

New floristic records in the Balkans: 15*

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Abstract: New chorological data are presented for 127 species and subspecies from Bosnia and Herzegovina (reports no. 64-72), Bulgaria (48, 52-63, 73, 103-127), Greece (6-37, 49-51, 74-83, 86-102), R Macedonia (46, 47), Montenegro (64) and Turkey-in-Europe (1-5, 38-45, 84, 85). The taxa belong to the following families: *Aceraceae* (104), *Amaranthaceae* (87), *Amaryllidaceae* (49, 80), *Apiaceae* (6, 88, 89), *Araliaceae* (42), *Asteraceae* (7, 61, 64, 65, 74, 90), *Boraginaceae* (8, 66), *Brassicaceae* (9, 46, 91), *Campanulaceae* (105), *Caryophyllaceae* (10-12, 75, 92, 106), *Chenopodiaceae* (76, 93-95), *Cistaceae* (107), *Convolvulaceae* (13), *Crassulaceae* (47), *Cucurbitaceae* (96), *Cyperaceae* (26, 70-72, 99), *Dipsacaceae* (67), *Ephedraceae* (86), *Euphorbiaceae* (14, 97, 108), *Fabaceae* (1-5, 15-18, 48, 68, 77, 84, 85, 98, 109-115), *Ericaceae* (60), *Geraniaceae* (38-41), *Guttiferae* (19), *Iridaceae* (50, 73), *Juncaceae* (52, 53), *Liliaceae* s.l. (27, 81, 120), *Linaceae* (116), *Onagraceae* (20), *Orchidaceae* (51, 82, 83), *Orobanchaceae* (62), *Papaveraceae* (43), *Phytolaccaceae* (44), *Poaceae* (28-37, 54-59, 100-102, 121-127), *Ranunculaceae* (69), *Rosaceae* (117), *Rubiaceae* (21, 63, 78), *Scrophulariaceae* (79, 103, 118, 119), *Solanaceae* (22), *Valerianaceae* (23), *Violaceae* (24, 25) and *Zygophyllaceae* (45).

First report for a country is: Bulgaria – *Trifolium fragiferum* subsp. *fragiferum* (48).

The publication includes contributions by M. Aybeke (1-2), M. Aybeke, C. Kurt & A. Semerci (3-5), B. Biel & Kit Tan (6-37), F. Dane, S. Yalçın & İ. Deniz (38-41), F. Dane & N. Aydın (42-45), D. Dimitrov (46-48), K. Giannopoulos & Kit Tan (49-51), V. Goranova, H. Pedashenko & K. Vassilev (52-59), D. Ivanova, R. Natcheva, V. Vladimirov, S. Bancheva & M. Delcheva (60), T. Karakiev (61-63), Đ. Milanović, J. Brujić & V. Stupar (64-72), R. Natcheva & D. Ivanova (73), K. Polymenakos, A. Bonetti, G. Fakas & Kit Tan (74-83), G. Savaş, G. Yilmaz, N. Başak & F. Dane (84-85), A.P. Seregin & Kit Tan (86-102), S. Stoyanov & V. Goranova (103), V. Velchev & A. Petrova (104-127).

This is the fifteenth 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 Bosnia and Herzegovina and Montenegro have been reviewed by V. Stevanović, for Bulgaria by V. Vladimirov, for Greece by Kit Tan, for R Macedonia by V. Matevski and for Turkey-in-Europe by F. Dane.

Reports 1–2

Mehmet Aybeke

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Fabaceae

1. *Galega officinalis* L. (Fig. 1)

Tu(E) A1(E) Edirne, Centre, Trakya Agricultural Research Institute, in waste places, 26 m, 41°40'28" N, 26°33'39" E, 26.06.2004, coll. M. Aybeke, C. Kurt & A. Semerci, det. M. Aybeke (TTAE 1456).

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



Fig. 1. *Galega officinalis*: A. plant with flowers, B. leaf, scale bar 10 cm (photo M. Aybeke).

2. *Trigonella monspeliaca* L.

Tu(E) A1(E) Edirne, Lalapaşa, Sinanköy, in a meadow, 181 m, 41°48'00" N, 26°43'00" E, 03.06.2003, coll. M. Aybeke, C. Kurt & A. Semerci, det. M. Aybeke (TTAE 1419).

New for A1(E) Edirne in European Turkey. So far the species has been known from A2(E) Istanbul: Florya (Huber-Morath 1970).

Acknowledgements. Fieldwork was carried out in 2004 within the project TAGEM/04/04/01/002.

Reports 3–5

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Fabaceae

3. *Astragalus onobrychis* L. (Fig. 2)

Tu(E) A1(E) Edirne, Lalapaşa, Hacılar village, in a pasture, 41°56'00" N, 26°47'00" E, 460 m, 08.07.2003, coll. M. Aybeke, C. Kurt & A. Semerci, det. M. Aybeke (TTAE 12-24); Edirne, Keşan, Paşayigit, in a pasture, 40°57'56" N, 26°38'17" E, 137 m, coll. M. Aybeke, C. Kurt & A. Semerci, det. M. Aybeke (TTAE 244).

New for A1(E) Edirne in European Turkey. The species has been known so far from A2(E) Istanbul,



Fig. 2. *Astragalus onobrychis* (photo C. Kurt).

from İskenderköy Yeşilköy (Chamberlain & Matthews 1970).

4. *Lathyrus inconspicuus* L.

Tu(E) A1(E) Edirne, Lalapaşa, Vaysal, in a pasture, 41°56'31" N, 26°52'23" E, 378 m, 17.07.2003, coll. M. Aybeke, C. Kurt & A. Semerci, det. M. Aybeke (TTAE 179).

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

5. *Lathyrus sphaericus* Retz.

Tu(E) A1(E) Edirne, Keşan, Paşayigit, in a pasture, 40°57'56" N, 26°38'17" E, 137 m, 30.04.2004, coll. M. Aybeke, C. Kurt & A. Semerci, det. M. Aybeke (TTAE 256); Edirne, Süloğlu, Geckinli village, 41°44'46.9" N, 26°52'13.5" E, 183 m, 02.06.2004, coll. C. Kurt, A. Semerci & M. Aybeke, det. M. Aybeke (TTAE 753).

New for A1(E) Edirne in European Turkey. So far the species has been known from A1(E) Tekirdağ, Ganosdağı (Davis 1970).

Acknowledgements. Fieldwork was carried out in 2003–2006 within the project TAGEM/04/04/01/002.

Reports 6–37

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This is the fourteenth report of new plant-records for the island of Samothraki (N Aegean islands, Nomos Evrou, Eparchia Samothrakis) based on fieldwork carried out during 2007–2011. 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

6. *Anethum graveolens* L.

Gr Samothraki: SW of Kamariotissa, wet pasture by seasonal pool behind coastal barrier, 5 m, 40°27'43" N, 25°27'33" E, 07.06.2008, *Biel* 08.017.

New for the N Aegean area.

Asteraceae

7. *Tragopogon sinuatus* Avé-Lall. (Fig. 3)

Gr Samothraki: W-NW of Chora, stony pastures, on limestone, 140 m, 40°28'29" N, 25°29'53" E, 29.05.2002, *Biel* 02.119; S of Chora, walled cemetery with old trees, on basalt/porphyry, 280 m, 40°28'48" N, 25°31'32" E, 04.05.2010, *Biel* 10.133.

Also noted near Kamariotissa. Recorded from Thasos and Limnos.

