

New floristic records in the Balkans: 14*

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Abstract.

New chorological data are presented for 203 species and subspecies from Bulgaria (reports no. 1-26, 58-76, 105-150, 158, 165-203), Greece (27-49, 77-104, 154-157, 162-164), Montenegro (151-153) and Turkey-in-Europe (50-57, 159-161). The taxa belong to the following families: *Anacardiaceae* (58), *Apiaceae* (2, 27-30, 105, 114, 115, 131-134), *Asteraceae* (3, 31-33, 59-61, 77, 78, 116-120, 135-137, 151, 162, 190-199), *Boraginaceae* (79, 80, 121, 138), *Brassicaceae* (50-53, 81-85, 106, 139), *Campanulaceae* (177, 178), *Caprifoliaceae* (86), *Caryophyllaceae* (4-8, 34, 35, 62, 87, 88, 140-142, 155, 156, 169), *Ceratophyllaceae* (122), *Chenopodiaceae* (89, 200, 201), *Crassulaceae* (63, 170, 171), *Cucurbitaceae* (1), *Cuscutaceae* (90), *Cyperaceae* (15, 48, 168, 184, 185), *Dipsacaceae* (36), *Elatinaceae* (166), *Euphorbiaceae* (9, 91, 92, 152), *Fabaceae* (10, 37-39, 64-67, 93, 107, 143, 159-161, 172), *Fagaceae* (165), *Frankeniaceae* (68), *Geraniaceae* (54-57, 144), *Guttiferae* (163, 179), *Haloragaceae* (123, 145), *Iridaceae* (129), *Juncaceae* (49, 186), *Lamiaceae* (11, 40, 69, 173, 180), *Liliaceae* s.l. (16, 73), *Linaceae* (124, 181), *Malvaceae* (41, 42), *Orchidaceae* (17-19, 74, 164), *Paeoniaceae* (167), *Papaveraceae* (94), *Plantaginaceae* (95), *Poaceae* (20-26, 75-76, 101-104, 112, 113, 130, 148-150, 175, 176, 187-189, 202, 203), *Polygalaceae* (108), *Polygonaceae* (109), *Ranunculaceae* (43, 96, 97, 125, 126, 146, 153, 182), *Resedaceae* (98), *Rosaceae* (12, 13, 44, 70, 71, 99, 110, 111, 158), *Rubiaceae* (45, 100, 127), *Saxifragaceae* (147), *Scrophulariaceae* (14, 72, 128, 174, 183), *Taxaceae* (154), *Thymelaeaceae* (46), *Valerianaceae* (47) and *Violaceae* (157).

First reports for countries are: Bulgaria – *Rochelia disperma* subsp. *retorta* (121) and *Sesleria tenuifolia* subsp. *tenuifolia* (23); Montenegro – *Consolida hispanica* (153), *Doronicum orientale* (151), *Euphorbia lingulata* (152).

The publication includes contributions by M. Ančev (1), A. Asenov (2-26), B. Biel & Kit Tan (27-49), F. Dane & G. Korkmaz (50-53), F. Dane, S. Yalçın & İ. Deniz (54-57), D. Dimitrov (58-76), D. Dimitrov & V. Vutov (77-104), D. Dimitrov, V. Vutov & M. Hodzha (105-113), A.S. Petrova (114-130), A.S. Petrova, R. Vassilev & B. Assyov (131-150), D. Petrović & D. Stešević (151-153), K. Polymenakos, G. Zarkos, G. Fakas & Kit Tan (154-157), M. Ronikier & A. Ronikier (158), G. Savaş, G. Yılmaz, N. Başak & F. Dane (159-161), Kit Tan, T. Lafranchis & G. Vold (162-164), A. Tashev (165), R. Tzonev, A. Ralev, P. Shurulinkov & T. Karakiev (166-168), K. Vassilev (169-176), K. Vassilev & H. Pedashenko (177-189), V. Vladimirov & A.S. Petrova (190-203).

This is the fourteenth 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, for Montenegro by V. Stevanović and for Turkey-in-Europe by F. Dane.

Report 1

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Cucurbitaceae

1. *Sicyos angulatus* L.

Bu Forebalkan (*Western*): SW of elevation Markova Mogila, about 3 km northwards of Cherven Bryag town, 20.09.2010, coll. M. Ančev (SOM 166188).

Sicyos angulatus is an annual North American liana-like plant. It was found during a field trip in N Bulgaria, while crossing the Forebalkan, southwest of the elevation Markova Mogila, about 3 km northwards of Cherven Bryag. The population was composed of numerous plants, with flowers and young fruits, in a ruderal habitat along the high bank of river Iskar. The species has been reported earlier as a new adventive plant for the Bulgarian flora, found in the Danubian Plain floristic region, in the surroundings of Nikopol town (Tzonev 2005, 2008) and Iskar village along river Iskar (Vladimirov 2009a). The finding of *S. angulatus* southwards of the earlier reported localities is an indication of extension of its distribution southwards, most probably as a result of zoohory well known in *S. angulatus* (cf. Denissova 1981: 59).

Reports 2-26

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Apiaceae

2. *Ferulago campestris* (Besser) Rchb.

Bu Znepole region: Mt Zemenska, close to Silni Vrah locality, 900 m, on limestones, in open ridge area, FN-30, 15.06.2009, coll. A. Asenov (SO 105805).
New for Mt Zemenska.

Asteraceae

3. *Centaurea immanuelis-loewii* Degen

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge rocky places, 900 m,

close to peak Tichak, FN-30, 27.07.2006, coll. A. Asenov (SO 104310).

Already known for Znepole region. New locality of this endangered plant species for Mt Zemenska.

Caryophyllaceae

4. *Dianthus capitatus* subsp. *andrzejowskianus* Zapal.

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge grassy places, 1150 m, close to peak Tichak, FN-30, 29.07.2010, coll. A. Asenov (SO 106306).

New for this floristic region.

5. *Dianthus carthusianorum* L.

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge grassy places, 1150 m, close to peak Tichak, FN-30, 27.07.2010, coll. A. Asenov (SO 106263).

New for Znepole region.

6. *Dianthus pontederiae* subsp. *kladovanus* (Degen) Stoj. & Acht.

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge grassy places, 1150 m, close to peak Tichak, FN-30, 27.07.2010, coll. A. Asenov (SO 106261).

New for Znepole region.

7. *Dianthus quadrangulus* Velen.

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge grassy places, 1150 m, close to peak Tichak, FN-30, 29.07.2010, coll. A. Asenov (SO 106305).

— Pirin Mts: Kadievi Livadi locality, 1300 m, close to Breznitsa village, GM-21, 02.08.2008, coll. A. Asenov (SO 105404).

New species for both floristic regions.

8. *Dianthus tristis* Velen.

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge rocky places, 1000 m, close to peak Tichak, FN-30, 12.07.2010, coll. A. Asenov (SO 106188).

New for Znepole region.

Euphorbiaceae

9. *Acalypha virginica* L.

Bu Znepole region: Mt Zemenska, close to peak Tichak, in open ridge rocky places, on limestone, 1000 m, FN-30, 800 m, at Mechka foothills, FN-30, 23.04.1961, coll. D. Jordanov & A. Janev (SO 106399).

New for Znepole region.

Fabaceae**10. *Trifolium leucanthum* M. Bieb.**

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge rocky places, 900 m, close to peak Tichak, FN-30, 23.06.2010, coll. A. Asenov (SO 106175).

New for Znepole region.

Lamiaceae**11. *Thymus glabrescens* Willd.**

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge rocky places, 1000 m, close to peak Tichak, FN-30, 12.07.2010, coll. A. Asenov (SO 106187).

New for Znepole region.

Rosaceae**12. *Potentilla pilosa* Willd.**

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge rocky places, 900 m, close to peak Tichak, FN-30, 23.06.2010, coll. A. Asenov (SO 106172).

New for Znepole region.

13. *Potentilla sulphurea* Lam.

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge rocky places, 900 m, close to peak Tichak, FN-30, 23.06.2010, coll. A. Asenov (SO 106173).

New for Mt Zemenska.

Scrophulariaceae**14. *Euphrasia liburnica* Wettst.**

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge rocky places, 1000 m, close to peak Tichak, FN-30, 12.07.2010, coll. A. Asenov (SO 106184).

New for Znepole region.

Cyperaceae**15. *Carex brevicollis* DC.**

Bu Znepole region: Mt Zemenska, on limestone terrain, in an open ridge area, FN-30, 31.05.2010, coll. A. Asenov (SO 106167).

New for Znepole region.

Liliaceae s.l.**16. *Asphodeline lutea* (L.) Rchb.**

Bu Znepole region: Mt Zemenska, at Mechka foothills, on limestone, 800 m, FN-30, 23.04.1961, coll. D. Jordanov & A. Janev, det. A. Asenov (SO 106398).

New for Znepole region.

Orchidaceae**17. *Epipactis exilis* P. Delforge**

Bu Znepole region: Mt Zemenska, on limestone terrain, in a *Fagus silvatica* forest, FN-30, 30.07.2010, coll. A. Asenov (SO 106330).

New for Znepole region.

18. *Ophrys apifera* Huds.

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge rocky places, 1000 m, close to peak Tichak, FN-30, 11.06.2010, coll. A. Asenov (SO 106170).

New for Mt Zemenska.

19. *Orchis papilionacea* L.

Bu Znepole region: Mt Zemenska, on limestone terrain, in an open ridge area, FN-30, 28.05.2010, coll. A. Asenov (SO 106 171).

Confirming the occurrence in Znepole region.

Poaceae**20. *Avenula compressa* (Heuff.) W. Sauer & Chmel.**

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge grassy places, 1000 m, close to peak Tichak, FN-30, 12.07.2010, coll. A. Asenov (SO 106208).

New for Mt Zemenska.

21. *Festuca spectabilis* Jan

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge rocky places, 900 m, close to peak Tichak, FN-30, 23.06.2010, coll. A. Asenov (SO 106174).

New for Znepole region.

22. *Melica transsilvanica* Schur

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge grassy places, 1000 m, close to peak Tichak, FN-30, 12.07.2010, coll. A. Asenov (SO 106209).

New for Znepole region.

23. *Sesleria tenuifolia* Schrad. subsp. *tenuifolia*

Bu Sofia region: Bezden village, FN-74, 28.05.2008, coll. K. Vasilev (SOM 164488, 164487).

— Znepole region: Mt Zemenska, on limestone terrain, in open ridge grassy places, 1000 m, FN-30, 21.05.2007, coll. A. Asenov (SO 106166); Mt Golo Bardo, FN-61, 16.05.2010, coll. D. Dimitrov (SO 106169).

New for Bulgaria. Otherwise, the species is distributed in the Apennine Peninsula (Italy) and Western Balkan Peninsula (Albania, Croatia, Slovenia, former Yugoslavia).

24. *Stipa crassiculmis* P.A. Smirn.

Bu Pirin Mts (*Southern*): on limestones, close to Rozhen Monastery, 800 m, FM-90, 18.06.1999, coll. *D. Stojanov* (SO 99912).

New for the Southern Pirin Mts.

25. *Stipa pulcherrima* K. Koch

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge grassy places, 1150 m, close to peak Tichak, FN-30, 27.07.2010, coll. *A. Asenov* (SO 106264).

New species for Znepole region.

26. *Stipa tirsia* Steven

Bu Znepole region: Mt Zemenska, on limestone terrain, in open ridge rocky places, close to peak Tichak, 1000 m, FN-30, 20.07.2010, coll. *A. Asenov* (SO 106 257).

New for Mt Zemenska.

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Reports 27-49

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This is the thirteenth report of new plant-records for the island of Samothraki (N Aegean islands, Nomos Evrou, Eparchia Samothrakis) based on fieldwork carried out during 2006–2007 and 2010. 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.

Apiaceae

27. *Apium graveolens* L.

Gr Samothraki: Kamariotissa, road margins and waste ground in village, 15 m, 40°28'31" N, 25°28'26" E, 21.05.2010, *Biel* 10.694.

Also noted within the capital, Chora. Recorded from the islands of Thasos and Ag. Evstratios in the N Aegean.

28. *Bifora radians* M. Bieb. (Fig. 1)

Gr Samothraki: NW of Alonia, wheat field

on plateau, limestone, 130 m, 40°28'16" N, 25°30'05" E, 12.05.2010, *Biel* 10.506.

New for the N Aegean area.



Fig. 1. *Bifora radians* (photo B. Biel).

29. *Scandix pecten-veneris* L.

Gr Samothraki: E of Xiropotamos-Seli, dirt track at steep rocky slope, 460 m, 40°27'05" N, 25°32'50" E, 11.05.2010, *Biel* 10.450; *loc. ibid.*, steep rocky slope of ravine, 470 m, 40°27'09" N, 25°33'01" E, 11.05.2010, *Biel* 10.458.

Widespread; noted near Alonia, Anomeria, Chora, Kamariotissa and Profitis Ilias. Recorded from Thasos, Limnos and Ag. Evstratios.

30. *Turgenia latifolia* (L.) Hoffm.

Gr Samothraki: NW of Alonia, wheat field on plateau, limestone, 130 m, 40°28'16" N, 25°30'05" E, 12.05.2010, *Biel* 10.500.

New for the N Aegean area.

Asteraceae

31. *Chrysanthemum coronarium* L.

Gr Samothraki: NE of Kamariotissa, field margin at newly asphalted road to holiday homes, 20 m, 40°28'39" N, 25°28'49" E, 03.05.2010, *Biel* 10.060.

Recorded from Thasos, Limnos and Ag. Evstratios.

32. *Scorzonera mollis* M. Bieb.

Gr Samothraki: Monopati, SE of Therma, clearing in *Arbutus-Erica* scrub with *Pteridium aquilinum*, 550 m, 40°28'29" N, 25°37'58" E, 09.05.2010, *Biel* 10.376.

Also noted at Fonias spring and above Pachia Ammos. Recorded from Thasos and Limnos.

33. *Sonchus tenerrimus* L.

Gr Samothraki: SW of Kamariotissa, grazed

uncultivated land above coast, 5 m, 40°28'15" N, 25°27'55" E, 26.06.2010, *Biel* 10.702.

Collected in same locality by Strid in 1998 (*Strid* 46951, G). Also noted within the village of Therma. Recorded from Thasos and Limnos.

Caryophyllaceae

34. *Cerastium glomeratum* Thuill.

