New for the N Aegean area. Also found at Alonia and Chora.

Caryophyllaceae

28. *Minuartia mediterranea* (Link) Maly

Gr Samothraki: SE of Profitis Ilias, rocky slope with open phrygana near chapel, on granite, 250 m, 40°24'21"N, 25°35'08"E, 10.04.2006, *Biel* 06.258a; SW of Xiropotamos-Makrilies, gravelly stream bed with olive trees and grazed scrub, 30 m, 40°25'46"N, 25°30'45"E, 11.04.2006 *Biel* 06.280.

New for the N Aegean area. Several other collections, mainly in open dry places.

Cucurbitaceae

29. *Cucurbita pepo* L.

Gr Samothraki: NW of Kato Karyotes, gravelly coast with scrub, 3 m, 40°30'29"N, 25°33'16"E, 13.07.2011, *Biel* 11.402.

New for the N Aegean area. There are very few reports from Greece, in fact, only three, at the coast of the cities of Patras and Thessaloniki, and the northern beach area of the island of Andros.

Cuscutaceae

30. *Cuscuta palaestina* Boiss. (Fig. 5)

Gr Samothraki: NE of Kamariotissa, gravelly limestone or sandstone slopes with grazed *Sarcopoterium*-phrygana, 40°29'20"N, 25°29'21"E, 40 m, 01.05.2001, *Biel* 01.110a (on *Vicia tenuissima*); E of Pachia Ammos, phrygana on low rocky ridge east of beach, 30 m, 40°23'32"N, 25°35'05"E, 23.06.2007, *Biel* 07.200 (on *Anthyllis hermanniae*); SE of Profitis Ilias, heavily grazed rocky granitic slope with sparse phrygana near the chapel of Panagia Kremniotissa, 250 m, 40°24'21"N, 25°35'08"E, 23.06.2007, *Biel* 07.204 (on *Symphyandra*

samoethracica); shrubby road margins in village of Therma, 50 m, 40°29'38"N, 25°36'31"E, 09.06.2008, *Biel* 08.083.

Recorded from Thasos and Ag. Evstratios. On various hosts of which *Symphyandra samoethracica* appears to be new.



Fig. 5. *Cuscuta palaestina* on *Symphyandra samoethracica* (photo B. Biel).

Fabaceae

31. *Lotus halophilus* Boiss. & Spruner

Gr Samothraki: Pachia Ammos, western part of sandy beach near the restaurant, 3 m, 40°23'34"N, 25°34'38"E, 11.02.2009, *Biel* 09.060.

Recorded from Limnos.

Lamiaceae

32. *Stachys thirkei* K. Koch

Gr Samothraki: N-NE of Pachia Ammos, in an abandoned but fenced olive grove, on granite, 150 m, 40°25'10"N, 25°35'09"E, 13.06.2008, *Biel* 08.184.

New for the N Aegean area. In Greece, recorded with certainty only from Mt Pangeon (NE) and the island of Chios (E Aegean). All other records in Greece possibly belong to other members of the *S. germanica* complex.

Papaveraceae

33. *Fumaria kralikii* Jord.

Gr Samothraki: SW of Kamariotissa, heavily grazed open phrygana slopes, 18 m, 40°28'03"N, 25°27'35"E, 02.04.2006, *Biel* 06.024a; E-NE of Kamariotissa, shady stream banks in between fields, 20 m, 40°28'55"N, 25°28'58"E, 03.05.2010, *Biel* 10.073.

Recorded from Thasos, widespread on mainland (NE and NC).

Polygonaceae

34. *Polygonum aviculare* subsp. *rurivagum* (Boreau) Berher

Gr Samothraki: road sides and waste ground within Kamariotissa, 15 m, 40°28'31"N, 25°28'26"E, 12.07.2009, *Biel* 09.129b; SW of Kamariotissa, embankment at pasture with small spring, 20 m, 40°27'45"N, 25°27'47"E, 04.05.2010, *Biel* 10.148.

New for the N Aegean area.

35. *Polygonum mesembrium* Chrtek

Gr Samothraki: Kamariotissa, park at seafront, 2 m, 40°28'34"N, 25°28'25"E, 10.02.2009, *Biel* 09.054.

New for the N Aegean area; mainly in coastal areas of NE and EC Greece with records also from Lesvos and N Evvia. Noted at roadsides in Chora.

Scrophulariaceae

36. *Veronica dillenii* Cyr.

Gr Samothraki: SE of Therma, in *Pteridium* below Aetos, 550 m, 40°28'29"N, 25°37'58"E, 09.05.2010, *Biel* 10.384; S-SE of Therma, ravine above Aetos, rocky slope with *Pteridium*, 850 m, 40°27'55"N, 25°37'16"E, 09.05.2010, *Biel* 10.396a; Pachia Ammos, sandy beach with *Vitex* scrub, 7 m, 40°23'45"N, 25°34'46"E, 07.05.2011, *Biel* 11.133; E-SE of Chora, steep gravelly slope with open cushion phrygana below saddle of Fengari ridge, 1100 m, 40°27'60"N, 25°34'28"E, 03.07.2011, *Biel* 11.319.

New for the N Aegean area and first report for the Greek islands. On mainland Greece (NE and NC). Identification confirmed by M.A. Fischer (Vienna).

Solanaceae

37. *Solanum luteum* subsp. *alatum* (Moench) Dostál

Gr Samothraki: southern outskirts of Kamariotissa, ruderal path between gardens, 10 m, 40°28'40"N, 25°28'32"E, 27.10.2002, *Biel* 02.155.

New for the N Aegean area. Mainly in the S Aegean. Several other collections from fields and roadsides.

38. *Solanum luteum* Mill. subsp. *luteum* (= *Solanum villosum* Mill. subsp. *villosum*)

Gr Samothraki: SW of Kamariotissa, seasonally flooded wheat field by dirt road, 4 m, 40°28'10"N, 25°27'50"E, 26.06.2010, *Biel* 10.707.

Recorded from Thasos, of scattered occurrence in Greece. Several other collections from roadsides, waste ground and other ruderal habitats.

Valerianaceae

39. *Valerianella echinata* (L.) DC.

Gr Samothraki: Pachia Ammos, sandy beach with *Vitex* scrub, 7 m, 40°23'45"N, 25°34'46"E, 06.05.2010, *Biel* 10.277.

Recorded from Thasos. Widespread in southern Greece.

Cyperaceae

40. *Carex serotina* Mérat

Gr Samothraki: NE of Pachia Ammos, steep slope with wet meadows above gorge, on granite, 770 m, 40°25'11"N, 25°37'14"E, 22.07.2009, *Biel* 09.284; N of Pachia Ammos, along path on mountain ridge, phrygana, 440 m, 40°25'16"N, 25°35'19"E, 16.05.2010, *Biel* 10.580; E-NE of Profitis Ilias, grazed meadows on both sides of stream source, 810 m, 40°26'20"N, 25°34'35"E, 20.05.2010, *Biel* 10.691.

New for the N Aegean area and first report for the Greek islands. An important constituent of the bogs and wet meadows at the headwaters of streams. In several European floras, the species is referred to *C. viridula*.

Juncaceae

41. *Luzula campestris* L.

Gr Samothraki: Therma, northern slope along the track to the summit, *Juniperus/Berberis* scrub, 1100–1400 m, 40°28'N, 25°35'E, 26.05.1999, *Schuler* 99/430 (B, herb. Schuler); SW of Therma, *Juniperus-Berberis* scrub on steep rocky slope, on basalt/porphyry, 1160 m, 40°28'45"N, 25°35'16"E, 17.06.2008, *Biel* 08.247; N-NE of Pachia Ammos, rocky slope with spring, phrygana and *Quercus*, 680 m, 40°25'10"N, 25°35'53"E, 16.05.2010, *Biel* 10.587a; N-NE of Pachia Ammos, open phrygana with two streams, on basalt and schist, 820 m, 40°25'23"N, 25°36'12"E, 16.05.2010, *Biel* 10.612; N-NE of Pachia Ammos, gorge and rocky slopes of Kousianda river, 800 m, 40°25'21"N, 25°36'30"E, 16.05.2010, *Biel* 10.614.

Recorded from Thasos.

Poaceae

42. *Elytrigia atherica* (Link) Kerguélen

Gr Samothraki: S of Kamariotissa, dry ditch and reed area with seasonally wet field 50–300 m behind the coast, on basalt loam, 5 m, 40°27'05"N, 25°28'23"E, 29.05.2002, *Biel* 02.056; SW of

Kamariotissa, ruderal places in port area, 3 m, 40°28'40"N, 25°28'20"E, 16.06.2007, *Biel* 07.002a (det. H. Scholz, Berlin).

New for the N Aegean area; absent from the E and W Aegean. Our records were previously referred to *Elymus pycnanthus*.

Cited vouchers are provisionally kept in the private herbarium of B. Biel at H6chberg (herb. Biel). We thank Dr John Richards (Hexham, UK), for kindly identifying our *Taraxacum* specimens.

Reports 43–45

Feruzan Dane & Sevil Tütüncü Konyar

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Linaceae

43. *Linum austriacum* L. subsp. *austriacum*

Tu(E) A1(E) Edirne: around Budakdođanca and Ahık6y, 98 m, 41°45'37"N, 26°20'33"E, 02.06.1987, coll. *N. Bařak* & *G. Dalgıç*, det. *A. Baytop* (EDTU 786); H6seyinpınar village, 26 m, 41°40'28"N, 26°33'39"E, 11.05.1988, coll. *F. Dane* & *al.*, det. *A. Baytop* (EDTU 2029); S6leođlu, Tatarlar village, at roadside, 156 m, 41°46'02"N, 26°54'43"E, 02.05.1987, coll. *G. Olgun*, det. *C. Yarcı* (EDTU 836).

New record for A1(E) Edirne in European Turkey. So far the species has been known from A1(E) Tekirdađ (Davis 1967).

44. *Linum bienne* Mill.

