New floristic records in the Balkans: 19 reports 85-104

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New floristic records in the Balkans: 19*

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Abstract: New chorological data are presented for 140 species and subspecies from Bulgaria (1-3, 40-84, 105-109, 114-129, 137-140), Greece (4-39, 85-104, 130-136) and Turkey-in-Europe (110-113). The taxa belong to the following families: *Amaryllidaceae* (70), *Apiaceae* (50, 60, 85), *Asteraceae* (1-5, 61-64, 74, 75, 86, 87, 105, 130), *Balsaminaceae* (76), *Brassicaceae* (65, 88, 89), *Cactaceae* (49), *Campanulaceae* (77), *Caprifoliaceae* (137), *Caryophyllaceae* (6, 51, 66, 67, 131, 132), *Cistaceae* (90), *Convolvulaceae* (78), *Crassulaceae* (114), *Cyperaceae* (35-37, 46, 100-102), *Euphorbiaceae* (7, 52), *Fabaceae* (8-13, 68, 69, 91-94, 106-109), *Fumariaceae* (14), *Gentianaceae* (15), *Geraniaceae* (40), *Grossulariaceae* (138), *Iridaceae* (55, 71), *Lamiaceae* (16-18, 95, 96), *Liliaceae* s.l. (38, 39, 47, 48, 56, 57, 72, 103, 104), *Loranthaceae* (41), *Lythraceae* (19, 79), *Malvaceae* (20, 21), *Onagraceae* (22, 23), *Orchidaceae* (58, 59, 73, 82, 83), *Orobanchaceae* (42), *Phytolaccaceae* (43), *Plantaginaceae* (44), *Poaceae* (84, 117-129), *Polygonaceae* (24-26), *Potamogetonaceae* (27), *Ranunculaceae* (28, 29, 97), *Rosaceae* (30, 80, 133, 134, 139), *Rubiaceae* (31-33, 81), *Salicaceae* (140), *Scrophulariaceae* (34, 45, 98, 115, 135, 136), *Solanaceae* (53), *Tetragoniaceae* (99), *Valerianaceae* (116) and *Violaceae* (54, 110-113).

First reports for a country are: Greece – *Asparagus verticillatus* (39), *Oenothera fallax* (22) and *O. suaveolens* (23).

A new species is described: *Sagina stridii* Kit Tan & al. (131).

The publication includes contributions by: S. Bancheva, V. Vladimirov & M. Delcheva (1-3), B. Biel & Kit Tan (4-39), N. Grozeva, B. Petkov & A. Petrova (40-48), R. Kenderova (49), A. Petrova, G. Trifonov & D. Venkova (50-59), A. Petrova, R. Vassilev & I. Gerasimova (60-73), A. Petrova, D. Venkova, R. Vassilev & N. Nikolov (74-84), K. Polymenakos & Kit Tan (85-104), S. Stoyanov (105-109), M. Türkoğlu & F. Dane (110-113), K. Vassilev & H. Pedashenko (114-129), G. Zarkos, V. Christodoulou & Kit Tan (130-136), J. Zieliński & A. Petrova (137-140).

This is the nineteenth 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 1–3

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Asteraceae

1. *Centaurea diospolitana* (Bancheva & Stoyanov) Bancheva

Bu Tundzha Hilly Country: Sakar Mt, W of Ustrem village (Haskovo Province), at the periphery of dry, stony grasslands in thermophilous oak forests and brushwood, 240 m, 42.02299°N, 26.42442°E, 19.05.2012, coll. *S. Bancheva*, *V. Vladimirov* & *M. Delcheva* (SOM 168719).

The species has been recently described (Bancheva & Stoyanov 2009) from four localities in Derventski Vazvishenia Mt (= Derventski hills), Yambol Province. New for Sakar Mt in the same floristic region. The population comprises several hundreds of individuals.

2. *Centaurea kamciensis* Kočev & S.P. Gančev (Fig. 1)

Bu Balkan Range (*Eastern*): on cliffs at Chudnite Skali monument, near Asparuhovo village (Varna Province), 150 m, 42.96546°N, 27.29154°E, 13.06.2012, *S. Bancheva*, *V. Vladimirov* & *M. Delcheva* obs. (photo); *loc. ibid.*, 42.96797°N, 27.29162°E, 26.07.2012, coll. *S. Bancheva*, *V. Vladimirov* & *M. Delcheva* (SOM 168720).

Centaurea kamciensis is a Bulgarian endemic, one of the rarest species in the Bulgarian flora. It was collected in the same locality on 13.07.1962 by the Hungarian botanist T. Pócs (BP 482449!, sub *C. kerneriana* subsp. *myrabilis* Pócs, *nom. nud.*). In fact, the species was described in 1968 by the Bulgarian botanists H. Kočev and S. Gančev who collected the taxon in Prisovit locality near Asparuhovo village, Dalgopol Municipality. Since then the species has not been collected again and has been known only with the type gathering (SOM 87520!). Although the locality lies in Northeast Bulgaria close to the south border of the floristic region, we prefer to retain it in the Balkan Range (*Eastern*) floristic region as the taxon was originally published.

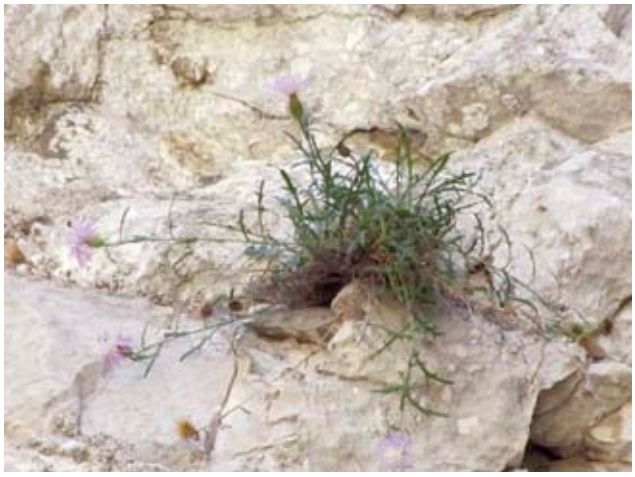

Fig. 1. *Centaurea kamciensis* (photo M. Delcheva).

3. *Leontodon saxatilis* Lam.

Bu Balkan Range (*Central*): pavements along the streets near the center of Kalofer town, *ca.* 600 m, 42.61194°N, 24.97685°E, 29.07.2012, coll. *V. Vladimirov*, *S. Bancheva* & *M. Delcheva* (SOM 168721).

A recently reported species for the Bulgarian flora, so far recorded in Balkan Range (*Western*) floristic subregion (Dimitrova & al. 2005; Vladimirov & Petrova 2010). Probably occurring in the meadows in the vicinities of the town from where seeds of the species arrived.

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Reports 4–39

Burkhard Biel[1] & Kit Tan[2]

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This is the eighteenth report of new plant-records for the island of Samothraki (N Aegean islands, Nomos Evrou, Eparchia Samothrakis) based on fieldwork 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

4. *Hypochoeris cretensis* (L.) Bory & Chaub.

Gr Samothraki: E-NE of Pachia Ammos, steep rocky granitic slope above stream, 100 m, 40°24'11"N, 25°37'08"E, 19.05.2010, *Biel* 10.677.

Recorded from the island of Thasos in the N Aegean area.

5. *Leontodon hispidus* L. s.str.

Gr Samothraki: Therma, wet area with source of thermal spring at bath house, 40 m, 40°29'48"N, 25°36'14"E, 05.04.2006, *Biel* 06.139; E-SE of Chora, rocky hill slope with open phrygana, on granite and schist, 900 m, 40°27'46"N, 25°33'33"E, 11.06.2008, *Biel* 08.125; Chora, road margins and wall crevices, 260 m, 40°28'20"N, 25°31'32"E, 12.05.2010, *Biel* 10.481; NW of Anomeria-Kerasia, fenced pasture at forest margin, on basalt and porphyr, 230 m, 40°26'51"N, 25°40'09"E, 08.02.2011, *Biel* 11.024.

New for the N Aegean area.

Caryophyllaceae

6. *Minuartia recurva* (All.) Schinz & Thell. subsp. ***recurva*** (incl. *M. recurva* subsp. *condensata* (C. Presl) Greuter & Burdet) (Fig. 2)

Gr Samothraki: SW of Therma, cushion phrygana on rocky ridge NW of Fengari peak, 1580 m, 40°27'48"N, 25°35'04"E, 26.06.2007, *Biel* 07.273; *loc. ibid*., 20.07.2009, *Biel* 09.265; S of Therma, open cushion phrygana at Louloudi plateau, 1470 m, 40°26'56"N, 25°35'56"E, 19.06.2008, *Biel* 08.279; *loc. ibid*., 23.07.2009, *Biel* 09.298; S of Therma, open cushion phrygana at Louloudi, SE ridge, 1380 m, 40°26'56"N, 25°35'56"E, 23.07.2009, *Biel* 09.297.

Fig. 2. *Minuartia recurva* (photo B. Biel).

New for the N Aegean area and apparently the first report for the Greek islands. Restricted to the central and eastern rocky slopes of the Saos ridge where 14 separate gatherings were made. The violet-tinged sepals are 2.8–3.5 (–4) mm long, the stems (0.7–)1–3(–4) cm, the inflorescences (1–) 2–4 (–7)-flowered and the seed capsules 4 mm long, thus showing some variation from typical *M. recurva* as encountered on the mainland.

Euphorbiaceae

7. *Chamaesyce maculata* (L.) Small

Gr Samothraki: SW of Kamariotissa, ruderal places near harbour, 3 m, 40°28'40"N, 25°28'20"E, 06.11.2008, *Biel* 08.388; E-NE of Palaeopolis, rocky coastal slope with ruderal vegetation, 5 m, 40°30'16"N, 25°31'55"E, 19.07.2009, *Biel* 09.232.

Recorded from Thasos. Naturalized; scattered in open, mostly sandy ground at low altitudes.

Fabaceae

8. *Astragalus echinatus* Murr.

Gr Samothraki: E-NE of Pachia Ammos, gravelly beach at mouth of Vatos river, 15 m, 40°23'43"N, 25°36'13"E, 07.05.2010, *Biel* 10.319; *loc. ibid*., 07.05.2011, *Biel* 11.156; Pachia Ammos, sandy beach with small dunes and *Vitex* scrub, 7 m, 40°23'45"N, 25°34'46"E, 07.05.2011, *Biel* 11.132.

New for the N Aegean area, recorded from Peloponnese and the S Aegean area.

9. *Astragalus sinaicus* Boiss.

Gr Samothraki: S-SW of Kamariotissa, gravelly southeastern edge of coastal lagoon, 4 m, 40°29'26"N, 25°27'41"E, 04.05.2010, *Biel* 10.144; S of Chora, heavily grazed *Sarcopoterium*-phrygana with scattered *Pinus* and *Pyrus* near the saddle (above the sports field), on schist and porphyr, 280 m, 40°28'11"N, 25°31'29"E, 06.05.2011, *Biel* 11.103.

Recorded from Thasos and Limnos.

10. *Lathyrus hirsutus* L.

Gr Samothraki: E of Kamariotissa, phrygana and uncultivated field, limestone, 40 m, 40°28'34"N, 25°28'48"E, 08.05.2010, *Biel* 10.348.

Recorded from Thasos.

11. *Medicago littoralis* Loisel.

Gr Samothraki: S of Kamariotissa, edge of coastal field, 30 m, 40°28'11"N, 25°28'26"E, 15.05.2010, *Biel* 10.572.

Recorded from Thasos, Limnos and Ag. Evstratios.

12. *Trifolium striatum* L.

Gr Samothraki: N-NW of Therma, open phrygana beside the road junction, 5 m, 40°30'01"N, 25°36'30"E, 09.06.2008, *Biel* 08.058; phrygana SW of Kamariotissa, heavily grazed slope, 18 m, 40°28'03"N, 25°27'35"E, 04.05.2011, *Biel* 11.069.

New for the N Aegean area.

13. *Vicia hybrida* L.

Gr Samothraki: S of Chora, heavily grazed *Sarcopoterium*-phrygana with scattered *Pinus* and *Pyrus* near the saddle (above the sports field), on schist and porphyr, 280 m, 40°28'11"N, 25°31'29"E, 29.04.2001, *Biel* 01.021.

Recorded from Thasos, Limnos and Ag. Evstratios, widespread in E Greece. Confirming report by Katsikopoulos (1936: 7).