Gr Samothraki: SE of Profitis Ilias, rocky slope with open phrygana near the chapel Kremniotissa, on granite, 250 m, 40°24'21" N, 25°35'08" E, 10.04.2006, *Biel* 06.253; SW of Xiropotamos-Makrilies, gravelly river bed with olive trees and scrub, 30 m, 40°25'46" N, 25°30'45" E, 11.04.2006, *Biel* 06.282; NE of Therma, alluvial forest with two large seasonal pools, behind coastal barrier, 3 m, 40°29'57" N, 25°37'23" E, 05.05.2010, *Biel* 10.211.

Also noted near Anomeria and Kamariotissa. Recorded from Thasos, Limnos and Ag. Evstratios.

35. *Silene grisebachii* Davidov (Fig. 2)

Gr Samothraki: E of Pachia Ammos, low rocky ridge with phrygana east of beach, 30 m, 40°23'32" N, 25°35'05" E, 23.06.2007, *Biel* 07.199; *loc. ibid.*, 07.05.2010, *Biel* 10.329; 19.05.2010, *Biel* 10.684; Pachia Ammos, sandy beach with small dunes and *Vitex*, 7 m, 40°23'45" N, 25°34'46" E, 07.05.2010, *Biel* 10.274.

Recorded from Thasos and Limnos.



Fig. 2. *Silene grisebachii* (photo B. Biel).

Dipsacaceae

36. *Knautia integrifolia* (L.) Bertol.

Gr Samothraki: W-SW of Kamariotissa, edge of fallow field above dirt road and chapel, 10 m, 40°28'19" N, 25°27'25" E, 03.05.2010, *Biel* 10.050.

Recorded from Thasos and Limnos.

Fabaceae

37. *Melilotus segetalis* (Brot.) Ser.

Gr Samothraki: S of Kamariotissa, dry ditch and reed

area with seasonally wet uncultivated field 50–300 m near river mouth at the coast, on basalt loam, 5 m, 40°27'05" N, 25°28'23" E, 18.05.2010, *Biel* 10.653.

Also noted at the beach of Therma. Recorded from Thasos and Limnos.

38. *Melilotus spicatus* (Sm.) Breistr.

Gr Samothraki: E-SE of Chora, rocky hill with open phrygana, 900 m, 40°27'46" N, 25°33'33" E, 13.05.2010, *Biel* 10.523.

Confirming literature record of Stojanov & Kitanov (1944: 436). Recorded for Thasos as *M. neapolitanus* Ten.

39. *Robinia pseudoacacia* L.

Gr Samothraki: Chora, road margins and waste ground in village, 260 m, 40°28'28" N, 25°31'33" E, 04.05.2010, *Biel* 10.105.

Also noted at Kamariotissa. Introduced, escape from planting. Recorded from Thasos and Limnos.

Lamiaceae

40. *Ziziphora capitata* L. (Fig. 3)

Gr Samothraki: E-NE of Kamariotissa, uncultivated field below slope, on limestone, 40 m, 40°28'34" N, 25°28'49" E, 08.05.2010, *Biel* 10.347.

New for the N Aegean area.



Fig. 3. *Ziziphora capitata* (photo B. Biel).

Malvaceae

41. *Lavatera cretica* L.

Gr Samothraki: SW of Kamariotissa, wet ground in *Populus* plantation behind harbour, 3 m, 40°28'21" N, 25°28'12" E, 15.05.2010, *Biel* 10.561.

Recorded from Ag. Evstratios.

42. *Malva parviflora* L.

Gr Samothraki: N of Ano Karyotes, *Cistus-Sarcopoterium* phrygana along road to village,

10 m, 40°30'16" N, 25°35'02" E, 10.05.2010, *Biel* 10.410; SW of Kamariotissa, *Populus* plantation behind harbour, 3 m, 40°28'21" N, 25°28'12" E, 15.05.2010, *Biel* 10.562.

Recorded from Limnos and Ag. Evstratios.

Ranunculaceae

43. *Ranunculus psilostachys* Griseb.

Gr Samothraki: S-SE of Therma, rocky river gorge with *Alnus* trees at Fonias spring, 750 m, 40°27'20" N, 25°37'14" E, 09.05.2010, *Biel* 10.401.

Recorded from Thasos.

Rosaceae

44. *Aphanes australis* Rydb.

Gr Samothraki: N of Therma, open oak scrub with phrygana, 15 m, 40°30'03" N, 25°36'19" E, 05.05.2010, *Biel* 10.229; N of Pachia Ammos, shrubby slope above river gorge, 460 m, 40°25'21" N, 25°36'30" E, 16.05.2010, *Biel* 10.575.

There were large populations of *A. australis* along the dirt paths in six other localities including Alonia, Chora and Therma. The species is rather widely distributed on Samothraki at lower altitudes. Recorded from Thasos.

Rubiaceae

45. *Rubia tenuifolia* D'Urv.

Gr Samothraki: Therma, road margin with scrub within village, 50 m, 40°29'38" N, 25°36'31" E, 18.05.2010, *Biel* 10.655.

Recorded from Thasos.

Thymelaeaceae

46. *Thymelaea passerina* (L.) Coss. & Germ. (Fig. 4)

Gr Samothraki: E of Kamariotissa, uncultivated field on limestone slope, 40 m, 40°28'34" N, 25°28'48" E, 29.06.2010, *Biel* 10.765.

Recorded from Thasos as *Lygia passerina* (L.) Fasano (Stojanov & Kitanov 1946).

Valerianaceae

47. *Centranthus ruber* (L.) DC.

Gr Samothraki: SW of Profitis Ilias, rocky slope near the cemetery, 320 m, 40°25'53" N, 25°32'36" E, 11.05.2010, *Biel* 10.441.

Probably an escape from planting. New for the N Aegean area.

Cyperaceae

48. *Schoenoplectus litoralis* (Schrad.) Palla [Syn.: *Scirpus litoralis* Schrad.]

Gr Samothraki: SW of Kamariotissa, S edge

of seasonal coastal pool, 4 m, 40°27'38" N, 25°27'35" E, 03.05.2010, *Biel* 10.053.

A small group of plants were found, accompanied by *Juncus gerardi*, *J. subulatus* and *Bolboschoenus maritimus*. *Juncus gerardi* was collected during the Copenhagen University students' excursion to Samothraki in 1997. Recorded from Ag. Evstratios.

Juncaceae

49. *Juncus subulatus* Forssk.

Gr Samothraki: SW of Kamariotissa, edge of seasonal coastal pool, on gravelly soil, 4 m, 40°27'38" N, 25°27'35" E, 03.05.2010, *Biel* 10.052.

Recorded from Limnos.

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



Fig. 4. *Thymelaea passerina* (photo B. Biel).

Reports 50-53

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Brassicaceae

50. *Alyssum desertorum* Stapf

Tu(E) A1(E) Edirne: Centre – Yıldırım cemetery, 26 m, 41°40'28" N, 26°33'39" E, 15.04.1989, coll. *F. Dane* & al. (EDTU 2969); in the land of Musabeyli village, 109 m, 41°41'00" N, 26°40'00" E, 28.04.1989, coll. *F. Dane*, det. *N. Orcan* (EDTU 3525).

New for A1(E) with the specimens collected from Edirne in European Turkey. The species has been so far known from A1(E) Tekirdag and A2(E) Istanbul (Dudley 1965).

51. *Alyssum minus* (L.) Rothm.

Tu(E) A1(E) Edirne: between Edirne and Uzunköprü, 7 m, 41°16'10" N, 26°41'10" E, 23.04.1987, coll. *F. Dane*, det. *N. Orcan* (EDTU 603).

New for A1(E) with the specimens collected from Edirne in European Turkey. The species has been so far known from A2(E) Istanbul (Dudley 1965).

52. *Alyssum minutum* DC.

Tu(E) A1(E) Edirne: Suloglu – near dam, 156 m, 41°46'02" N, 26°54'43" E, 04.04.1990, coll. *A. Durak* (EDTU 4303) & coll. *S. Zeydan* & *H. Tokcan*, det. *N. Orcan* (EDTU 4352).

New for A1(E) with the specimens collected from Edirne in European Turkey. The species has been so far known from A2(E) Istanbul (Dudley 1965).

53. *Alyssum strigosum* Banks & Sol.

Tu(E) A1(E) Edirne: Centre – at roadside, 26 m, 41°40'28" N, 26°33'39" E, 03.04.1987, coll. *F. Dane* (EDTU 2735); Uzunköprü, near Ozsen rice factory, 7 m, 41°16'10" N, 26°41'10" E, 25.04.1989, coll. *F. Dane* & al., det. *N. Orcan* (EDTU 3481).

New for A1(E) with the specimens collected from Edirne in European Turkey. The species has been so far known from A1(E) Tekirdag and A2(E) Istanbul (Dudley 1965).

Reports 54-57

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Geraniaceae

54. *Geranium asphodeloides* Burnm. f. subsp. *asphodeloides*

Tu(E) A1(E) Edirne: Uzunköprü – Çöpköy, 3 km, 7 m, 41°16'10" N, 26°41'10" E, 25.04.1987, coll. *F. Dane*, det. *I. Deniz* (EDTU 628).

— A1(E) Kırklareli: Demirköy, Demirköy – Igneada, 7 km, 244 m, 41°49'17" N, 27°45'38" E, 10.06.1988, coll. *F. Dane* & *G. Dalgic*, det. *I. Deniz* (EDTU 2626); Demirköy: Demirköy – Igneada, 1 km, 244 m, 41°49'17" N, 27°45'38" E, 06.05.1990, coll. *C. Yarcı* (EDTU 5042); Demirköy: Ahmetler village, at fieldside, 100 m, 244 m, 41°49'17" N, 27°45'38" E, 10.07.1997, coll. *C. Yarcı*, det. *I. Deniz* (EDTU 7164).

— A1(E) Istanbul: Çatalca, Binkılıç, Çilingöz Field side, 29 m, 41°08'28" N, 28°28'02" E, 24.04.1999, coll. *N. Güler*, det. *I. Deniz* (EDTU 7891).

— A1(E) Tekirdağ: Saray Bahçeköy, Kastro seaside, 152 m, 41°26'26" N, 27°55'19" E, 24.04.1999, coll. *N. Güler*, det. *I. Deniz* (EDTU 7906).

New for A1(E). The species has been so far known from A2(E) Istanbul (Davis 1967).

55. *Geranium dissectum* L.

Tu(E) A1(E) Edirne: Centre, 26 m, 41°40'28" N, 26°33'39" E, 15.04.1989, coll. *F. Dane*, det. *I. Deniz* (EDTU 2990); Kutlutaş, 26 m, 41°40'28" N, 26°33'39" E, 30.04.1988, coll. *F. Dane*, det. *I. Deniz* (EDTU 5008); Karaağaç – Pazarkule, 135 m, 41°46'39" N, 26°28'51" E, 24.05.1998, coll. *N.Ç. Demirkan* (EDTU 7597); Centre, under a tree, 135 m, 41°46'39" N, 26°28'51" E, 03.05.1991, coll. *E. Kavaz*, det. *I. Deniz* (EDTU 5008); Centre, in grassland of Musabeyli village, 109 m, 41°41'00" N, 26°40'00" E, 30.03.1989, coll. *F. Dane* & *N. Aktaç* (EDTU 3512); Edirne-Kapıkule, 10 km, under a tree, 57 m, 40°53'00" N, 26°38'00" E, 02.06.1987, coll. *G. Dalgic* & *N. Başak*, det. *I. Deniz* (EDTU 871); Kesan – Mecidiye, 108 m, 40°51'21" N, 26°37'49" E, 31.05.1988, coll. *G. Dalgic* & *N. Polat*, det. *I. Deniz* (EDTU 2066); Havsa, 65 m, 41°33'01" N, 26°49'13" E, 30.05.1989, coll. *İ.Ö. Aygün*, det. *I. Deniz* (EDTU 3234); Edirne – Uzunköprü, Değirmenci dam, 7 m, 41°16'10" N, 26°41'10" E, 25.04.1989, coll. *F. Dane* & *N. Polat*, det. *I. Deniz* (EDTU 3474); Uzunköprü Özşen near rice factory, 7 m, 41°16'10" N, 26°41'10" E,

25.04.1989, coll. *F. Dane, N. Polat & S. Arda*, det. *I. Deniz* (EDTU 3490); Edirne: Meric, near the river, 20 m, 41°11'22" N, 26°25'03" E, 04.05.1985, coll. *C. Yarcı*, det. *I. Deniz* (EDTU 6028).

— A1(E) Istanbul: Selimpasa, around Durukan, 0 m, 41°03'18" N, 28°22'15" E, 12.05.2001, coll. *Aslıhan* (EDTU 8042).

— A1(E) Tekirdağ: Şarköy, at the seaside, 0 m, 40°36'58" N, 27°06'03" E, 18.05.1989, coll. *F. Dane*, det. *I. Deniz* (EDTU 4143).

New for A1(E) with the specimens collected from Edirne in European Turkey. The species has been so far known from A1(E) Tekirdağ, A2(E) Istanbul, A2(A) Istanbul (Davis 1967).

56. *Geranium lucidum* L.

Tu(E) A1(E) Edirne: Centre, 135 m, 41°46'39" N, 26°28'51" E, 17.05.1985, coll. *F. Dane, G. Dalgiç & N. Başak*, det. *I. Deniz* (EDTU 104); Centre, in the Söğütlük İzzet Arseven forest, 135 m, 41°46'39" N, 26°28'51" E, 18.04.1998, coll. *N.Ç. Demirkan* (EDTU 7590); Centre, Söğütlük İzzet Arseven forest, near river Meric, 135 m, 41°46'39" N, 26°28'51" E, 16.04.2000, coll. *N.Ç. Demirkan* (EDTU 7591); Uzunköprü, Uzunköprü – Çöpköy, 3 km, 7 m, 41°16'10" N, 26°41'10" E, 25.04.1987, coll. *F. Dane & G. Olgun*, det. *I. Deniz* (EDTU 621); Lalapaşa, Taşlımüsellim – Lalapaşa, 172 m, 41°50'00" N, 26°27'49" E, 01.06.1987, coll. *G. Olgun & F. Dane*, det. *I. Deniz* (EDTU 747); Centre, Orhaniye – Elcili, 1 km, in the forest, 135 m, 41°46'39" N, 26°28'51" E, 09.06.1987, coll. *F. Dane, G. Dalgiç & N. Başak*, det. *I. Deniz* (EDTU 1149); Uzunköprü: Çöpköy, 56 m, 41°13'11" N, 26°49'22" E, 10.05.1987, coll. *F. Dane*, det. *I. Deniz* (EDTU 1825).