Tu(E) A1(E) Edirne: Centre, the Balkan Campus of Trakya University, 26 m, 41°40'28"N, 26°33'39"E, 06.06.1987, coll. & det. *E. D6zalan* (EDTU 1116); Uzunk6pr6, Deđirmenci Barrage, 7 m, 41°16'10"N, 26°41'10"E, 11.06.1987, coll. *F. Dane* & *al.*, det. *A. Baytop* (EDTU 1266); Musabeyli village, in a dry pasture, 109 m, 41°40'60"N, 26°40'00"E, 23.06.1989, coll. *F. Dane*, det. *A. Baytop* (EDTU 3633).

— A1(E) Kırklareli: Kofcaz, Kocayazı village, 535 m, 42°00'00"N, 27°16'60"E, 18.06.1986, coll. & det. *A. Asan* (EDTU 438).

New record for A1(E) Edirne in European Turkey. So far the species has been known from A1(E) Tekirdađ, A2(E) Istanbul (Davis 1967).

45. *Linum corymbulosum* Rchb.

Tu(E) A1(E) Tekirdađ: Muratlı, 15 km from Muratlı to L6leburgaz, 78 m, 41°10'17"N, 27°30'11"E, 22.06.1987, coll. *N. Bařak* & *F. Dane*, det. *A. Baytop* (EDTU 1557); 40 km from Hayrabolu to Tekirdađ, 17 m, 41°12'42"N, 27°06'31"E, 22.06.1987, coll. & det. *F. Dane* & *N. Bařak*.

New for A1(E) Edirne in European Turkey. So far the species has been known from A1(E) anakkale and A2(E) Istanbul (Davis 1967).

Reports 46–48

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Crassulaceae

46. *Sedum album* L.

Tu(E) A1(E) anakkale: Gelibolu, in the English Cemetery, 0 m, 40°24'37"N, 26°40'15"E, 29.05.1993, coll. *G. Dalgıç*, det. *K. Alpınar* (EDTU 5644).

— A1(E) Edirne: Lalapařa, Bađlık Beck, on a hill and hillside, 172 m, 41°49'60"N, 26°43'60"E, 14.05.1988, coll. *F. Dane*, det. *K. Alpınar* (EDTU 3190); S6leođlu, Tařlım6sellim village, 193 m, 41°49'00"N, 26°46'60"E, 01.06.1987, coll. *F. Dane*, det. *K. Alpınar* (EDTU 699); Centre, opposite the Selimiye Mosque, 99 m, 41°31'00"N, 26°38'60"E, 25.05.1993, coll. & det. *G. Dalgıç* & *K. Alpınar* (EDTU 5645).

— A1(E) Kırklareli: 6 km from Kırklareli to Derek6y, 446 m, 41°55'58"N, 27°22'00"E, 10.06.1987, coll. *C. Yarcı* & *N. Bařak*, det. *K. Alpınar* (EDTU 1226); Kayalidere, 237 m, 41°46'40"N, 27°05'56"E, 06.05.1988, coll. *G. Dalgıç* & *N. Bařak*, det. *K. Alpınar* (EDTU 1998).

— A1(E) Tekirdađ: řark6y, 0 m, 40°36'58"N, 27°06'03"E, 16.08.1989, coll. *F. Dane*, det. *K. Alpınar* (EDTU 4073); Tekirdađ, 0 m, 40°58'50"N, 27°30'54"E, 12.05.1989, coll. *G. Dalgıç*, det. *K. Alpınar* (EDTU 4441).

New for A1(E) anakkale, A1(E) Edirne, A1(E) Kırklareli and A1(E) Tekirdađ in European Turkey. So far the species has been known from A2(E) Istanbul (Chamberlain 1972).

47. *Sedum hispanicum* L.

Tu(E) A1(E) Edirne: Centre, İsmailçe village, 99 m, 41°31'00"N, 26°38'60"E, 20.05.1993, coll. *F. Dane*, det. *K. Alpınar* (EDTU 5643); Lalapaşa, Vaysal village, 378 m, 41°56'31"N, 26°52'23"E, 29.04.1992, coll. *G. Dalgıç*, det. *K. Alpınar* (EDTU 5425); Keşan, Mecidiye Military Camp, 61 m, 40°38'20"N, 26°32'14"E, 08.05.1993, coll. *G. Dalgıç*, det. *K. Alpınar* (EDTU 5648).

— A1(E) Kırklareli: Demirköy, 3 km from İğneada to Demirköy, 244 m, 41°49'17"N, 27°45'38"E, 17.06.1987, coll. *F. Dane & al.*, det. *K. Alpınar* (EDTU 1396).

New for A1(E) Edirne, A1(E) Kırklareli in European Turkey. So far the species has been known from A1(E) Çanakkale (Chamberlain 1972).

48. *Sedum sediforme* (Jacq.) Pau

Tu(E) A1(E) Çanakkale: Eceabat, around the Conkbayırı Englishs Cemetery, 0 m, 40°11'02"N, 26°21'23"E, 07.07.1987, coll. *F. Dane*, det. *K. Alpınar* (EDTU 1741).

New for A1(E) Çanakkale in European Turkey. So far the species has been known from A2(E) Istanbul (Chamberlain 1972).

Reports 49–51**Feruzan Dane, Sevil Tütüncü Konyar, Güler Dalgıç & İsmet Uysal**

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Malvaceae**49. *Malope malacoides* L.**

Tu(E) A1(E) Edirne: Keşan, Çeltikköy exit, 108 m, 40°51'21"N, 26°37'49"E, 09.05.1995, coll. & det. *G. Dalgıç* (EDTU 3304).

New for A1(E) Edirne in European Turkey. So far the species has been known from A1(E) Çanakkale and Tekirdağ, and A2(E) Istanbul (Cullen 1967).

Rubiaceae**50. *Rubia tinctorum* L.**

Tu(E) A1(E) Kırklareli: Demirköy, 57 km from Kırklareli to Demirköy, Velika bridge, 244 m, 41°49'17"N, 27°45'38"E, 12.06.1985, coll. *B. Kasaplıgil*, det. *H. Demiriz* (EDTU 207).

— A1(E) Edirne: Centre, 2 km from Domurcalı to

Taşlımüsellim, 196 m, 41°49'00"N, 26°49'00"E, 01.06.1987, coll. *F. Dane et al.*, det. *İ. Uysal* (EDTU 897); Centre, in the vicinity of the bus station, 99 m, 41°31'00"N, 26°38'60"E, 09.06.1989, coll. *F. Dane*, det. *İ. Uysal* (EDTU 3344); Centre, Söğütlük forest, 99 m, 41°31'00"N, 26°38'60"E, 10.08.1989, coll. & det. *F. Dane* (EDTU 3828); Centre, Yıldırım, around Külliye, 99 m, 41°31'00"N, 26°38'60"E, 30.06.1990, coll. *F. Dane & G. Dalgıç*, det. *İ. Uysal* (EDTU 4405).

— A1(E) Tekirdağ: Şarköy coast, 0 m, 40°58'50"N, 27°30'54"E, 16.08.1989, coll. & det. *F. Dane* (EDTU 4048).

New for A1(E) Edirne, A1(E) Kırklareli and A1(E) Tekirdağ in European Turkey. So far the species has been known from A1(E) Çanakkale and A2(E) Istanbul (Ehrendorfer & Schonbeck-Temesy 1982).

Verbenaceae**51. *Vitex agnus-castus* L.**

Tu(E) A1(E) Tekirdağ: Şarköy, 0 m, 40°36'58"N, 27°06'03"E, 16.08.1989, coll. & det. *F. Dane* (EDTU 4090).

New for A1(E) Tekirdağ in European Turkey. So far the species has been known from A1(E) Çanakkale (Townsend 1982).

Reports 52–65**Dimitar Dimitrov**

National Natural History Museum, Blvd. Tsar Osoboditel 1, 1000 Sofia, Bulgaria

Aspidiaceae**52. *Polystichum setiferum* (Forssk.) Woyn.**

Bu Forebalkan (*Eastern*): Mikrenski Heights, in a beech forest above Balgarene village, Lovech district, 600 m, LH-16, 18.06.2012, coll. *D. Dimitrov* (SOM 168656); above Ablanitsa village, Lovech district, in a beech forest, 650 m, LH-10, 19.06.2012, coll. *D. Dimitrov* (SOM 168655).

New for this floristic region. There is also material, collected by I. Urumov at the railway station in Roman in 1926 (SO 83383).

Asteraceae**53. *Jurinea mollis* subsp. *anatolica* (Boiss.) Stoj. & Stef.**

Bu Rhodopi Mts (*Central*): S of Marzyan village, LF-28, 11.08.2012, coll. *D. Dimitrov* (SOM 168917).

New for this floristic region.

54. *Prenanthes purpurea* L.

Bu Forebalkan (*Eastern*): Mikrenski Heights, N of Borima village, Lovech district, in the beech forest along the road to Staro Selo, 650 m, LH-06, 19.06.2012, coll. *D. Dimitrov* (SOM 168668).

New for this floristic region.

Caryophyllaceae

55. *Cerastium pumilum* subsp. *pallens* (Schultz) Schinz & Thell.

Bu Danubian Plain: on calcareous rocks at Ralevo village, Pleven district, LH-09, 29.05.2012, coll. *D. Dimitrov* (SOM 168662); close to Nikolaevo village, Pleven district, LH-09, 29.06.2012, coll. *D. Dimitrov* (SOM 168661).

New for this floristic region.

56. *Cerastium tenoreanum* Ser.

Bu Danubian Plain: at Pisarevo village, Iskar Municipality, KJ-71, 03.05.2012, coll. *D. Dimitrov* (SOM 168663).

New for this floristic region.

57. *Paronychia kapela* (Hacq.) A. Kern.

Bu Danubian Plain: on the calcareous rocks S of Todorovo village, Pleven district, LJ-00, 01.06.2012, coll. *D. Dimitrov* (SOM 168664).

New for this floristic region.

58. *Scleranthus polycarpus* L.

Bu Danubian Plain: in the meadows above Ralevo village, Pleven district, LH-09, 02.05.2012, coll. *D. Dimitrov* (SOM).