Fumariaceae

14. *Fumaria parviflora* Lam.

Gr Samothraki: SW of Kamariotissa, seasonally flooded wheat field by dirt track, 4 m, 40°28'10"N, 25°27'56"E, 07.06.2008, *Biel* 08.007; SW of Kamariotissa, road margins and uncultivated fields near harbour, 3 m, 40°28'40"N, 25°28'20"E, 03.05.2010, *Biel* 10.022; W-SW of Kamariotissa, uncultivated field near chapel, on coastal limestone, 10 m, 40°28'09"N, 25°27'33"E, 03.05.2010, *Biel* 10.049; E-NE of Kamariotissa, shady stream bank in between fields, 20 m, 40°28'55"N, 25°28'58"E, 03.05.2010, *Biel* 10.073a; Chora, road margins and wall crevices, 260 m, 40°28'20"N, 25°31'32"E, 04.05.2010, *Biel* 10.103; S of Kamariotissa, large wheat field and road margins, 30 m, 40°28'11"N, 25°28'33"E, 15.05.2010, *Biel* 10.566; E of Kamariotissa, ruderal embankment near village, 30 m, 40°28'23"N, 25°28'44"E, 09.02.2011, *Biel* 11.039.

Confirming an earlier record by Stojanov & Kitanov (1944: 429).

Gentianaceae

15. *Centaurium pulchellum* (Swartz) Druce

Gr Samothraki: N of Therma, open gravelly wet areas and ditch E of harbour, 2 m, 40°30'00"N, 25°36'14"E, 09.06.2008, *Biel* 08.052.

Recorded from Thasos, Limnos and Ag. Evstratios. An earlier collection was made near Ag. Kremniotissa, on wet granitic rocks (22.06.1999, *Bigazzi* & *Selvi* s.n., C!).

Lamiaceae

16. *Ballota nigra* subsp. ***meridionalis*** (Bég.) Bég. (= *B. nigra* subsp. *unciata* (Fiori & Bég.) Patzak)

Gr Samothraki: roadsides and walls in centre of Therma, on porphyr and basalt, 50 m, 40°29'38"N, 25°36'31"E, 12.06.2000, *Biel* 00.059; SW of Kamariotissa, waste ground near harbour, on basalt and loamy soil, 3 m, 40°28'40"N, 25°28'20"E, 24.10.2002, *Biel* 02.135.

Confirming an earlier record by Ade & Rechinger (1938: 132).

17. *Teucrium divaricatum* Boiss.

Gr Samothraki: NE of Pachia Ammos near Kopries, low saddle with cushion phrygana, on granite, 870 m, 40°24'59"N, 25°36'57"E, 30.06.2010, *Biel* 10.791.

Recorded from Thasos and Limnos. Confirming report by Katsikopoulos (1936: 10).

18. *Thymus longicaulis* subsp. ***chaubardii*** (Boiss. & Heldr.) Jalas

Gr Samothraki: hillslope S of Chora, with *Pinus* and small spring, on schist and porphyr, 270 m, 40°28'47"N, 25°31'32"E, 09.06.2000, *Biel* 00.021a.

Recorded from Thasos. Confirming an earlier record by Rechinger (1943: 538) as *T. macedonicus*.

Lythraceae

19. *Lythrum virgatum* L. (Fig. 3)

Gr Samothraki: NE of Therma, heavily grazed area with seasonal flooding, directly behind coastal barrier, surrounded by *Vitex* scrub, 3 m, 40°29'57"N, 25°37'23"E, 21.06.2008, *Biel* 08.302.

New for the N Aegean area and first record from the Greek islands. Confirming report by Katsikopoulos (1936: 8).

Malvaceae

20. *Althaea officinalis* L.

Gr Samothraki: road margins and waste ground in Kamariotissa, 15 m, 40°28'31"N, 25°28'26"E, 12.07.2011, *Biel* 11.399.

Recorded from Thasos.

21. *Lavatera punctata* All.

Gr Samothraki: NE of Alonia, road margins near Moni Ag. Athanasiou, phrygana and open *Quercus* woodland, on limestone and sandstone, 120 m, 40°28'00"N, 25°30'22"E, 10.06.2000, *Biel* 00.044; E of Kamariotissa, phrygana and uncultivated field, on limestone, 40 m, 40°28'34"N,

25°28'48"E, 29.06.2010, *Biel* 10.764; NE of Kamariotissa, embankment above stream, 15 m, 40°28'53"N, 25°29'01"E, 27.06.2011, *Biel* 11.238.

New for the N Aegean area and confirming report by Katsikopoulos (1936: 7).

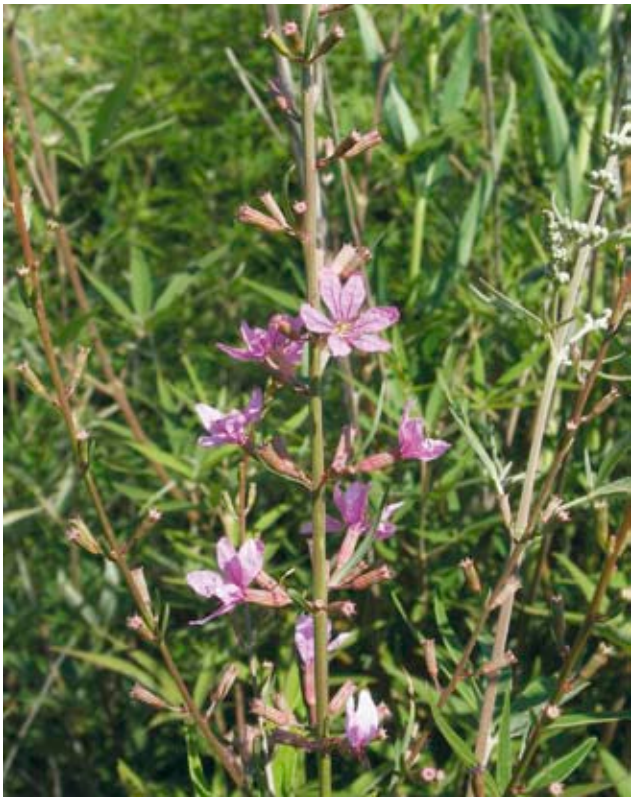

Fig. 3. *Lythrum virgatum* (photo B. Biel).

Onagraceae

22. *Oenothera fallax* Renner

Gr Samothraki: Kamariotissa, road sides and waste ground, 15 m, 40°28'31"N, 25°28'26"E, 12.07.2009, *Biel* 09.128; N of Kamariotissa, grassy road margins, 3 m, 40°28'48"N, 25°28'31"E, 27.06.2011, *Biel* 11.244.

New for Greece. An apparently recent introduction, not noted on island prior to 2009; alien status not yet established. Det. L. Meierott, March 2012.

23. *Oenothera suaveolens* Pers.

Gr Samothraki: Therma, walled cemetery with old trees, near village centre, 40 m, 40°29'45"N, 25°36'32"E, 28.06.2011, *Biel* 11.255.

New for Greece. Recent introduction, first noted June 2010; alien status not yet established. A sizeable stand grows within the walled cemetery, protected against grazing by sheep and goats. Det. L. Meierott, March 2012.

Polygonaceae

24. *Persicaria hydropiper* (L.) Spach

Gr Samothraki: Therma, floating mat, 5 m, 40°30'N, 25°40'E, 26.08.1998, *Schuler* 98/409 (B); S of Anomeria-Isomata, *Quercus* slope, on porphyr and basalt, 120 m, 40°27'45"N, 25°40'12"E, 04.10.2006, *Biel* 06.540; E of Therma, sandy bed of Varades stream, in *Pteridium* opening, 5 m, 40°30'01"N, 25°36'30"E, 20.06.2008, *Biel* 08.297.

New for the N Aegean area.

25. *Rumex obtusifolius* L.

Gr Samothraki: E-NE of Kamariotissa, shady stream bank between fields, 20 m, 40°28'55"N, 25°28'58"E, 03.05.2010, *Biel* 10.075; NE of Therma, heavily grazed area with seasonal flooding, directly behind coastal barrier, surrounded by *Vitex* scrub, 3 m, 40°29'57"N, 25°37'23"E, 05.05.2010, *Biel* 10.213.

Recorded from Thasos.

26. *Rumex palustris* Sm.

Gr Samothraki: N-NW of Therma, open phrygana with intermittent spring beside the road junction, 5 m, 40°30'01"N, 25°36'30"E, 19.06.2007, *Biel* 07.086; Kamariotissa, roadsides and waste ground, 15 m, 40°28'45"N, 25°28'32"E, 08.06.2008, *Biel* 08.045.

New for the N Aegean area and Aegean islands.

Potamogetonaceae

27. *Potamogeton nodosus* Poir. (Fig. 4)

Gr Samothraki: E-SE of Therma, large coastal wetland in alluvial forest W of Fonias river, 2 m, 40°29'34"N, 25°38'48"E, 12.07.2011, *Biel* 11.395.

Recorded from Limnos. Det. van der Weyer, March 2012; identity conf. Kaplan, March 2012.

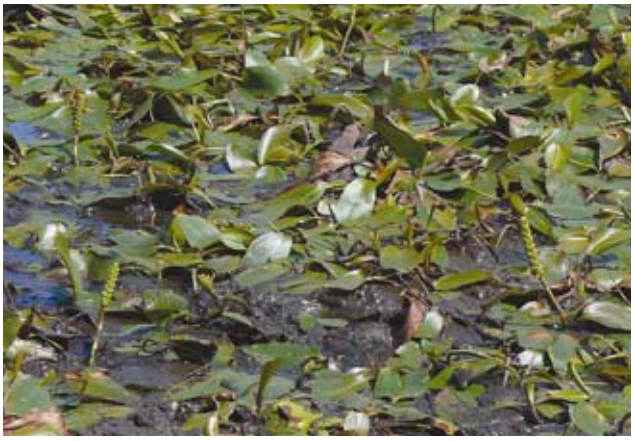

Fig. 4. *Potamogeton nodosus* (photo B. Biel).

Ranunculaceae

28. *Ranunculus thasius* Halácsy

Gr Samothraki: E-NE of Kamariotissa, shady stream bank between fields, 20 m, 40°28'55"N, 25°28'58"E, 17.06.2007, *Biel* 07.042; E-SE of Therma, large coastal wetland in alluvial forest W of Fonias river, 2 m, 40°29'34"N, 25°38'48"E, 20.06.2008, *Biel* 08.294.

Recorded from Thasos.

29. *Ranunculus trichophyllus* Chaix

Gr Samothraki: NE of Therma, heavily grazed area with seasonal flooding, directly behind coastal barrier, surrounded by *Vitex* scrub, 3 m, 40°29'57"N, 25°37'23"E, 03.11.2008, *Biel* 08.348.

Recorded from Thasos and Limnos.

Rosaceae

30. *Crataegus heldreichii* Boiss. (Fig. 5)

Gr Samothraki: E-SE of Kamariotissa, road margin and orchard, on limestone and marly loam, 30 m, 40°28'53"N, 25°28'54"E, 11.05.2001, *Biel* 01.107; E of Kamariotissa, open *Quercus coccifera* slope with phrygana and *Pyrus* trees, on flysch, 30 m, 40°28'53"N, 25°29'00"E, 26.05.2002, *Biel* 02.002; E-NE of Alonia, open *Quercus* forest near abandoned irrigation channel, on porphyr, 240 m, 40°27'45"N, 25°31'32"E, 10.06.2008, *Biel* 08.106; N-NW of Ano Karyotes, coastal phrygana with small damp areas, 2 m, 40°30'30"N, 25°34'45"E, 10.05.2010, *Biel* 10.418; E of Xiropotamos, steep rocky slope of valley, 460 m, 40°27'05"N, 25°32'50"E, 11.05.2010, *Biel* 10.457.

New for the N Aegean area. Confirming the earlier report by Katsikopoulos (1936: 8).

Rubiaceae

31. *Galium capitatum* Bory & Chaub.

Gr Samothraki: N of Pachia Ammos, meadow on rocky slope above Aloni to Riaki river, 400 m, 40°25'21"N, 25°35'06"E, 24.06.2007, *Biel* 07.212; SE of Therma, field of *Pteridium* on slope below Aetos, 550 m, 40°28'29"N, 25°37'58"E, 09.05.2010, *Biel* 10.385.

New for the N Aegean area.