— A1(E) Kırklareli: Demirköy, Koru village, 244 m, 41°49'17" N, 27°45'38" E, 25.05.1986, coll. *G. Dalgiç & N. Basak*, det. *I. Deniz* (EDTU 411); Kofcaz, Kofcaz – Elmacik, 3 km, 445 m, 41°55'42" N, 27°09'40" E, 10.06.1987, coll. *H. Arda, N. Başak, G. Olgun & F. Dane*, det. *I. Deniz* (EDTU 1241).

New for A1(E) with the specimens collected from Edirne and Kırklareli in European Turkey. The species has been so far known from A1(A) Çanakkale, A2(E) Istanbul (Davis 1967).

57. *Geranium molle* L. subsp. *molle*

Tu(E) A1(E) Edirne: Centre – Demirhanli village,

end of Edirne, 123 m, 41°41'51" N, 26°44'24" E, 25.05.1987, coll. *F. Dane, G. Olgun & C. Yarcı*, det. *I. Deniz* (EDTU 805); Centre, Karaağaç, near river Meriç, in *Populus* sp. field, 23 m, 41°39'28" N, 26°31'25" E, 06.05.2000, coll. *N.Ç. Demirkan* (EDTU 7593); Centre, Doyran village, 15 m, 41°29'04" N, 26°36'22" E, 17.04.1993, coll. *A. Bekçioğlu*, det. *I. Deniz* (EDTU 5629); Uzunköprü, at the entrance of Havsa, 7 m, 41°16'10" N, 26°41'10" E, 25.04.1989, coll. *F. Dane, N. Polat & N. Kaptanoğlu*, det. *I. Deniz* (EDTU 3364); Centre, in the grassland of Musabeyli village, 109 m, 41°41'00" N, 26°40'00" E, 30.03.1989, coll. *F. Dane & N. Aktaş*, det. *I. Deniz* (EDTU 3874); Lalapaşa, Çalidere – Donköy, 3 km, 172 m, 41°50'00" N, 26°44'00" E, 21.05.1992, coll. *F. Güdücü*, det. *I. Deniz* (EDTU 4851); Lalapaşa, Hamzabeyli – Donköy, 4 km, 172 m, 41°50'00" N, 26°44'00" E, 21.05.1992, coll. *N. Karaoğlu*, det. *I. Deniz* (EDTU 4893); Lalapaşa, Çalidere – Donköy, 3 km, 172 m, 41°50'00" N, 26°44'00" E, 21.05.1992, coll. *S. Kaya & F. Toksöz*, det. *I. Deniz* (EDTU 5104); Enez, Küçükeren village, wheat field, 5 m, 40°43'29" N, 26°04'57" E, 16.04.1994, coll. *M. Kireç*, det. *I. Deniz* (EDTU 7183); Enez, Yenice village, around Kepirler, 85 m, 40°42'00" N, 26°09'00" E, 19.05.1994, coll. *M. Kireç*, det. *I. Deniz* (EDTU a5).

— A1(E) Çanakkale: Gelibolu, Bolayır, Tigardere Park, 80 m, 40°30'45" N, 26°45'20" E, 10.05.1987, coll. *F. Dane*, det. *I. Deniz* (EDTU 668).

— A1(E) Istanbul: Pierre Loti, 93 m, 41°03'18" N, 28°54'30" E, 23.04.1993, coll. *D. Tüziin* (EDTU 5573).

New for A1(E) with the specimens collected from Edirne in European Turkey. The species has been so far known from A1(E) Çanakkale and A2(E) Istanbul (Davis 1967).

Reports 58-76

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Anacardiaceae

58. *Cotinus coggygia* Scop.

Bu Mt Slavyanka: Stargach Mt, at the highest point of

the Pazlaka locality, 1200 m, GL-39, 03.05.1994, in bloom, coll. *D. Dimitrov* (SO 97053).

The species has been so far known from elsewhere but the Central Balkan Range, Sofia region, Mt Belasitsa and Mt Slavyanka (Andreev 1992).

Asteraceae

59. *Carduus kernerii* Simonk.

Bu Mt Slavyanka: in calcareous grassy areas between peaks Gotsev Vrah and Tsarev Vrah, 2000 m, GL-18, 26.07.2005, coll. *D. Dimitrov* (SOM 162248).

The species has been so far known from the Balkan Range (*Central & Western*), Vitosha region, West Frontier Mts, Pirin Mts, Rila Mts, and Rhodopi Mts (*Western*) (Peev 1992).

60. *Centaurea triumfettii* subsp. *cana* (Sm.) Dostál

Bu Mt Slavyanka: Stargach Mt, in calcareous grassy areas, in a forest of Oriental Hornbeam and Manna Ash on peak Pazlaka, 1100 m, GL-39, 10.06.2005, coll. *D. Dimitrov* (SOM 161810).

This subspecies has been so far known from the Black Sea Coast, Rhodopi Mts (*Central & Eastern*), Thracian Lowland, Tundzha Hilly Country, and Mt Strandzha (Peev 1992).

61. *Senecio papposus* (Rchb.) Less. subsp. *papposus*

Bu Mt Slavyanka: beneath the beech timberline facing peak Gotsev Vrah, 1800 m, GL-18, 19.06.2005, coll. *D. Dimitrov* (SO 92333).

New for this floristic region.

Caryophyllaceae

62. *Silene saxifraga* L.

Bu Mt Slavyanka: on calcareous east slope of peak Gotsev Vrah, 2180 m, GL-18, 06.07.2005, coll. *D. Dimitrov* (SOM 162242).

New species for this floristic region.

Crassulaceae

63. *Sedum tenuifolium* (Sm.) Strobl

Bu Mt Slavyanka: E of Petrovo village, under Juniper bushes, single specimens, GL-18, 10.06.1994, coll. *I. Pashaliev* (SOM 152257).

This species has been so far known from the Valley of River Mesta (Dimitrov & Nikolov 1998).

Fabaceae

64. *Hippocrepis ciliata* Willd.

Bu Mt Slavyanka: Stargach Mountain, in calcareous rocky areas above Ilinden village, Gotse Delchev district, beneath peak Pazlaka, 900 m, 35° slope,

GL-39, 10.06.2005, coll. *D. Dimitrov* (SOM 161842).

This chasmophyte has been so far known from the Balkan Range (*Eastern*), Valley of River Struma, Rila Mts, Rhodopi Mts, Thracian Lowland, Tundzha Hilly Country, and Mt Strandzha (Kozhuharov 1992).

65. *Vicia onobrychioides* L.

Bu Mt Slavyanka: Stargach Mt, in calcareous grassy areas beneath peak Pazlaka, above Ilinden village, Gotse Delchev district, 1000 m, GL-39, 10.06.2005, coll. *D. Dimitrov* (SOM 161845).

This Mediterranean species has been so far known from Sofia region, Znepole region, Rhodopi Mts (*Central*), and Thracian Lowland (Kozhuharov 1992).

66. *Trigonella spicata* Sm.

Bu Mt Slavyanka: Stargach Mt, in calcareous grassy areas beneath peak Pazlaka, above Ilinden village, Gotse Delchev district, 1000 m, GL-39, 10.06.2005, coll. *D. Dimitrov* (SOM 161844).

This rare Pontic-Mediterranean species has been so far known from the Pirin Mts (*Southern*) (Kozhuharov 1992).

67. *Trigonella striata* L.

Bu Mt Slavyanka: Stargach Mt, in calcareous grassy areas beneath peak Pazlaka, above Ilinden village, Gotse Delchev district, 1000 m, GL-30, 10.06.2005, coll. *D. Dimitrov* (SOM 161843).

New species for the region.

Frankeniaceae

68. *Frankenia pulverulenta* L.

Bu Black Sea Coast (*Southern*): northwards of the Pomorie salt evaporation ponds, at the road to Aheloy village, on clayey salty soil in a dried-up evaporation pond, NH-51. Mosaic community of low density. Accompanying species: *Salicornia europaea*, *Artemisia pontica*, *Salsola ruthenica*, *Hymenolobus procumbens*, 04.05.2010, coll. & det. *D. Dimitrov* (SOM 165873).

Frankenia pulverulenta is considered nearly cosmopolitan species in fields and pastures and is widely distributed, probably due to the human impact and animals. The distribution range of the genus *Frankenia* comprises the Mediterranean Coast, Southeast Europe and up to Siberia, Mongolia and Punjab.

In Bulgaria, this species was first collected by Jordanov in 1929 in the saltworks near Sozopol. Another locality, also from the Southern Black Sea

Coast, is the spit between the sea and lake Pomorie reported by Vihodcevsy (1980) on the basis of materials of Ivan Ganchev collected in 1961 which remained undetermined.

An examination of the Herbarium of the Institute of Botany at the Bulgarian Academy of Sciences (SOM) showed that there were no Bulgarian materials on *Frankenia pulverulenta*. In the Herbarium of Sofia University (SO), there were five sheets from the Southern Black Sea Coast: the drying-up ponds of the former Sozopol saltworks (1929), coll. & det. *D. Jordanov* (SO 51478, SO 51479, SO 51480, SO 51482) and the spit between the sea and lake Pomorie (06.1961), coll. *I. Ganchev*, det. *N. Vihodcevsy* (SO 51481).

This taxon was classified as Critically Endangered (CR) in the *Red List of Bulgarian vascular plants* (Dimitrova 2009). The species was not identified during the investigation of the flora in Lake Pomorie Protected Area for a management plan for 2005. A major threat to this Bulgarian halophyte is the human impact: construction of hotels, holiday resorts and road infrastructure. The newly discovered locality falls within the Lake Pomorie Protected Area. We suggest that this confirmed habitat of this critically endangered species of the Bulgarian flora should be further protected by the Ministry of Environment and Water and the Regional Inspectorate of Environment and Water – Burgas, considering also the fact that another critically endangered species, *Hymenolobus procumbens* (L.) Nutt., occurs along with it.

Lamiaceae

69. *Stachys angustifolia* M. Bieb.

Bu Mt Slavyanka: Stargach Mt, in calcareous rocky areas above Ilinden village, Gotse Delchev district, 850 m, 35° slope, beneath peak Pazlaka, GL-39, 10.06.2005, coll. *D. Dimitrov* (SOM 161839).

New species for the region.

Rosaceae

70. *Alchemilla crinita* Buser

Bu Mt Slavyanka: Parilski Dol, peak Tsarev Vrah, GL-18, 06.08.1980, coll. *B. Kuzmanov* (SOM 145127).

This species has been so far known from Sredna Gora, Rila Mts and Rhodopi Mts (*Western*) (Markova 1992).

71. *Alchemilla glaucescens* Wallr.

Bu Mt Slavyanka: the subalpine part above Parilski Dol, 1900 m, GL-18, 19.06.1984, coll. *D. Dimitrov* (SOM 163273).

New species for this floristic region.

Scrophulariaceae

72. *Rhinanthus alpinus* Baumg.

Bu Mt Slavyanka: in rocky grassy areas along the ridge from peak Gotsev Vrah to peak Tsarev Vrah, 2000 m, GL-18, 26.07.2005, coll. *D. Dimitrov* (SOM 162415).

This species has been so far known from the Balkan Range (*Central*), Rila Mts, Pirin Mts, and Rhodopi Mts (*Western*) (Petrova 1992).

Liliaceae

73. *Fritillaria drenowskyi* Degen & Stoj.

Bu Mt Slavyanka: Stargach Mt, in calcareous areas above Ilinden village, beneath Pazlaka locality, 1000 m, GL-39, 10.06.2005, coll. *D. Dimitrov* (SOM 161847).

New locality in this floristic region. This protected Balkan endemic has already been recorded from Mt Slavyanka floristic region and Southern Pirin Mts (Petrova 1992).

Orchidaceae

74. *Nigritella nigra* (L.) Rchb. f.

Bu Mt Slavyanka: in calcareous grassy areas on the north slope of peak Gotsev Vrah, 2100 m, GL-18, 26.07.2005, obs. *D. Dimitrov*.

No herbarium specimens have been collected, since only two specimens were observed. This species has been so far known from the Balkan Range (*Western* & *Central*), Vitosha region, Pirin Mts, Rila Mts, and Rhodopi Mts (*Western* & *Central*) (Andreev 1992).

Poaceae

75. *Avenula versicolor* (Vill.) M. Láinz.

Bu Mt Slavyanka: on the southern slope of peak Golyam Tsarev Vrah, in calcareous grassy areas, 2100 m, GL-18, 26.07.2005, coll. *D. Dimitrov* (SOM 162248).

New species for the region.

76. *Sclerochloa dura* (L.) P. Beauv.

Bu Mt Slavyanka: Stargach Mt, in the streets of Ilinden village, Gotse Delchev district, GL-39, 10.06.2005, coll. *D. Dimitrov* (SOM 161848).

New species for this floristic region.

Reports 77-104

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All records are new for the vascular flora of the Athos Peninsula (Hagion Oros) in Greece. Geographical coordinates of some of the localities mentioned in the text are: Konstamonitou Monastery – 40.17° N, 24.10° E, Zografou Monastery – 40.18° N, 24.09° E, Hilandariou Monastery – 40.19° N, 24.07° E and Vatopediou Monastery – 40.19° N, 24.13° E.

Asteraceae

77. *Senecio viscosus* L.

Gr In the vicinity of Zografou Monastery, 29.03.2008, coll. D. Dimitrov & V. Vutov (SOM 164834).

78. *Sonchus bulbosus* (L.) N. Kilian & Greuter [syn. *Crepis bulbosa* (L.) Tausch]

Gr Near the quay of Zografou Monastery, 29.03.2008, coll. D. Dimitrov & V. Vutov (SOM 165830).

Boraginaceae

79. *Myosotis stricta* Link ex Roem. & Schult.

Gr Pashakonak region, 05.05.2008, coll. D. Dimitrov & V. Vutov (SOM 165051).

80. *Anchusa procera* Besser

Gr Above the quay of Zografou Monastery, 29.03.2008, coll. D. Dimitrov & V. Vutov (SOM 165819).

Brassicaceae

81. *Cardamine flexuosa* With.

Gr In a humid gully below Zografou Monastery, 29.03.2008, coll. D. Dimitrov & V. Vutov (SOM 164839).

82. *Lepidium campestre* (L.) R. Br.

Gr In a humid gully below Zografou Monastery, 29.03.2008, coll. D. Dimitrov & V. Vutov (SOM 164150).

83. *Neslia apiculata* Fisch., C.A. Mey. & Avé-Lall.

Gr Below Zografou Monastery, 29.03.2008, coll. D. Dimitrov & V. Vutov (SOM 164837).

84. *Teesdalia coronopifolia* (J.P. Bergeret) Thell.

Gr Above Zografou Monastery, along the road to Vatopedi Monastery, on rocks in an oak forest, 29.03.2008, coll. D. Dimitrov & V. Vutov (SO 104867).