New for this floristic region.

Crassulaceae

59. *Sedum kostovii* Stef.

Bu Rhodopi Mts (*Central*): on the vertical rocks before Marzyan village, Zlatograd district, LF-28, 11.08.2012, coll. *D. Dimitrov* (SOM 168860).

A new locality of this vulnerable species (Bancheva 2009).

Ranunculaceae

60. *Clematis recta* L.

Bu Danubian Plain: N of Obnova village, on the calcareous rocks and bushes on the northern slope, 135 m, LJ-31, 14.06.2012, coll. *D. Dimitrov* (SOM 168665).

There is material, collected by R. Tsonev in Levski town, in Karamandol forest, LJ-40, 19.05.2000 (SO 102883), but that record is unpublished.

Juncaceae

61. *Juncus acutiflorus* Ehrh.

Bu Rhodopi Mts (*Western*): above Satovcha town, in meadows, GM-41, 26.06.2012, coll. *D. Dimitrov* (SOM 168878).

Confirming the species for this floristic region.

62. *Juncus tenuis* Willd.

Bu Forebalkan (*Eastern*): N of Borima town, along the road to Staro Selo, LH-06, 19.06.2012, coll. *D. Dimitrov* (SOM 168659).

New for this floristic region.

Poaceae

63. *Festuca picturata* Pils

Bu Rhodopi Mts (*Western*): in the meadows over Satovcha town, GM-41, 28.06.2012, coll. *D. Dimitrov* (SOM 168863).

New for this floristic region.

64. *Festuca spectabilis* subsp. *affinis* (Hack.) Hack.

Bu Danubian Plain: S of Nikolaevo village, Pleven district, LH-09, 20.05.2012, coll. *D. Dimitrov* (SOM 168658).

New for this floristic region.

65. *Koeleria nitidula* Velen.

Bu Danubian Plain: close to Nikolaevo village, Pleven district, LH-09, 29.05.2012, coll. *D. Dimitrov* (SOM 168657); *circa vicum* Roman, FN-66, 12.05.1893, coll. *St. Gheorgiev* (SO 72275).

New for this floristic region.

Reports 66–97**Dimitar Dimitrov & Vasil Vutov**

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The species below are new to the mentioned floristic regions.

Apiacea

66. *Torilis heterophylla* Guss.

Bu Znepole Region: Dragomanski Chepan, in calcareous and grassy places under peak Petrovski Krast above Dragoman, FN-55, 15.06.2006, coll. *D. Dimitrov* (SOM 163483).

Asteraceae

67. *Antennaria dioica* (L.) Gaertn.

Bu Rhodopi Mts (*Eastern*): in dry grassy places af-

ter Goljam Makaz before Krumovgrad, LF-67, 06.2006, coll. *D. Dimitrov* (SOM 164104).

68. *Hedypnois rhagadioloides* (L.) F.W. Schmidt [syn. *H. cretica* (L.) Dum.]

Bu Mt Strandzha: at Brodilivo village, Burgas district, in open places, NG-75, 20.05.1970, coll. *V. Velchev*, rev. *D. Dimitrov* (SOM 154371, sub *Picris pauciflora* Willd.).

69. *Hypochaeris glabra* L.

Bu Balkan Range (*Eastern*): Mt. Eminska, in open places at the mixed forest near Panitsovo village, Nesebar Municipality, NH-54, 19.05.2007, coll. *D. Dimitrov* (SOM 163665).

Boraginaceae

70. *Lycopsis arvensis* subsp. *orientalis* (L.) Kuzn.

Bu Znepole Region: Dragomanski Chepan, in grassy places under peak Petrovski Krast, 1100 m, FN-55, 29.05.2006, coll. *D. Dimitrov* (SOM 163715, SO 104307).

Brassicaceae

71. *Cardamine flexuosa* With.

Bu Sofia Region: on the left bank of river Iskar, opposite German village, FN-92, 20.04.2007, coll. *D. Dimitrov* (SOM 163867, SO 104525).

72. *Rapistrum rugosum* (L.) All.

Bu Balkan Range (*Western*): Mt. Murgash, in grassy calcareous places and fields N of Negushevo village, Sofia district, GN-23, 14.06.2007, coll. *D. Dimitrov* (SOM 163012, SO 104541).

Caryophyllaceae

73. *Cerastium fontanum* subsp. *vulgare* (Hartm.) Greuter & Burd.

Bu Forebalkan (*Western*): Zamfirovo village, Montana district, FN-89, 07.05.2007, coll. *D. Dimitrov* (SOM 163500).

— Valley of River Struma (*Northern*): in damp grassy places, in the gardens S of Rila town, FM-76, 30.04.2008, coll. *D. Dimitrov* (SOM 164147).

74. *Cerastium glomeratum* Thuill.

Bu Valley of River Struma (*Northern*): Rila town, on dry grassy terraces above the road from Smochevo village, FM-76, 30.04.2008, coll. *D. Dimitrov* (SOM 164148).

75. *Cerastium petricola* Pančić

Bu Znepole Region: Mt. Dragomanski Chepan, in rocky calcareous places under peak Petrov

Krast, FN-55, 29.05.2006, coll. *D. Dimitrov* (SOM 163763, SO 104524).

— Valley of River Struma (*Southern*): above Kresnensko Hanche, FM-82, 20.05.2008, coll. *D. Dimitrov* (SO 105146).

— Rhodopi Mts (*Eastern*): in rocky and grassy places above Gorna Kula village, Krumovgrad district, LF-89, 05.2005, coll. *D. Dimitrov* (SOM 163815).

76. *Cerastium tauricum* Spreng.

Bu Znepole Region: Mt. Golo Bardo, in calcareous rocky places at the fork from Bosnek village to the Sofia – Kulata road, FN-70, 25.06.2005, coll. *D. Dimitrov* (SOM 168504).

77. *Cerastium tenoreanum* Ser.

Bu Forebalkan (*Western*): Pastrinata, above Dolno Belotintsi village, in sandy places in a mixed deciduous forest, FP-81, 09.05.2007, coll. *D. Dimitrov* (SO 104544).

78. *Cerastium velenovskiyi* Hayek

Bu Balkan Range (*Western*): Mt. Sofiyska Stara Planina, above St. Georgi Pobedonosets Kremikovski Monastery, GN-03, 25.07.2006, coll. *D. Dimitrov* (SOM 163582).

79. *Dianthus giganteus* subsp. *croaticus* (Borbás) Tutin

Bu Forebalkan (*Eastern*): in the Koritna open-air pit near Dobrevtsi village, Jablanitsa municipality, KH-67, 25.10.2007, *D. Dimitrov* & *V. Vutov* (SOM 163926).

Fabaceae

80. *Colutea arborescens* L.

Bu Sofia Region: on the wall of the Pancharevo Water Reservoir, at German village, FN-91, 20.04.2007, coll. *D. Dimitrov* (SOM 163869, SO 104540).

81. *Genista sessilifolia* subsp. *trifoliata* (Janka) Kuzmanov

Bu Balkan Range (*Western*): Mt. Murgash, in grassy calcareous places NE of Negushevo village, Sofia district, GN-23, 14.06.2007, coll. *D. Dimitrov* (SOM 163613, SO 104542).

82. *Onobrychis inermis* Stev.

Bu Znepole Region: Dragomanski Chepan, in calcareous grassy places under peak Petrovski Krast above Dragoman, FN-55, 15.06.2006, coll. *D. Dimitrov* (SOM 163481).

Confirming the species for this region.

83. *Ornithopus compressus* L.

Bu Balkan Range (*Eastern*): W from Panitsovo village, in the meadows in a mixed deciduous forest, 280 m, NH-54, 29.05.2007, coll. *D. Dimitrov* (SOM 163501).

— Valley of River Mesta: on the right side of the road after the road fork from Bukovo village, GM-22, 05.07.2008, coll. *D. Dimitrov* (SO 105139).

84. *Trifolium alexandrinum* L.

Bu Balkan Range (*Eastern*): in open places at the mixed forest by Panitsovo village, Nesebar municipality, NH-54, 29.05.2007, coll. *D. Dimitrov* (SOM 163529).

Lamiaceae**85. *Salvia nutans* L.**

Bu Balkan Range (*Western*): Mt. Murgash, on the marl rock above (NE of) Negushevo village, Sofia district, GN-23, 14.06.2007, coll. *D. Dimitrov* (SOM 163614).

Linaceae**86. *Linum bienne* Mill.**

Bu Znepole Region: in the hills NW of Varshets town, FN-88, 17.05.1971, coll. *P. Panov* (SOM 131823).

Papaveraceae**87. *Fumaria schramii* (Asch.) Velen.**

Bu Balkan Range (*Western*): Dragomanski Chepan, in calcareous grassy places under the peak Petrov Krast, FN-55, 29.05.2006, coll. *D. Dimitrov* (SOM 163711).

Ranunculaceae**88. *Ranunculus ophioglossifolius* Vill.**

Bu Mt Sredna Gora (*Western*): in the damp swamps under peak Malak Pop, Ravna Polyana locality above Koprivstitsa town, KH-82, 30.07.2008, coll. *D. Dimitrov* (SO 105152, 105153).

Rosaceae**89. *Rosa elliptica* Tausch**

Bu Vitosha Region: in calcareous rocky places above Duhlata spring at Bosnek village, FN-70, 25.05.2005, coll. *D. Dimitrov* (SOM 163505).

90. *Rosa mollis* Sm.

Bu Vitosha Region: above Dragalevtsi, at the road from Aleko chalet, 1200 m, FN-91, 25.06.2006, coll. *D. Dimitrov* (SOM 163755).

Santalaceae**91. *Thesium dollinerii* Murb.**

Bu Forebalkan (*Eastern*): in calcareous grassy plac-

es above the Koritna open-air pit at Dobrevtsi village, Jablanitsa municipality, KH-67, 25.10.2007, coll. *D. Dimitrov* & *V. Vutov* (SOM 163877).