32. *Galium recurvum* DC.

Gr Samothraki: NE of Therma, heavily grazed area with seasonal flooding, directly behind coastal barrier, surrounded by *Vitex* scrub, 3 m, 40°30'11"N, 25°36'48"E, 19.06.2007, *Biel* 07.101c.

Recorded from Thasos.

33. *Valantia muralis* L.

Gr Samothraki: SE of Palaeopolis, scrub within archaeological site, 40 m, 40°30'00"N, 25°32'00"E, 15.06.2000, *Biel* 00.097; Pachia Ammos, sandy beach with small dunes and *Vitex* scrub, 7 m, 40°23'45"N, 25°34'46"E, 06.05.2010, *Biel* 10.291; E of Pachia Ammos beach, coastal conglomerate cliff and granitic gravel, *ca.* 50 m, 40°23'44"N, 25°35'35"E, 07.05.2010, *Biel* 10.302.

Recorded from Thasos and Limnos. Confirming the report by Katsikopoulos (1936:8). Twelve other localities were noted in the surroundings of Anomeria, Chora, Kamariotissa, Profitis Ilias, Therma and Xiropotamos.

Scrophulariaceae

34. *Gratiola officinalis* L. (Fig. 6)

Gr Samothraki: NE of Therma, large coastal wetland in alluvial forest, 3 m, 40°29'00"N, 25°37'06"E,

Fig. 5. *Crataegus heldreichii* (photo B. Biel).

Fig. 6. *Gratiola officinalis* (photo B. Biel).

31.05.2002, *Biel* s.n.; wet meadow in alluvial forest, 2 m, 40°30'07"N, 25°37'06"E, 06.05.2010, *Biel* 10.249; *loc. ibid*., 18.05.2010, *Biel* 10.666.

Confirming a report by Katsikopoulos (1936:10).

Cyperaceae

35. *Bolboschoenus glaucus* (Lam.) Sm.

Gr Samothraki: E-NE of Palaeopolis, wet places on gravelly beach with *Vitex* scrub, 2 m, 40°30'16"N, 25°31'55"E, 19.07.2009, *Biel* 09.237; W-SW of Kamariotissa, gravelly beach west of the large Ag. Andreas lagoon, 3 m, 40°28'16"N, 25°27'17"E, 27.06.2011, *Biel* 11.219.

Recorded from Limnos. *Bolboschoenus maritimus* was noted in 14 different localities on Samothraki, but never together with *B. glaucus*.

36. *Cyperus fuscus* L. (Fig. 7)

Gr Samothraki: NE of Therma, heavily grazed area with seasonal flooding, directly behind coastal barrier, surrounded by *Vitex* scrub, 3 m, 40°29'57"N, 25°37'23"E, 31.05.2002, *Biel* 02.130; SE of Anomeria, wet roadside slopes, on basalt and schist, 80 m, 40°27'28"N, 25°40'01"E, 04.10.2006, *Biel* 06.538.

New for the N Aegean area. Mainly in permanently wet places (5 separate gatherings).

Fig. 7. *Pycreus flavescens* (left) and *Cyperus fuscus* (photo B. Biel).

37. *Pycreus flavescens* (L.) Rchb. (Fig. 7)

Gr Samothraki: E-SE of Therma, large coastal wetland in alluvial forest W of Fonias river, 2 m, 40°29'34"N, 25°38'48"E, 01.10.2006, *Biel* 06.425; NE of Therma, heavily grazed area with seasonal flooding, directly behind coastal barrier, surrounded by *Vitex* scrub, 3 m, 40°29'57"N, 25°37'23"E, 03.11.2008, *Biel* 08.346; SE of Anomeria, wet places at roadside slopes, 80 m, 40°27'31"N, 25°40'01"E, 17.07.2009, *Biel* 09.211; SW of Anomeria-Isomata, wet places on *Quercus* slope above road, on porphyr and basalt, 130 m, 40°25'54"N, 25°40'18"E, 17.07.2009, *Biel* 09.218; E of Profitis Ilias, steep rocky slope above *Platanus* edged stream, 620 m, 40°25'56"N, 25°33'55"E, 21.07.2009, *Biel* 09.269.

Recorded from Thasos. Mainly in permanently wet places, widely distributed especially on the southern slopes of the island where 22 separate gatherings were made.

***Liliaceae* s.l.**

38. *Asparagus aphyllus* L.

Gr Samothraki: SW of Kamariotissa, phrygana on gravelly limestone slope above coastal field, 10 m, 40°28'09"N, 25°27'33"E, 28.04.2001, *Biel* 01.003.

Recorded from Thasos, Limnos and Ag. Evstratios but apparently rare on Samothraki.

39. *Asparagus verticillatus* L.

Gr Samothraki: SE of Xiropotamos, *Quercus* slope with cemented irrigation channel, 410 m, 40°26'54"N, 25°31'56"E, 11.05.2010, *Biel* 10.471.

New for Greece. Native to C and E Asia. Alien status not yet established. Det. L. Meierott, March 2012.

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

Reports 40–48

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The following reports are from 'Nahodiste na div bozhur' Protected Site. It is situated at *ca.* 9 km SW of Sredets town, Burgas district. It has an area of 84 ha and was declared in 2001 for the protection of a century old oak forest and a large population of *Paeonia peregrina*. According to the floristic division of Bulgaria, the territory lies in Tundzha Hilly Country floristic region. The flora of the protected area was studied in 2009–2011 and 254 species from

57 families were established (Grozeva & al. 2012). Here data about 9 species, new or confirmed for the Tundzha Hilly Country floristic region are reported.

Geraniaceae

40. *Geranium purpureum* Vill.

Bu Tundzha Hilly Country: Protected Site 'Nahodishte na div bozhur', by *Quercus cerris* forest in the central part of the protected area, 250 m, 42°17'21.96"N, 27°10'56.52"E, 02.06.2010, coll. *N. Grozeva* & *B. Petkov* (SOM 168646).

This is the first record of the species for this floristic region. So far known from the neighbouring floristic regions (Assyov & Petrova 2006).

Loranthaceae

41. *Loranthus europaeus* Jacq.

Bu Tundzha Hilly Country: Protected Site 'Nahodishte na div bozhur', *Quercus frainetto* forest at the northern boundary of the protected area, 256 m, 42°17'25.47"N, 27°10'48.57"E, 15.06.2010, coll. *N. Grozeva* & *B. Petkov* (SOM 168642).

New for Tundzha Hilly Country.

Orobanchaceae

42. *Orobanche pubescens* d'Urv.

Bu Tundzha Hilly Country: Protected Site 'Nahodishte na div bozhur', by oak forest in the eastern part of the protected area, among species of *Asteraceae*, 208 m, 42°17'04.66"N, 27°11'23.08"E, 15.05.2010, coll. *B. Petkov* & *N. Grozeva* (SOM 168649).

The species has been known so far from Black Sea Coast, Northeast Bulgaria, Forebalkan, Balkan Range, Mt Slavyanka, Rhodopi Mts and Thracian Lowland (Stoyanov 2009).

Phytolaccaceae

43. *Phytollaca americana* L.

Bu Tundzha Hilly Country: Protected Site 'Nahodishte na div bozhur', along the road E of Malkata Maya, 243 m, 42°17'15.33"N, 27°10'50.66"E, 07.07.2010, coll. *B. Petkov* & *N. Grozeva* (SOM 168643).

Vladimirov (2001) reported this species for some floristic regions in Bulgaria and noted that there are old data of Podpěra (1902) for Tundzha Hilly Country. This information was neglected in the general sources for the Bulgarian flora (e.g. Georgiev 1966; Delipavlov 2003; Assyov & Petrova 2006). Confirming the species for this floristic region.

Plantaginaceae

44. *Plantago argentea* Chaix

Bu Tundzha Hilly Country: Protected Site 'Nahodishte na div bozhur', dry grassland in the western parts, 266 m, 42°17'12.22"N, 27°10'35.57"E, 15.06.2010, coll. *N. Grozeva* & *B. Petkov* (SOM 168644).

New for Tundzha Hilly Country.

Scrophulariaceae

45. *Verbascum xanthophoeniceum* Griseb.

Bu Tundzha Hilly Country: Protected Site 'Nahodishte na div bozhur', stony grassland in the central part, 239 m, 42°17'14.58"N, 27°11'07.88"E, 11.06.2009, coll. *B. Petkov* & *N. Grozeva* (SOA 059715).

A Balkan-Anatolian element, in Bulgaria mostly in the southern part of the country, but not reported for Tundzha Hilly Country (Stefanova-Gateva 1995; Assyov & Petrova 2006).

Cyperaceae

46. *Carex pendula* Huds.

Bu Tundzha Hilly Country: Protected Site 'Nahodishte na div bozhur', wet places in the eastern part, 154 m, 42°16'54.91"N, 27°11'51.55"E, 20.05.2010, coll. *B. Petkov* & *N. Grozeva* (SOM 168641)

New for Tundzha Hilly Country.

Liliaceae **s.l.**

47. *Allium nigrum* L.

Bu Tundzha Hilly Country: Protected Site 'Nahodishte na div bozhur', dry grasslands in the north part, 210 m, 42°17'26.63"N, 27°10'58.89"E, coll. *B. Petkov* & *N. Grozeva* (SOM 168648).

New for Tundzha Hilly Country.

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

Bu Tundzha Hilly Country: Protected Site 'Nahodishte na div bozhur', meadow in the western parts, 266 m, 42°17'12.22"N, 27°10'35.57"E, 19.04.2009, coll. *B. Petkov* & *N. Grozeva* (SOM 168647).

This species is widespread in Bulgaria (Assyov & Petrova 2006), but it has not been reported so far for Tundzha Hilly Country.

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Report 49

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Cactaceae

49. *Opuntia humifusa* (Raf.) Raf.

Bu Pirin Mts (*Southern*): dry grasslands W of Laki village, Hadzhidimovo Municipality, SW exposed slopes with 10–25° inclination, *ca.* 686 m, 41°28'04.2"N, 23°42'53.2"E, 13.05.2012, *R. Kenderova* obs.

New species for the region. Variously sized groups of *Opuntia* with diameter of 30–60 cm to 3–5 m were observed, covering a total area of 0.2–0.3 ha.

Reports 50–59

Antoaneta Petrova[1], Georgi Trifonov[2] & Diana Venkova[1]

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Apiaceae

50. *Foeniculum vulgaris* Mill.

Bu Tundzha Hilly Country: N of Zlati Voivoda village, along the road to Sliven town, group of plants, MH-31, 17.07.2011, coll. *A. Petrova* & *D. Venkova* (SOM 167764).

Observed also along the road Nova Zagora – Zlati Voivoda village as well as in suburbs of Kazanlak town in this floristic region. An anthropophyte, more widespread in Bulgaria than reported in Floras (Peev 1982; Assyov & Petrova 2006, etc.).

Caryophyllaceae

51. *Dianthus superbus* L.

Bu Tundzha Hilly Country: Golyamata Livada meadow in Elaka locality W of Gabarevo village, LH-41, 04.08.2012, coll. *G. Trifonov* (SOM 168615).

New for the floristic region, the altitude of about 400 m is unusually low for the species in Bulgaria.

Euphorbiaceae

52. *Euphorbia maculata* L.

Bu Thracian Lowland: at the bus station in Harmanli town, MG-04, 18.07.2009, coll. *A. Petrova* (SOM 168060); sandy banks of Maritsa river, near the bridge N of Zlokuchane village, KG-67, 31.08.2011, coll. *A. Petrova* (SOM 168061); in the dried up bed of Stryama river near the Trakia Highway, LG-27, 12.10.1994, coll. *D. Stoyanov* (sub *E. chamaecyse*, SO 96887).

A widespread species in the urban areas of the country, quite underestimated and only rarely reported from some floristic regions (Bancheva & al. 2002; Dimitrov & Vutov 2004; Stoyanov 2010).

Solanaceae

53. *Lycium barbarum* L.

Bu Thracian Lowland: Gelemenovo village and its vicinities, large population along the main road to Trakia Highway, 17.10.2010, obs. *A. Petrova*.

An antropophyte, naturalized locally across the country.

Violaceae

54. *Viola montana* L.

Bu Tundzha Hilly Country: edges of streamlet woody vegetation E of Tarnichane village, LH-41, 16.05.2011, coll. *A.S. Petrova* & *D. Venkova* (SOM 167453).

New for this floristic region.