85. *Thlaspi alliaceum* L.

Gr Along the road from Zografou Monastery to the quay of Hilandariou Monastery, 29.03.2008, coll. D. Dimitrov & V. Vutov (SO 104874).

Caprifoliaceae

86. *Viburnum tinus* L.

Gr Below Zografou Monastery, 16.01.2009, coll. V. Vutov (SOM 165054).

Caryophyllaceae

87. *Dianthus armeria* L. subsp. *armeria*

Gr At Vatopedi Monastery, 16.01.2009, coll. V. Vutov (SOM 165556).

88. *Minuartia viscosa* (Schreb.) Schinz & Thell.

Gr On the road to Konstamonitou Monastery 06.05.2008, coll. D. Dimitrov & V. Vutov (SOM 164150, 165058).

Chenopodiaceae

89. *Salsola soda* L.

Gr In sandy places around the quay of Hilandariou Monastery, 05.05.2008, coll. D. Dimitrov & V. Vutov (SO 105053).

Cuscutaceae

90. *Cuscuta approximata* Bab.

Gr Arsamata locality near the quay of Zografou Monastery, 06.05.2008, coll. D. Dimitrov & V. Vutov (SOM 164162).

Euphorbiaceae

91. *Euphorbia epithymoides* L.

Gr Above Zografou Monastery, 29.03.2008, coll. D. Dimitrov & V. Vutov (SO 105079).

92. *Euphorbia platyphyllos* L.

Gr Arsamata locality near the quay of Zografou Monastery, 05.05.2008, coll. D. Dimitrov & V. Vutov (SO 105578).

Fabaceae

93. *Lathyrus sylvestris* L.

Gr Arsamata locality near Zografou Monastery, 05.05.2008, coll. D. Dimitrov & V. Vutov (SOM 164166).

Papaveraceae

94. *Hypocoum procumbens* L. subsp. *procumbens*

Gr Eastwards of the quay of Hilandariou Monastery, 29.03.2008, coll. D. Dimitrov & V. Vutov (SO 104275).

Plantaginaceae

95. *Plantago afra* L.

Gr Along the road to Konstamonitou Monastery, 06.05.2008, coll. D. Dimitrov & V. Vutov (SOM 165822).

Ranunculaceae**96. *Ranunculus chius* DC.**

Gr Along the road from Zografou Monastery to Hilandariou Monastery, 05.05.2008, coll. *D. Dimitrov* & *V. Vutov* (SOM 164152).

97. *Ranunculus oxyspermum* M. Bieb.

Gr Pashakonak locality, 05.05.2008, coll. *D. Dimitrov* & *V. Vutov* (SOM 164681).

Resedaceae**98. *Reseda alba* L.**

Gr Along the road to Konstamonitou Monastery, 06.05.2008, coll. *D. Dimitrov* & *V. Vutov* (SOM 165868).

Rosaceae**99. *Aphanes arvensis* L.**

Gr Eastwards of Hilandariou monastery, 29.03.2008, coll. *D. Dimitrov* & *V. Vutov* (SO 104874).

Rubiaceae**100. *Galium setaceum* Lam.**

Gr Along the road from Zografou Monastery to the Pashakonak locality, 05.05.2008, coll. *D. Dimitrov* & *V. Vutov* (SOM 165829).

Poaceae**101. *Aegilops neglecta* Req. ex Bertol.**

Gr Above the Arsamata locality, near the quay of Zografou Monastery, 05.05.2008, coll. *D. Dimitrov* & *V. Vutov* (SOM 165101).

102. *Cynosurus echinatus* L.

Gr Along the road from Zografou Monastery to Hilandariou Monastery, 29.03.2008, coll. *D. Dimitrov* & *V. Vutov* (SO 104863).

103. *Hordeum hystrix* Roth

Gr Along the road from Zografou Monastery to Hilandariou Monastery, 29.03.2008, coll. *D. Dimitrov* & *V. Vutov* (SOM 164145).

104. *Polypogon monspeliensis* (L.) Desf.

Gr In the vicinity of Zografou Monastery, 06.2007, coll. *V. Vutov* (SO 104862).

The herbarium specimens were collected in the summer of 2005–2006 and in the autumn of 2007. Records by V. Stribrny were used for *Carex punctata*, records by D. Georgiev were used for *Oenanthe millefolia* and *Alyssum tortuosum*, and records by S. Platikanov were used for *Polygala carniolica*.

Apiaceae**105. *Oenanthe millefolia* Janka**

Bu Rhodopi Mts (*Western*): at the outskirts of Debrashtitsa village, KG-76, 06.1995, coll. *D. Georgiev* (SO 100146).

New for the subregion.

Brassicaceae**106. *Alyssum tortuosum* Willd.**

Bu Rhodopi Mts (*Western*): around Radilovo, Pazardzhik district, KG-76, 06.1995, coll. *D. Georgiev* (SO 100157).

New species for this floristic region and subregion.

Fabaceae**107. *Trifolium hybridum* subsp. *anatolicum* (Boiss.) Hausskn.**

Bu Rhodopi Mts (*Central*): in herbaceous places around Martsiganitsa Chalet, 05.2005, LG-24, coll. *D. Dimitrov* (SOM 163811).

This subspecies has been so far known from the Balkan Range (*Western* & *Central*), Vitosha region, Pirin Mts and Rila Mts (Kozhuharov 1992).

Polygalaceae**108. *Polygala carniolica* A. Kern.**

Bu Rhodopi Mts (*Central*): in limy herbaceous places near Mugla village, KG-80, 07.2003, coll. *S. Platikanov* (SOM 159027).

New species for this floristic region and subregion.

Polygonaceae**109. *Rumex crispus* L.**

Bu Rhodopi Mts (*Western*): E from the Batak Dam, in mountain meadows, 1400 m, KG-65, 20.10.2007, coll. *D. Dimitrov* (SOM 163844).

New species for this floristic region and subregion.

Rosaceae**110. *Alchemilla cinerea* Buser**

Bu Rhodopi Mts (*Central*): near Martsiganitsa Chalet, LG-24, 05.2005, coll. *D. Dimitrov* (SOM 163779).

This species has been so far known from the Pirin Mts and Rila Mts (Markova 1992).

Reports 105-113**Dimitar Dimitrov¹, Vassil Vutov¹ & Moussa Hodzha²**

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111. *Alchemilla heterophylla* Rothm.

Bu Rhodopi Mts (*Western*): Batak Divide, Dzshinevra State Forestry Farm, KG-62, 05.10.2007, coll. *D. Dimitrov* & *V. Vutov* (SOM 163837).

This species has been so far known from the Pirin Mts (Markova 1992).

Poaceae**112. *Bromus lacmonicus*** Hausskn.

Bu Rhodopi Mts (*Central*): on calcareous rocks above Trigrad village, along the road to Zhrebevo village, LG-24, 29.06.2006, coll. *D. Dimitrov* (SOM 163623).

New species for this floristic subregion.

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

Bu Rhodopi Mts (*Central*): in a humid meadow above Trigrad village, along the road to Zhrebevo village, KG-80, 29.06.2006, coll. *D. Dimitrov*.

New species for the region.

Reports 114-130**Antoaneta S. Petrova**

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Apiaceae**114. *Bupleurum affine*** Sadler

Bu Rhodopi Mts (*Western*): E of Bratsigovo town, in dry pastures, KG-85, 42°02'25.7" N, 24°23'24.1" E, 01.08.2010, coll. *A.S. Petrova* (SOM 166106).

New for this floristic subregion.

115. *Orlaya kochii* Heywood

Bu Rhodopi Mts (*Western*): E of Bratsigovo town, in dry pastures, KG-85, 42°02'25.7" N, 24°23'24.1" E, 01.08.2010, coll. *A.S. Petrova* (SOM 166172).

New for this floristic subregion.

Asteraceae**116. *Centaurea indurata*** Janka

Bu Pirin Mts (*Northern*): in forest glades at Krushe locality, SW of Razlog town, ca. 1150 m, GM-03, 41°51'12.5" N, 23°22'37.7" E, 26.08.2010, with flowers and fruits, coll. *A.S. Petrova* (SOM 166080).

New for this floristic region and subregion.

117. *Ligularia sibirica* (L.) Cass.

Bu Pirin Mts (*Northern*): along running brooks in Krushe locality, SW of Razlog town,

41°51'13.8" N, 23°22'37.8" E, ca. 1150 m, GM-03, 26.08.2010, with fruits, coll. *A.S. Petrova* (SOM 166124).

This species is included in the Annex IIB of the Directive 92/43 EEC and is critically endangered in Bulgaria (Bancheva 2009). A single population in Izvoro locality (at a distance of about 6 km) was known (Dimitrova & al. 2005. Action plan for *Ligularia sibirica* (L.) Cass. in Bulgaria, in Bulgarian, unpubl.). About 65 plants were counted at Krushe locality.

118. *Petasites kablikianus* Bercht.

Bu Rhodopi Mts (*Central*): W of Smolyan town, along the road to Mugla village, in wet places in the river Cherna valley, in Gerzovitsa locality, LG-00, 41°33'34.4" N, 24°36'14.0" E, 31.07.2010, coll. *A.S. Petrova* (SOM 166112).

Confirming this easternmost locality (LG-00, see map in Tan & al. 2010: 247) of the species in Bulgaria.

119. *Serratula bulgarica* Acht. & Stoj.

Bu Northeast Bulgaria: Taushan Tepe hill near Nevsha villige, Varna district, NH-29, 26.05.2010, coll. *A.S. Petrova* (SOM 166009).

A critically endangered species (Tzonev & Vladimirov 2009), with general distribution in North Bulgaria and Romania. In Bulgaria, it has been so far known only from the "locus classicus" (Achtaroff & Stojanoff 1932) near Turgovishte town – there has been no data from there at least for 60 years. A new locality has recently been found in the Central Danubian Plain (Tzonev 2004). In the present locality a small population was observed on the northern slope of this remarkable steppe refugium Taushan Tepe (Petrova 2007; Petrova & al. 2007a).

120. *Xeranthemum cylindraceum* Sm.

Bu Rhodopi Mts (*Western*): SE of Bratsigovo town, in dry pastures, KG-85, 42°02'25.7" N, 24°23'24.1" E, 01.08.2010, coll. *A.S. Petrova* (SOM 166103).

A species with a wide distribution, but without data from this region (Assyov & Vassilev 2004).

Boraginaceae**121. *Rochelia disperma*** subsp. *retorta* (Pall.)

Kotejowa

Bu Northeast Bulgaria: in a stony pasture near Vetrino village (Kairyaka locality), Varna district, NH-39; 43°15'35.8" N, 27°25'49.7" E, 07.05.2010, with flowers and fruits, coll. *A.S. Petrova* (SOM 166005). The observed

population was with significant density on a small patch of disturbed soil.

A new subspecies for Bulgaria. The species is known for Bulgaria only from the Valley of River Struma (Dimitrov 1997), wherefrom *R. d.* subsp. *disperma* was collected (SO 95716).

Ceratophyllaceae

122. *Ceratophyllum demersum* L.

Bu Rhodopi Mts (*Western*): Burovo Blato Dam, E of Bratsigovo town, KG-85, 42°01'39.10" N, 24°23'46.84" E, 01.08.2010, coll. A.S. Petrova (SOM 166105).

New for this floristic region and subregion.

Haloragaceae

123. *Myriophyllum spicatum* L.

Bu Rhodopi Mts (*Western*): Burovo Blato Dam, E of Bratsigovo town, KG-85, 42°01'39.10" N, 24°23'46.84" E, 01.08.2010, coll. A.S. Petrova (SOM 166104).

Re-discovering the taxon for this floristic subregion. This species was known from the Batak marsh and after the construction of the Batak Dam that locality was considered destroyed (Jordanov & Andreev 1979), a decision accepted by Petrova (1992) and the subsequent general flora sources.

Linaceae

124. *Linum bienne* Mill.

Bu Northeast Bulgaria: in dry glasslands at Taushan Tepe hill, near Nevsha villige, Varna district, NH-29, 43°17'18.2" N, 27°18'57.5" E, 26.05.2010, coll. A.S. Petrova (SOM 166082).

New for this floristic region.

Ranunculaceae

125. *Delphinium balcanicum* Pawl.

Bu Rhodopi Mts (*Western*): SE of Bratsigovo town, in dry pastures, KG-85, 42°02'25.7" N, 24°23'24.1" E, 01.08.2010, coll. A.S. Petrova (SOM 166107).

A Mediterranean floristic element, new for this floristic region.

126. *Ranunculus gracilis* E.D. Clarke

Bu Northeast Bulgaria: in stony pastures near Vetrino village (Kairyaka locality), Varna district, NH-39; 43°15'35.8" N, 27°25'49.7" E, 07.05.2010, coll. A.S. Petrova (SOM 166003).

New for this floristic region.

Rubiaceae

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

Bu Valley of River Mesta: E bank of River Mesta, E of Gotse Delchev town, GM-20, 41°34'31.5" N, 23°46'30.7" E, 26.08.2010, coll. A.S. Petrova (SOM 166128).

The limited floristic studies in the Mesta River floristic region and, respectively, the lack of herbarium vouchers from there are the reason for many comparatively common species not being mentioned for this region in the general flora sources. Such possibly is the case of *Galium rivale*.

Scrophulariaceae

128. *Verbascum decorum* Velen.

Bu Rhodopi Mts (*Central*): NW of Devin town, on sandstones along the road to Lisichevo, KG-82, 41°45'33.6" N, 24°23'18.5" E, 01.08.2010, coll. A.S. Petrova (SOM 166110).

A new location of this rare species with strongly localized distribution. A small population of about 25 individuals was observed.

Iridaceae

129. *Gladiolus palustris* Gaudin

Bu Pirin Mts (*Northern*): along running brooks in Krushe locality SW of Razlog town, 41°51'04.3" N, 23°22'35.8" E, ca. 1150 m, GM-03, 26.08.2010, with fruits, coll. A.S. Petrova (SOM 166122).

This species is included in the Annex IIb of the Directive 92/43 EEC. It is given as Data Deficient in the *Red List of Bulgarian vascular plants* (Dimitrova 2009). The locality was discovered in 1962 by Yordanov & Kuzmanov (1963) but this is the only recent confirmation, despite the comprehensive studies of some rare species (Dimitrova & al. 2005. Action plan for *Ligularia sibirica* (L.) Cass. in Bulgaria, in Bulgarian, unpubl.) and wetland plant communities (Hajek & al. 2005). The locality is listed as an Important Plant Area (Apostolova & Meshinev 2008) and Natura 2000 site (Petrova & al. 2007b) of this botanically very interesting area. More than 650 individuals were counted, scattered in forest glades.