Scrophulariaceae**92. *Veronica austriaca* subsp. *neiceffii* (Degen) Peev**

Bu Znepole Region: Dragomanski Chepan, in calcareous grassy places under peak Petrov Krast, FN-55, 29.05.2006, coll. *D. Dimitrov* (SOM 163716).

Cyperaceae**93. *Carex hostiana* DC.**

Bu Forebalkan (*Western*): Beli Izvor village, Vratsa district, FN-99, 10.05.2007, coll. *D. Dimitrov* (SO 104549).

Iridaceae**94. *Iris reichenbachii* Heuff.**

Bu Valley of River Struma (*Southern*): Tisata Reserve above the right bank of river Struma in a mixed deciduous forest, FM-82, 05.05.2007, coll. *D. Dimitrov* (SOM 164000).

Poaceae**95. *Festuca dalmatica* Hack.**

Bu Valley of River Struma (*Northern*): in graminoid prope pagum Stob, Dupnitsa district, FM-76, 22.05.1949, coll. *N. Stojanov* (SO 06792).

96. *Festuca spectabilis* subsp. *affinis* (Boiss.) Hack.

Bu Vitosha Region: Mt. Plana, in wet grassy places under Krastatia Dab, FN-91, 15.07.2006, coll. *D. Dimitrov* (SOM 163472).

— Rhodopi Mts (*Eastern*): on a serpentine rock at Fotinovo village, 600 m, LF-68, 20.06.2001, coll. *D. Pavlova*, rev. *D. Dimitrov* (SO 102463, sub *F. arundinaceae* subsp. *fenas* (Lay.) Arcang.).

97. *Stipa tirsa* Stev.

Bu Vitosha Region: in calcareous rocky places above Duhlata spring, at Bosnek village, FN-70, 15.06.2005, coll. *D. Dimitrov* (SOM 163501).

Reports 98–102**Neli Grozeva & Biser Petkov**

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Chenopodiaceae**98. *Chenopodium foliosum* Asch.**

Bu Mt Strandzha: Malko Tarnovo town, in grasslands

in the northwest part, 377 m, 41°59'01.39"N, 27°32'33.11"E, 27.09.2012, coll. N. Grozeva & B. Petkov (SOM 169147).

This species is comparatively widespread on the territory of Bulgaria (Assyov & Petrova 2012), but so far has not been reported from Mt Strandzha.

99. *Chenopodium strictum* Roth

Bu Mt Strandzha: in ruderal places west of Kosti village, 54 m, 42°03'36.90"N, 27°47'12.64"E, 24.09.2012, coll. N. Grozeva & B. Petkov (SOM 169143).

A new species for Mt Strandzha. So far the species has been known from the Black Sea Coast, Northeast Bulgaria, Danubian Plain, Sofia region, Znepole Region, Rhodopi Mts (*Eastern*), Thracian Lowland, and Tundzha Hilly Country (Grozeva 2012).

100. *Dysphania ambrosioides* (L.) Mosyakin & Clements [syn. *Chenopodium ambrosioides* L.]

Bu Tundzha Hilly Country: in ruderal places along river Tundzha, northwards of village Okop, 125 m, 42°24'15.85"N, 26°31'11.76"E, 14.09.2012, coll. N. Grozeva (SOM 169145).

A new species for the Tundzha Hilly Country. So far the species has been reported for the Black Sea Coast, Danubian Plain, Forebalkan (*Eastern*), Valley of River Struma, and Thracian Lowland (Assyov & Petrova 2012; Vladimirov 2012).

101. *Dysphania multifida* (L.) Mosyakin & Clements [syn. *Chenopodium multifidum* L.]

Bu Mt Strandzha: in grassy places W of Brodilovo village, 46 m, 42°05'09.89"N, 27°51'53.69"E, 24.09.2012, coll. N. Grozeva & B. Petkov (SOM 169146).

This species is comparatively widespread in Bulgaria (Assyov & Petrova 2012), but this is the first record for Mt Strandzha.

102. *Dysphania pumilio* (R. Br.) Mosyakin & Clemants [syn. *Chenopodium pumilio* R. Br.]

Bu Mt Strandzha: in ruderal places along the road between Brodilovo and Kosti villages, 18 m, 42°04'08.03"N, 27°49'02.43"E, 24.09.2012, coll. N. Grozeva & B. Petkov (SOM 169144).

A new species for Mt Strandzha. So far it has been reported from the Black Sea Coast, Northeast Bulgaria, Balkan Range (*Eastern*), Valley of River Struma (*Southern*), Thracian Lowland, and Tundzha Hilly Country (Grozeva 2007; Vladimirov & Petrova 2010; Vladimirov 2011, 2012).

Reports 103–114

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).

Aizoaceae

103. *Mesembryanthemum nodiflorum* L. (Fig. 6)

Gr Nomos & Eparchia Korinthias: on the rocks at Cape Melangavi, near sea level, 38°01'N, 22°51'E, 08.05.2011, Polymenakos obs. (photo, conf. Kit Tan, January 2013).

New for eparchia and nomos. With *Frankenia* spp., *Stachys swainsonii* subsp. *melangavica* and *Campanula celsii* subsp. *spathulifolia*.



Fig. 6. *Mesembryanthemum nodiflorum* (photo K. Polymenakos).

Asteraceae

104. *Centaurea attica* Nyman

Gr Nomos Evvias, Eparchia Chalkidos: Mt Dirfis, summit slopes, 1160 m, 38°38'N, 23°49'E, 09.08.2012, Polymenakos obs. (photo, conf. Kit Tan, January 2013).

New for Mt Dirfis. Together with flowering *Calamintha nepeta* and *Convolvulus cantabrica*. The area was heavily grazed and the plants 'goated'. Four subspecies occur in Greece and this might possibly represent *C. a.* subsp. *pentelica* (Hausskn.) Dostál. Material will be re-collected later in the year.

Betulaceae

105. *Alnus glutinosa* (L.) Gaertner subsp. *glutinosa*
(Fig. 7)

Gr Nomos Arkadias, Eparchia Mandinias: SE foothills of Menalon, on the side of the river Lousios, 330 m, 37°32'N, 22°02'E, 09.08.2012, 11.11.2007, *Polymenakos* obs. (photo, conf. Kit Tan & J. Zieliński, January 2013).

New for Mt Menalo in central Peloponnese. Within *A. glutinosa*, three subspecies have been recognized. This shrub-like plant has hairy stems and leaves more coriaceous and hairy beneath than in the typical form which is usually glabrous. According to Zieliński, this morphotype has been collected in northern Greece by A. Boratyński (Poznan) and if found to be more widespread, may be treated as a separate taxon.



Fig. 7. *Alnus glutinosa* subsp. *glutinosa* (photo K. Polymenakos).

Convolvulaceae

106. *Convolvulus cantabrica* L.

Gr Nomos Evvias, Eparchia Chalkidos: Mt Dirfis, northern slopes at summit, 1160 m, 38°38'N, 23°49'E, 09.08.2012, *Polymenakos* obs. (photo, conf. Kit Tan, January 2013).

New for Mt Dirfis. Numerous plants, together with flowering *Calamintha nepeta* and *Centaurea attica* (see entry under the latter species).

Ericaceae

107. *Arbutus unedo* L. (Fig. 8)

Gr Nomos Attikis, Eparchia Megaridos: Mt Pateras, common along forest road, 560 m, 38°05'N, 23°23'E, 07.11.2012, *Polymenakos* obs. (photo, conf. Kit Tan, January 2013).

Not listed from Pateras by Constantinidis (1997).



Fig. 8. *Arbutus unedo* (photo K. Polymenakos).

Euphorbiaceae

108. *Euphorbia rigida* M. Bieb. (Fig. 9)

Gr Nomos Attikis, Eparchia Megaridos: Mt Kitheronas, openings of *Pinus* forest in valley outside Vilia, 600–830 m, 38°10'N, 23°18'E, 30.01.2013, *Polymenakos* obs. (photo, conf. Kit Tan, February 2013).

Not listed from Kitheronas by Constantinidis (1997). There were thousands of plants in vegetative state, together with *Crocus olivieri*, *Crocus sieberi* subsp. *atticus*, *Erophila praecox*, *Erodium cicutarium* and *Allium chamaemoly* which were all in full flower at the end of January.



Fig. 9. *Euphorbia rigida* (photo K. Polymenakos).

Lythraceae**109. *Lythrum thymifolia* L.**

Gr Nomos & Eparchia Attikis: Mt Parnitha, roadsides at Dekelia, 445 m, 38°09'N, 23°47'E, 13.07.2012, *Polymenakos* obs. (photo, conf. Kit Tan, January 2013).

New for Mt Parnitha, growing together with *Kickxia elatine* and *Mentha pulegium*. In Nomos Attikis, reported only from Mt Pastra (eparchia Megaridos).

Plumbaginaceae**110. *Limoniastrum monopetalum* (L.) Boiss.**
(Fig. 10)

Gr Nomos & Eparchia Attikis: Legrena (bay 4 km west of Sounio), sea level, 37°39'N, 23°59'E, 05.08.2012, *Polymenakos* obs. (photo, conf. Kit Tan, January 2013).

— Nomos Lakonias, Eparchia Epidavrou Limiras: coastal phrygana at Cape Maleas, 0–5 m, 08.04.2005, *Kit Tan* & *G. Vold* obs. (rare).

New for the respective eparchies, nomi and phytogeographical regions Peloponnese and Sterea Ellas. At the salines of Legrena, a single plant was in fruit amongst clumps of *Arthrocnemum macrostachyum*.



Fig. 10. *Limoniastrum monopetalum* (photo K. Polymenakos).

Primulaceae**111. *Samolus valerandi* L.**

Gr Nomos & Eparchia Attikis: Mt Parnitha, by a small pool above Dekelia, 550 m, 38°09'N, 23°46'E, 23.11.2011, *Polymenakos* obs. (photo, conf. Kit Tan, January 2013); at spring on way from Tatoi (Dekelia) to Ag. Mercurios, 545 m, 38°09'N, 23°47'E, 28.05.2012, *Polymenakos* obs. (photo, conf. Kit Tan, January 2013).