Iridaceaea

55. *Iris sibirica* L.

Bu Tundzha Hilly Country: wet meadows SW of Dunavtsi village, LH-52, 20.05.2011, coll. *A.S. Petrova* & *D. Venkova* (SOM 167453); Elaka locality W of Gabarevo village, LH-41, 04.08.2012, coll. *G. Trifonov* (SOM 168617).

New floristic region for this Euro-Siberian floristic element, comperatively rare in Bulgaria.

Liliaceae s.l.

56. *Paris quadrifolia* L.

Bu Tundzha Hilly Country: wet alder-groove at Golemia Orman place in Elaka locality W of Gabarevo village, *ca.* 400 m, LH-41, 19.07.2012, coll. *G. Trifonov* (SOM 168624).

New for the floristic region.

57. *Veratrum lobelianum* Bernh.

Bu Tundzha Hilly Country: Elaka locality W of Gabarevo village, *ca.* 450 m, LH-41, 19.07.2012, coll. *G. Trifonov* (SOM 168631).

Orchidaceae

58. *Gymnadenia conopsea* (L.) R. Br.

Bu Valley of River Mesta: meadow near Hadzhidimovo village, GM-30, 03.06.1995, coll. *I. Nikolov*, det. *A. Petrova* (SOM 155391).

— Tundzha Hilly Country: meadows W of Dunavtsi village, LH-52, 19.06.2011, coll. *A.S. Petrova* & *D. Venkova* (SOM 167771).

This species is found mainly in mountain and submountain regions in Bulgaria (Stojanov 1964; Andreev 1992; Assyov & Petrova 2006, etc.). The above cited data, confirm its presence at lower altitudes and are the first vouchers for these floristic regions deposited in the main herbaria in Bulgaria. The population in the meadows near Dunavtsi village is a very numerous one, with a few thousands of individuals. These meadows shelter also significant populations of three orchids from the Red List of Bulgaria: *Orchis ustulata*, *Dactylorhiza incarnata* and *Epipactis palustris* (Petrova 2009), as well as *Orchis elegans* and *Platanthera bifolia* and many other species with pretty flowers. That is why they are very impressive in June and are among the best representatives of the habitat 6510 Lowland hay meadows in Bulgaria.

Literature data (Stefanov & Bunkov 1978) exist for the distribution of *G. conopsea* in the floristic region Black Sea Coast (*Southern*): Kokiche locality between Primorsko and Pisarevo villages (NG-67).

59. *Orchis laxiflora* Lam. s.s.

Bu Tundzha Hilly Country: meadows E of Tarnichane village, LH-41,16.05.2011, coll. *A.S. Petrova* & *D. Venkova* (SOM 167491).

A new locality of this vulnerable for Bulgaria species (Petrova 2009). Known for the Tundzha Hilly Country from the vicinities of Tvarditsa and Shivachevo towns.

Reports 60–73

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Apiaceae

60. *Torilis leptophylla* (L.) Rchb. f.

Bu Northeast Bulgaria: steppe grasslands S of Neikovo village, PJ-12, 43.59634°N, 28.41705°E, 15.05.2012, with flowers and fruits, coll. *A. Petrova* (SOM 168682).

New for the floristic region.

Asteraceae

61. *Carduus personata* (L.) Jacq.

Bu Tundzha Hilly Country: Elaka locality W of Gabarevo village, along a brook in the aluvial alder forest, *ca.* 450 m, LH-41, 23.05.2012, with flowers, coll. *A. Petrova* (SOM 168684).

New for the floristic region, on a comparatively low altitude – in Bulgaria the species is mostly mountainous one.

62. *Centaurea trinervia* Willd. (Fig. 8)

Bu Northeast Bulgaria: Tepichkite locality near Nevsha village, Varna district, NH-29, 43.28650°N, 27.31601°E & 43.28738°N, 27.31745°E, 02.06.2012, with flowers and fruits, coll. *A. Petrova* & *R. Vassilev* (SOM 168613).

A Critically Endangered species in Bulgaria, known with a very limited number of individuals from the neighboring Taushan Tepe hill (Petrova 2011a). Here only few single individuals were observed. The relic *Centaurea jankae* Brandza, known from Taushan tepe, was also found at Tepichkite hills.

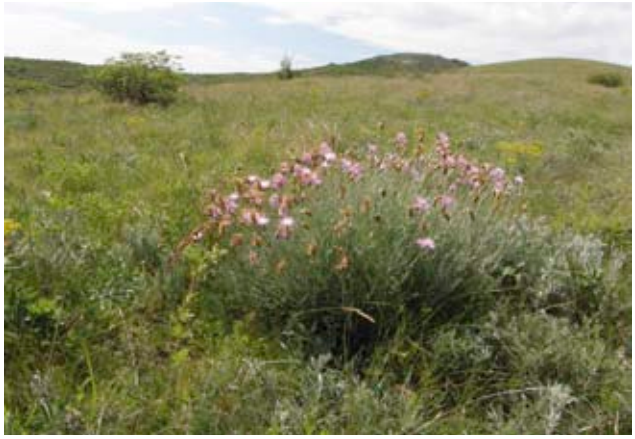

Fig. 8. *Centaurea trinervia* (photo A. Petrova).

63. *Erigeron annuus* (L.) Desf.

Bu Mt Slavyanka: E of Goleshovo village, along the mountain road to Paril hut, grassy places, GL-19, 09.07.2012, coll. *A. Petrova* (SOM 168738).

An alien species, new for this floristic region.

64. *Inula aschersoniana* Janka (Fig. 9)

Bu Pirin Mts (*Southern*): above Musomishta village, limestone rocks in the Musomishki Dol locality, GM-20; 08.07.2012, *A. Petrova*, *R. Vassilev* & *I. Gerasimova* obs.

A Balkan endemic, quite common in the limestone areas in Bulgaria, but not given for the region in the contemporary floristic sources (Peev 1992; Delipavlov 2003; Assyov & Petrova 2006).

Fig. 9. *Inula aschersoniana* (photo A. Petrova).

Brassicaceae

65. *Aurinia uechtritziana* (Bornm.) Cullen & T.R. Dudley

Bu Northeast Bulgaria: an inland dunes W of Venelin village, Varna district, NH-56, 43.05109°N; 27.64890°E, 06.06.2012, coll. *A. Petrova* & *R. Vassilev* (SOM 168671).

New for the floristic region. The locality lies in Kamchia river valley, about 22 km W from the coastal line and at about 2.5 km N of the present river bed. The inland sand dunes are well developed, cover about 3 ha, with a low stony ridge at the top and with 40° average inclination. The vegetation is similar to that of the well known inland sand dunes in Pobiti Kamani phenomenon, that lies some 25 km to the north (Cheshitev & al. 1994; Filipova-Marinova & Petrova 2003; Petrova 2011b). Other psamophyte species found there are *Alyssum borzaeanum*, *Centaurea arenaria*, etc.

Caryophyllaceae

66. *Silene gallinyi* Rchb.

Bu Valley of River Mesta: dry hills N of Ilinden village, 41.46894°N, 23.78986°E, 07.07.2012, with flowers and fruits, coll. *A. Petrova*, *R. Vassilev* & *I. Gerasimova* (SOM 168743).

— Pirin Mts (*Southern*): near Lozenitsa village, on sandy soils, FL-99, 12.07.1957, coll. *V. Velchev*, *S. Petrov* & *S. Ganchev* (SOM 104597, sub *S. trinervia*); dry hills near Breznitsa village, Pirin Mts, GM-21, 29.08.1937, coll. *B. Achtarov* (SOM 23535, sub *S. trinervia*); dry hills above Lilyanovo village, Pirin Mts, FM-90, 08.08.1918, coll. *B. Davidoff* (SOM *s.n.*, sub *S. trinervia*).

— Rhodopi Mts (*Western*): Belovo town, KG-57, 1910, coll. *I. Urumov* (SOM 23526, sub *S. trinervia*).

New for these floristic regions.

67. *Silene frivaldszkyana* Hampe

Bu Northeast Bulgaria: inland dunes W of Venelin village, Varna district, NH-56, 43.05109°N; 27.64890°E, 06.06.2012, coll. *A. Petrova* & *R. Vassilev* (SOM 168739).

— Sofia Region: Kambanite locality near Sofia, on clay-sandy hill, FN-92, 01.08.2008, coll. *A. Petrova* (SOM 164354).

A Balkan endemic species, found on stony and sandy substrates, but not given so far for these floristic regions (Petrova 1992; Assyov & Petrova 2006).

Fabaceae

68. *Astragalus varius* S.G. Gmel.

Bu Northeast Bulgaria: inland dunes W of Venelin village, Varna district, NH-56, 43.05109°N; 27.64890°E, 06.06.2012, coll. *A. Petrova* & *R. Vassilev* (SOM 168672).

New for the floristic region. Observed also on the Malkia Kayryak hill N of Devnya town.

69. *Caragana frutex* (L.) K. Koch

Bu Danubian Plain: hills between Gorna Studena and Varzulitsa village, on clayey marls, 43.42050°N, 25.41433°E, 01.06.2012, coll. *A. Petrova* & *R. Vassilev* (SOM 168612).

A new locality of this locally found in Bulgaria Ponto-Siberian element. Its communities belong to the habitat 40C0 *Ponto-Sarmatic deciduous thickets, included in the Annexes of Directive 92/43/EEC. Here the species forms many small thickets (20–200 m^2 each). Most of them are around groups of oak trees on the crest of the hill, some patches are on the slopes.

Amaryllidaceae

70. *Pancratium maritimum* L. (Fig. 10)

Bu Black Sea Coast (*Northern*): fixed dunes S of the

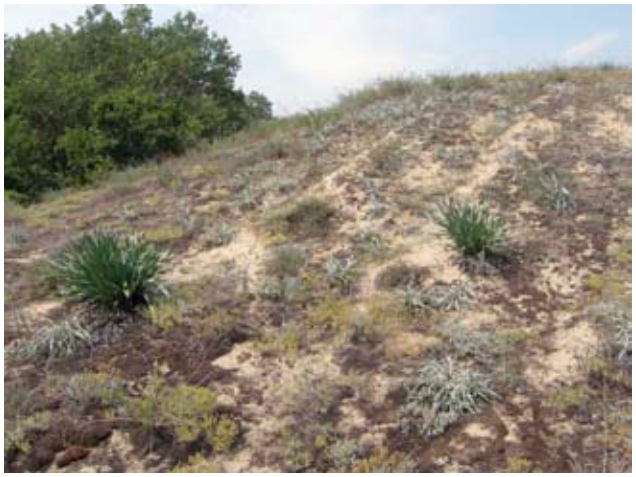

Fig. 10. *Pancratium maritimum* (photo A. Petrova).

Kamchia river mouth, 43.00128°N, 27.88843°E, 05.06.2012, coll. *A. Petrova* & *R. Vassilev* (SOM 168669).

A psammophyte, known from the Southern Black Sea Coast (Assyov & Petrova 2006; Apostolova 2011). This is the first reliable record from the Northern Black Sea Coast. Only 2 large tufts were observed.

Iridaceae

71. *Gladiolus palustris* Gaudin

Bu Pirin Mts (*Southern*): mesophyllous meadow in Popovi Livadi locality, 41.54916°N, 23.66242°E, 08.07.2012, with flowers, coll. *A. Petrova*, *R. Vassilev* & *I. Gerasimova* (SOM 168736).

New for this floristic subregion. A rare species in Bulgaria, locally known, including the Krushe locality in the Northern Pirin Mts (Petrova 2010). A small population was observed (33 plants, of them 11 flowering ones).

Liliaceae s.l.

72. *Bellevalia sarmatica* (Georgi) Woronow (Fig. 11)

Bu Northeast Bulgaria: Tepichkite locality near Nevsha village, Varna district, NH-29, 43.28813°N, 27.31793°E, 02.06.2012, with fruits, *A. Petrova* & *R. Vassilev* obs.

New for the floristic region. *Bellevalia sarmatica* is a Pontic geoelement in the Bulgarian flora. It is evaluated as Critically Endangered for Bulgaria (Petrova 2009). The species has a scattered distribution and, up to now, was known only from the coastal area between Rusalka resort and Balchik town in Bulgaria – floristic subregion Northern Black Sea Coast. Here a small population of few individuals was observed.

Fig. 11. *Bellevalia sarmatica* (photo A. Petrova).