Poaceae

130. *Bromus intermedius* Guss.

Bu Valley of River Struma (*Southern*): in arable lands NE of Strumyani town, FM-81, 30.05.2010, coll. A.S. Petrova (SOM 165993).

A Mediterranean floristic element, so far reported for the Bulgarian flora only from the Rhodopi Mts (*Eastern*) (Assyov & Petrova 2006).

Reports 131-150

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Apiaceae

131. *Peucedanum cervaria* (L.) Lapeyr.

Bu Sofia region: in meadows S of Tsraklevtsi village, FN-75, 43°56'30.8" N, 23°08'32.8" E, 04.07. & 28.08.2010, coll. A.S. Petrova & R. Vassilev (SOM 166173, 166136).

A species new for this floristic region, with local distribution. A well developed population with more than 100 flowering and many vegetative individuals was observed.

132. *Peucedanum oligophyllum* (Griseb.) Vandas

Bu Sofia region: among shrubs along the Lomsko Shose road, westwards of Belidie Han locality, on limestone, FN-75; 42°55'08.37" N, 23°09'41.19" E, 897 m, 04.07.2010, coll. A.S. Petrova & R. Vassilev (SOM 166184).

A new species for this floristic region.

133. *Smyrniium perfoliatum* L.

Bu Danubian Plain: among shrubs along the road between Slivata and Dobri Dol villages, FP-64, 27.04.2010, obs. A.S. Petrova & R. Vassilev.

A species with wide distribution, so far overlooked in this region. Observed also near the villages of Orsoya, Dabova Mahala and Drenovets.

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

Bu Sofia region: in dry stony grasslands above the carst spring near Bezden village, FN-75, 20.06.2009, coll. A.S. Petrova (SOM 165260).

New for this floristic region.

Asteraceae

135. *Arctium nemorosum* Lej.

Bu Mt Belasitsa: at the edge of a beech forest near Belasitsa chalet, FL-78, 13.08.2009, coll. A.S. Petrova, B. Assyov & R. Vassilev (SOM 165178); observed also along the road to Kongura Nature Reserve.

A species with local distribution in the mountain re-

gions of Bulgaria, a new record for the Mt Belasitsa floristic region.

136. *Centaurea pannonica* (Heuff.) Simonk.

Bu Sofia region: in dry grasslands along the road from Kostinbrod town to Bogyovtsi village, 42°52'57.1" N, 23°09'36.5" E, FN-75, 28.08.2010, coll. A.S. Petrova & R. Vassilev (SOM 166140).

— Pirin Mts (*Northern*): in meadows at Krushe locality, SW of Razlog town, 41°51'33.1" N, 23°23'36.1" E, GM-03, 02.08.2009, coll. A.S. Petrova & R. Vassilev (SOM 165193). The larger part of that locality is permanently wet, the species is found in slightly elevated dryer places.

New for both floristic regions.

137. *Erigeron sumatrensis* Retz. [syn. *Conyza sumatrensis* (Retz.) E. Walker]

Bu Sofia region: in the yard of the Techno-Bild car sellers, at the crossroads of Simeonovsko Shose Blvd. and Prof. I. Stranski St., Studentski Grad Res. Distr., Sofia, FN-92, 02.12.2009, with fruits and flowers, coll. A.S. Petrova (SOM).

— Mt Belasitsa: along the road to Belasitsa chalet, FL-78, 13.08.2009, with flowers and fruits, coll. A.S. Petrova, B. Assyov & R. Vassilev (SOM 165201, sub *Conyza sumatrensis*).

Erigeron sumatrensis is a recently published alien for Bulgaria (Vladimirov 2009b), with a high invasive potential. In both reported places only single individuals were found and definitely the beginning of an invasion in those particular areas was observed.

Boraginaceae

138. *Buglossoides glandulosa* (Velen.) R. Fern.

Bu Danubian Plain: in pannonic sand dunes near Orsoya village (close to the sand pit), FP-64, 43°47'10.9" N, 23°05'30.2" E, ca. 100 m, 26.04.2010, coll. A.S. Petrova & R. Vassilev (SOM 166152).

New for this floristic region.

Brassicaceae

139. *Armoracia macrocarpa* (Waldst. & Kit.) Kit. & Baumg. (Fig. 5)

Bu Danubian Plain: at the coast of Danube River, near the water tower of Dobri Dol village, 43°47'29.5" N, 23°01'19" E, FP-64, 26.04.2010, a group of plants with 10 inflorescences was observed by A.S. Petrova & R. Vassilev.

A new locality for this rare species.



Fig. 5. *Armoracia macrocarpa* (photo A.S. Petrova).

Caryophyllaceae

140. *Cerastium glomeratum* Thuill.

Bu Danubian Plain: on a dry sandy hill eastwardst of Archar village, FP-55, 43°49'09.6" N, 22°56'39.8" E, ca. 100 m, 27.04.2010, coll. A.S. Petrova & R. Vassilev (SOM 166150).

A species with cosmopolite distribution apparently so far overlooked in this region. Observed also near Orsoya village.

141. *Cerastium semidecandrum* L.

Bu Danubian Plain: on a dry sandy hill eastwards of Archar village, FP-55, 43°49'09.6" N, 22°56'39.8" E, ca. 100 m, 27.04.2010, coll. A.S. Petrova & R. Vassilev (SOM 166151).

A species with wide distribution so far overlooked in this region.

142. *Moenchia graeca* Boiss. & Heldr.

Bu Valley of River Struma (*Southern*): in dry places near Topolnitsa village, FL-98, 24.04.2009, coll. B. Assyov, A.S. Petrova & R. Vassilev (SOM 165501).

A new species for this floristic region.

Fabaceae

143. *Astragalus sesameus* L.

Bu Valley of River Struma (*Southern*): in dry places near the graveyard of Kulata village, FL-98, 24.04.2009, coll. B. Assyov, A.S. Petrova & R. Vassilev (SOM 165320).

A Steno-Mediterranean floristic element, evaluated as Endangered in the *Red List of Bulgarian vascular plants* (Sopotlieva 2009). In the recent general sources on Bulgarian flora it is recorded only from the Pirin Mts (*Southern*) and Tracian Lowland floristic regions (Tersiiski 2003; Assyov & Petrova 2006), although

there were other collections from the Valley of River Struma floristic region (SOM 134492, near Chuchuligovo village, 1964, coll. V. Velchev). The observed population has a mosaic spatial structure, with many patches on the hills in the Kartaletsa locality and in the vicinity of the graveyard.

Geraniaceae

144. *Geranium brutium* Gasp.

Bu Valley of River Struma (*Southern*): in dry places near the graveyard of Kulata village, FL-98, 24.04.2009, coll. B. Assyov, A.S. Petrova & R. Vassilev (SOM).

Possibly so far overlooked in this region.

Haloragaceae

145. *Myriophyllum verticillatum* L.

Bu Sofia region: in the lake of the meadow complex near Ranislavtsi village, Kostinbrod municipality, 43°56'12.1" N, 23°09'09.7" E, FN-75, 28.08.2010, coll. A.S. Petrova & R. Vassilev (SOM 166138).

New for this floristic region.

Ranunculaceae

146. *Ranunculus oxyspermus* M. Bieb.

Bu Danubian Plain: on a dry sandy hill eastwards of Archar village, ca. 120 m, FP-55, 43°49'09.6" N, 22°56'39.8" E, 27.04.2010, coll. A.S. Petrova & R. Vassilev (SOM 166154).

A species new for this floristic region.

Saxifragaceae

147. *Parnassia palustris* L.

Bu Sofia region: in meadows southwards of Tsraklevtsi village, FN-75, 42°57'09.6" N, 23°09'05.9" E, 28.08.2010, coll. A.S. Petrova & R. Vassilev (SOM 166139).

New for this floristic region.

Poaceae

148. *Achnatherum bromoides* (L.) P. Beauv.

Bu Valley of River Struma (*Southern*): in dry places along the road from Kresna town to Gorna Breznitsa village, FM-72, 20.07.2008, coll. A.S. Petrova (SOM 165176); in dry places in a *Quercus coccifera* community above Kamenitsa village, FM-81, 21.11.2009, coll. A.S. Petrova (SOM 165486); at the southern foothills of Mt Ograzhden, along the road to Gega village, FL-68, 21.11.2009, coll. A.S. Petrova (SOM 165487).

A comparatively common species in the region, but unmentioned for it in the recent floristic sources (Kozuharov 1992; Delipavlov 2003; Assyov & Petrova 2006).

149. *Calamagrostis pseudophragmites* (Haller f.) Koeler

Bu Sofia region: in meadows southwards of Tsraklevtsi village, FN-75, 42°56'39.9" N, 23°09'19.6" E, 04.07.2010, coll. A.S. Petrova & R. Vassilev (SOM 166184).

New for this floristic region.

150. *Sieglingia decumbens* (L.) Bernh.

Bu Sofia region: in meadows southwards of Tsraklevtsi village, FN-75, 42°56'39.6" N, 23°09'29.8" E, 04.07.2010, coll. A.S. Petrova & R. Vassilev (SOM 166187).

The distribution of this common species seems strongly underestimated in Kozuharov (1992), so this collection simply confirms its distribution in the region.

Reports 151-153

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Asteraceae

151. *Doronicum orientale* Ten. (syn. *D. caucasicum* M. Bieb.) (Figs. 6, 7)

Cg On northern slopes of Mt Rumija: i) Đuravci village, 350 m, NE exposition, in White Hornbeam (*Carpinus orientalis*) and Pomegranate (*Punica granatum*) shrubland (ass. *Carpinetum orientalis punicosum* Černj 1942). Besides *C. orientalis* and *P. granatum*, other abundant species in this association were: *Fraxinus ornus*, *Paliurus spina-christi*, *Salvia officinalis*. The soil type was shallow and rocky limestone, while the terrain had northeast exposition; and ii) village Livari, 500 m, along the trail to peak Rumija. The localities were at 10 km from each other, for both gatherings: 26.04.2008, coll. D. Petrović & D. Stešević, det. D. Petrović (TGU)

So far three species from genus *Doronicum* L. were reported in the flora of Montenegro: *D. austriacum* Jacq., *D. columnae* Ten. and *D. grandiflorum* Lam. (Rohlena 1942). *Doronicum orientale* resembles most *D. columnae*, but it can be clearly distinguished by its rhizome. The rhizome of *D. orientale* has a conspic-



Fig. 6. *Doronicum orientale*: 1 – habitus; 2 – macro detail of rhizome – tufts of hairs.

uous tuft of hairs (Fig. 6), unlike *D. columnae* whose rhizome is glabrous or sparsely pubescent. Although considering its general distribution *D. orientale* was expected on the territory of Montenegro, it was not reported for a long time. The population near Đuravci village has only few individuals. The population recorded above Livari village, along the trail to peak Rumija, was larger and had ca. 50 individuals.

Euphorbiaceae

152. *Euphorbia lingulata* Heuff. (Figs. 7, 8)

Cg Paštrovačka Gora, ca. 500 m, on NE exposed slopes, in a shady place near a White Hornbeam shrubland, with a herb layer of *Hedera helix*, *Pimpinella saxifraga*, *Thalictrum aquilegifolium*, *Trifolium nigrecens*, *Vicia grandiflora* etc., 10.05.2009, coll. D. Petrović, det. D. Petrović & D. Stešević (TGU).

According to Hayek (1917), *E. lingulata* is recorded in Montenegro. This data originated from I. Dörfler, who had collected very significant material in the border region between SE Montenegro and N. Albania (in 1914), and gave it to Hayek for identification (Pulević 1980). Thus in 1917 Hayek report-

ed *E. lingulata* for the Rapša hill in Albania, a few kilometers from the border of Montenegro. Actually, there is no data about the presence of *E. lingulata* on the territory of Montenegro. However, several authors citing Hayek (1917) wrote that *E. lingulata* occurred in Montenegro (Rohlena 1942; Janković & Nikolić 1972).

Among the *Euphorbia* species reported for the flora of Montenegro, *E. lingulata* resembles closest *E. epithymoides* L. The distinguishable features are: length and width of stem leaves (the leaves of *E. epithymoides* are 2–3 times as long as wide), as well as the length of ray-leaves (the rays of *E. epithymoides* are about as long as the ray-leaves).

So far Paštrovačka Gora has been the only locality of *E. lingulata* in Montenegro. The population is rather small and consists of 100 individuals.

Ranunculaceae

153. *Consolida hispanica* (Costa) Greuter & Burdet

[syn. *C. orientalis* (J. Gay) Schrödinger] (Fig. 7)

Cg Mt Lisinj, 700 m, on SW exposed rocky terrain

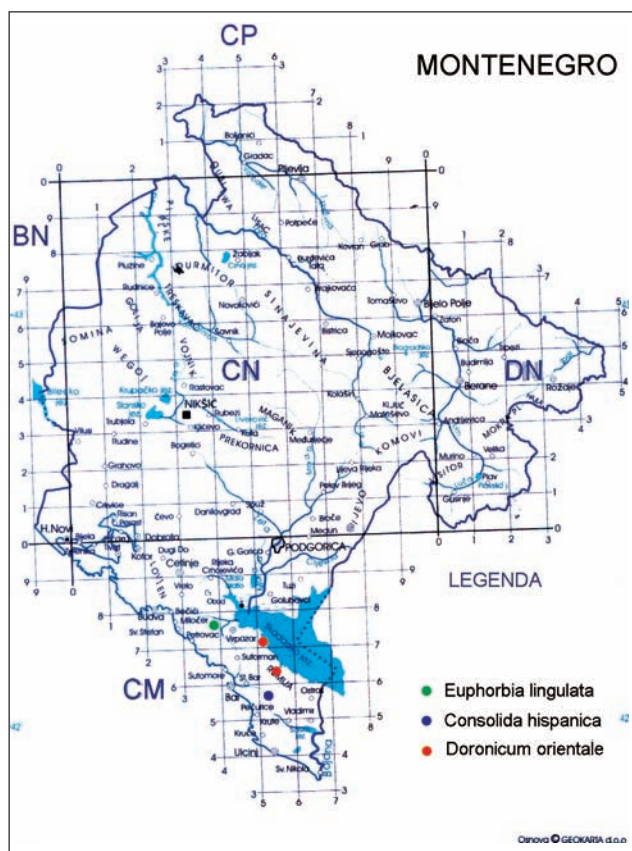


Fig. 7. UTM grid map of Montenegro with distribution of *Consolida hispanica*, *Euphorbia lingulata* and *Doronicum orientale*. Size of dots represent UTM grid 2 × 2 km.

dominated by a Submediterranean community composed primarily of *Phlomis fruticosa*, *Petrorhagia saxifraga*, *Trifolium arvense*, *Teucrium polium*, *Onosma echioides*, *Orlaya grandiflora*, 05.06.2008, coll. & det. D. Petrović (TGU).