New for Mt Parnitha, reported from Mt Pendeli. The pool was an interesting biotope with *Juncus articula-*

tus, *J. subnodulosus*, *J. inflexus* and *Cirsium creticum*; unfortunately, the area was bulldozed on 4 January 2013. *Coriaria myrtifolia* still surrounds the former pool, it was last collected in the area in May and June 1994. In the second locality one km to the east, *Samolus* occurred together with *Veronica anagallis-aquatica*, *Juncus inflexus* and *Epilobium hirsutum*.

Rafflesiaceae**112. *Cytinus hypocistis* subsp. *clusii* Nyman (Fig. 11)**

Gr Nomos & Eparchia Attikis: Imittos, northern slope above Ag. Paraskevi, in vegetation with *Quercus coccifera* and *Phillyrea latifolia*, 420 m, 38°09'N, 23°46'E, 22.04.2010, *Polymenakos* obs. (photo, conf. Kit Tan, February 2013).

New for Mt Imittos, recorded from Mts Pendeli and Parnitha. Parasitic on *Cistus creticus* and distinguished from *C. h.* subsp. *hypocistis* by its creamy-white flowers; in the latter they are yellow.



Fig. 11. *Cytinus hypocistis* subsp. *clusii* ((photo K. Polymenakos).

Rosaceae**113. *Prunus mahaleb* L.**

Gr Nomos Evvias, Eparchia Chalkidos: Mt Dirfis, northern slopes at summit, 1000 m, 38°38'N, 23°49'E, 09.08.2012, *Polymenakos* obs. (photo, conf. Kit Tan, January 2013).

New for Mt Dirfis. A few shrub-like plants, on the same slopes as *Convolvulus cantabrica*.

Alliaceae**114. *Allium cupani* Raf. (Fig. 12)**

Gr Nomos Evvias, Eparchia Chalkidos: Mt Dirfis,

northern serpentine slope, 930 m, 38°38'N, 23°48'E, 09.08.2012, *Polymenakos* obs. (photo, conf. Kit Tan, January 2013).

New for Mt Dirfis. Together with *Juniperus oxycedrus*, *Genista millii* and *Minuartia dirphyia*. Recorded from Mt Ochi in southeastern Evvia.



Fig. 12. *Allium cupani* (photo K. Polymenakos).

Reports 115–121

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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).

In the spring of 2012 a botanical investiga-

tion was made of some small islets in the Kiklades and East Aegean area that were considered suitable for the installation of wind generators. The time spent on each of these uninhabited tiny land masses was very brief, the helicopter hovering overhead with an arranged pick-up time of less than an hour. Nevertheless, some interesting finds were made and some are communicated in this report.

Asteraceae

115. *Scorzonera araneosa* Sm.

Gr Nomos Kikladon, Eparchia Thiras: island of Plakia, east of Amorgos, on hard limestone rock, 36°52'N, 25°37'E, 05.04.2012, *Sfikas* 14084 (herb. Sfikas; det. Kit Tan, May 2012).

New for Plakia in the Kiklades. The species is restricted to the S Aegean (Kiklades and southern Crete). Recorded from Amorgos as *S. eximia* Rech. fil. (Rechinger 1943: 686).

Campanulaceae

116. *Legousia speculum-veneris* (L.) Chaix

Gr Nomos Dodekanisou, Eparchia Kalimnou: island of Ofidoussa, W of Astypalea, hard limestone, 36°33'N, 26°09'E, 07.04.2012, *Sfikas* 14080 (herb. Sfikas; det. Kit Tan, May 2012).

An earlier collection from Ofidoussa had been made by Runemark & Nordenstam in May 1960 (LD). The species is widely distributed in Greece. However, some of the plants on Ofidoussa were unusual in having flowers with a very large white central eye, nearly twice the norm as observed in plants from elsewhere.

Linaceae

117. *Linum decumbens* Desf.

Gr Nomos Dodekanisou, Eparchia Kalimnou: island of Kounouppia, near Astypalea, 36°32'N, 26°28'E, 06.04.2012, *Sfikas* 14085 (herb. Sfikas; det. Kit Tan, May 2012).

Confirming a previous gathering by Runemark & Nordenstam in June 1960 (LD). Recorded from the E Aegean islands (Samos and Chalki), Kiklades and the Karpathos island group.

Zygophyllaceae

118. *Fagonia cretica* L.

Gr Nomos Dodekanisou, Eparchia Ko: island of Paxia (Pachia), W of Nisyros, 36°34'N, 27°05'E, 08.04.2012, *Sfikas* 14079 (herb. Sfikas; conf. Kit Tan, May 2012).

New for the E Aegean area. Described from Crete

and recorded from the Kiklades; it has however, not been reported from Nisyros or any of the other E Aegean islands.

Amaryllidaceae

119. *Narcissus papyraceus* Ker Gawl. (Fig. 13)

Gr Nomos Kefallinias, Eparchia Samis: Kefalonia, river banks and damp meadows near the village of Koulouráta, 38°20'N, 20°30'E, 13.12.2005, Sfikas 13707 (herb. Sfikas; det. Kit Tan, May 2012).



Fig. 13. *Narcissus papyraceus* (photo G. Sfikas).

New for the island of Kefallinia. This is a variant of *N. papyraceus* unusual in having umbels of 6–15 flowers only 15–20 mm in diameter and perianth tube 8–14 mm in length (i.e., smaller than in *N. p.* subsp. *panizzianus*). Both perianth segments and the corona are snowy-white. The scape is 16–30 cm long (shorter than the leaves) and 0.2–0.3 mm in diameter. The single bract is 2.5–4 cm long. The plants flower from December to February. They are also taken and grown as garden ornamentals (first noted in a pizzeria). Local villagers inform us that prior to 1950, this plant grew wild over a large area of the

plain of Sami. Nowadays, the plain is under cultivation and parts transformed into building plots with houses. *Narcissus papyraceus*, which also grows wild on Kerkira (observed by L. Collas), has flowers double the size (25–40 mm) as also found in plants from the W Mediterranean (France, Spain and Portugal) and C Mediterranean (Italy and Sicily) and former Yugoslavia. The species has also been reported from Zakynthos (Ronniger 1941: 84). One cannot rule out the possibility that the plants from the Ionian islands may (or may not) have been introduced bearing in mind the geographical proximity to Italy.

Araceae

120. *Zantedeschia aethiopica* (L.) Spreng.

Gr Nomos Dodekanisou, Eparchia Rodou: Simi, along footpath from Pontkokastro to Noulia, 36°36'N, 27°50'E, 01.03.2008, *Vratsánou* obs. New for island of Simi, nomos and eparchia. Naturalized, flowering. Also noted along footpath to Ag. Paraskevi and Ag. Aekaterini.

Liliaceae s.l.

121. *Allium pilosum* Sm.

Gr Nomos Dodekanisou, Eparchia Kalimnou: island of Pontikoussa, west of Astypalea, 36°33'N, 26°14'E, 06.04.2012, *Sfikas* 14078 (herb. Sfikas). New for Pontikoussa in the Kiklades. A Greek endemic originally described from the island of Kimolos (Sibthorp & Smith 1809: 225).

Reports 122–129

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Pinaceae

122. *Pseudotsuga menziesii* (Mirb.) Franco subsp. *menziesii*

Bu Rhodopi Mts (*Central*): on the territory of Slaveino State Forestry Farm, in the lands of village Bosilkovo, Chukara locality, in an opening in a *Pinus sylvestris* forest, below a culture of *Pseudotsuga menziesii*, along with young growth of *P. sylvestris*, *Fagus sylvatica* and *Quercus dale-*

champii; in the middle of a slope with northern exposition and incline of 35°, 1079 m, 41°41'40.0"N, 24°57'12.8"E, 27.09.2012, coll. A. Tashev (SOM 168950; SOA 59741); on the territory of Slaveino State Forestry Farm, above Zagrazhden village, under a culture of *Pseudotsuga menziesii*, along with young growth of *P. sylvestris*, *Fagus sylvatica* and *Rubus caesius*, *Pteridium aquilinum* etc., in the lower part of a slope with southeast exposition and incline of 25°, 1123 m, 41°43'18.1"N, 24°59'11.3"E, 25.09.2012, coll. A. Tashev (SOM 168951; SOA 59740); on the territory of Slaveino State Forestry Farm, in the lands of Krastatista village, close to a dirt road, in mass under a culture of *Pinus sylvestris*, along with *Fagus sylvatica*, *Quercus dalechampii*, *Juniperus communis*, *Chamaecytisus absinthioides*, *Genista rumelica*, etc., in the middle of a slope with southern exposition and incline of 25°, 1173 m, 41°38'28.9"N, 24°57'09.2"E, 29.09.2012, coll. A. Tashev (SOM 168952; SOA 59739).

The populations of *Pseudotsuga menziesii* ssp. *menziesii* were presented by single specimens or small groups, the individuals being of different age and height.

These are new localities of this adventive species for the Bulgarian flora, which have emerged naturally, by means of natural reproduction of individuals of *Pseudotsuga menziesii* ssp. *menziesii* from the artificial plantations in adjacent territories. So far such natural groups have been identified only in the Rila and Western Sredna Gora mountains (Assyov & Petrova 2012: 333).

Betulaceae

123. *Ostrya carpinifolia* Scop.

Bu Pirin Mts (*Northern*): above Ilindentsi village, below Kamenata Kariera locality, on the periphery of a natural *Pinus nigra* forest with undergrowth of *Quercus pubescens*, on a slope with SW exposition, with fruits, 800 m, FM-81, 07.07.2008, coll. E. Tsavkov (SOM 168715, 168716).

A new locality in Bulgaria for this relict sub-Mediterranean species. It has been known so far from the Balkan Range (*Central*), Valley of River Struma, Rila Mts, Rhodopi Mts, Znepole Region, Mt Belasitsa, Mt Slavyanka, Valley of River Mesta, West Frontier Mts and Mt Sredna Gora (*Western*) (Tashev 2010: 17; Delipavlov & Cheshmedzhiev 2011: 64; Assyov & Petrova 2012: 302).