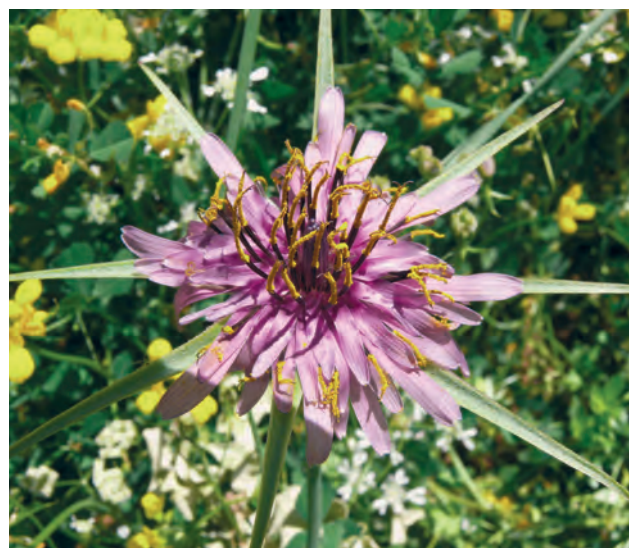


Fig. 3. *Tragopogon sinuatus* (photo B. Biel).

Boraginaceae

8. *Asperugo procumbens* L.

Gr Samothraki: N-NW of Alonia, river valley with *Platanus*, on limestone, 60 m, 40°28'08" N, 25°30'12" E, 06.11.2008, *Biel* 08.395a.

New for the N Aegean area.

Brassicaceae

9. *Diplotaxis tenuifolia* (L.) DC.

Gr Samothraki: Chora, road margins, wall crevices and ledges, 260 m, 40°28'20" N, 25°31'32" E, 14.07.2009, *Biel* 09.158.

Recorded from the island of Limnos in the N Aegean.

Caryophyllaceae

10. *Moenchia graeca* Boiss. & Heldr.

Gr Samothraki: N-NW of village of Therma, seasonal pool beside the road junction to Therma, 5 m, 40°30'01" N, 25°36'30" E, 05.05.2010, *Biel* 10.190a.

New for the N Aegean area.

11. *Spergula pentandra* L.

Gr Samothraki: SE of Therma, below Aetos, rocky slope with *Juniperus*, 690 m, 40°28'16" N, 25°37'43" E, 09.05.2010, *Biel* 10.390.

Recorded from Thasos and Limnos.

12. *Spergularia bocconeii* (Scheele) Graebn.

Gr Samothraki: E-SE of Therma, large coastal wetland in alluvial forest W of Fonias river, 2 m, 40°29'34" N, 25°38'48" E, 22.06.2007, *Biel* 07.191.

Recorded from Limnos and Ag. Evstratios.

Convolvulaceae**13. *Ipomoea purpurea* (L.) Roth**

Gr Samothraki: Kamariotissa, wasteland and roadsides in village, 15 m, 40°28'45" N, 25°28'32" E, 06.11.2008, *Biel* 08.395.

Introduced, now naturalized at roadsides and open places. New for the N Aegean area.

Euphorbiaceae**14. *Euphorbia pubescens* Vahl**

Gr Samothraki: walled cemetery with old trees, near village centre of Therma, 40 m, 40°29'45" N, 25°36'32" E, 25.07.2009, *Biel* 09.314.

Recorded from Limnos.

Fabaceae**15. *Lathyrus sativus* L.**

Gr Samothraki: SW of Profitis Ilias, rocky slopes around cemetery, 320 m, 40°25'53" N, 25°32'36" E, 11.05.2010, *Biel* 10.439.

Recorded from Thasos.

16. *Melilotus italicus* (L.) Lam.

Gr Samothraki: Kamariotissa, gravelly beach and park at seafront, 2 m, 40°28'34" N, 25°28'25" E, 03.05.2010, *Biel* 10.017.

Also noted SW of Kamariotissa. Recorded from Thasos.

17. *Trifolium cherleri* L.

Gr Samothraki: in phrygana on slope west of Chora, 280 m, 40°28'21" N, 25°31'24" E, 10.06.2008, *Biel* 08.110.

Also noted SW of Xiropotamos. Recorded from Thasos and Limnos.

18. *Vicia melanops* Sm.

Gr Samothraki: road margins in village of Therma, 50 m, 40°29'38" N, 25°36'31" E, 09.06.2008, *Biel* 08.077; *loc. ibid.*, 06.05.2010, *Biel* 10.266.

Recorded from Thasos and Limnos.

Guttiferae**19. *Hypericum tetrapterum* Fr.**

Gr Samothraki: N of Kato Karyotes, coastal *Platanus* forest affected by tourist development, 3 m, 40°30'29" N, 25°34'20" E, 25.06.2007, *Biel* 07.228; NE of Therma, road embankment by seasonal pool, 5 m, 40°30'01" N, 25°37'03" E, 06.05.2010, *Biel* 10.261.

New for the N Aegean area.

Onagraceae**20. *Epilobium angustifolium* L.**

Gr Samothraki: S of Chora, above cemetery, in partly burnt *Pinus* forest, 280 m, 40°28'16" N, 25°31'30" E, 14.07.2009, *Biel* 09.166.

New for the N Aegean area.

Rubiaceae**21. *Galium incanum* Sm.**

Gr Samothraki: E-SE of Chora, rocky saddle with open phrygana, 900 m, 40°27'46" N, 25°33'33" E, 21.06.2007, *Biel* 07.157; E-NE of Pachia Ammos, steep rocky coastal cliffs, on granite, 90 m, 40°23'39" N, 25°35'42" E, 13.06.2008, *Biel* 08.176.

New for the N Aegean area.

Solanaceae**22. *Solanum elaeagnifolium* Cav.**

Gr Samothraki: S-SW of Xiropotamos, gravelly beach and adjacent field margins, 2 m, 40°25'23" N, 25°30'44" E, 16.06.2008, *Biel* 08.215.

Also at Palaeopolis. Recorded from Thasos and Limnos.

Valerianaceae**23. *Valerianella muricata* (Steven) Baxter (Fig. 4)**

Gr Samothraki: N-NW of village of Therma, seasonal pool, near road junction to Therma, 5 m, 40°30'01" N, 25°36'30" E, 05.05.2010, *Biel* 10.162.

Recorded from Thasos and Ag. Evstratios.

Violaceae**24. *Viola hymettia* Boiss. & Heldr.**

Gr Samothraki: S of Anomeria-Kantaratica, slope with phrygana and open oak scrub, 160 m, 40°27'26" N, 25°40'03" E, 08.02.2011, *Biel* 11.026.

Confirming a report by Katsikopoulos (1936: 7).

Recorded from Thasos.

25. *Viola suavis* M. Bieb.

Gr Samothraki: E-NE of Alonia, road embankment, 220 m, 40°27'58" N, 25°31'29" E, 09.02.2009, *Biel*



Fig. 4. *Valerianella muricata* (photo B. Biel).

09.021; N of Ano Karyotes, *Erica* dominated phrygana between coast and road, 4 m, 40°30'20" N, 25°35'06" E, 10.05.2010, *Biel* 10.414.

New for the N Aegean area. The species was reported from the island of Samos in the E Aegean (*Rechinger* 3772, LD) but no other localities in Greece seem to have been documented.

Cyperaceae

26. *Isolepis setacea* (L.) R. Br.

Gr Samothraki: N-NW of Therma, seasonal pool, near road junction to Therma, 5 m, 40°30'01" N, 25°36'30" E, 05.05.2010, *Biel* 10.177.