According to Rohlena (1942) and Pulević (2005), genus *Consolida* is represented in the flora of Montenegro by three native species: *C. ajacis* (L.) Schur, *C. regalis* Grey and *C. uechtritziana* (Huth) Soó. *Consolida hispanica* is very similar to *C. ajacis*, but it is distinguishable by its shorter spur (in *C. ajacis* the spur is longer than 12 mm) and by the bracteoles (bracteoles of *C. ajacis*, at least of the lower flowers, do not reach the base of flower). So far only one population of *C. hispanica* was recorded in Montenegro: on Mt Lisinj. The population is very poor and represented by ca. 20 individuals.

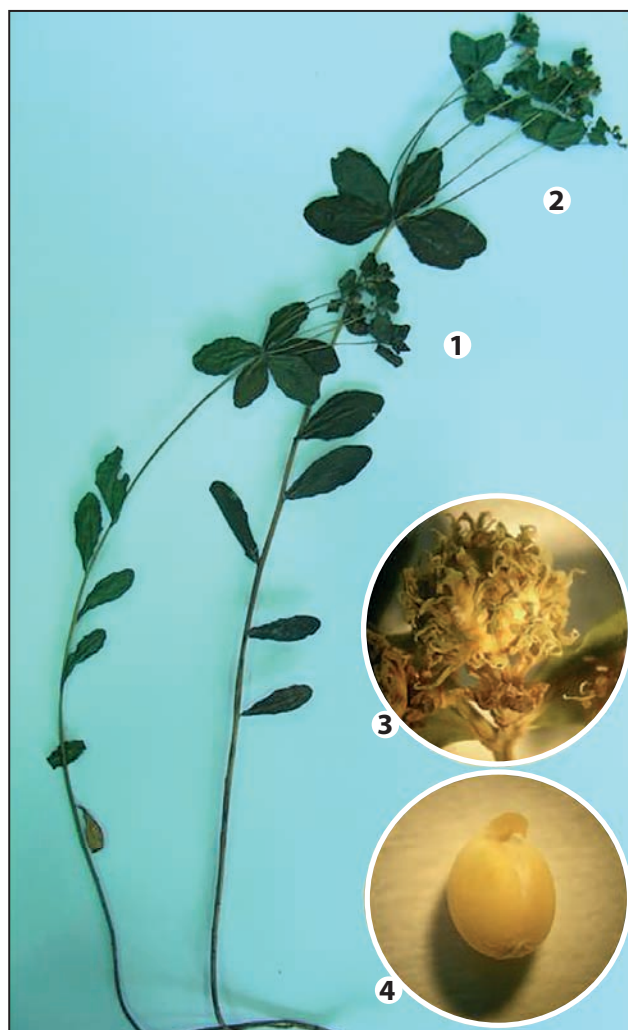


Fig. 8. *Euphorbia lingulata*: 1 – habitus; 2 – cyathium rays; 3 – fruit; 4 – seed.

Reports 154-157

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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).

Taxaceae

154. *Taxus baccata* L. (Fig. 9)

Gr Nomos Samou, Eparchia Samou: rocky limestone slope near summit of Mt Kerkis, 1200 m, 37°43' N, 26°36' E, 24.07.2008, obs. G. Fakas (several photos).

New for Samos and the East Aegean islands. An old tree certainly more than a hundred years in age, exceeding 5 m in height and with trunk nearly 2 m in girth, was discovered on a slope of Mt Kerkis in July 2008, growing together with *Fraxinus ornus*. This is surprising as the mountain is fairly well-botanized and the flora and vegetation of the island was the subject of a *PhD Thesis* (Christodoulakis 1986). An eighty-year old shepherd in the area informed us he remembers the trees in the area as a small child; these trees and others have now disappeared. He thinks such trees still likely to exist in other rocky areas of Samos. *Taxus baccata* is not very common nor existing as large populations in Greece. It is absent from all the Aegean islands with the exception of Thasos and Samothraki in the north.

Caryophyllaceae

155. *Dianthus androsaceus* (Boiss. & Heldr.) Hayek (Fig. 10)

Gr Nomos Korinthias, Eparchia Korinthias: Mt Killini, limestone area south of Lake Dhasios, 1510 m, 37°58' N, 22°24' E, 12.08.2010, obs. K. Polymenakos & G. Zarkos (photos, conf. Kit Tan, September 2010).

Confirmation of existence in *locus classicus*. *Dianthus androsaceus* is a small, spiny, cushion-forming perennial resembling *Acantholimon echinus* (L.) Boiss. [syn: *A. androsaceum* (Jaub. & Spach) Boiss.]. It was first collected on Mt Killini by Thomas Pichler in July 1876 and by Theodor von Heldreich in June 1887 and seems to



Fig. 9. *Taxus baccata* (photo G. Fakas).



Fig. 10. *Dianthus androsaceus* (photo K. Polymenakos).

be restricted to Mts Killini, Panachaiko and Kallifoni in the north Peloponnese and Mt Taigetos in the south Peloponnese. It has not been observed on Killini for more than 120 years and is presumed extinct in its *locus classicus*. However, recent exploration by Kostas Polymenakos and Giorgos Zarkos revealed the plant alive and well on this mountain. The locality south of Lake Dhasios is a heavily grazed, flat limestone area with *Crataegus pycnoloba* and *Juniperus oxycedrus*. Approximately 20 plants were discovered within an area of 10 × 10 m, growing together with *Plantago holosteum*. Most of the plants were in fruit and no other population was observed by them on Killini. There have been no sightings of *D. androsaceus* from Mt Killini since 1887 and this is a notable rediscovery after the days of Pichler and Heldreich. However, a chance meeting by Kit Tan with Tristan Lafranchis in October 2010 revealed that the latter had also observed it recently on Mt Killini.

156. *Silene oligantha* subsp. *parnesia* Greuter

Gr Nomos & Eparchia Attikis: Mt Pendeli, SE of the main peak, flowering, 750–800 m, 38°04' N, 23°54' E, 06.06.2010, obs. K. Polymenakos (photos, conf. Kit Tan, November 2010); *loc. ibid.*, fruiting, 38°03' N, 23°53' E, 28.11.2010, obs. K. Polymenakos (photo).

A Greek endemic otherwise known only from Mt Parnitha. New for Mt Pendeli where two populations of *ca.* 15 plants and *ca.* 70 plants were noted on the rocky limestone slopes, growing together with *Spartium junceum*, *Arbutus unedo*, *Cistus creticus*, *Onobrychis ebenoides*, etc. in former *Pinus halepensis* woodland. Large trees of the latter no longer exist on Pendeli after the disastrous forest fires of 2007. The two other subspecies of *S. oligantha* are also Greek endemics restricted to Mt Olimbos or NW Evvia.

After this paper went to press, we found that the taxon was first reported from Mt Pendeli by Vagelis Baliouisis (Athens) in the abstracts of the Proceedings of the 11th Pan-Hellenic Scientific Congress of the Hellenic Botanical Society (www.hbs.gr).

Violaceae

157. *Viola heldreichiana* Boiss.
(Fig. 11)

Gr Nomos Samou, Eparchia Samou: 40–60 m N-NE of the chapel of Profitis Ilias at summit of Mt Ambelos (Karvouni), 1150 m, 37°45' N, 26°50' E, 30.03.2010, obs. K. Polymenakos & G. Fakas (photos, conf. Kit Tan, September 2010).

Confirmation of absence of *Viola hymettia* Boiss. & Heldr. from the island of Samos. *Viola heldreichiana* is a small annual with pale violet-purple or cream-coloured flowers 5–6 mm diam. It inhabits limestone rock crevices and mobile screes. Reports from Crete (Kedhros, Psiloritis) cited by Raus (1986: 638) refer to *V. rauliniana* Erben. *Viola hymettia* has much larger flowers and was first described from Mts Taigetos and Hymettos (Imittos); there are several records from the mountains of Attiki (Fig. 12). It was reported from the summit of Mt Ambelos on the island of Samos by Christodoulakis (1986:146); this report was based on Rechner's *Flora Aegaea* (1943: 257) substantiated by a specimen, *Rechner* 3862 (*n.v.*). In *Flora Aegaea*, this collection and another from Mt Atheras on the island of Ikaria (*Rechner* 4402, LD) were listed as *V. hymettia*. However, *Rechner* 4402 had been re-identified as *V. heldreichiana* by Erben in 1984. Thus it is probable that *Rechner* 3862, collected on 10.04.1934 at 1140 m on Samos, is also *V. heldreichiana*. There are at present four known records of *V. heldreichiana* on Samos, all collected from the summit area of Mt Ambelos, two of them misidentified as *V. hymettia*. *Snogerup* 9016 (LD) collected on 08.05.1992 is correctly identified and ours is the fourth record. Despite



Fig. 11. *Viola heldreichiana*
(photo K. Polymenakos).

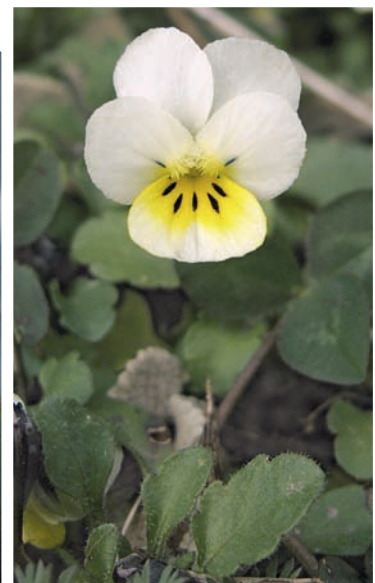


Fig. 12. *Viola hymettia*
(photo K. Polymenakos).

careful searching for *V. hymettia* on Mt Ambelos for several years, it was not to be found and our conclusion is that it does not exist on Samos.

Report 158

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Rosaceae

158. *Dryas octopetala* L.

Bu Rhodopi Mts (*Central*): Smolyan district, on the ridge between Golyam Perelik (2191 m) and Golyam Snežnik (2188 m), on a north-exposed slope and on sheer rock outcrop just below the ridge, ca. 2050 m, 41°37' N, 24°33' E, 19.07.2006, coll. M. Ronikier & A. Ronikier (KRAM 581501).

Dryas octopetala belongs to the most important representatives of the arctic-alpine species. It is widespread in the circumpolar arctic/subarctic regions and in the more southerly high mountain ranges (Hultén & Fries 1986). The Balkans belong to the southernmost reaches of its general distribution. In Bulgaria, *D. octopetala* has been so far known from the high western ranges of the Central Balkan Range, Rila, Pirin and Slavyanka Mts (Stojanov & Kitanov 1966; Markova 1992; Stevanović & al. 2009). The present record is the first locality in the Rhodopes contributing to a low number of typical arctic-alpine species reported from this area (cf. Stevanović & al. 2009). The population discovered was extremely small and occupied a surface of a few square meters on rock shelves. It included several flowering individuals. Its distance to the closest Bulgarian populations in Pirin and Slavyanka/Orvilos Mts is about 90 km. However, the closest known relic population of *D. octopetala* is located in the Greek massif of Falakron Mts (Strid 1986), about 50 km apart; these two populations form the south-easternmost reaches of the species' distribution in Europe.

Reports 159-161

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Fabaceae

159. *Trifolium angustifolium* L. var. *angustifolium*

Tu(E) A1(E) Edirne: Centre – Musabeyli village, in pastures, 109 m, 41°41'00" N, 26°40'00" E, 23.06.1989, coll. F. Dane (EDTU 3571); around Faculty of Medicine, 26 m, 41°40'28" N, 26°33'39" E, 25.05.1986, coll. G. Dalgic & A. Asan (EDTU 399); Kucukdolluk village, 132 m, 41°45'00" N, 26°40'00" E, 16.07.1999, coll. G. Savas (EDTU 7418); Kesan: Yerlisu village, 162 m, 40°44'00" N, 26°43'00" E, 25.05.1999, coll. N. Basak & N. Guler (EDTU 7459); Meseli – Kircasali, 1 km, 89 m, 41°23'33" N, 26°48'11" E, 09.06.1987, coll. G. Dalgic & F. Dane (EDTU 1059); Enez: at Mecidiye, seaside, 0 m, 40°38'20" N, 26°32'14" E, 11.06.1997, 06.1987, coll. N. Basak & N. Guler (EDTU 7478); Suloglu: Demirhanli village, 123 m, 41°41'51" N, 26°44'24" E, 16.07.1999, coll. G. Savas (EDTU 7421).

New for A1(E) with the specimens collected from Edirne in European Turkey. The species has been so far known from A1(E) Tekirdag and A2(E) Istanbul (Zohary 1970).

160. *Trifolium purpureum* Loisel. var. *laxiusculum* (Boiss. & Blanche) Hossain

Tu(E) A1(E) Edirne: Uzunkopru – Kurttepe village, 95 m, 41°22'00" N, 26°43'00" E, 04.08.1998, coll. G. Savas (EDTU 7351); Enez: Mecidiye, the seaside, 0 m, 40°38'20" N, 26°32'14" E, 11.06.1997, coll. N. Basak & N. Guler (EDTU 7476).

New for A1(E) with the specimens collected from Edirne in European Turkey. The species has been so far known from A2(E) Istanbul (Zohary 1970).

161. *Trifolium purpureum* Loisel. var. *purpureum*

Tu(E) A1(E) Edirne: Centre – around Faculty of Medicine, 26 m, 41°40'28" N, 26°33'39" E, 06.06.1987, coll. E. Duzalan (EDTU 1108); Kucukdolluk village, 132 m, 41°45'00" N, 26°40'00" E, 16.07.1999, coll. G. Savas (EDTU 7417); Havsa: near Sinit lake, 65 m, 41°33'01" N, 26°49'13" E, 20.05.1999, coll. G. Savas (EDTU 7367); Lalapasa: between Domurcali and Taslimusellim villages, 193 m, 41°49'00" N, 26°47'00" E, 01.06.1987, coll. N. Basak & A. Asan (EDTU 947); Suloglu: Domurcali village, 196 m, 41°49'00" N, 26°49'00" E, 16.07.1999, coll. G. Savas (EDTU 7423); near Suloglu dam, 156 m,

41°46'02" N, 26°54'43" E, 16.07.1999, coll. G. Savas (EDTU 7427).