Brassicaceae

124. *Erysimum diffusum* Ehrh.

Bu Mt Sredna Gora (*Western*): Ihtiman Divide: to the northwest of Belovo town, above the Belana Paper Works. In the lower parts of a slope with southeastern exposition and incline of 25°, on calcareous rocks, among shrubs of *Ostrya carpinifolia* in a thinned-out culture of *Pinus nigra*, 370 m, 42°13'27.0"N, 23°59'57.1"E, KG-57, 06.06.2008, coll. A. Tashev (SOM 164664, 164665; SO 105619).

A new locality for this Central and South European floristic element that so far was pending confirmation (Assyov & Petrova 2012: 184).

Crassulaceae

125. *Sedum kostovii* Stef.

Bu Mt Sredna Gora (*Western*): Ihtiman Divide: to the northwest of Belovo town, above the Belana Paper Works. In the lower parts of a slope with southeastern exposition and incline of 25°, on calcareous rocks, among shrubs of *Ostrya carpinifolia* in a thinned-out culture of *Pinus nigra*, 385 m, 42°13'27.2"N, 23°59'56.0"E, KG-57, 06.06.2008, coll. A. Tashev (SOM 164653).

A new locality for this protected, vulnerable and endemic species, so far known from the Balkan Range (*Central*), Mt Slavyanka, Valley of River Mesta, Pirin Mts, Rila Mts, Rhodopi Mts (*Western, Central*), and Tundzha Hilly Country (Delipavlov & Cheshmedzhiev 2011: 164; Assyov & Petrova 2006: 376).

Globulariaceae

126. *Globularia aphyllanthes* Crantz

Bu Mt Sredna Gora (*Western*): Ihtiman Divide, above Momina Klisura village, on calcareous rocks in a culture of *Pinus nigra*, in the lower part of a slope with southern exposition and incline of 30°, 455 m, 42°13'39.4"N, 23°59'37.4"E, KG-57, 10.05.2009, coll. A. Tashev (SOM 164912; SO 105777).

A new locality for this European floristic element (Delipavlov & Cheshmedzhiev 2011: 368; Assyov & Petrova 2012: 214).

Saxifragaceae

127. *Saxifraga bulbifera* L.

Bu Rhodopi Mts (*Eastern*): In the lands of Lambuh village, in Varbata locality, on a forest clearing surrounded with a forest of *Quercus frainetto*, *Q. pubescens*, *Carpinus orientalis*, etc., on a western slope with incline of 4°, 263 m, 41.59362°N,

26.12071°E, MG-20, 21.04.2012, coll. A. Tashev (SOM 168570).

A new species for this floristic region. (Delipavlov & Cheshmedzhiev 2011: 167; Assyov & Petrova 2012: 366).

Poaceae

128. *Koeleria nitidula* Velen.

Bu Mt Sredna Gora (*Western*): Ihtiman Divide, to the northwest of Belovo town, above the Belana Paper Works. In the lower parts of a slope with southwest exposition and incline of 20°, on calcareous rocks, in a thinned-out culture of *Pinus nigra*, 375 m, 42°13'27.0"N, 23°59'57.2"E, KG-57, 06.06.2008, coll. A. Tashev (SOM 164661, 164662; SO 105621).

A new locality for this Pontic element (Delipavlov & Cheshmedzhiev 2011: 501; Assyov & Petrova 2012: 247).

129. *Secale rhodopaeum* Delip.

Bu Rhodopi Mts (*Eastern*): on the territory of Kirkovo State Forestry Farm, in the Gyumyurdzhinski Snezhnik Protected Area, in the region of peak Veikata, above an old-growth forest of *Fagus sylvatica* ssp. *moesiaca*, along with *Rubus caesius*, *Calamagrostis arundinaceae*, etc., in the crest part of a slope with northwest exposition and incline of 10°, on a calcareous base rock, with fruits, 1318 m, 41°14'22.1"N, 25°16'37.1"E, LF-56, 13.08.2012, coll. A. Tashev (SOM 168971, 168972; SOA 059737, 059738).

This is the second locality of this endemic, threatened and legally protected species that so far was pending confirmation (Assyov & Petrova 2012: 375).

Report 130

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Continuing a series of new plant records based on floristic investigations in north Peloponnese, northern and central Greece, with a focus on *Datura stra-*

monium f. *tatula* (L.) Geerinck & Walravens (syn. *Datura tatula* L.)

Solanaceae

130. *Datura stramonium* f. *tatula* (L.) Geerinck & Walravens

- Gr** Nomos Achaïas, Eparchia Patron: by coast between Patras and Ag. Vasilis, wasteground and irrigated fields, 0–2 m, 38°17'N, 21°45'E, 07.08.1994, *Strid* 36520 (G).
- Nomos & Eparchia Korinthias: edge of cultivated fields and irrigation channels at Lake Stymfalia, 750 m, 37°52'N, 22°28'E, 04.11.2012, *Kit Tan, G. Vold & Zarkos* 31461 (C); *loc. ibid.*, 37°52'N, 22°30'E, 26.10.2012, *Christodoulou* obs. (photos).
 - Nomos & Eparchia Larisis: field cultivated with sugar beet, Nikaia, 96 m, 39°33'N, 22°27'E, 2005, *Tsialtas* obs.; harvested wheat field, Mesorahi, 137 m, 39°33'N, 22°22'E, 2005, *Tsialtas* obs.; fallow field at Platikampos, 60 m, 39°37'N, 22°32'E, 2005, *Tsialtas* obs.; rubbish dump at cotton gin factory, Prodromos, 62 m, 39°35'N, 22°35'E, 2009, *Tsialtas* obs.; field cultivated with cotton, Nikaia, 108 m, 39°32'N, 22°26'E, 2009, *Tsialtas* obs.; road margins, Ag. Anargyroi, 125 m, 39°31'N, 22°24'E, 2009, *Tsialtas* obs.; roadsides and field margins, Chalki, 90 m, 39°33'N, 22°31'E, 2011, *Tsialtas* obs.
 - Nomos & Eparchia Thessalonikis: road margins, Pylaia, 32 m, 40°33'N, 22°59'E, ann. 2011, *Tsialtas* obs.
 - Nomos Serron, Eparchia Visaltias: road margins, Amfipoli, 13 m, 40°49'N, 22°50'E, 2011, *Tsialtas* obs.; harvested wheat field, Eukarpia, 15 m, 40°32'N, 22°60'E, ann. 2011, *Tsialtas & Eleftherohorinos* obs.; edge of cotton field, 53 m, 40°53'N, 23°41'E, 2011, *Tsialtas & Eleftherohorinos* obs.
 - Nomos & Eparchia Dramas: gravelly road embankment SW of Sideronero, 230 m, 41°21'N, 24°12'E, 06.10.2000, *Strid & Vollbrecht* 50995 (G, LD).

Datura stramonium L. exists in Greece in two forms – the green-stemmed, white-flowered plant (Fig. 14a) and the purple-stemmed, violet or lilac-flowered variant (Fig. 14b). The latter has been referred to as *D. stramonium* var. *tatula* (L.) Torr. The two taxa co-exist in the majority of sites surveyed, at the margins of cultivated fields of wheat, cotton and sugar-beet, and also along roadsides, ditches, rubbish dumps and other

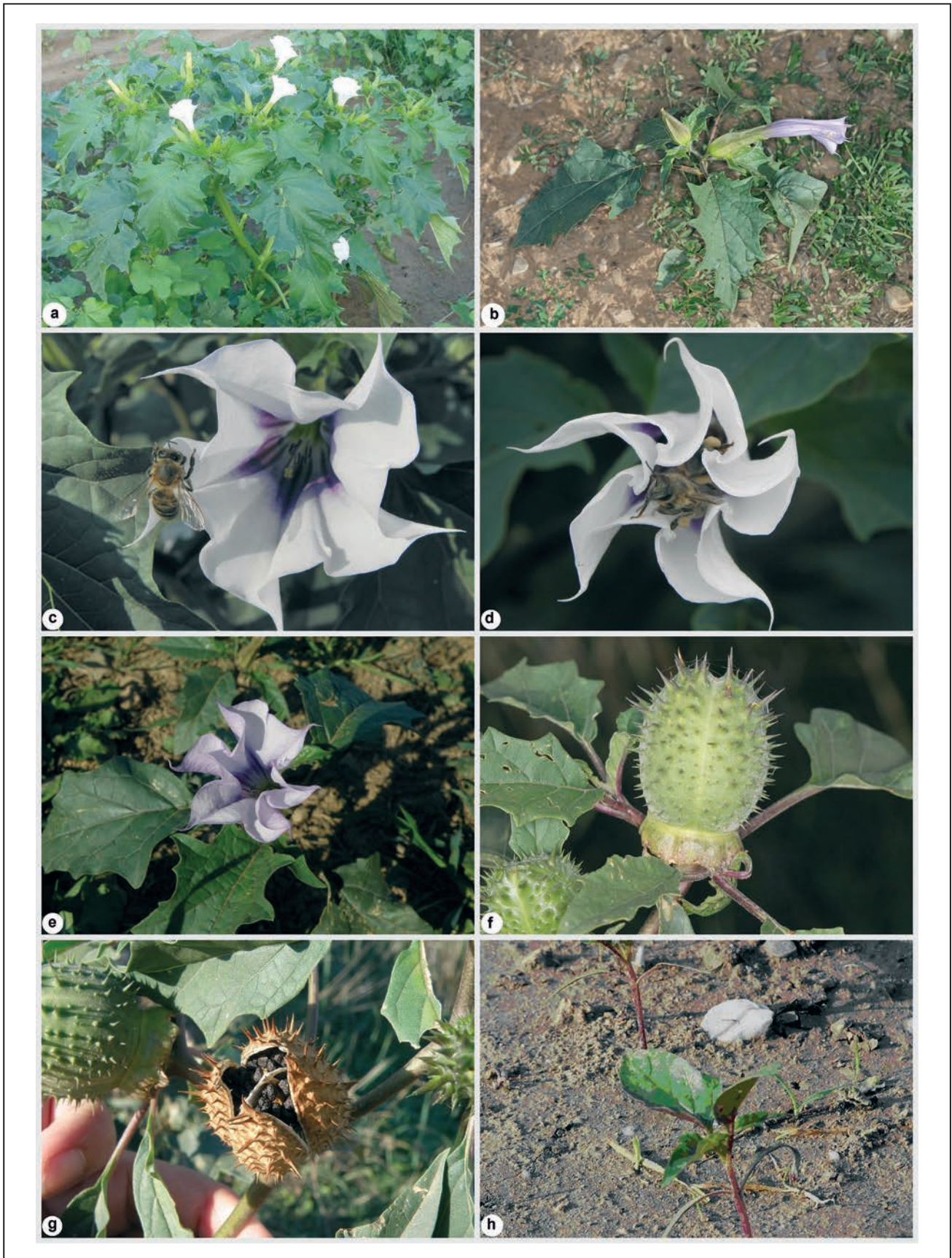


Fig. 14. *Datura stramonium*: a, f & g (photo V. Christodoulou); b & e (photo G. Zarkos); c, d & h (photo I. Tsialtas).