Recorded from Thasos.

Liliaceae

27. *Ornithogalum divergens* Boreau (Fig. 5)

Gr Samothraki: N-NE of Kato Karyotes, E of river, wet ditches and heavily grazed coastal phrygana with *Vitex* shrubs, on schist/basalt, 5 m, 40°30'28" N, 25°34'30" E, 05.05.2001, *Biel*



Fig. 5. *Ornithogalum divergens* (photo B. Biel).

01.063; NE of Therma, heavily grazed, large damp area with alluvial forest and seasonal pools, directly behind coastal barrier, 3 m, 40°29'57" N, 25°37'23" E, 05.05.2010, *Biel* 10.209; *loc. ibid.*, 06.05.2010, *Biel* 10.245; N-NW of Ano Karyotes, coastal phrygana with small wet areas, 2 m, 40°30'30" N, 25°34'45" E, 10.05.2010, *Biel* 10.416; SW of Therma, cushion phrygana on steep rocky slope, 1300 m, 40°27'59" N, 25°34'47" E, 13.05.2010, *Biel* 10.534.

New for N Aegean islands.

Poaceae

28. *Aegilops geniculata* Roth

Gr Samothraki: NE of Alonia, phrygana and open oak scrub near Moni Ag. Athanasiou, on limestone and sandstone, 120 m, 40°28' N, 25°30'22" E, 12.05.2010, *Biel* 10.488.

Reported by Stojanov & Kitanov (1944: 419) as *Aegilops ovata*. Recorded from Thasos and Limnos.

29. *Agrostis stolonifera* L. subsp. *stolonifera*

Gr Samothraki: E-SE of Therma, gravelly beach with *Vitex* shrubs near mouth of Fonias river, 2 m, 40°29'28" N, 25°39'30" E, 27.06.2010, *Biel* 10.731; NE of Pachia Ammos, steep granitic slope with wet meadows above river gorge, 770 m, 40°25'11" N, 25°37'14" E, 30.06.2010, *Biel* 10.793.

Previous records for Samothraki refer to *A. stolonifera* subsp. *scabriglumis*. Recorded from Thasos.

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

Gr Samothraki: SW of Kamariotissa, road margins and waste ground in harbour area, 3 m, 40°28'40" N, 25°28'20" E, 03.05.2010, *Biel* 10.023; *loc. ibid.*, 21.05.2010, *Biel* 10.693; SW of Kamariotissa, seasonally wet wheat field by dirt track, 4 m, 40°28'10" N, 25°27'50" E, 26.06.2010, *Biel* 10.701.

Recorded from Limnos.

31. *Avena sterilis* L. subsp. *sterilis*

Gr Samothraki: SW of Kamariotissa, road margins and waste ground in harbour area, 3 m, 40°28'40" N, 25°28'20" E, 21.05.2010, *Biel* 10.693a.

Confirming report by Katsikopoulos (1936: 12) which was without indication of subspecies. Four other localities near Alonia, Ano Kariotis, Profitis Ilias and Therma were also noted. No subspecies was indicated in a record from Ag. Evstratios.

32. *Bromus hordeaceus* subsp. *mediterraneus* H.

Scholz

Gr Samothraki: meadow near Therma, 40 m, 40°29'41" N, 25°36'35" E, 18.05.2010, *Biel* 10.660; SE of Kamariotissa, edge of dirt track with ditch in a small valley leading to the harbour, 15 m, 40°28'18" N, 25°28'40" E, 08.05.2010, *Biel* 10.333.

Material reported as *B. mollis* by Ade & Rechinger (1938: 143) may belong to this taxon.

33. *Elytrigia bessarabica* (Sävil. & Rayss) Dubovik

Gr Samothraki: W-SW of Kamariotissa, ruderal places on gravelly beach near small coastal pool, 3 m, 40°28'19" N, 25°27'25" E, 26.06.2010, *Biel* 10.711.

Elymus farctus, to which *E. bessarabica* has been assigned as a subspecies, was reported from Samothraki by Katsikopoulos (1936: 12) as *Agropyron junceum*. *Elymus farctus* is recorded from all islands of the N Aegean area.

34. *Hordeum vulgare* L.

Gr Samothraki: W-NW of Alonia, wheat field on plateau, limestone, 130 m, 40°28'15" N, 25°30'05" E, 12.05.2010, *Biel* 10.509.

Recorded from Thasos and Limnos.

35. *Micropyrum tenellum* (L.) Link

Gr Samothraki: Pachia Ammos, sandy beach area with small dunes and *Vitex*, 7 m, 40°23'45" N, 25°34'46" E, 07.05.2010, *Biel* 10.292; E-NE of Pachia Ammos, rocky slope with phrygana, on path, 90 m, 40°23'42" N, 25°35'47" E, 07.05.2010, *Biel* 10.310; S-SE of Therma, open *Genista* phrygana, rocky ridge at Aetos, 770 m, 40°28'06" N, 25°37'29" E, 09.05.2010, *Biel* 10.392; E-SE of Alonia, rocky slopes with phrygana beside wet dirt track, 690 m, 40°27'29" N, 25°32'58" E, 13.05.2010, *Biel* 10.512a; E-SE of Chora, rocky slopes with open phrygana, 900 m, 40°27'46" N, 25°33'33" E, 13.05.2010, *Biel* 10.524; E-SE of Profitis Ilias, open phrygana with rock outcrops at Aginaros, 740 m, 40°25'38" N, 25°34'33" E, 20.05.2010, *Biel* 10.687.

Widely distributed but scattered on island, apparently overlooked. New for the N Aegean area.

36. *Lolium rigidum* subsp. *lepturoides* (Boiss.)

Sennen & Mauricio

Gr Samothraki: Therma, Tsivdogiani river valley with *Platanus*, 60 m, 40°29'33" N, 25°36'31" E, 19.06.2007, *Biel* 07.120; W-SW of Kamariotissa, sandy ground

at northern edge of coastal lagoon, 3 m, 40°28'16" N, 25°27'17" E, 02.05.2010, *Biel* 10.011.

Collected by Schuler from Akr. Fonias in northern part of island (*Schuler* 99/483, B) and by Rechinger between Kamariotissa and Chora (*Rech.* 9699, W, as *L. loliaceum*). The record cited as *L. strictum* in Stojanov & Kitanov (1945: 262) refers to *L. rigidum* subsp. *rigidum*. Recorded from Thasos.

37. *Poa pelasgis* H. Scholz

Gr Samothraki: N-NE of Pachia Ammos, rocky slope with stream and *Quercus* scrub, 680 m, 40°25'10" N, 25°35'53" E, 16.05.2010, *Biel* 10.589; Kamariotissa, gravelly beach and park at seafront, 2 m, 40°28'34" N, 25°28'25" E, 12.05.2010, *Biel* 10.477; S of Chora, heavily grazed *Sarcopoterium* phrygana with *Pinus* and *Pyrus*, on schist and porphyritic substrate, 280 m, 40°28'11" N, 25°31'29" E, 04.05.2010, *Biel* 10.126.

New for the N Aegean area and apparently the northernmost record in Greece.

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

Acknowledgements. We are grateful to Hildemar Scholz (Berlin) for determining and confirming the identity of the grasses.

Reports 38–41

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Geraniaceae**38. *Geranium purpureum* Vill.**

Tu(E) A1(E) Kırklareli, Kocayazı-Askercesme, near a stream, 535 m, 42°00'00" N, 27°17'00" E, 16.07.1985, coll. A. Asan & H. Demiriz, det. İ. Deniz (EDTU 250).