New for A1(E) with the specimens collected from Edirne in European Turkey. The species has been so far known from A1(E) Tekirdag and A2(E) Istanbul (Zohary 1970).

Reports 162-164

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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).

Asteraceae

162. *Petasites anapetrovianus* Kit Tan, Ziel., Vladimirov & Stevanović (Fig. 13)

Gr Nomos Fokidos, Eparchia Parnassidos: Mt Iti, 7 km N-NW of Pavliani, *Abies* forest, 1450 m, 38°46' N, 22°17' E, 22.05.1975, *Landström* 2504 (LD).

— Nomos Fokidos, Eparchia Doridos/Parnassidos: Mt Vardousia, 7 km E-NE of Artotina, stony

and rocky limestone slopes in the deep ravine, 145-600 m, 38°44' N, 22°06' E, 13.06.1985, *Gustavsson* 9357 (G).

New for Mts Iti and Vardousia, nomos and eparchia and also phytogeographical region Sterea Ellas (StE). This species was collected at 1950 m on Mt Peristeri in the S Pindos (SPi) by Kit Tan, G. Vold and V. Vladimirov in July 2008 and recently described as a new species (Tan & al. 2010). It was considered to occur also on other mountains in S Pindos and Sterea Ellas, which prediction proved correct. KT thanks A. Strid for photographing the specimen at LD at her request.

Guttiferae

163. *Hypericum rumeliacum* Boiss.

Gr Nomos Achaias, Eparchia Egialias: hillslopes above Diakopto, ca. 400 m, 38°08' N, 22°13' E, flowering May 2010, fruiting June 2010, *Lafranchis* s.n. (herb. Lafranchis, conf. Kit Tan, 2010).

New for eparchia and second known record for the Peloponnese. *Hypericum rumeliacum* is common in the mountains of Greece, extending locally to the N Peloponnese (eparchia Kalavriton, Mt Kallifoni where it was collected at ca. 1700 m, see Fig. 5 in *Phytologia Balcanica* 16(2): 227-231, 2010). The new record, also in the northern Peloponnese, links the distribution of the species on mainland Sterea Ellas closer to the Peloponnese across the Gulf of Corinth. The low altitude of 400 m is surprising as *H. r.* subsp. *apollonis* (Boiss. & Heldr.) Robson & Strid, to which the Peloponnese collections belong, generally occurs at higher altitudes.

Orchidaceae

164. *Spiranthes spiralis* (L.) Chevall.

Gr Nomos Kerkiras, Eparchia Paxos: island of Paxos, track going down to Kipiadi beach, 39°13' N, 20°09' E, October 1997, obs. *Nelson* (photo).

New for the Ionian island of Paxi. Several small colonies were found just beginning to bloom under *Cupressus* in the second week of October; also noted on the track between Loggos and Kondoyanatika. We are grateful to Dr Charles Nelson (Heather Society, U.K.) for communicating this first record.



Fig. 13. *Petasites anapetrovianus* – herbarium LD (photo A. Strid).

Report 165

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Fagaceae

165. *Quercus thracica* Stef. & Nedjalkov (Fig. 14)

Bu Rhodopi Mts (Eastern): southwards of Krumovgrad town, along the motor road to Makaza, between the Sarnak and Kandilka villages. On a slope with a bulging relief, inclination 21°, W-NW exposition, 450 m, 41°25'32.2"N; 25°35'52.6"E, [lot 706 „m(m)” of the Krumovgrad State Forestry Farm].

On 20.07.2010 we have witnessed the complete withering out of *Quercus thracica* in its one and only location. All branches on both stems had withered, as well as the stems themselves. The bark was missing in many places on the stems. No signs of sprout regeneration were found. In our opinion, the tree had died because

of the damage inflicted on its root system during construction of the supporting wall and enclosure around it. The pathogenous fungi *Hypoxylon mediterraneum* and *Diplodia mutila* had infected the damaged spots. The disease caused by these fungi is called Hypoxylon Canker and the tree withers up usually within two or three years after infection. *Quercus thracica* had lived much longer after its infection.

Already on 28.08.2009 the Regional Inspectorate of the Environment and Water in Haskovo had inspected the Evergreen Thracian Oak Natural Landmark, proclaimed as such by Order No 2606 of 14.12.1960 issued by the General Forestry Directorate. Inspection Protocol No 545 confirms the complete withering out of *Quercus thracica*. The beginning of the withering process was discovered by us already in April 2000, when we found that the bark on both stems had started to wither at the base, up to about 30 cm above the soil surface, and that the timber under the bark had also started to decay. The tops of the top annual twigs were also observed to dry out up to some 30–40% (Tashev 2002: 24-25).



Fig. 14. *Quercus thracica* (photo A. Tashev).

Reports 166-168

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Elatinaceae

166. *Elatine alsinastrum* L.

Bu Northeast Bulgaria: Chaira locality, in a temporary shallow spring marsh (known as Chair Gyol), close to General Kolevo village, Dobrich district, 220 m, NJ-73, 43°38'49.6" N, 27°57'31.2" E, 06.06.2010, coll. P. Shurulinkov & G. Daskalova (SOM 165945).

The species was known from the Danubian Plain (Kosta Perchevo village, Vidin district), Balkan Range (*Central* – Velchevo village, Gabrovo district), Sofia region (the former wetlands around Sofia city), Znepole region (Dragoman marsh), Tracian Lowland (Mezek village, Haskovo district and Manole village, Plovdiv district) (Jordanov & Peev 1979). Most of the former localities were destroyed after the drying up of wetlands in Bulgaria. The species is included as Rare in the first edition of *Red Data Book of People's Republic of Bulgaria* (Peev 1984) and assessed as Critically Endangered (CR) at national level (Dimitrova 2009).

This species has an ample population in the newly established locality in Northeast Bulgaria. It occurs in the temporary marsh of Chair Gyol valley on the Dobrudzha's Plateau, between General Kolevo and Plenimir villages. It participates in aquatic communities dominated by *Juncus atratus*, *Rorippa amphibia*, *Eleocharis palustris*, *Alisma plantago-aquatica* etc.

Paeoniaceae

167. *Paeonia tenuifolia* L.

Bu Sofia region: between Bozhurishte and Kostinbrod towns, Sofia district, in a mesophilous meadow, close to a fishpond and the rail tracks, 540 m, FN-83, 42°46'27.47" N, 23°12'32.78" E, 05.06.2010, coll. R. Tzonev & I. Hristov (SOM 165946).

Confirming the occurrence of this rare species in the locality. The species is known from localities in Northeast Bulgaria, Danubian Plain, Sofia region, Tundzha Hilly Country, and Mt Strandzha (Jordanov 1970). The locality between Voluyak village and Kostinbrod and Bozhurishte towns was recorded by Jordanoff (1936), but it has not been confirmed for a long time (Velchev 1984). Thus the species was reported as extinct from this locality in the *Red Data Book of the People's Republic of Bulgaria* (Velchev 1984) and in some other literature sources (Peev 2000).

The confirmed locality is a small meadow (4 dka) surrounded by the rail tracks, agricultural land and a fishpond. The vegetation is dominated by *Elymus repens*, *Alopecurus pratensis*, *Salvia nemorosa*, *Poa pratensis*, etc. The population of *Paeonia tenuifolia* numbers some 100 individuals. The locality needs strict protection, because it is the last surviving one in the Sofia fields and in the vicinities of Bozhurishte – a town named after this species, which is “Bozhur” in Bulgarian (see Peev 2000).

Cyperaceae

168. *Isolepis supina* (L.) R. Br.

Bu Danubian Plain: in drying former riverbeds of river Osam, 1.2 km northwards of Bulgarene village, Pleven district, 47 m, LJ-41, 43°27'21.79" N, 25°05'08.97" E, 04.07.2010, coll. R. Tzonev (SO 106183, SOM 165944).

The species is already known from the Danubian Plain (Kuzmanov & Kožuharov 1964) but here a new locality is reported. The taxon is included as Endangered in the *Red Data Book of the People's Republic of Bulgaria*, but the last collection was in 1941 (Markova 1984). It was not evaluated during the Elaboration of Red Lists of Higher Plants and Fungi project, supported by the Bulgarian Ministry of Environment and Water (Petrova & Vladimirov 2009) and is not included in the new edition of the *Red Data Book of Bulgaria*, because of the lack of information on its recent distribution in the country. In the newly discovered locality, the population is numerous and sparsely covers 7–8 dka. It inhabits the drying old riverbeds of river Osam and forms small patches on the wet beds. The species composition of the vegetation in the locality includes *Potentilla reptans*, *Alisma lanceolata*, *Butomus umbellatus*, *Mentha pulegium*, *Xanthium strumarium*, etc.

The species is listed in the Annex 2a of the Bulgarian Biodiversity Act and its localities must be included in a new protected area.

Reports 169-176

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Caryophyllaceae

169. *Dianthus superbus* L.

Bu Znepole region: Mt Ruy, on peak Ruy, FN-24,
42.86846° N, 22.57262° E, 01.08.2009, coll. K.
Vassilev (SOM 16051).

This species is widespread in the Bulgarian mountains. It was found locally in Znepole region, only in the highest part of Mt Ruy and is a new species for this floristic region.

Crassulaceae

170. *Sedum pallidum* M. Bieb.

Bu Znepole region: on a cliff between Berende
Izvor and Kalotina villages, near the border
with Serbia, FN-56, 17.06.2009, 42.99730° N,
22.87732° E, coll. K. Vassilev (SOM 166053).

This is a Mediterranean element reported for many floristic regions but so far unknown from the Znepole region.

171. *Sedum urvillei* DC.

Bu Sofia region: distributed on eroded calcareous
hills along the road Sofia – Breznik, close to
Rosoman village, FN-63, 42.75803° N, 23.07191° E,
29.05.2009, coll. K. Vassilev (SOM 166040).

This species is widespread in Bulgaria (Assyov & Petrova 2006) but it has not been reported for Sofia region yet.

Fabaceae

172. *Lathyrus inconspicuus* L.

Bu Sofia region: Mt Lyulin, in pastures, on the
right side on the road from Bankya to Klisurski
monastery, FN-73, 42.72570° N, 23.09482° E,
11.06.2009, coll. K. Vassilev (SOM 166041).

A new species for this floristic region.

Lamiaceae

173. *Thymus glabrescens* Willd.

Bu Znepole region: Mt Ruy, on peak Ruy, FN-24,
42.86233° N, 22.57663° E, 01.08.2009, coll. K.
Vassilev (SOM 166052).

The species was found in mesophilous grassland communities on peak Ruy. A new record for Znepole region.

Scrophulariaceae

174. *Pedicularis moesiaca* Standl.

Bu Znepole region: on a calcareous hill above
Erul village, FN-33, 42.74044° N, 22.65648° E,
16.06.2009, coll. K. Vassilev (SOM 166049).

This is a Balkan endemic (Petrova & Vladimirov 2010), which has not been known from Znepole region so far. Its population is represented only by several individuals.

Poaceae

175. *Festuca stojanovii* (Acht.) Foggi & Petrova

Bu Northeast Bulgaria: under the Shumen Plateau,
along the asphalt road towards the town, on
rocks, MH-99, 28.07.1981, coll. S. Kožuharov &
A. Petrova (SOM 143945).

— Znepole region: on a calcareous hill above Murino
village, 10.06.2009, 42.61736° N, 22.72834° E, coll.
K. Vassilev (SOM 166050); on calcareous pastures
on Mt Chepan, peak Petrovski Krast, 1206 m, FN-
55, 15.08.1941, coll. B. Achtarov (SOM 6086); on
calcareous terrains on Mt Paramunska, 1250 m,
FN-43, 16.06.1936, coll. B. Achtarov (SOM 6089);
on calcareous terrains on Mt Paramunska, 1200 m,
16.06.1939, coll. B. Achtarov (SOM 6084); on
calcareous pastures on Mt Rudina, 1200 m, above
village of Gorni Korten, Kyustendil district, FN-
20, 14.07.1940, coll. B. Achtarov (SOM 6081); on
calcareous terrains above Krakra Pernishki, Mt
Golo Bardo, FN-61, 31.05.1936, coll. B. Achtarov
(SOM 6078).

— Mt Sredna Gora (*Western*): Mt Lozenska, in
cracks of limestone rocks of peak Bachul, GN-
01, 27.07.1954, coll. I. Ganchev (SOM 40285);
Mt Lozenska, on the southern calcareous
slopes of peak Golyama Rakova Mogila, FN-
91, 29.07.1954, coll. I. Ganchev (SOM 40287);
Mt Lozenska, in cracks of limestone rocks on
peak Polovrak, Gorni Lozen village, GN-01,
24.09.1953, coll. I. Ganchev (SOM 40285).

This species is a Balkan endemic with local distribution in Serbia and Bulgaria (Petrova & Vladimirov 2010). According to Assyov & Petrova (2006), it is distributed only in two floristic regions: the Balkan Range (*Western*) and West Frontier Mts. After careful examination of all herbarium materials of the species in SOM and SO, it seems to have been distributed in three more floristic regions. Confirming the occurrence in Znepole region (Kožuharov 1992).

176. *Stipa epilosa* Martinovský

Bu Sofia region: on calcareous hills above the road to Opitsvet village, close to Slivnitsa town, FN-64, 42.85697° N, 23.06263° E, 04.06.2009, coll. K. Vassilev (SOM 166045).

This species is common in the country and is distributed in the neighboring floristic regions, but has not been reported for Sofia region yet.

Reports 177-189**Kiril Vassilev & Hristo Pedashenko**

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Campanulaceae**177. *Asyneuma canescens*** (Waldst. & Kit.) Griseb. & Schenk

Bu Balkan Range (*Western*): Mt Ponor, on the northeast slopes of peak Kovilya, 3 km northwest of Zanoge village, FN-87, 13.07.2009, 43.08149° N, 23.28232° E, coll. K. Vassilev & H. Pedashenko (SOM 166029).

This is a new species for this floristic region.

178. *Campanula jordanovii* Ančev & Kovanda

Bu Balkan Range (*Western*): Mt Ponor, SE of peak Prepasnitsa, between Breze and Zanoge villages, FN-87, 07.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166056); Mt Ponor, between Zanoge village, Botin Vrah and Treskata Mogila peaks, FN-87, 08.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166061).

This species has not been reported yet for this floristic region.

Guttiferae**179. *Hypericum barbatum*** Jacq.

Bu Balkan Range (*Western*): Mt Ponor, on the west slopes of peak Dolniya Vrah, FN-87, 43.09386° N, 23.21808° E, 30.06.2009, coll. K. Vassilev & H. Pedashenko (SOM 166027).