disturbed places. No obvious morphological differences have been noted and breeding experiments reveal that the two differ only by a single pair of genes, with the gene responsible for violet flowers dominant over that for white ones (Berkov & al. 2006). As such, it is more appropriate taxonomically to treat them as *Datura stramonium* L. f. *stramonium* and *D. stramonium* f. *tatula* (L.) Geerinck & Walravens, as published in *Naturalistes Belges* 79(4): 270 (1998), instead of recognizing them as varieties. The white-flowered form is common and widespread throughout Greece but no formal floristic records have been published to document the violet-flowered form in Greece. The latter had also not been mentioned in a recent publication on the alien flora of Greece (Arianoutsou & al. 2010). We now include a survey of the localities where it has been observed and/or collected.

Datura stramonium f. *tatula* is believed to originate from N America (Griffin & Lin 2000) but is now naturalized in most of Europe except the extreme north. It was probably introduced to Greece together with the wide-scale import of cotton seed for sowing, particularly over the last two decades. Indeed in north and central Greece, it occurs in areas where cotton is the main spring crop. It is particularly common on the Thessalian Plain where the soil is a Holocene alluvium formed by continental deposits of sand, clay, loam and talus. The mean temperature on the plain is 15.7°C, and the annual precipitation ca. 425 mm. Plants of *D. stramonium* f. *tatula* grow well together with large- or small-leaved forms of white-flowered *D. stramonium* f. *stramonium*, and in some areas, were found together with *D. ferox* L. and *D. innoxia* Mill. Thus, there is a real threat of intra- and/or inter-species hybridization in the wild and this has already been observed. During the summer of 2005 and during 2006 to 2011, it was noted that at the eastern part of the Thessalian Plain and in northern Greece, although both forms were initially represented in equal proportions, the violet-flowered plants gradually became more abundant as a result of the dominance of the violet-flowered gene or to the higher competitive ability to attract a pollinator and thus secure fruit-set. Pollination is effected by *Apis mellifera*, the honeybee (Figs. 14c & d).

Material collected by Tsialtas was cultivated at the Aristotle University Farm in Thessaloniki. Morphometric measurements were taken based on 18 accessions raised from seed and mature plants.

A description of *D. stramonium* f. *tatula* in Greece follows:

Erect herbaceous annual 0.5–1.9 m tall. Stems hollow, glabrous or pubescent, with mostly forked, ascending branches. Petioles up to 12 cm long. Leaves alternate, ovate to elliptic, 5–25 × 4–25 cm, acute, cuneate to sub-cordate at base, sinuate-dentate to lobed, rarely entire, glabrescent, dark green above, strongly foetid. Flowers axillary, solitary, actinomorphic, shortly pedicellate. Corolla trumpet-shaped, 5–10 cm long, 5-dentate at margin, pale lilac to purplish-violet with darker coloured spot at base, vespertine, highly fragrant at anthesis (Fig. 14e). Capsule erect, oblong-ovoid, 3–7 × 2–5 cm, densely covered with unequal green or purple spines, with those on lower part of fruit shorter than those at upper half, dehiscent by 4 (–6) valves (Fig. 14f). Seeds numerous, reniform, 3–4 × 2–3 mm, irregularly rugose, ripening black (Fig. 14g). Cotyledons linear-lanceolate, 10–50 × 2–10 mm, often sparsely hairy; first leaves ovate, entire to subentire, acute, purplish on veins and surface beneath (Fig. 14h).

Reports 131–132

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Scrophulariaceae

131. *Veronica persica* Poir.

Tu(E) A1(E) Edirne: Centre, Karağaç, in the campus of Faculty of Art, and at the roadsides between Karağaç and Pazarkule, 23 m, 41°39'28"N, 26°31'25"E, 03.02.2013, coll. & det. S. Tütüncü Konyar (EDTU 13242).

New for A1(E) Edirne in European Turkey. So far the species has been known from A1(E) Tekirdağ and A2(E) Istanbul (Fischer 1978).

Tamaricaceae

132. *Tamarix parviflora* DC.

Tu(E) A1(E) Edirne: Centre, in the Balkan Campus of Trakya University and at the roadsides, 26 m, 41°40'28"N, 26°33'39"E, 06.04.2012, coll. & det. S. Tütüncü Konyar (EDTU 13244).

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

Reports 133–140

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Caryophyllaceae

133. *Minuartia recurva* (All.) Schinz & Thell.

Bu Valley of River Mesta: in dry grasslands around Gospodintsi village, 41.65759°N, 23.74062°E, GM-21, 27.06.2012, coll. K. Vassilev (SOM 168828).

It is an accompanying species in the xerothermic communities of class *Thero-Brachypodietea* and alliances *Saturejion montanae* and *Festucion valesiaca* of class *Festuco-Brometea*. They have open to semi-open horizontal structure. Soils are shallow and eroded, skeletal, with occurrence of many annual species such as *Sedum rubens*, *Apera spica-venti*, *Aira elegantissima*, *Trachynia distachya*, *Alyssum minus*, *Medicago minima*, and *Arenaria serpyllifolia*. So far *Minuartia recurva* has been known from seven floristic regions in the country and has never been reported from the Valley of River Mesta (Assyov & Petrova 2012).

Ericaceae

134. *Arctospahylos uva-ursi* (L.) Spreng.

Bu Znepole Region: Mt Ruy, in xero-mesophytic grasslands under peak Ruy, FN-24, 12.07.2009, coll. K. Vassilev (SOM 168326).

It is a new species for this floristic region locally distributed on the NE slope of peak Ruy.

Fabaceae

135. *Trifolium angustifolium* L.

Bu Mt Slavyanka: above Petrovo village, in grassland communities along the road, GL-09, 26.06.1992, coll. I. Pashaliev (SOM 151158).

— Rhodopi Mts (*Western*): in xerothermic grasslands between Debrene village and Satovcha town, 41.57686°N, 23.89030°E, GM-40, 21.06.2012, coll. K. Vassilev (SOM 168843).

A new species for these floristic regions.

Lamiaceae

136. *Thymus atticus* Čelak.

Bu Rhodopi Mts (*Western*): in xero-mesophytic grasslands near Debrene village, 41.57109°N, 23.83133°E, FM-90, 21.06.2012, coll. K. Vassilev (SOM 168837).

This Balkan endemic is distributed in the southern part of the country. Its communities are rich of xerothermic species, such as *Helianthemum salicifolium*, *Fumana procumbens*, *Thymus* spp., *Dichanthium ischaemum*, *Poa bulbosa*, *Sedum sartorianum*, *Xolanthes guttatus*, *Aira elegantissima*, and *Trachynia distachya*. They belong to the *Festuco-Brometea* and *Thero-Brachypodietea* classes. The species is new for this floristic region in the country.

137. *Thymus callieri* Velen.

Bu Mt Sredna Gora (*Western*): in xerothermic grasslands between Pchelin and Ochusha villages, 42.35714°N, 23.75940°E, 02.08.2012, GM-29, coll. K. Vassilev (SOM 168812); in dry grasslands between Panagyuriste and Zlatitsa towns, 42.56001°N, 24.21519°E, 03.08.2012, KH-71, coll. K. Vassilev (SOM 168813); in dry grasslands between Kostenets town and Gorna Vasilitsa village, 42.32802°N, 23.84425°E, 02.08.2012, GM-39, coll. K. Vassilev (SOM 168814); along the road towards Pirdop town, 10.06.2003, KH-63, coll. G. Cherneva (SOM 160290)

— Pirin Mts (*Northern*): in grasslands around Senoklas village, 41.85200°N, 23.17830°N, FM-83, 03.07.2010, coll. K. Vassilev (SOM 168482).

This is a new species for these floristic regions.

138. *Thymus comptus* Friv.

Bu Vitosha Region: Mt Verila, in dry grasslands near Kraynitsi village, 42.34860°N, 23.23403°E, FM-89, 05.06.2010, coll. K. Vassilev & H. Pedashenko (SOM 168480, 168479).

— Valley of River Mesta: in dry grasslands around Gospodintsi village, 41.65895°N, 23.72731°E, 21.06.2012, GM-21, coll. K. Vassilev (SOM 168838).

— Mt Sredna Gora (*Western*): in grasslands near Klisura town, 42.68250°N, 24.49554°E, KH-92, 21.06.2011, coll. K. Vassilev & H. Pedashenko (SOM 168471).

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

Plantaginaceae

139. *Plantago afra* L.

Bu Valley of River Mesta: in dry grasslands around Gospodintsi village, GM-21, 21.06.2012, coll. K. Vassilev (SOM 168845).

— Pirin Mts (*Northern*): in dry grasslands around

Senoklas village, 41.82896°N, 23.18690°E, FM-83, 03.07.2010, coll. K. Vassilev (SOM 168481).