Orchidaceae

73. *Epipactis palustris* (L.) Crantz

Bu Valley of River Mesta: wet places along a small brook near Ilinden village, 41.47766°N, 23.79283°E, 07.07.2012, with flowers, coll. *A. Petrova*, *R. Vassilev* & *I. Gerasimova* (SOM 168747).

A species with a local distribution in Bulgaria, considered Endangered for the country because of the strong, rapid loss of the habitats (Petrova 2009). These are the first reliable data from the Valley of River Mesta floristic region (Assyov & Petrova 2006; Petrova 2011a). Because of the characters of the geomorphology, this very small wet locality is surprisingly well preserved in an area that is generally dry. The population of *E. palustris* comprises more than 200 shoots.

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Reports 74–84

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Asteraceae

74. *Bidens frondosus* L.

Bu Black Sea Coast (*Northern*): Durankulak lake, wet places on the eastern coast, near the water-lock, PJ-23, 18.08.2011, coll. *A. Petrova* (SOM 168042).

— Rhodopi Mts (*Eastern*): Arda river, *ca.* 3 km W of Madzharovo town, MG-00, 18.07.2009, *A. Petrova*, *H. Pedashenko* & *D. Sopotlieva* obs.

An alien species, which spreads rapidly during the past decade (Šumberova & al. 2004; Vladimirov 2006, 2009; etc.).

75. *Cirsium candelabrum* Griseb.

Bu Forebalkan (*Eastern*): Dryanovo town, along the road to Gabrovo, before the tunnel, LH-75, 13.08.2011, coll. *A. Petrova*, *D. Venkova* & *N. Nikolov* (SOM 167799).

This is the first record N of the Balkan Range (Assyov & Petrova 2006).

Balsaminaceae

76. *Impatiens glandulifera* Royle

Bu Znepole Region: E of Velinovo village, along the road to Filipovo village, FN-33, 15.07.2010, coll. *A. Petrova*, *D. Venkova* & *N. Nikolov* (SOM 166119).

— Thracian Lowland: sandy banks of Maritsa river, near the bridge N of Zlokuchane village, KG-67, 31.08.2011, coll. *A. Petrova* (SOM 168062).

Large populations of this alien species were observed in both places.

Campanulaceae

77. *Asyneuma anthericoides* (Janka) Bornm.

Bu Mt Slavyanka: rocky places in Parilski Dol locality, GL-29, 04.08.2010, coll. *A. Petrova* (SOM 166099).

New for the floristic region.

Convolvulaceae

78. *Convolvulus persicus* L.

Bu Black Sea Coast (*Northern*): sandy beach in front of Durankulak Lake, PJ-23, 43°41'28.6"N, 28°33'47.9"E, 17.08.2011, with young fruits, coll. *A. Petrova*, *D. Venkova* & *N. Nikolov* (SOM 167868).

Convolvulus persicus is a psammophyte with a scattered distribution in Central Asia and Asia Minor, Caucasus Mts and along the Black Sea Coast. In Bulgaria, it has been collected only few times and is considered Critically Endangered (Petrova 2011a). The locality in the area of Durankulak Lake is the only recent existing one in Bulgaria. The observed population forms 2 spots each with an area of about 1000 m^2 and with a few hundreds of aboveground groups of stems.

Lythraceae

79. *Lythrum virgatum* L.

Bu Black Sea Coast (*Northern*): sandy beach in front of Durankulak lake, PJ-23, 17.08.2011, *A. Petrova* obs.

New for the floristic region.

Rosaceae

80. *Sanguisorba officinalis* L.

Bu Sofia Region: wet meadows at Ranislavtsi locality, Kostinbrod municipality, FN-75, 28.08.2010, coll. *A. Petrova* & *R. Vassilev* (SOM 167892).

New for the floristic region.

Rubiaceae

81. *Galium rivale* (Sm.) Griseb.

Bu Mt Slavyanka: along a brook above Paril village, GL-29, 41°25'34.5"N, 23°40'03.3"E, 04.08.2010, coll. *A. Petrova* (SOM 166098).

New for the floristic region.

Orchidaceae

82. *Dactylorhiza kalopissii* E. Nelson

Bu Mt Slavyanka: wet places along the road from Paril village to Paril shalet, 41.42274°N, 23.66026°E, 24.07.2011, coll. *A. Petrova*, *D. Venkova* & *R. Vassilev* (SOM 167754).

Dactylorhiza kalopissii is a Balkan endemic species, typical for calcicole fens and along river habitats, with a high conservation status, included in the Annexes of the Directive 92/43 EEC and the Bern convention. The distribution is local, in NW Greece, R Macedonia (Delforge 2006) and Bulgaria. After the first report in 1991 (Linding & Linding 1991) from Rhodopi Mts (*Central*), it was found in Pirin Mts (*Northern*) by Griebl (2007), Balkan Range (*Eastern*)

and Tundzha Hilly Country (Petrova & al. 2009) and Sregna Gora Mts (*Western*) by Pedashenko (2010). This new locality connects the Greek and Bulgarian parts of the distribution area of the species.

The population consists of three subpopulations, comprising 75, 12 and 5 plants respectively, with some 80 % of flowering individuals. The subpopulations are situated along a small brook running down to Paril village, along the road from the village to the shalet. All spots are very vulnerable, both because of natural factors as overgrowing by trees and shrubs and/or changes of water course and human disturbance like road improvement, catching of water, etc.

83. *Epipactis exilis* P. Delforge

Bu Mt Slavyanka: beech forest along the road from Paril village to Paril shalet (near the entrance of Parilski Dol), 24.07.2011, coll. *A. Petrova*, *D. Venkova* & *R. Vassilev* (SOM 167756). Only 2 individuals were observed.

— Pirin Mt (*Northern*): beech forest above Krushe locality (at Gotse Delchev meeting place), SW of Razlog town, GM-03, 41.85152°N, 23.37068°E, 23.07.2011, coll. *A Petrova*, *D. Venkova* & *R. Vassilev* (SOM 168616). About 15 individuals were observed.

Epipactis exilis has been recently reported for Bulgaria and is evaluated as Endangered for the country (Petrova & Venkova 2008). This evaluation is based on a limited extent of area of occupancy, a very fragmented distribution, the strong decline of the beech forests in Bulgaria and fluctuations of the number of mature individuals.

Poaceae

84. *Agrostis castellana* Boiss. & Reut.

Bu Znepole Region: E of Velinovo village, along the road to Filipovo village, FN-33, 22.08.2007, coll. *A. Petrova* (SOM 163697).

New for the floristic region.

Acknowledgements. Some of the data were obtained during the field work of the project "Mapping and identification of conservation status of natural habitats and species – Phase I". Financial support of the Ministry of Environment and Water is gratefully acknowledged.

Reports 85–104

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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).

Apiaceae

85. *Cachrys cristata* DC. (Fig. 12)

Gr Nomos & Eparchia Attikis: Chamolia, south of Vravrona, *ca.* 3 m, 37°55'N, 24°02'E, 06.05.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for eparchia and nomos Attikis, and

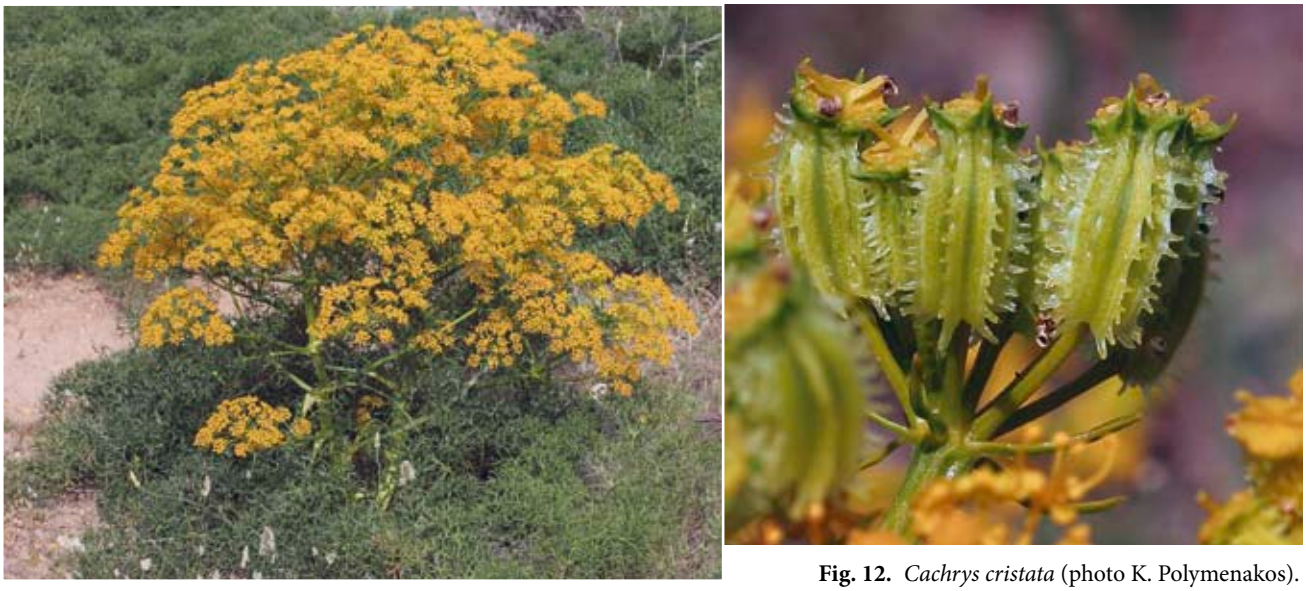

Fig. 12. *Cachrys cristata* (photo K. Polymenakos).

phytogeographical region Sterea Ellas. Recorded from Ionian islands (Kefalonia), eastern and central mainland Greece, E and N Aegean islands, Crete and the Kiklades but not yet from Sterea Ellas and the Peloponnese. There were approximately 50 plants at the beach, clearly visible from a car cruising at 60 km/hr. Together with *Elymus farctus*, *Limonium sinuatum*, *Papaver rhoeas* and *Plantago lagopus*.

Asteraceae

86. *Carduus nutans* L.

Gr Nomos & Eparchia Attikis: Mt Parnitha, 1070 m, 38°10'N, 23°43'E, 08.06.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, June 2012).

New for Mt Parnitha. Approximately 10 plants were noted at the roadside, with *Ptilostemon afer*, in openings of *Abies* forest.

87. *Centaurea iberica* subsp. ***holzmanniana*** (Boiss.) Dostál (Fig. 13)

Gr Nomos Attikis, Eparchia Megaridos: Mt Pateras, road from Kriemadi to Villia, uncultivated field, 535 m, 38°08'N, 23°17'E, 08.04.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, June 2012).

New for Mt Pateras. Identical to the plants collected on Parnitha between Tatoi and Ag. Mercurios by Timoleon Holzmann & Heldreich in July 1878 (C!). Endemic to C and S Greece, distinguished from *C. i.* subsp. *iberica* by the lower stature, prostrate-ascending stems and longer apical spine on the phyllaries.

Fig. 13. *Centaurea iberica* subsp. *holzmanniana* (photo K. Polymenakos).

Brassicaceae

88. *Descurainia sophia* (L.) Prantl

Gr Nomos & Eparchia Attikis: children's playground across the hospital in the centre of Athens, 135 m, 37°59'N, 23°45'E, 01.05.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for eparchia and nomos Attikis. Naturalized ruderal which will surely persist and be part of the urban flora at roadsides and waste ground. Together with *Malva sylvestris*, *Setaria* spp., and *Sisymbrium irio*.

89. *Hornungia petraea* (L.) Rchb.

Gr Nomos & Eparchia Attikis: southern slope of Mt Pendeli, 960 m, 38°04'N, 23°52'E, 22.04.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, April 2012).

New for Mt Pendeli, not recorded by Baliousis & Yannitsaros (2011). A few plants were observed on the cliffs together with *Asplenium ceterach*, *Aubrieta deltoidea*, *Doronicum orientale*, *Saxifraga carpetana* and *Viola*.

Cistaceae

90. *Cistus parviflorus* Lam.

Gr Nomos & Eparchia Attikis: Mt Parnitha, Varibobi to Katsimidi, 360 m, 38°08'N, 23°47'E, 20.04.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for Mt Parnitha. Approximately 20 plants were noted at the roadside, in openings of *Pinus* forest. Mapped by Boratyński & al. (1992) from surrounding area but not directly from the mountain itself.