New for A1(E) Kırklareli. So far the species has been known from A2(A) Istanbul, A2(E) Istanbul (Reeve 1966).

39. *Geranium pyrenaicum* Burnm. f.

Tu(E) A1(E) Kırklareli: Pınarhisar, Pınarhisar-Erenler, 206 m, 41°37'27" N, 27°31'12" E, 17.06.1987, coll. G. Olgun & A. Aydın, det. İ. Deniz (EDTU 1334); Demirköy, at the end of Koru village, 244 m, 41°49'17" N, 27°45'38" E,

25.05.1987, coll. *F. Dane*, det. *İ. Deniz* (EDTU 630); Demirköy, at the end of Yeniceköy, 5 km, along Velika stream, 244 m, 41°49'17" N, 27°45'38" E, 03.06.1988, coll. *F. Dane* & *G. Dalgıç* (EDTU 2146); Demirköy, at the end of Demirköy, 244 m, 41°49'17" N, 27°45'38" E, 03.06.1988, coll. *F. Dane* & *G. Dalgıç* (EDTU 2768).

New for A1(E) Kırklareli. So far the species has been known from A1(A) Tekirdağ, A2(E) Istanbul (Reeve 1966).

40. *Geranium sanguineum* L.

Tu(E) A1(E) Çanakkale: Eceabat, Anarfartalar, 0 m, 40°11'02" N, 26°21'23" E, 20.05.1987, coll. *F. Dane* & *İ. Deniz* (EDTU 2824).

New for A1(E) Çanakkale in European Turkey. So far the species has been known from A1(E) Edirne, A2(E) Istanbul, A2(A) Istanbul (Reeve 1966). A new locality in A1(E) Edirne is reported here: Edirne, Süloğlu, Taslimüsellim, 156 m, 41°46'02" N, 26°54'43" E, 01.06.1987, coll. *F. Dane* (EDTU 698).

41. *Geranium tuberosum* L. subsp. *tuberosum*

Tu(E) A1(E) Edirne: Center, Trakya University, Faculty of Science, in a meadow area, 135 m, 41°46'39" N, 26°28'51" E, 20.04.1987, coll. *N. Başak*, det. *İ. Deniz* (EDTU 592); Lalapasa, Ortakci village, 157 m, 41°47'00" N, 26°45'00" E, 10.05.1990, coll. *F. Dane* & *N. Polat*, det. *İ. Deniz* (EDTU 4771); Enez, Çamlık, 5 m, 40°43'29" N, 26°04'57" E, 23.05.1993, coll. *F. Dane* & *N. Polat*, det. *İ. Deniz* (EDTU 5696).

New for A1(E) Edirne. So far the species has been known from A1(E) Çanakkale, A2(E) Istanbul (Reeve 1966).

Reports 42–45

Feruzan Dane & Necla Aydın

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Araliaceae

42. *Hedera helix* L.

Tu(E) A1(E) Edirne: Center, at the Karaağaç Vocational High School, 41°03'00" N, 26°33'00" E, 24.03.1991, coll. *G. Dalgıç* (EDTU 4682); in the Söğütlük forest, 52 m, 41°03'00" N, 26°32'00" E, 28.07.2008, coll. *F. Dane* & *N. Aydın* (EDTU).

— A1(E) Kırklareli: Vize, Saka Gölü Kıyısı, 41°34'21" N, 27°45'57" E, 30.08.1989, coll. *S. Yurtsever* (EDTU 3950).

New for A1(E) Kırklareli and Edirne. So far the species has been known from A1(E) Çanakkale, A2(A) Balıkesir and A2(E) Istanbul (Chamberlain 1972).

Papaveraceae

43. *Chelidonium majus* L.

Tu(E) A1(E) Edirne: Center, Söğütlük, at Tunca riverside, 41°40'28" N, 26°33'39" E, 20.05.1987, coll. *F. Dane* (EDTU 2702), 25.07.2010, coll. *F. Dane* & *N. Aydın* (EDTU).

New for A1(E) Edirne. So far the species has been known from A1(E) Tekirdağ and A2(E) Istanbul (Cullen 1965).

Phytolaccaceae

44. *Phytolacca americana* L.

Tu(E) A1(E) Edirne: Center, at Tunca riverside, 41°40'28" N, 26°33'39" E, 17.10.1990, coll. *F. Dane* (EDTU 4407).

New for A1(E) Edirne. So far the species has been known from A2(E) Istanbul (Cullen 1967).

Zygophyllaceae

45. *Tribulus terrestris* L.

Tu(E) A1(E) Edirne: Center, Musabeyli Köyü Merası, 41°41'00" N, 26°40'00" E, 15.09.1989, coll. *F. Dane* & *N. Polat* (EDTU 3889); Kampüs Çevresi, 40°44'00" N, 26°43'00" E, 14.09.1989, coll. *F. Dane* (EDTU 3974).

— A1(E) Kırklareli: Kofcaz, Kofcaz Yol Kenarı, 41°55'42" N, 27°09'40" E, 18.06.1986, coll. *F. Dane* & *al.* (EDTU 435).

— A1(E) Tekirdağ: Şarköy, at the seaside, 41°39'28" N, 26°31'25" E, 02.08.1987, coll. *F. Dane* (EDTU 1822).

New for A1(E) Edirne, Kırklareli and Tekirdağ. So far the species has been known from A1(A) Çanakkale, A2(E) Istanbul and A2(A) Kocaeli (Coode 1967).

Reports 46–48

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Brassicaceae

- 46. *Rorippa islandica*** (Oeder) Schinz & Thell.
Ma Mt Jablanica, Malo Sedlo, 22.08.1948, coll. B. Kitanov, det. D. Dimitrov (SO 106110).
 Reported by Micevski (1995) for Lake Prespa, Strumitsa (Monospitovsko swamp).

Crassulaceae

- 47. *Sedum album*** subsp. ***atthoum*** (DC.) Hayek
Ma Lake Ohrid, on rocks, 20.08.1908, coll. & det. St. Petkov (SO 33360).
 This taxon has been reported in a note by Micevski (1998) to the chorology of *Sedum album* and listed as Not Confirmed.

Fabaceae

- 48. *Trifolium fragiferum*** L. subsp. ***fragiferum***
Bu Thracian Lowland: Mt Sakar, between Levka and Mustrag villages, Svilengrad district, 14.08.1982, coll. P. Panov (SOM 166749).
 A new subspecies for the flora of Bulgaria (Kozuharov 1976).

Reports 49–51**Konstantinos Giannopoulos¹ & Kit Tan²**

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This paper continues 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). The flora of Ilia prefecture is a long-standing interest of the first author (KG) for many years and few botanists have visited Mt Minthi especially in winter and early spring. The following observations emphasize the importance and need for comprehensive studies by local residents, be they amateur or professional naturalists.

Amaryllidaceae

- 49. *Galanthus reginae-olgae*** Orph. subsp. ***reginae-olgae*** (Figs. 6–7)
Gr Nomos & Eparchia Ilias: Mt Lapithas behind lake Kaiafas, shaded rocky NE-facing slope, 480 m, 37°33'N, 21°39'E, several dates of observation (06.11.2006, 02.11.2008, 14.11.2009 & 30.10.2010), flowering late October to early

November, Giannopoulos obs. (photos, conf. Kit Tan, February 2011).