This is a new species for this floristic region.

Lamiaceae**180. *Thymus callieri*** Borbás ex Velen.

Bu Balkan Range (*Western*): Mt Ponor, on the southern slopes of peak Torlovishka Mogila, northwards of Breze village, FN-86, 14.07.2009,

coll. K. Vassilev & H. Pedashenko (SOM 166060); on the western slopes of Katina village, Sofia district, 28.05.1967, coll. V. Vihodcevski (SO 63641, 63642, 64643).

The species has not been so far reported from this floristic region.

Linaceae**181. *Linum nervosum*** Waldst. & Kit.

Bu Balkan Range (*Western*): Mt Ponor, on the northern slope of peak Kovilya, 3 km northwest of Zanoge village, FN-87, 07.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166058); Mt Murgash, in calcareous stony places above Negushevo village, 550 m, 14.06.2007, coll. D. Dimirov (SOM 163661).

This species has not been so far reported for this floristic region.

Ranunculaceae**182. *Clematis integrifolia*** L.

Bu Balkan Range (*Western*): Mt Ponor, on the southeastern slope of peak Kovilya, 3 km northwest of Zanoge village, FN-87, 13.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166062).

This is a new species for this floristic region.

Scrophulariaceae**183. *Veronica acinifolia*** L.

Bu Balkan Range (*Western*): Mt Ponor, in the valley between peaks Peev Vrah and Kanchina Mogila, FN-86, 43.06897° N, 23.25846° E, 05.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166030).

This species is represented by several individuals in the locality, on open, eroded places, and has not been so far reported for this floristic region (Assyov & Petrova 2006).

Cyperaceae**184. *Carex lasiocarpa*** Ehrh.

Bu Balkan Range (*Western*): Mt Ponor, in the valley between Tsarechka Mogila and peak Dolniya Vrah, FN-87, 43.08501° N, 23.23149° E, 02.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166026).

The species was firstly reported for Bulgaria from the Rhodopi Mts (*Western*) by Hájek & al. (2005). Later Hájek & al. (2006) reported it from Sofia region. This new location is the third locality of the species for Bulgaria.

185. *Carex tricolor* Velen.

Bu Balkan Range (*Western*): Mt Ponor, NE from

Gintsi village, between peaks Prodenitsa and Golemata Chuka, FN-77, 43.09510° N, 23.12856° E, 25.06.2009, coll. K. Vassilev & H. Pedashenko (SOM 166024); Mt Ponor, NE from Gintsi village, eastwards from peak Babin Krast, FN-77, 43.09676° N, 23.13872° E, 24.06.2009, coll. K. Vassilev & H. Pedashenko (SOM 166023); Mt Ponor, in the valley between peaks Tsarechka Mogila and Dolniya Vrah, FN-87, 43.08763° N, 23.19928° E, 07.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166021, 166022).

This is a Bulgarian endemic (Petrova & Velchev 2006), which has been known so far only from several floristic regions: the Balkan Range (*Central*), Vitoshka region, Rila Mts, Rhodopi Mts (*Western*) and West Frontier Mts (Vassilev 2006; Assyov & Petrova 2006).

Juncaceae

186. *Juncus filiformis* L.

Bu Balkan Range (*Western*): Mt Ponor, in the valley between peaks Ravno Buche and Sredniya Vrah, FN-87, 43.09200° N, 23.17488° E, 04.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166038).

This is a new species for this floristic region.

Poaceae

187. *Agrostis stolonifera* L.

Bu Balkan Range (*Western*): in a mesic meadow, 1.5 km NW of Zimevitsa village, FN-87, 43.05810° N, 23.27254° E, 07.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166019); along the stream Orlovata Bara, northwards of peak Kitkata – Mt Ponor, FN-87, 43.10526° N, 23.16706° E, 02.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166034); around Brakyovtsi village, Petrohan, 09.08.1969, coll. S. Kožucharov (SOM 131144); by the road along river Barza, at about 1200 m, Midzhurski divide of the Balkan Range (*Western*), 11.09.1994, coll. V. Vladimirov (SOM 154283).

This is a new species for this floristic region.

188. *Bromus moesiacus* Velen.

Bu Forebalkan (*Western*): above Ravna village, FN-77, 43.05367° N, 23.00391° E, 19.06.2009, coll. K. Vassilev & H. Pedashenko (SOM 166042).

Bromus moesiacus is a Bulgarian endemic (Petrova & Velchev 2006) and has limited distribution in the country (Assyov & Petrova 2006).

189. *Sesleria caerulea* (L.) Ard.

Bu Balkan Range (*Western*): Mt Ponor, on peak Kreta, eastwards of Breze village, FN-86, 05.07.2009, coll. K. Vassilev & H. Pedashenko (SOM 166059).

This species has not been so far reported for this floristic region.

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Reports 190-203

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Asteraceae

190. *Bidens frondosus* L.

Bu Tundzha Hilly Country: along river Tundzha near Srem village, ca. 40 m, 42.05246° N, 26.47373° E, 09.09.2010, coll. V. Vladimirov (SOM 166221).

New for this floristic region.

191. *Bidens vulgatus* Greene

Bu Northeast Bulgaria: bank of river Yantra near Beltsov village (along the road between Tsenovo village and Ruse town), 43.54850° N, 25.67054° E, LH-87, 12.09.2009, coll. V. Vladimirov & A.S. Petrova (SOM 166224, 166225); along Danube River near Batin village, ca. 20 m, 43.67218° N, 25.68673° E, LJ-93, 12.09.2010, obs. V. Vladimirov & A.S. Petrova; on the bank of Danube River at Pirgovo village, Ruse district, ca. 20 m, 43.74987° N, 25.83773° E, 12.09.2010, obs. V. Vladimirov & A.S. Petrova; on the bank of Danube River facing Kosui island, ca. 10 m, 44.05575° N, 26.68775° E, 13.09.2010, obs. V. Vladimirov & A.S. Petrova.
— Tundzha Hilly Country: along river Tundzha near Srem village, ca. 40 m, 42.05246° N, 26.47373° E, 09.09.2010, coll. V. Vladimirov (SOM 166222, 166223).

New for both floristic regions.

192. *Dittrichia graveolens* (L.) Greuter

- Bu** Balkan Range (*Western*): along Hemus Motorway near Vitinya village, *ca.* 780 m, 42.77015° N, 23.71671° E, 20.08.2010, coll. V. Vladimirov (SOM).
- Sofia region: along the road from Sofia to Kalotina, between the road forks to Boben and Hrabarsko villages, *ca.* 610 m, 42.81330° N, 23.11440° E, 29.10.2010, coll. V. Vladimirov (SOM 166226, 166227).
- Mt Sredna Gora (*Western*): along Trakia Motorway near the turn to Ihtiman town, GN-30, 15.10.2010, with flowers and fruits, coll. A.S. Petrova (SOM). A large population of the species has been found on a stretch of more than 5 km along the motorway, including the splitting belt, where the species is accompanied by numerous populations of *Atriplex nitens* and *A. roseum*, behaving as an invasive alien. This species with Mediterranean-Turanian distribution is known in Bulgaria from the Eastern Rhodopi Mts, Thracian Lowland and Tundzha Hilly Country floristic regions (Assyov & Petrova 2006). It has a high potential for seed production. Although the species may be native in some southern parts of the country, the above-mentioned occurrences are clearly results of the intensive traffic along the highways. Therefore, it should be regarded as alien, since both the habitat (man-made road embankment) and means of spread (vehicles) are anthropogenic factors.

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

- Bu** Balkan Range (*Central*): Ribaritsa village, along the road to the graveyard, KH-84, 30.08.2010, coll. A.S. Petrova (SOM 166143).
- New localities were observed in the Rhodopi Mts and Valley of River Mesta, from where the species was recently reported (Vladimirov 2009a) – in the areas of Smolyan, Devin, Bratsigovo and Gotse Delchev towns, obs. or coll. A.S. Petrova (SOM 166132, 166113).

194. *Erigeron sumatrensis* Retz.

- Bu** West Frontier Mts: Mt Ograzhden, *ca.* 3 km before Nikudin village along the road from Igralishte village, *ca.* 820 m, 41.57300° N, 23.06610° E, 08.10.2010, coll. V. Vladimirov (SOM 166232, 166233), several dozens of specimens.
- Valley of River Mesta: in ruderal vegetation on sands along the east bank of river Mesta, eastwards of Gotse Delchev town, 41°34'35.8" N, 23°46'26.8" E, GM-20, 26.08.2010, single individuals, coll. A.S. Petrova (SOM 166133).

It was also observed near the bridge over river Mesta, along the road between Gotse Delchev and Dospat towns.

- Tundzha Hilly Country: Elhovo town, along the road from Yambol, *ca.* 110 m, 42.18414° N, 26.57530° E, 09.09.2010, coll. V. Vladimirov (SOM 166229, 166230).

New for these floristic regions. *Erigeron sumatrensis* is an alien species, recently reported for the Bulgarian flora with a wide distribution range (Vladimirov 2009b). Other observed localities are: Northeast Bulgaria – Ruse town, near the engine depot of Ruse Marshalling Yard, *ca.* 50 m, 43.86055° N, 25.98943° E, MJ-15, 14.09.2010, coll. V. Vladimirov & A.S. Petrova (SOM 166231). A single fruiting individual was found and collected to prevent establishment.

195. *Galinsoga ciliata* (Raf.) S.F. Blake

- Bu** Black Sea Coast (*Northern*): in wet places at the Varna Railway Station, near the engine depot, NH-58, 02.09.2010, coll. A.S. Petrova (SOM 166072).

New for this floristic region.

196. *Helianthus tuberosus* L.

- Bu** Northeast Bulgaria: Ruse town, in the area of Ruse-East Harbour, thousands of flowering specimens in small or large (up to 50–60 m²) groups, *ca.* 50 m, 43.87835° N, 26.01031° E, 13.09.2010, coll. V. Vladimirov & A.S. Petrova (SOM 166234).
- Valley of River Mesta: in ruderal vegetation on sands along the east bank of river Mesta, east of Gotse Delchev town, 41°34'37.9" N, 23°46'26.7" E, GM-20, 26.08.2010, in a group of plants, coll. A.S. Petrova (SOM 166123).
- Tundzha Hilly Country: along river Tundzha near Galina Hotel (between Srem and Knyazhevo villages), *ca.* 80 m, 42.06391° N, 26.50576° E, 09.09.2010, coll. V. Vladimirov (SOM 166235).

New for these floristic regions. The species is widely naturalized and abundant in the area of Ruse town and its vicinity.

197. *Silphium perfoliatum* L.

- Bu** Northeast Bulgaria: along the road to Obratsov Chiflik, between the settlement and the road fork to Obratsov Chiflik on the Ruse-Karnobat road, *ca.* 150 m, 43.80385° N, 26.03886° E, 14.09.2010, coll. V. Vladimirov & A.S. Petrova (SOM 166236–166239).

A few individuals observed in two groups, about 60–70 m apart. Each individual was represented by several flowering stems. Probably cultivated in gardens from where viable parts of the rhizome have been thrown near the road. Currently, there is no evidence in the locality of self-establishment of the species and it should be considered a casual alien. As far as we know, this is the first report of an escaped occurrence of the species in Bulgaria.

198. *Solidago canadensis* L.

Bu Balkan Range (*Western*): Petrohan Pass, in a man-made habitat occasionally used as a parking place near a water fountain, *ca.* 1400 m, 43.11820° N, 23.12770° E, 19.09.2010, coll. V. Vladimirov (SOM 166240).

New for this floristic region. So far the species has been reported only from Sofia floristic region (Vladimirov 2003). A few plants were noted in the present locality, each with 2–3 flowering stems.

199. *Solidago gigantea* Aiton

Bu Vitosha region: Mt Vitosha, along the road from Zheleznitsa village to Yarema locality, FN-91, 27.08.2010, coll. A.S. Petrova (SOM 166121). The species was observed in three locations, two of them 2–3 m²; the third one large, with tufts dispersed over at least 200 m².

New for this floristic region.

Chenopodiaceae

200. *Chenopodium multifidum* L.

Bu Tundzha Hilly Country: Topolovgrad, along the road from Elhovo town, *ca.* 270 m, 42.08930° N, 26.34552° E, 09.09.2010, coll. V. Vladimirov (SOM 166241).

New for this floristic region.

201. *Chenopodium pumilio* R. Br.

Bu Northeast Bulgaria: in arable land along Yantra River, near Polski Trambesh town, LJ-80, 43.38218° N, 25.66709° E, 14.09.2010, coll. V. Vladimirov & A.S. Petrova (SOM 166242, 166243).

Recently reported for Bulgaria (Grozeva 2007), known from single localities in the Eastern Balkan Range (Karendila locality) and Thracian Lowland floristic regions. In the present locality, an abundant population in the ploughed fields (after harvesting of oilseed rape) was observed. While working with samples of genus *Amaranthus* in SOM, a wrongly identified voucher of *Ch. pumilio* was found, collected in Sliven town in 1986, some 20 years earlier than the collections of Grozeva, 2007 (SOM

160621, Sliven town, at the market-place, 10.08.1986, coll. P. Panov, sub *Amaranthus crispus*, rev. *Chenopodium pumilio*, 02.11.2010, A.S. Petrova). *Chenopodium pumilio* is considered a typical wool alien (Akeroyd 1993; Stace 1997). Sliven town is a traditional centre of woollen textile manufacture which probably explains the introduction of the species in the region.

Poaceae

202. *Eleusine indica* (L.) Gaertn.

Bu Black Sea Coast (*Northern*): in wet places at the Varna Railway Station, near the engine depot, NH-58, 02.09.2010, coll. A.S. Petrova (SOM 166186). New for this floristic region.

203. *Paspalum paspalodes* (Michx.) Scribn.

Bu Northeast Bulgaria: on the right bank of river Yantra near Beltsov village, *ca.* 25 m, LJ-82, 43.54850° N, 25.67054° E, 12.09.2009; coll. V. Vladimirov & A.S. Petrova (SOM 166244); on the bank of Danube River facing Kosui island, *ca.* 10 m, 44.05575° N, 26.68775° E, 13.09.2010, coll. V. Vladimirov & A.S. Petrova (SOM 166245); on the bank of the Danube near Pirgovo village, Ruse district, *ca.* 20 m, 43.74987° N, 25.83773° E, 12.09.2010, obs. V. Vladimirov & A.S. Petrova; in arable land along Yantra River, near Polski Trambesh town, LJ-80, 43.38218° N, 25.66709° E, 14.09.2010, coll. V. Vladimirov & A.S. Petrova (SOM 166228).

New for this floristic region.

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