Fabaceae

91. *Coronilla valentina* subsp. ***glauca*** (L.) Batt. (Fig. 14)

Gr Nomos & Eparchia Attikis: southeastern slope

Fig. 14. *Coronilla valentina* subsp. *glauca* (photo K. Polymenakos).

of Mt Imittos, 460–470 m, 37°55'N, 23°47'E, 05.04.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for Imittos. A single plant was observed at the foot of a vertical cliff, together with *Aurinia saxatilis*, *Brassica cretica*, *Campanula celsii*, *Carum multiflorum*, abundant *Coronilla emerus*, *Inula verbascifolia* and *Melica minuta*. More plants surely exist in the same locality, probably camouflaged as *Coronilla emerus* which it superficially resembles.

92. *Lathyrus clymenum* L.

Gr Nomos & Eparchia Attikis: east slopes of Mt Imittos, 460 m, 37°55'N, 23°47'E, 23.03.2011, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for Imittos and eparchia Attikis. Numerous plants along the forest road from 430 to 460 m.

93. *Onobrychis arenaria* subsp. ***lasiostachya*** (Boiss.) Hayek (Fig. 15)

Gr Nomos & Eparchia Attikis: Mt Pendeli, on way to summit Pyrgari, 1025 m, 37°55'N, 23°47'E, 21.05.2012, *K. Polymenakos* obs. (photos, det. Kit Tan, May 2012).

First collected on Mt Pendeli by Halácsy in May 1886 (type of *O. halacsyana* Heldr.); apparently no later gatherings. A small population of *ca.* 15 individuals was noted along the main road to the summit.

Fig. 15. *Onobrychis arenaria* subsp. *lasiostachya* (photo K. Polymenakos).

94. *Securigera cretica* (L.) Lassen

Gr Nomos & Eparchia Attikis: northern slopes of Mt Parnitha, roadside above Avlona, 260 m, 38°14'N, 23°41'E, 31.05.2009, *K. Polymenakos* obs.; Mt Parnitha, on road below Vourliotis, 550 m, 38°09'N, 23°46'E, 20.04.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for Mt Parnitha, eparchia and nomos Attikis. A single plant observed on rocky cliff below Vourliotis, together with *Malabaila involucrata* and *Rubia*.

Lamiaceae

95. *Calamintha incana* (Sm.) Boiss. (= *Satureja insularis* (Candargy) Greuter & Burdet; *Clinopodium insulare* (Candargy) Govaerts)

Gr Nomos & Eparchia Attikis: Mt Parnitha, on wall of derelict building at Ag. Mercurios, 600 m, 38°13'N, 23°46'E, 20.04.2012, *K. Polymenakos* s.n. (& photo), conf. Kit Tan, July 2012).

New for Mt Parnitha. We have retained the name *Calamintha incana* (1879) as it is a perfectly valid combination if one is not treating the species as a *Satureja* or *Clinopodium*.

96. *Thymus parnassicus* Halácsy

Gr Nomos & Eparchia Attikis: Mt Pendeli, 1000 m, 38°04'N, 23°52'E, 10.06.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, June 2012).

Confirming earlier report from Pendeli by Vierhapper (1919: 288). Abundant on steep rocky slope together with *Fumana procumbens*, *Linum leucanthum*, *Pimpinella tragium* and *Teucrium montanum* subsp. *helianthemoides*, flowering after *Thymus atticus*.

Ranunculaceae

97. *Ranunculus arvensis* L.

Gr Nomos Attikis, Eparchia Megaridos: foothills of Mt Pateras, near Ag. Charalambos, 245 m, 38°05'N, 23°27'E, 08.04.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for Mt Pateras. Numerous plants in uncultivated field together with *Vicia* and *Galium* spp.

Scrophulariaceae

98. *Veronica triloba* (Opiz) Wiesb.

Gr Nomos & Eparchia Attikis: Mt Parnitha, from Paleochori to Skipiza, 1160 m, 38°09'N, 23°42'E, 01.04.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for Mt Parnitha, eparchia and nomos Attikis.

Numerous plants along path in previously burnt *Abies* forest, together with *Erophila verna*, *Gagea heldreichii*, *Ranunculus ficaria*, *Taraxacum* sp.

Tetragoniaceae

99. *Tetragonia tetragonoides* (Pall.) O. Kuntze (Fig. 16)

Gr Nomos & Eparchia Attikis: Chalandri, NE of Athens, 190 m, 38°01'N, 23°48'E, 15.06.2007, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for mainland Greece. Introduced; there are a few other casual or more or less naturalized occurrences in the Peloponnese. In Chalandri, a single individual was noted, surviving in sand brought in for construction work, but not re-appearing the following year. Native to Australia and New Zealand, cultivated as a vegetable in SW Europe (New Zealand Spinach).

Fig. 16. *Tetragonia tetragonoides* (photo K. Polymenakos).

Cyperaceae

100. *Carex extensa* Gooden. (Fig. 17)

Gr Nomos & Eparchia Attikis: Schinias, sea level, 38°08'N, 24°02'E, 15.04.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for eparchia Attikis. Numerous plants on wet ground, together with *Oenanthe silaifolia*, *Tragopogon brevirostris* subsp. *longifolius*, *Schoenus nigricans*. Brofas & Karetsos (1992) reports *Carex distans* from the same area but this has not been confirmed.

101. *Carex halleriana* Asso

Gr Nomos Attikis, Eparchia Megaridos: Mt Kitheronas, outside Vilia, 675 m, 38°10'N, 23°18'E, 08.04.2012, *K. Polymenakos* obs. (photo).

New for Mt Kitheronas. In dry stream bed amongst *Quercus coccifera*.

102. *Carex otrubae* Podp.

Gr Nomos & Eparchia Attikis: Mt Parnitha, in water at Dekelia, 445 m, 38°09'N, 23°47'E, 20.04.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for Mt Parnitha. Numerous plants observed. Recorded from Mt Pendeli.

Fig. 17. *Carex extensa* (photo K. Polymenakos).

Liliaceae s.l.

103. *Bellevalia dubia* (Guss.) Rchb.

Gr Nomos Attikis, Eparchia Megaridos: foothills of Mt Pateras, Paleochori, 320 m, 38°07'N, 23°24'E, 08.04.2012, *K. Polymenakos* obs. (photo, conf. Kit Tan, May 2012).

New for Mt Pateras. Approximately 10 plants observed at edge of cultivated field together with *Bellevalia ciliata* and *Ornithogalum nutans*.

104. *Gagea dubia* A. Terracc.

Gr Nomos Attikis, Eparchia Megaridos: Mt Kitheronas, 1385 m, 38°11'N, 23°14'E, 08.04.2012, *K. Polymenakos* obs. (photo, det. Kit Tan, conf. J.M. Tison, May 2012).

New for Mt Kitheronas. Several individuals at the summit to the west of the chapel, together with *Buglossoides incrassata*, *Euphorbia apios* and *Holosteum umbellatum*. *Gagea bohemica* occurred *ca.* 20 m distant.

Reports 105–109

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Asteraceae

105. ***Centaurea kamciensis*** Kočev & S.P. Gančev (Fig. 18)

Bu Balkan Range (*Eastern*): Valley of Luda Kamchia river, 3 km SW of Asparuhovo village, Dalgopol municipality, rock formation Chudnite Skali, in the crevices of almost vertical calcareous rocks with west and northwest exposure above Tsonevo Dam, 70 m, NH-25, 42.96707°N, 27.29275°E, with flowers and fruits, 13.06.2012, coll. *S. Stoyanov* (SOM 168696, 168700).

Centaurea kamciensis was described by the Bulgarian botanists Kočev and Gančev (1968). The only herbarium sheet preserved in the Bulgarian herbaria is the type specimen (SOM 87502). Bearing in mind the single gathering of the species, so far *C. kamciensis* has been considered an unresolved taxon. Therefore, it is lacking from the contemporary field guides on the Bulgarian flora. The species is a Bulgarian endemic and is included in the Atlas of Bulgarian Endemic Plants (Peev 2006). This new locality lies in Chudnite Skali Nature Monument. The species must be urgently protected legally under the Biological Diversity Act.

Fig. 18. *Centaurea kamciensis* (photo S. Stoyanov).

Fabaceae

106. ***Astragalus corniculatus*** M. Bieb.

Bu Northeast Bulgaria: NE of Nevsha village (N of the motorway), Varna district, on a small hill SE of Taushan tepe hill, in dry calcareous pastures, 180 m, NH-29, 43.28131°N, 27.31440°E, with flowers, 14.05.2010, coll. *S. Stoyanov* (SOM 168157, 168158).

A rare species in the Bulgarian flora. So far *A. corniculatus* has been recorded in the Danubian Plain floristic region in open steppe communities in the valleys of the rivers Vit, Osam and Studena (Tzonev in press). A new species for Northeast Bulgaria. The locality is the easternmost in the country.

107. ***Astragalus dasyanthus*** Pall.

Bu Northeast Bulgaria: W of Mechka village, Ruse district, on the hills SW of Stalpishte locality, in loess steppe grasslands, 90 m, MJ-04, 43.70464°N, 25.79769°E, with flowers and fruits, 09.07.2010, coll. *S. Stoyanov* (SOM 168159, 168160).

A rare species for the Bulgarian flora. So fat recorded in the Danubian Plain and Valley of River Struma (*Northern*) floristic regions (Tzonev in press). All contemporary general literature sources on the Bulgarian flora report the species for Northeast Bulgaria, however so far no herbarium specimen has been deposited in the Bulgarian herbaria. Confirming the species for this floristic region.

108. ***Astragalus depressus*** L.

Bu West Frontier Mts: Vlahina Mt, W of Gorno Leshko village, Blagoevgrad district, in calcareous pastures and karst terrains, 1390 m, FM-54, 41.92853°N, 22.91042°E, with fruits, 04.06.2011, coll. *S. Stoyanov* (SOM 168161, 168162).

A new species for West Frontier Mts floristic region. Until now the species has been known from the Black Sea Coast (*Northern*), Balkan Range, Znepole Region, Vitosha Region, Mt Slavyanka, Pirin Mts, Mt Sredna Gora (*Western*), Rhodopi Mts (*Western* & *Central*) (Assyov & Petrova 2006).

109. ***Caragana frutex*** (L.) K. Koch (Fig. 19)

Bu Northeast Bulgaria: N of Loznitsa village, General Toshevo district, near the Bulgarian Romanian border, in dry calcareous pastures and along the bush margins, 120 m, NJ-77, 43.99209°N,

27.90516°E, with fruits, 13.05.2012, coll. *S. Stoyanov* (SOM 168557, 168558).

A rare species for the Bulgarian flora. According to the Red Data Book of R Bulgaria *C. frutex* occurrs locally in the Danubian Plain and Northeast Bulgaria floristic regions (Meshinev in press). The population near Loznitsa village covers an area of 0.1 ha and comprises some 250 individuals. A new locality for this species in Northeast Bulgaria floristic region.

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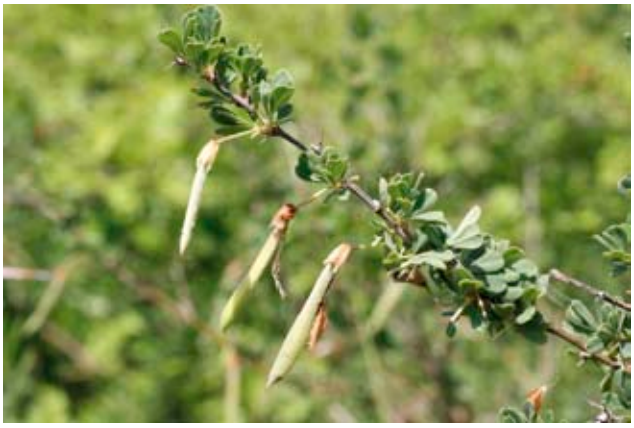

Fig. 19. *Caragana frutex* (photo S. Stoyanov).

Reports 110–113

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Violaceae

110. *Viola alba* Besser

Tu(E) A1(E) Edirne: Center, sandy and damp places, 26 m, 41°40'28"N, 26°33'39"E, 29.05.2012, coll. & det. *M. Türkoğlu*, conf. *F. Dane* (EDTU 13169).

New record for A1(E) Edirne. So far the species has been known from A1(A) Çanakkale, A2(E) Istanbul, A2(A) Istanbul (Coode & Cullen 1965).

111. *Viola kitaibeliana* Roem. & Schult.