New for both eparchia and nomos. Numerous plants were first discovered on the rocky slope in 2004. Although leaves were ± absent at flowering (Fig. 6), a few individuals had leaves up to 15 cm in length. The plants always flowered in autumn, never in winter or spring. *Galanthus reginae-olgae* subsp. *vernalis* flowered on Mt Minthi in late January and February (Fig. 7) and has been noted by Makri Aperghis (Athens) between Andritsena and Vasse (Nomos Ilias/Messinias) in March 2003.



Fig. 6. *Galanthus reginae-olgae* subsp. *reginae-olgae* from Mt Lapithas (photo K. Giannopoulos).



Fig. 7. *Galanthus reginae-olgae* subsp. *vernalis* from Mt Minthi (photo K. Giannopoulos).

Iridaceae

- 50. *Crocus sieberi*** subsp. ***nivalis*** (Bory & Chaub.) B. Mathew (Figs. 8–11)
Gr Nomos Ilias, Eparchia Olimbias: Mt Minthi, near the village of Minthi, 705 m, 37°30'N, 21°45'E, 31.12.2010, flowering late December to early January, Giannopoulos s.n. (living plants cult.

at C; numerous photos, conf. Kit Tan, February 2011); between villages of Minthi and Vresto, 635 m, 37°30' N, 21°47' E, 19.02.2011, peak flowering in February, *Giannopoulos* obs. (several photos, conf. Kit Tan February 2011); Mt Foloi, in oak forest, 770 m, 37°44' N, 21°44' E, 19.02.2011, peak flowering in January, *Giannopoulos* obs. (several photos, conf. Kit Tan February 2011).

Crocus sieberi, easily recognized by its yellow perianth throat, is reported here as a new record for both eparchia and nomos. The plants were numerous and formed dense populations (Fig. 8). On Mt Minthi most of the crocuses were bicoloured (Fig. 9) but a few were solid lavender-blue or purple. Two white-flowered forms (Fig. 10) were noted in the second locality which had been under observation for *ca.* 5 years. On Mt Foloi, the plants occupied an area of at least 2 sq. km and most flowers were a uniform purple, with a few bicoloured. Flowering begins shortly after Christmas and provides a beautiful sight in the snowy



Fig. 8. *Crocus sieberi*: population on Mt Minthi (photo K. Giannopoulos).



Fig. 9. *Crocus sieberi* from Mt Minthi: a striped bicoloured form (photo K. Giannopoulos).

landscape. The leaves of the Foloi plants are much shorter (4–7 cm) as compared to the leaves of the Minthi populations which are 6–18 cm in length.

Following Mathew (1982, 1991) the plants should be assigned to *C. sieberi* subsp. *nivalis* instead of *C. s.* subsp. *sublimis* (Herbert) B. Mathew as the perianth throat was completely glabrous (Fig. 11). *Crocus sieberi* subsp. *nivalis* was reported by Mathew as restricted to Mt Taigetos but it apparently extends further north in the Peloponnese and is much more widespread and locally common than previously thought. It is possible plants previously identified as *C. s.* subsp. *sublimis* (throat pubescent) actually represent *C. s.* subsp. *nivalis* (throat glabrous). The hairs in the perianth throat can be easily seen only in living material and not herbarium specimens. We have examined the perianth of numerous flowers in all three localities and found they are completely glabrous in the throat. It would seem that the presence or absence of hairs in the throat may not be a reliable character for separating the subspecies; *C. s.* subsp. *nivalis* however, seems to flower earlier in the year.

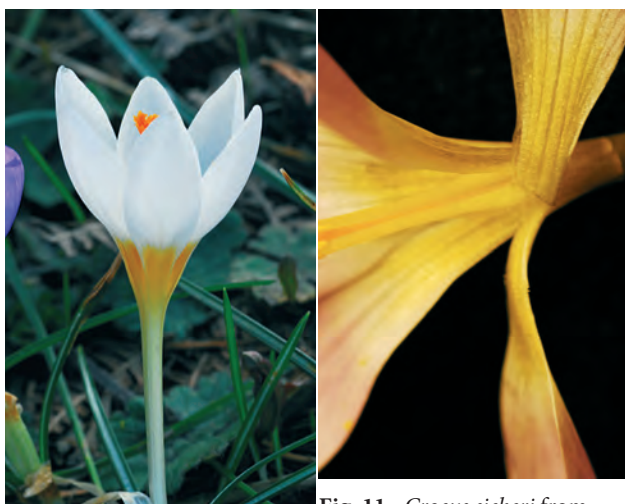


Fig. 10. *Crocus sieberi* from Mt Minthi: a white-flowered form (photo K. Giannopoulos).

Fig. 11. *Crocus sieberi* from Mt Minthi showing glabrous perianth throat (photo K. Giannopoulos).

Orchidaceae

51. *Ophrys spruneri* Nyman (Fig. 12)

Gr Nomos & Eparchia Ilias: near village of Latzoio, recently burnt *Pinus* woodland, 60 m, 37°42' N, 21°33' E, 10.04.2010, peak flowering in early April, *Giannopoulos* obs. (several photos, conf. Kit Tan, February 2011); near village of Platiana, 265 m, 37°32' N, 21°46' E, 28.03.2010, peak flowering in late March to early April, *Giannopoulos* obs. (photos);

near village of Amygdalies, 480 m, 37°31'N, 21°51'E, 28.03.2010, peak flowering in late March to early April, *Giannopoulos* obs. (photos).

New for eparchia and nomos where three localities have been noted. There were 20–30 plants in the Latzoio population with *Serapias* and *Ophrys oestrifera* occurring in the immediate vicinity. Within a 4 km radius of the site, several other orchids were found including *Anacamptis pyramidalis*, *Neotinea maculata*, *Ophrys argolica*, *O. herae*, *Orchis italica*, *O. laxiflora*, *O. papilionacea*, *O. simia* and *Spiranthes*. The area is vulnerable as it is under cultivation and threatened by human activity. In the locality near Platiana, there was a healthy population of 8–12 plants on a wet slippery N-facing slope. The plants flowered simultaneously with *Ophrys herae*, and were found together with *Ophrys lutea*, *Orchis italica*, *O. simia* and *Serapias* spp. The Amygdalies population had 10–15 plants on a damp S-facing slope. *Ophrys attica*, *O. lutea*, *Orchis italica*, *O. laxiflora* and *O. simia* occurred in the same site. The labellum in some of the flowers differ from typical *Ophrys sprunerii* and such plants are possible hybrids.



Fig. 12. *Ophrys sprunerii* near village of Latzoio (photo K. Giannopoulos).

Reports 52–59

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Juncaceae

52. *Juncus ranarius* Songeon & E.P. Perrier

Bu Sofia region: Sofia Mt above the catchment zone of Zhelyava village, GN-13, 30.08.2006, coll. D. Dimitrov (SOM 163047).

— Valley of River Mesta: at the hill outskirts along river Mesta, near Beslen village, Hadzhidimovo Municipality, Gotse Delchev district, GL-49, 04.10.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova (SOM 166576).

This species is comparatively rare for the country (Assyov & Petrova 2006). These are the first records from both floristic regions.

53. *Juncus tenuis* Willd.

Bu Valley of River Mesta: along the riverbank, NW of Banichan village, Gotse Delchev district, GM-21, 13.06.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova (SOM 166574); along the riverbank, N of Gospodintsi village, Gotse Delchev district, GM-21, 13.06.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova.

New species for this floristic region.

Poaceae

54. *Bromus intermedius* Guss.