According to Assyov & Petrova (2012), this species is known from two floristic regions in Bulgaria: the Valley of River Struma and Thracian Lowland. It has local distribution in the Valley of River Mesta and Pirin Mts (*Northern*) on eroded and shallow soils, especially on the southern and eastern slopes. Communities of *Plantago afra* belong to the class *Thero-Brachypodietea*. They are rich in xerothermic species, such as *Aira elegantissima*, *Sedum rubens*, *Crepis sancta*, *Alyssum desertorum*, *Xolanthes guttatus*, *Trifolium strictum*, *Veronica verna*, *Bromus squarrosus*, *Moenchia graeca*, etc.

Alliaceae

140. *Allium saxatile* M. Bieb.

Bu Forebalkan (*Western*): in grasslands around Dolna Brestovitsa village, 43.18942°N, 23.92434°E, GN-38, 23.08.2012, coll. K. Vassilev (SOM 168787).

This species takes part in the dry grasslands of the alliance *Saturejion montanae*. It is distributed in 11 floristic regions in Bulgaria and has never been reported for the Forebalkan (*Western*).

Reports 141–144

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Caryophyllaceae

141. *Minuartia bulgarica* (Velen.) Graebn.

Bu Valley of River Struma (*Northern*): in stony grasslands near Chetirtsitsi village, 42.22440°N, 22.86988°E, FM-57, 05.06.2010, coll. K. Vassilev & H. Pedashenko (SOM 168475).

This Balkan endemic is distributed in Bulgaria, Macedonia and Serbia (Petrova & Vladimirov 2010). This is a new floristic region for *Minuartia bulgarica* in the country. The species takes part on eroded terrains in the xerothermic grassland communities of alliances *Saturejion montanae* and *Festucion valesiaca*. Its accompanying species are also *Festuca valesiaca*, *Festuca dalmatica*, *Helianthemum salicifolium*, *Fumana procumbens*, and *Thymus striatus*.

Crassulaceae

142. *Sedum rubens* L.

Bu Pirin Mts (*Northern*): in dry grasslands around Brezhani village, 41.86577°N, 23.19745°E, FM-83, 03.07.2010, coll. K. Vassilev (SOM 168483).

A new species for this floristic region.

Fabaceae

143. *Chamaecytisus jankae* (Velen.) Rothm.

Bu Valley of River Struma (*Southern*): near Boboshevo town, FM-66, 31.05.1965, coll. P. Panov (SOM 165523).
— Mt Sredna Gora (*Western*): in mesophytic grasslands around Koprivstitsa town, 42.70923°N, 24.33847°E, KH-82, 20.06.2011, coll. K. Vassilev & H. Pedashenko (SOM 168441).
— Thracian Lowland: Vodentsi village, Haskovo district, 350–400 m, LG-91, 21.05.1976, coll. V. Velchev & P. Vasilev (SOM 136999).

This Balkan endemic is widely distributed in the xerothermic and xero-mesophytic grasslands of the class *Festuco-Brometea* in Bulgaria. Its communities have open to semi-open horizontal structure, the soils are shallow to moderately deep and frequently eroded. So far *Chamaecytisus jankae* has been known from 11 floristic regions in the country (Petrova & Vladimirov 2010; Assyov & Petrova 2012). This is a new floristic region for this species.

Iridaceae

144. *Crocus olivieri* J. Gay

Bu Pirin Mts (*Southern*): in calcareous grasslands SW of Koprivlen village, 41.48875°N, 23.76083°E, GL-39, 27.03.2012, coll. H. Pedashenko (SOM 168335).

It is a new species for this floristic region.

Reports 145–146

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Cactaceae

145. *Opuntia humifussa* (Raf.) Raf. (Fig. 15)

Bu Forebalkan (*Eastern*): Devetashko Plateau, W of Gorsko Slivovo village, limestone rocky area near the entrance of Garvanitsa cave, ca. 370 m, 43.21218°N, 25.04727°E, 27.06.2012, V. Vladimirov obs. (photo).

A new species for this floristic region. Apparently the first specimens were intentionally planted for ornamental purposes some years ago but now the species is spreading in the area and occupies about 30–40 m². Most of the plants are flowering and fruiting.



Fig. 15 & 15a. *Opuntia humifusa* (photo V. Vladimirov).

Lamiaceae

146. *Salvia nutans* L.

Bu Forebalkan (*Western*): hill SW of Montana town, S-exposed rocky slopes, limestone, ca. 315 m, 43.40511°N, 23.18395°E, 05.06.2010, coll. V. Vladimirov (SOM).

A new species for this floristic region.

Reports 147–153

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

Asteraceae

147. *Echinops graecus* Mill. (Figs. 16 & 16a)

Gr Nomos & Eparchia Korinthias: road margin at the south side of the Corinth canal, near bridge to the village of Isthmia, 6 m, 37°55'N, 23°04'E, 11.05.2012, Zarkos obs. (photos, conf. Kit Tan, February 2013).

Confirming Maire & Petitmengin's early record (05.08.1906) from cultivated fields at Corinthos, apparently not recollected from mainland Peloponnese for more than a hundred years.



Figs. 16 & 16a. *Echinops graecus* (photo G. Zarkos).

Loranthaceae

148. *Loranthus europaeus* Jacq. (Figs. 17 & 17a)

Gr Nomos & Eparchia Korinthias: on trees along the road from Kiato to near Kesari, 780 m, 37°57'N, 22°34'E, 19.01.2013, Zarkos & Christodoulou obs.; Kesari to Throfari, 840 m, 37°59'N, 22°35'E, 9.11.2007 and 19.01.2013, Zarkos & Christodoulou obs. (photos, conf. Kit Tan, February 2013); Mougosto forest, 890 m, 37°59'N, 22°36'E, 27.05.2010, Zarkos & Christodoulou obs. (photos).

New for eparchia and nomos Korinthias. Hemi-parasitic on trees of *Quercus pubescens* and *Q. frainetto*,

covered with bright yellow fruits towards the end of January and forming conspicuous growths more than 1 m in diameter on the oak branches.



Figs. 17 & 17a. *Loranthus europaeus* (photo V. Christodoulou).

Polygalaceae

149. *Polygala rausiana* Raabe & al.

Gr Nomos & Eparchia Korinthias: near the village of Throfari, 750 m, 38°01'N, 22°36'E, 03.05.2012, *Zarkos* & *Christodoulou* obs. (photos, det. Kit Tan, February 2013).

An additional locality for this recently described species. There were several plants between shrubs of *Genista acanthoclada*, along an abandoned forest road in an area burnt in 1999.

Alismataceae

150. *Alisma lanceolatum* With. (Fig. 18)

Gr Nomos & Eparchia Korinthias: near village of Velo, 10 m, 37°59'N, 22°46'E, 10.05.2012, *Zarkos* & *Christodoulou* obs. (photos, conf. Kit Tan, February 2013).

New for eparchia and nomos. Several plants in wet ditch at margin of Old National Road from Corinthos to Kiato. *Alisma gramineum* is the other species of *Alisma* recorded from Korinthias, collected at Lake Stymfalia.



Fig. 18. *Alisma lanceolatum* (photo V. Christodoulou).

Iridaceae

151. *Crocus sieberi* subsp. *atticus* (Boiss. & Orph.) B. Mathew (Fig. 19)

Gr Nomos & Eparchia Korinthias: road margins from Corinthos to Epidavros, near Almiri village, 350 m, 37°49'N, 23°05'E, 06.02.2010 & 10.02.2011, *Zarkos* obs. (photos, conf. Kit Tan, February 2013); in openings of *Pinus halepensis* woodland near Sofiko village, 370 m, 37°47'N, 23°07'E, 30.01.2013, *Christodoulou* obs. (photos, conf. Kit Tan, February 2013).

New for eparchia and nomos. Second record for the Peloponnese, the first being from the Methana Peninsula in Nomos Attikis, Eparchia Trizinias.



Fig. 19. *Crocus sieberi* subsp. *atticus* (photo G. Zarkos).

152. *Romulea columnnae* Sebast. & Mauri (Fig. 20)

Gr Nomos & Eparchia Korinthias: roadside 3 km W-SW of Velo village, 126 m, 37°58'N, 22°44'E, 19.02.2010, *Zarkos* & *Christodoulou* obs. (photos, conf. Kit Tan, February 2013); *loc. ibid.*,

29.01.2010, 05.02.2010 & 24.02.2012, Zarkos & Christodoulou obs.

New for eparchia and nomos. With *Anemone pavonina*, *Barlia robertiana*, *Muscari commutatum* and *Ophrys* spp.



Fig. 20. *Romulea columnae* (photo V. Christodoulou).

Liliaceae s.l.

153. *Bellevalia trifoliata* (Ten.) Kunth (Fig. 21)

Gr Nomos & Eparchia Korinthias: near the Ancient Theatre of Sikyon, 240 m, 37°58'N, 22°42'E, 20.03.2008, Zarkos & Christodoulou obs. (photo, conf. Kit Tan, February 2013); Kiato, 5 m, 38°00'N, 22°45'E, 01.04.2012, Zarkos & Christodoulou obs. (photo, conf. Kit Tan, February 2013).

An interesting discovery, the records are new for mainland Peloponnese. The species has, however, been collected from the offshore islands of Aegina and Kithira. In Greece, recorded only from the E Aegean islands, Crete and Karpathos. *Bellevalia trifoliata* can be considered an archaeophyte weed, i.e., introduced by man in earlier times intentionally or unintentionally, and becoming established, spreading effectively either vegetatively or by seed. Archaeophytes are usually restricted to man-made habitats, including cereal fields. At Sikyon, 2–3 plants were found five years ago, in waste ground surrounding the cereal fields but a motorcycle race-track has now been constructed and the plants were not sighted this year. There were more than a 100 individuals observed in Kiato, in a grassy plot together with *Allium* and *Galium verum*. However, it was difficult to investigate the area as the surrounding fields were fenced and the owners wary of intruders.



Fig. 21. *Bellevalia trifoliata* (photo G. Zarkos).

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