Tu(E) A1(E) Edirne: Center, sandy and damp places, 26 m, 41°40'28"N, 26°33'39"E, 29.05.2012, coll. & det. *M. Türkoğlu*, conf. *F. Dane* (EDTU 13164); Edirne: Süloğlu, sandy and damp places, 156 m, 41°46'02"N, 26°54'43"E, 29.05.2012, coll. & det. *M. Türkoğlu*, conf. *F. Dane* (EDTU 13162).

New record for A1(E) Edirne. So far the species has been known from A1(E) Çanakkale, A2(E) Istanbul (Coode & Cullen 1965).

112. *Viola odorata* L.

Tu(E) A1(E) Edirne: Karaağaç, sandy and damp places, 74 m, 41°03'00"N, 26°32'00"E, 29.05.2012, coll. & det. *M. Türkoğlu*, conf. *F. Dane* (EDTU 13166).

— A1(E) Kırklareli: Babaeski, sandy and damp places, 55 m, 41°25'57"N, 27°05'35"E, 29.05.2012, coll. *M. Türkoğlu*, conf. *F. Dane* (EDTU 13168).

New records for A1(E) Edirne and Kırklareli. So far the species has been known from A2(A) Istanbul, A3 Bolu, A6 Samsun, B1 Izmir. It was not reported for the European Turkey (Coode & Cullen 1965). Some specimens from the European Turkey are stored in ISTE Herbarium (Baytop 1984).

113. *Viola tricolor* L.

Tu(E) A1(E) Edirne: Center, Koop. Evleri, rood side, sandy and damp places, 26 m, 41°40'28"N, 26°33'39"E, 29.05.2012, coll. *F. Dane*, det. *M. Türkoğlu*, conf. *F. Dane* (EDTU 13175); Edirne: Süloğlu, sandy and damp places, 156 m, 41°46'02"N, 26°54'43"E, 29.05.2012, coll. & det. *M. Türkoğlu*, conf. *F. Dane* (EDTU 13177).

A new record for A1(E) Edirne.

Reports 114–129

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Crassulacea

114. *Sedum urvillei* DC.

Bu West Frontier Mts: Vlahina Mt, in stony places, FM-55, 42.06993°N, 22.82964°E, 18.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167832).

This a new species for this floristic region.

Scrophulariaceae

115. *Parentucelia latifolia* (L.) Caruel

Bu West Frontier Mts: Vlahina Mt, in dry grasslands, FM-62, 41.79701°N, 22.99325°E, 17.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167822).

This species is widespread in Bulgaria, but this is the first record from this floristic region.

Valerianaceae

116. *Valeriana tuberosa* L.

Bu Valley of River Struma (*Southern*): on the northern hill above Topolnitsa village, W of the road towards Draganovo village, FL-98, 41.41248°N, 23.31686°E, 20.05.2011, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167835).

First record for this floristic region.

Poaceae

117. *Agrostis canina* L.

Bu Valley of River Struma (*Norhertn*): in dry grasslands between the town of Boboshevo and Dragodan village, FM-66, 42.12646°N, 23.02039°E, 04.07.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167820).

— Pirin (*Northern*): in grasslands around Senokos village, FM-83, 41.8539°N, 23.17570°E, 03.07.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167818).

This species is locally distributed subdominant or companion species in xero-mesophytic and xerophytic grasslands of alliances *Festucion valesiacae*, *Koelerio-Festucion dalmaticae* and *Saturejion montanae* of class *Festuco-Brometea*. It is a new species for these floristic regions.

118. *Agrostis gigantea* Roth

Bu West Frontier Mts: Vlahina Mt, in meso-xerophilous grasslands around Breznishka's frontier post, FM-63, 03.07.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 166700).

This is a new species for this floristic region.

119. *Bromus lacmonicus* Hausskn.

Bu Znepole Region: Mt Golo Bardo, in grasslands around Ostritsa peak, FN-61, 1150 m, 08.07.1936, coll. *B. Achtarov* (SOM 6838); Rudina Mt, in calcareous grasslands above Gorni Koriten village, Kyustendil district, FN-20, 01.07.1940, coll. *B. Achtarov* (SOM 6926); Chepun Mt, on calcareous terrains with shallow soils and southern exposition under Petrovski Krast peak, 1100 m, FN-65, 27.06.1953, coll. *V. Velchev* (SOM 103489).

— Vitosha Region: Plana Mt, on northern slope of Manastirishte peak, 1350 m, FN-90, 04.08.2006, coll. *V. Vutov* & *D. Dimitrov* (SOM 163028).

— West Frontier Mts: Vlahina Mt, in meso-xerophylous grasslands around Breznishka's frontier post, FM-63, 03.07.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 1675014, 167570); *loc. ibid.*, FM-63, 41.80479°N, 22.98748°E, 17.06.2010 & 03.07.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 1675828).

— Mt Sredna Gora (*Western*): Losenska Mt, on stony meadow, E of Polovrak peak, GN-01, 25.09.1953, coll. *I. Ganchev* (SOM 40298).

The species is a Balkan endemic, which is distributed in three floristic regions according to Assyov & Petrova (2006) and Petrova & Vladimirov (2010). It is a companion species in calcareous dry grasslands of alliances *Festucion valesiacae* and *Saturejion montanae* in Western Bulgaria. These are first records for the aforementioned floristic regions.

120. *Festuca callieri* (St-Yves) Markgr.-Dann.

Bu Black Sea Coast (*Northern*): in stony steppes around Kaliakra cape, PJ-10, 18.08.1980, coll. *S. Kozhuharov* (SOM 87882).

— Balkan Range (*Eastern*): on hills above Aytos town, NH-23, 28.06.1972, coll. *S. Kozhuharov* (SOM 87870, 87938); Kotlensko-Varbishka Mt, Ornitsite protected area, on calcareous stones of Golyama Orlitsa peak, LH-19, 27.06.2002, coll. *D. Dimitrov* (SOM 161794); Aytos, NH-23, 09.05.1915, coll. *J. Mrkvicka* & *B. Davidoff* (SOM 6500, 6497, 6499).

— Rila Mts: in dry grasslands, distributed around Stob's pyramids, FM-76, 42.09352°N, 23.11654°E, 04.07.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167810).

— Rhodopi Mts (*Eastern*): Zhelezni Vrati locality around Kardzhali town, LG-61, 26.06.1981, coll. *S. Kozhuharov* & *A. Petrova* (SOM 87783).

This is a new species for these floristic regions.

121. *Festuca illyrica* Markgr.-Dann.

Bu Znepole Region: in dry grasslands around Katrishte village, 42.27399°N, 22.82671°E, FM-58, 10.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167812); Lyubasha Mt, Lyalintsi village, FN-43, without a date, coll. *S. Kozhuharov* (SOM 25538).

— Vitosha Region: Plana Mt, FN-90, 03.06.1972, coll. *S. Kozhuharov* (SOM 29679).

This is a Balkan endemic with local distribution in Bulgaria (Petrova & Vladimirov 2010). It is a new species for these floristic regions.

122. *Festuca oviniformis* Vetter

Bu Northeast Bulgaria: in dry grasslands on Madara plateau, NH-09, 29.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167826).

— West Frontier Mts: Vlahina Mt, in dry grasslands, FM-62, 41.79701°N, 22.99325°E, 17.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167821); *loc. ibid.*, FM-63, 41.80479°N, 22.98748°E, 17.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167829).
— Valley of River Struma (*Norhertn*): in dry grasslands around Vukovo village, FM-67, 42.19803°N, 22.97136°E, 17.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167831).
— Sofia Region: on stones above Belidie Han settlement, FN-75, 20.06.2009, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167807).

This is a new species for these floristic regions.

123. *Festuca panciciana* (Hack.) K. Richt.

Bu Znepole Region: in dry grasslands around Dolni Rakovets village, FN-60, 42.47014°N, 23.02849°E, 05.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167809).

This is the first record for the species from this floristic region.

124. *Festuca thracica* (Acht.) Markgr.-Dann.

Bu Northeast Bulgaria: in dry grasslands on Madara plateau, NH-09, 29.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167808).
— Znepole Region: in dry grasslands between Kalishte and Nevestino villages, FM-58, 42.27446°N, 22.83044°E, 06.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167814); in grasslands between Radomir town and Kondofrei village, FN-60, 18.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167833).

This is a new species for these floristic regions.

125. *Poa angustifolia* L.

Bu Black Sea Coast (*Southern*): by the salth lakes around the town of Burgas, NH-30, 19.06.1972, coll. *M. Stoeva* (SOM 139391).
— Vitosha Region: Vitosha Mt, in subalpine pastures to Kamenoto Zdanie, on siliceous soils, 1750 m, 10.07.1932, coll. *B. Achtaroff* (SOM 5788); in meadows on northern slopes of Lyulin Mt, 24.06.1949, coll. *I. Ganchev* (5775).
— West Frontier Mts: Vlahina Mt, on the top of the Breznishka's frontier post, 1700 m, FM-63, 05.07.2009, coll. *V. Vutov* & *D. Dimitrov* (SOM 165020).
— Valley of River Struma (*Norhertn*): in dry grasslands of Zemen gorge, FM-39, 42.43726°N, 22.70153°E, 15.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167824); in sandy places near the road between Pastuh and Skrino villages in the Skrino gorge, 25.04.2004, coll. *D. Dimitrov* (SOM 163540).
— Valley of River Struma (*Southern*): in dry shrub communities around Kulata town, FL-98, hill Kartalets, 10.04.1960, coll. *V. Velchev* & *I. Bondev* (SOM 106884).
— Pirin Mts: in calcareous grasslands at Orlova skala, GM-20, 25.07.1935, coll. *B. Achtaroff* (SOM 5792).
— Pirin Mts (*Southern*): in Popski preslap gorge, place Mlakite, 1000 m, 19.06.2008, coll. *V. Vutov* & *D. Dimitrov* (SOM 164683).
— Rila Mts: in forests near Iskar river to Samokov town, 1000 m, GM-18, 05.06.1909, coll. *B. Davidoff* (SOM 5794); in agricultural area "Samokovski Lago" above Samokov town, 930 m, GM-18, 01.06.1911, coll. *B. Davidoff* (SOM 5786); in open woodland of *Abies alba*, *Pinus sylvestris* and *Picea abies* in Belaka locality, near Belitsa and Semkovo villages, on southern slopes, 1900 m, GN-30, 07.08.1957, coll. *I. Bondev* (SOM 109010); above Cham Koria, 1300 m, GM-18, 08.07.1936, coll. *B. Achtaroff* (SOM 5700); *loc. ibid.*, coll. *B. Achtaroff* (SOM 5784).

New for these floristic regions. This species is widespread in Bulgaria and takes part in xerophytic and xero-mesophytic communities of alliance *Festucion valesiacae*. *Poa angustifolia* is a good diagnostic species for class *Festuco-Brometea*.

126. *Poa macedonica* (Acht.) Stoeva & Kožuharov

Bu West Frontier Mts: Vlahina Mt, in dry grasslands, FM-62, 41.77233°N, 23.00030°E, 17.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167819).
— Mt Slavyanka: on the east slope of Gotsev peak, 2200 m, GL-08, 26.07.2005, coll. *D. Dimitrov* (SOM 164152).

New for these floristic regions. So far the species has been recorded only in Pirin Mts (Assyov & Petrova 2006). It is a Balkan endemic, known from Bulgaria and Greece.

127. *Stipa eriocaulis* subsp. ***austriaca*** (Beck) Martinov

Bu Valley of River Struma (*Norhertn*): in xerophytic grassland communities of Zemen gorge, FM-39, 42.43726°N, 22.70153°E, 15.06.2010, coll.

K. Vassilev & *H. Pedashenko* (SOM 167824); in dry grasslands N of Vukovo village, FM-67, 42.20489°N, 22.97415°E, 16.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167047).

It is a new species for this floristic region.

128. *Stipa pennata* L.

Bu Northeast Bulgaria: in dry grasslands on Madara plateau, NH-09, 29.06.2010, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167827).

Confirming the species for this floristic region. First reported by Petrova & al. 2007.

129. *Stipa pulcherrima* K. Koch

Bu Valley of River Struma (*Southern*): on the hill N of Topolnitsa village, W of the road towards Draganovo village, FL-98, 20.05.2011, coll. *K. Vassilev* & *H. Pedashenko* (SOM 167834).

It is a new species for this floristic region.