Bu Valley of River Mesta: in rocky places NW of Banichan village, Gotse Delchev district, GM-21, 04.10.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova (SOM 166578).

This is a new species for this floristic region. So far it has been known from the Rhodopi Mts (*Eastern*) (Assyov & Petrova 2006) and the Valley of River Struma (*Southern*) (Petrova 2010).

55. *Cleistogenes serotina* (L.) Keng.

Bu West Frontier Mts: Mt Osogovo, on the right slope above the road between Vaksevo and Drumohar villages, Kyustendil district, FM-57, 10.06.2004, coll. D. Stoyanov (SOM 160575).
— Mt Slavyanka: along the river around Yanovo village, GL-09, 25.08.1992, coll. I. Pashaliev (SOM 151694).
— Valley of River Mesta: in rocky places NW of Banichan village, Gotse Delchev district, GM-21, 04.10.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova (SOM 166575).

It is a common species for Bulgaria (Assyov & Petrova 2006), but so far it has not been reported from these floristic regions.

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

Bu Valley of River Struma (*Southern*): Pchelina hill, at Pchelina village (presently renamed to General Todorov), Petrich district, FL-98, 19.05.1958, coll. J. Radenkova, det. I. Bondev (SOM 110970).

— Valley of River Mesta: in open rocky grasslands on the hill slopes between Ablanitsa and Valkosel villages, Gotse Delchev district, KF-59, 03.10.2009, coll. K. Vassilev, H. Pedashenko & V. Goranova (SOM 166577).

These are the first records for this species from both floristic regions.

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

Bu Valley of River Mesta: in open rocky grasslands NW of Banichan village, Gotse Delchev district, GM-21, 13.06.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova (SOM 166581); in open rocky grasslands on the hills E from the road between Sadovo village and Ilinden border checkpoint, GL-39, 12.06.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova (SOM 166580); on hills between Blatska and Valkosel villages, Gotse Delchev district, KF-59, 03.10.2009, coll. K. Vassilev, H. Pedashenko & V. Goranova.

In the Herbarium SOM, there are three herbarium specimens of *Festuca thracica* collected from the Valley of River Struma, on rocks at Brestovo village, Blagoevgrad district (S. Kozhuharov & A. Petrova, 15.07.1981, SOM 77538, 86922, 143954). This locality is situated in Mt Vlahina, which falls into the West Frontier Mts floristic region. It has not been considered so far in the main Bulgarian floristic sources (Kozhuharov 1992; Delipavlov 2003; Assyov & Petrova 2006), which makes it a new species for the West Frontier Mts floristic region.

This species is a Balkan endemic, distributed in Bulgaria, Greece and R Macedonia (Petrova & Vladimirov 2010). It is included in the *Red List of Bulgarian vascular plants* as Endangered (Stoyanov 2009). In Bulgaria, it is also known from the Thracian Lowland, Valley of River Struma (*Southern*) and Rhodopi Mts (*Central* and *Eastern*) (Assyov & Petrova 2006).

58. *Koeleria nitidula* Velen.

Bu Valley of River Mesta: on the slopes E from the road between Sadovo village and Ilinden border checkpoint, Gotse Delchev district, GL-39,

12.06.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova (SOM 166573); on screes at the village of Petrelik, Gotse Delchev district, GL-39, 12.06.2009, coll. K. Vassilev, H. Pedashenko & V. Goranova.

This is a new record of this species for that floristic region.

59. *Poa timoleontis* Boiss.

Bu Valley of River Mesta: in rocky places NW of Banichan village, Gotse Delchev district, GM-21, 04.10.2009, coll. K. Vassilev, H. Pedashenko & V. Goranova (SOM 166579).

This is a new record of this species for the Valley of River Mesta. It is also distributed at the Black Sea Coast (*Southern*), Znepole Region, Valley of River Struma (*Southern*) and Rhodopi Mts (*Eastern*) (Assyov & Petrova 2006).

Report 60

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Ericaceae**60. *Empetrum nigrum* subsp. *hermaphroditum*** (Hagerup) Böcher

Bu Rhodopi Mts (*Central*): NW of peak Golyam Perelik, along the trail from Perelik chalet to peak Golyam Snezhnik, in open stony places in a sparse *Picea abies* forest, on a steep N-facing slope, siliceous bedrock, ca. 2100 m, 41.61056° N, 24.56472° E, 16.08.2010, obs. R. Natcheva & D. Ivanova (Fig. 13), three plants noticed; *loc. ibid.*, in open place on eroded soil with a very sparse vegetation cover, ca. 2100 m, 41.61033° N, 24.56646° E, 12.10.2010, obs. V. Vladimirov, S. Bancheva, M. Delcheva & R. Gorgorov, two plants noticed.

New for this floristic region. Altogether five plants of *E. nigrum* have been noticed in the area, at least two of them fruiting (very few fruits observed). *Arctostaphylos uva-ursi*, *Bruckenthalia spiculifolia*, *Juncus trifidus*, *Juniperus sibirica*, *Vaccinium myrtillus*, *V. uliginosum*, *V. vitis-idaea* grew in close proximity. Phytogeographically, the

new locality is very interesting since this Arctic-Alpine species has been so far believed to occur only in the two highest mountains in Bulgaria: Rila and Pirin Mts (Ančev 1982; Dimitrov & al. 2003). Those mountains are rich in Arctic-Alpine and glacial relic species (Stevanović & al. 2009). The present locality is the southernmost in the country (and one of Europe's southernmost too) and the easternmost on the Balkan Peninsula. The closest known localities lie to N-NW in the Pirin Mts and are at least 85–90 km apart. This record is particularly interesting in the light of the recent discovery of a small patch of *Dryas octopetala* (Ronikier & Ronikier 2010) some 1–2 km westwards, on N-exposed steep rock outcrops, just below the ridge. Both species are represented in the area with extremely small populations and thus are of very high conservation concern and deserve monitoring efforts. Although being the highest part of the Rhodopi Mts, the region is covered by forests (mostly *Picea abies*) and few open spaces with sparse vegetation cover exist, especially such, facing to the north. Therefore, the discovery of many more specimens and locations of *D. octopetala* and *E. nigrum* in the region seems very unlikely. Both species probably set an example of the impact of climate changes (warming) on the flora and vegetation in the lower mountains, causing expansion of the forest to higher elevations and formation of denser and taller grass communities on the mountain ridges, thus leaving little or no space for less competitive species adapted to sites with sparse vegetation cover and cold microclimate.



Fig. 13. *Empetrum nigrum* subsp. *hermaphroditum* (photo D. Ivanova).

Both species are “taken captive” in their present locations in the Rhodopi Mts, surrounded from all sides by a Norway Spruce forest.

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Reports 61–63

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Asteraceae

61. *Anthemis parnassica* (Boiss. & Heldr.) R.

Fernández

Bu Mt Slavyanka: near the springs of river Petrovska, in grassland vegetation, near the road to Goleshovo village, GL-09, 09.12.2009 coll. T. Karakiev (SOM 166161).

The species has been so far known from the floristic regions of the Valley of River Struma, Rhodopi Mts (*Eastern*) and Mt Strandzha (Delipavlov 2003). The highest altitude known for this species is 400 m. In this location the altitude was around 500 m.

Orobanchaceae

62. *Orobanche aegyptiaca* Pers.

Bu Thracian Lowland: Haskovo town, in the garden of a petrol station, LG-83, 19.08.2010, obs. T. Karakiev; Hristiyanovo village, Stara Zagora district, in a tobacco plantation near the village, LG-89, 19.08.2010, coll. T. Karakiev (SOM 166160).

A new species for this floristic region.

Rubiaceae

63. *Galium uliginosum* L.

Bu Rhodopi Mts (*Western*): in a grassland bog in the Dulgata Livada locality, Lesichevo neighbourhood, DLS Borovo, Devin district, 1700 m, KG-74, 22.07.2010, obs. T. Karakiev.
— Rhodopi Mts (*Central*): Gerzovitsa locality, W of the town of Smolyan, 1900 m, KG-90, 22.07.2010, coll. T. Karakiev (SOM 166159).

This species has been so far known from the floristic region of the Balkan Range (*Central*), at an altitude up to 1500 m (Cheshmedzhiev 2003).

Reports 64–72

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Asteraceae

64. *Arnica montana* L. subsp. *montana* (Fig. 14)

BH Mt Maglić, Vučevo highland-Pitomine, ass.

Piceetum subalpinum, on the E slope of the former glacial cirque valley, ca. 1580 m, on limestone, 43°18'15" N, 18°46'05" E, 14.07.2007, coll. J. Brujić, V. Stupar & J. Travar (Herb. Fac. Silv.); Prijedor locality, ass. *Nardetum subalpinum montenegrinum*, ca. 1630 m, in a siliceous meadow, 43°17'20" N, 18°43'11" E, 19.07.2009, coll. Đ. Milanović (Private Herbarium 19b/01–152).

Cg Mt Maglić, Ulobić pasture-Šuvalina Česma, ass.

Hyperici-Vaccinietum myrtilli, ca. 1740 m, in a siliceous meadow, 43°17'12" N, 18°47'06" E, 22.08.2010, coll. Đ. Milanović (Private Herbarium

19b/01–154); Mt Volujak, Rudinske Kolibe, ass. *Hyperici-Vaccinietum myrtilli*, ca. 1690 m, 43°15'03" N, 18°43'02" E, 31.07.2009, coll. Đ.

Milanović (Private Herbarium 19b/01–153).

This famous medicinal plant grows on deep siliceous soils in the montane and subalpine zones of the high mountains of Bosnia and Herzegovina. It was recorded in the following localities: Mt Mačak above Travnik (Brandis in Beck von Mannagetta & al. 1983), below Tajan (Bjelčić in Beck von Mannagetta & al. 1983), Mt Vranica – Luke and Sjekira (Reiser in Beck von Mannagetta & al. 1983), Karića Meadow on Mt Ozren in the vicinity of Sarajevo (Malý in Beck von Mannagetta & al. 1983), Mt Vitreuš (Reiser in Beck von Mannagetta & al. 1983), Mt Ljubišnja, in the vicinity of Rajkovići village (Malý in Beck von Mannagetta & al. 1983), Borovica Hill nearby Sutjeska Monastery (Plavšić in Beck von Mannagetta & al. 1983), in the surrounding of Sarajevo – Vučja Luka (Malý in Beck von Mannagetta & al. 1983), Mt Treskavica – peak Barice (Fiala in Beck von Mannagetta & al. 1983), Mt Trebević (Malý in Beck von Mannagetta & al. 1983) and Mt Ivan (Malý 1928).

It was previously recorded from Mt Maglić, without precisely cited locality (Bjelčić 1956). Now, Bjelčić's record was confirmed and some new localities of the species have been discovered. It is also known in Montenegro in Mt Ljubišnja (Blečić & al. 1968), ca. 65 km SE from the localities in Mts Maglić and Volujak.

65. *Leontodon incanus* (L.) Schrank subsp. *incanus* (Fig. 14)

BH Mt Klekovača, Kecmanska Kosa locality, along the roadside incision, on dolomite, ca. 900 m, 44°29'07" N, 16°30'13" E, 03.06.2005, coll. Đ.

Milanović (Private Herbarium 19b/01–105); Mt Plješevica, Skočajska draga locality nearby Skočaj village, along the roadside incision, on dolomite, ca. 270 m, 44°45'27" N, 15°50'35" E, 23.05.2010, coll. Đ. Milanović, V. Stupar, J. Brujić & D. Nikić (Milanović Đ. Private Herbarium 19b/01–106; Herb. Fac. Silv.).

This species is very rare in the flora of Bosnia and Herzegovina. It was recorded only from several localities: Ovčarevo, Paklarevo-Travnik and Mt Vilenica in the vicinity of Travnik (Brandis in Beck von Mannagetta & al. 1983) and Cigelj, Gnjilovita Kosa and on the slopes of Mt Jadovnik nearby Drvar (Ritter-

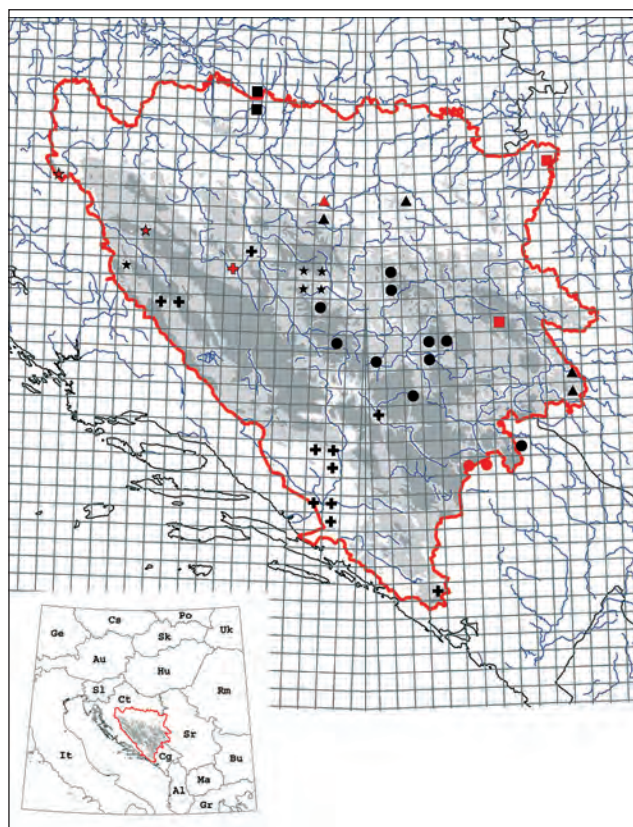


Fig. 14. Distribution of the species *Echinium russicum* ▲, *Leontodon incanus* subsp. *incanus* ★, *Cladium mariscus* +, *Carex elongata* ■ and *Arnica montana* ● in Bosnia and Herzegovina. New records are indicated by red.

Studnička 1957). In both new localities this species grows on dolomite, along the roadside incisions and on the edges of Black Pine and Scots Pine forests. It grows in similar ecological conditions as in the dolomite complexes in the vicinity of Drvar and Travnik.

Boraginaceae

66. *Echium russicum* J.F. Gmel. (Fig. 14)

BH Mt Borja, creek Velika Ostružnica valley nearby Pribinić, on serpentine, ca. 440 m, 44°35'12" N, 17°40'19" E, 18.07.2009, coll. V. Stupar & J. Brujić (Herb. Fac. Silv.).

The species is extremely rare in the territory of Bosnia. It was recorded from few localities: Mt Varda nearby Rudo, in the surroundings of Vardište and Višegrad (Malý 1912), Mt Ozren near Bosansko Petrovo Selo and creek Miljkovača valley in Mt Borja (Stupar & al. 2009).