Reports 130–136

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Continuing a series of new plant records based on floristic investigations in north central Peloponnese. Mt Killini in the prefecture of Korinthias is the *locus classicus* for several Greek mountain species and considered botanically well-explored. New discoveries, however, still emerge.

Asteraceae

130. *Staehelina uniflosculosa* Sm. (Fig. 20)

Gr Nomos & Eparchia Korinthias: Mt Killini, Flabouritsa gorge, along rocky footpath from Manna to Markou Lakka, 1160 m, 37°57'N, 22°28'E, 16.06.2012, *G. Zarkos* & *V. Christodoulou* obs. (photos, det. Kit Tan, June 2012).

New for Mt Killini. Recorded from Mt Chelmos but not from the other mountains in the Peloponnese. The tufts were out of reach on a high vertical limestone rock face together with *Asperula arcadiensis*. *Campanula asperuloides* was noted in the shady crevices at the base of the rock, forming attractive little clusters of purplish-blue.

Fig. 20. *Staehelina uniflosculosa* (photo V. Christodoulou).

Caryophyllaceae

131. *Sagina stridii* Kit Tan, Zarkos & Christodoulou, **sp. nov**. (Figs. 21a & 21b)

Distinguished from *Sagina procumbens* L. by its 5-merous flowers with 10 stamens, and petals equalling or longer than the sepals. *S. procumbens* has usually 4-merous flowers with 4 stamens, and petals absent or less than half as long as the sepals.

Herbaceous, caespitose *perennial* with slender, 1.5–3 cm long, glabrous, decumbent or ascending stems rooting at lower nodes. *Leaves* opposite, exstipulate, linear-filiform, 3–25 (–35) × 0.4–0.6 mm, fused at base into a short, membranous sheath, glabrous, shiny mid-green, with hyaline arista less than half the width of leaf. *Flowers* solitary on long, filiform, glabrous pedicels, 5-merous. *Sepals* free, 1.25–1.75 × 2–2.2 mm, broadly ovate-elliptic, obtuse, green tipped purplish, with scarious margins ¼ the width of sepal, without conspicuous veins. *Petals* white, entire, shortly clawed, equalling or slightly longer than sepals, never absent. *Stamens* 10; anthers cream. *Styles* 5, alternating with sepals. *Capsules* erect, 2–2.2 mm long at maturity, slightly exceeding sepals, splitting almost to base into 5 valves. *Seeds* numerous, dark brown, 0.3–0.5 mm long, pyriform to reniform with distinct dorsal groove, obtusely tuberculate.

Habitat and ecology: snowbed meadows, wet places by mountain roads, 2000–2100 m. Flowering June to July, probably self-pollinated.

Eponymy: named after Arne Strid, former professor of botany at the University of Copenhagen, who was the first to collect the plant on Mt Chelmos more than twenty years ago, before our present discovery in 2011. Unfortunately his collections were lost and have not re-surfaced at the time of writing.

Localities: Nomos Achaias, Eparchia Kalavriton: Mt Chelmos, 2100 m, 02.07.1988, *Strid* (photos!); Nomos

Fig. 21. *Sagina stridii* (photos A. Strid).

& Eparchia Korinthias: Mt Killini, path from plateau to the summit of Simio, 2000 m, 37°56'N, 22°24'E, 19.06.2011, *Zarkos* & *Christodoulou* obs. (photos).; *loc. ibid*., 24.6.2012, *Zarkos* & *Christodoulou* s.n. (holotype C).

Living material of *S. stridii* was collected from Mt Killini on 24.06.2012 by Zarkos and Christodoulou and grown on at Copenhagen Botanical Garden. The plants resemble unusually large-flowered forms of *S. procumbens* which also occurs on Mt Killini. A specimen of *S. procumbens* from this mountain (*Hartvig* & *al.* 10242, C!) was noted to be mat-forming, with 4-merous flowers and without any petals. *Sagina procumbens* occurs in most of Europe, SW Asia, Caucasus and Siberia and along the east and west coasts of N America. It is an introduced weed in eastern Asia and temperate areas of the southern hemisphere. *Sagina stridii,* on the other hand, seems to be a narrow endemic, restricted to wet places on two of the highest mountains of the Peloponnese (Chelmos and Killini). Strid noted that on Chelmos, the plants were very local, growing in a damp spot in a snowbed meadow at 2100 m, together with *Bellis perennis* (Fig. 21b).

Petrorhagia phthiotica (Boiss. & Heldr.) P.W. Ball & Heywood was noted further along the mountain path to the summit in June 2008 and re-collected in June 2012, shortly after *S. stridii* was relocated.

132. *Silene reinholdii* Heldr. (Fig. 22)

Gr Nomos Achaias, Eparchia Kalavriton: Mt Saitas, E-SE of Likouria, rocky limestone slopes in openings of *Abies cephalonica* forest, along path to the summit, 1230 m, 37°51'N, 22°15'E, 20.05.2012, *G. Zarkos* & *V. Christodoulou* obs. (photos, conf. Kit Tan, June 2012).

New for Mt Saitas and second record from north central Peloponnese. The species has been reported only once in 118 years from Nomos Achaias (Vouraikos gorge near Megaspileo, Halácsy 1894: 499) and not elsewhere in north central Peloponnese. The plants were identical to those collected at Akrocorinthos. When this paper was submitted, we were unaware that the species had also been noted on the south side of Mt Saitas, near the village of Daras (unpubl. data, pers. comm., D. Mermygkas July 2012).

Fig. 22. *Silene reinholdii* (photo V. Christodoulou).

Rosaceae

133. *Malus florentina* (Zuccagni) C.K. Schneid. (Fig. 23)

Gr Nomos & Eparchia Korinthias: on forest road near Mt Killini, between the villages of Klimedi and Markasi, 1086 m, 37°57'N, 22°33'E, 04.06.2008, 06.06.2011 & 17.09.2011, *G. Zarkos* & *V. Christodoulou* obs. (several photos in flower and fruit, conf. Kit Tan, July 2012).

New for Nomos Korinthias. In the north Peloponnese, recorded only from Nomos Achaias. *Malus florentina* was found in a burnt (later reforested) area, together with *Arbutus andrachne, Erica arborea*, *Pinus nigra*, *Pistacia terebinthus*, *Quercus frainetto* and *Q. pubescens*.

134. *Sorbus torminalis* (L.) Crantz

Gr Nomos & Eparchia Korinthias: Mougosto forest, 869 m, 38°00'N, 22°36'E, 30.09.2007, 04.06.2008 & 10.10.2009, *G. Zarkos* & *V. Christodoulou* obs. (photos, conf. Kit Tan, July 2012).

New for Nomos Korinthias. In the Peloponnese recorded only from Nomos Ilias, Nomos Achaias and Nomos Arkadias (Mt Parnonas). Together with *Malus florentina* and associated species (see above entry).

Fig. 23. *Malus florentina* (photo V. Christodoulou).

Scrophulariaceae

135. *Verbascum banaticum* Schrad. (Fig. 24)

Gr Nomos & Eparchia Korinthias: Mt Killini, Flabouritsa gorge, along rocky footpath from Manna to Markou Lakka, 1160 m, 37°57'N, 22°28'E, 16.06.2012, *G. Zarkos* & *V. Christodoulou* obs. (photos, det. Kit Tan, conf. A. Strid, July 2012).

New for Mt Killini and Nomos Korinthias. This is also the first record for the Peloponnese, representing the southernmost occurrence of the species in the Balkans. The nearest locality is reported as

Fig. 24. *Verbascum banaticum* (photo G. Zarkos).

Mt Parnitha in Nomos and Eparchia Attikis. *V. banaticum* resembles *V. delphicum* Boiss. & Heldr. which is also known from Mt Parnitha but can be distinguished by its much-branched (as opposed to simple or sparingly branched), lax inflorescence.

136. *Verbascum nigrum* subsp. ***abietinum*** (Borbás) I.K. Ferguson (Fig. 25)

Gr Nomos & Eparchia Korinthias: Mt Killini,

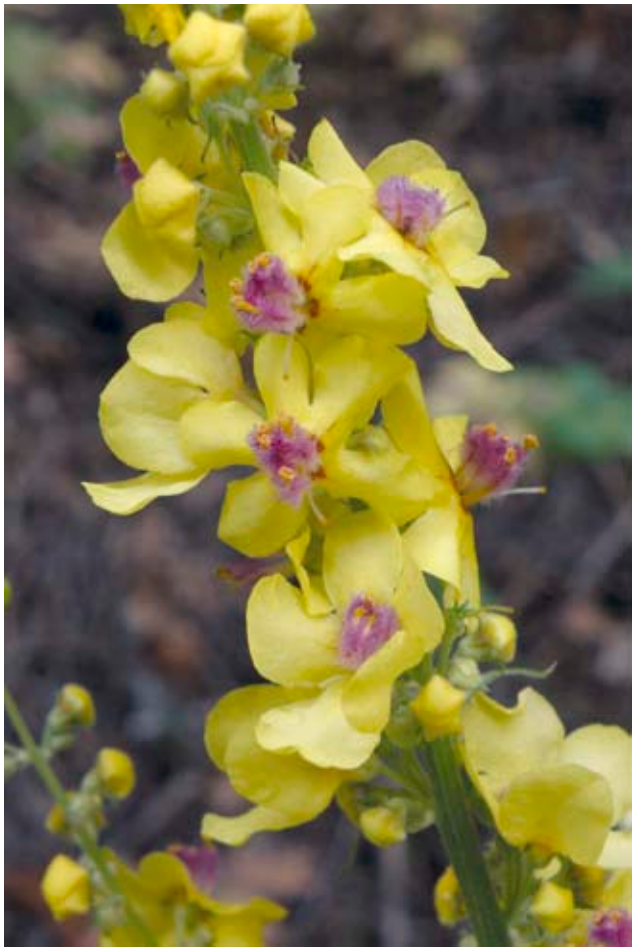

Fig. 25. *Verbascum nigrum* subsp. *abietinum* (photo G. Zarkos).

Flabouritsa gorge, along rocky footpath from Manna to Markou Lakka, 1200 m, 37°57'N, 22°26'E, 16.06.2012, *G. Zarkos* & *V. Christodoulou* obs. (several photos, det. Kit Tan, July 2012).

First confirmation of a more than 150 year old record from Mt Killini (*Orphanides* 1162, WU-Hal, as *V. abietinum*). This is apparently the southernmost occurrence of the taxon in Greece and the Balkans, without other records from the rest of the Peloponnese.

Reports 137–140

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Caprifoliaceae

137. *Symphoricarpos albus* (L.) S.F. Blake

Bu Sofia Region: Sofia, northeastern part of the town, near Chavdar Bridge, ruderal shruby places, *ca.* 530 m, 42.70222°N, 23.35040°E, 18.07.2012, coll. & det. *J. Zieliński, A. Petrova* (SOM 168731, 168732).

— Znepole Region: around Tsegrilovtsi village, SW of Tran town, ruderal places, FN-23, 07.07.2012, *J. Zieliński* obs.

Grossulariaceae

138. *Ribes aureum* Pursh

Bu Vitosha Region: Mt Vitosha "*in saxosis silvaticis supra coenobium Dragalevtsi*", coll. & det. *B. Davidoff* sub *R. grossularia*, 04.05.1893 (SOM 36204), rev. *B. Achtarov* as *R. aureum*, conf. *J. Zieliński*.

— Balkan Range (*Western*): W slope of Vezhen summit, Kasadzhika locality, above Klisura town, KH-83, without a date, coll. & det. *S. Baev* sub *R. petraeum* (SOM 36206).

Rosaceae

139. *Spiraea* ×*pseudosalicifolia* Silverside

Bu Znepole Region: Tsegrilovtsi village, SW of Tran town, ruderal places, FN-23, 07.07.2012, coll. & det. *J. Zieliński* (SOM 168694).

— Rhodopi Mts (*Western*): near Dospat town, KG-61, 16.09.2006, *J. Zieliński* obs.

Salicaceae

140. *Populus* ×*canadensis* Moench

Bu Danubian Plain: near Bregovo town, Vidin district, FP-39, 16.05.1965, coll. & det. *V. Velchev* sub *P. nigra* (SOM 113870).

— Balkan Range (*Eastern*): Sinite Kamani Nature Park, Karandila locality, MH-42, 17.05.2008, coll. & det. *A. Petrova* sub *P. nigra* (SOM 158476).

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