Dipsacaceae

67. *Dipsacus pilosus* L. (Fig. 15)

BH Mt Čemernica, Bijela Ravan above Otlovići village, ass. *Piceo-Abio-Fagetum illyricum*, ca.

1200 m, 44°31'22" N, 17°16'22" E, 14.08.2007, coll.

J. Brujić & J. Travar (Herb. Fac. Silv.).

This species occurs sporadically in the wet brushes and forests, along roadsides and riverbanks. It was recorded from the following localities in Bosnia and Herzegovina: Zovik and Pazarić nearby Sarajevo (Ritter-Studnička in Beck von Mannagetta & al. 1974), Mt Igman – Puhlovići (Formanek in Beck von Mannagetta & al. 1974), Krupačka Stijena in river Željeznica valley (Malý in Beck von Mannagetta & al. 1974), Stambolčić village in the vicinity of Pale (Malý in Beck von Mannagetta & al. 1974), Banja Stijena in river Prača valley (Malý in Beck von Mannagetta & al. 1974), Gorovići-Vitez (Malý in Beck von Mannagetta & al. 1974), river Sutjeska valley near Tjentište (Beck von Mannagetta in Beck von Mannagetta & al. 1974), river Fojnica valley near Fojnica (Malý 1928), in the forests of NW Bosnia (Slavnić & Bjelčić 1963), and Benkovac in Mt Kozara (Bucalo & al. 2007).

Fabaceae

68. *Genista sylvestris* subsp. *dalmatica* (Bartl.)

Lindb. (Fig. 16)

BH Nearby Ostrožac in the river Una canyon, along the roadway incision, ca. 270 m, 44°54'11" N, 15°56'36" E, 22.05.2010, coll. Đ. Milanović, V. Stupar, J. Brujić & D. Nikić (Milanović Đ. Private Herbarium 09/01–87, Herb. Fac. Silv.).

The species is widely distributed in the Submediterranean zone of the state. However, it reaches as far as the continental zone in places with stronger Mediterranean impact. It was recorded from many localities in Herzegovina and South Bosnia: in the mountains Prolog, Vještica, Troglav and Krug near Livno (Protić in Beck von Mannagetta 1927), Mt Borova Glava near Livno (Sendtner in Beck von Mannagetta 1927), Mt Hrbljina near Glamoč (Brandis in Beck von Mannagetta 1927), above Grkovci and Preodac (Protić in Beck von Mannagetta 1927), nearby Grahovo (Handel-Mazetti in Beck von Mannagetta 1927), Preslica Mt (Vandas in Beck von Mannagetta 1927), near Konjic (Degen in Beck von Mannagetta 1927), beside Bigolje (Malý in Beck von Mannagetta 1927), besides lake Boračko (Blau in Beck von Mannagetta 1927), Mt Prenj (Beck von Mannagetta 1927), Glogovo and Prislav (Vandas in Beck von Mannagetta 1927), in the surrounding of Mostar (Fiala in Beck von

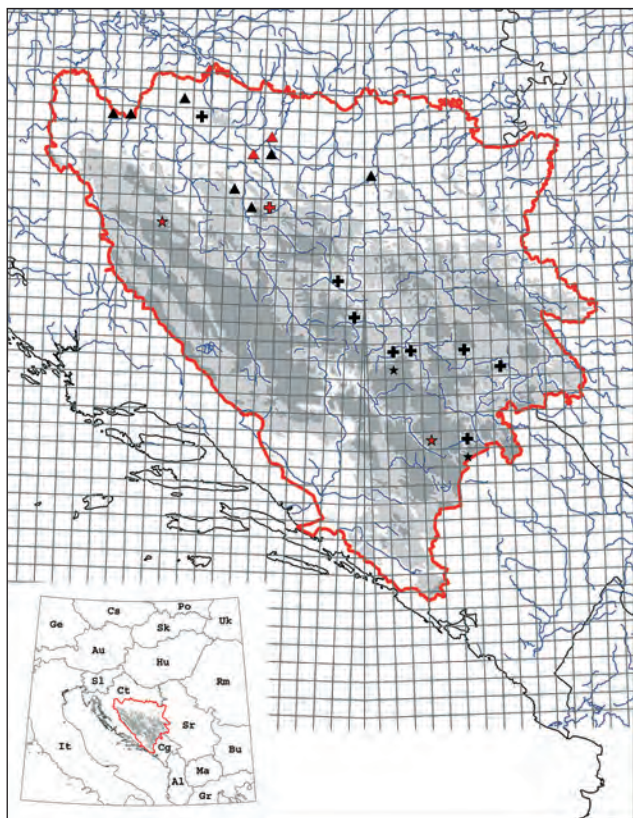


Fig. 15. Distribution of the species *Dipsacus pilosus* +, *Carex ferruginea* ★ and *Eranthis hyemalis* ▲ in Bosnia and Herzegovina. New records are indicated by red.

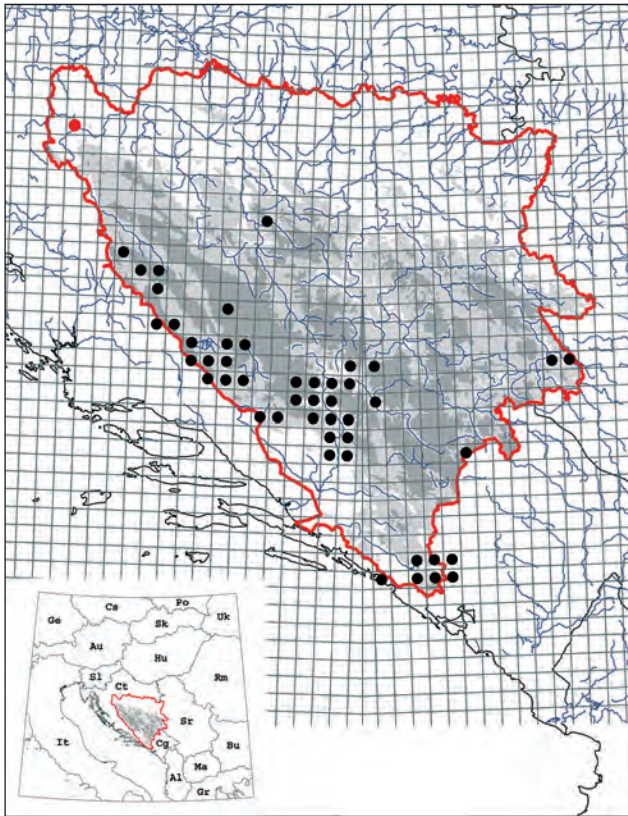


Fig. 16. Distribution of the species *Genista sylvestris* subsp. *dalmatica* ● in Bosnia and Herzegovina. New record is indicated by red.

Mannagetta 1927), Podvelež in the vicinity of Mostar (Beck von Mannagetta 1927), Velika Vljajna in Mt Čabulja (Prodan in Beck von Mannagetta 1927), Mt Čvrtnica (Vandas in Beck von Mannagetta 1927), Mt Radovan in the vicinity of Posušje (Fiala in Beck von Mannagetta 1927), in the surroundings of Trebinje and in Mt Leotar (1229 m) (Beck von Mannagetta 1927), Koritna Greda near Vučija in Mt Bijela Gora (Pantoscek in Beck von Mannagetta 1927), besides Ivanica (Adamović in Beck von Mannagetta 1927), around Podorašac nearby Konjic (Malý 1928), besides Vrbjani and Pirići nearby Konjic (Ritter-Studnička 1953), Vrtaljica, Zlatar and Suhi Dol nearby Konjic (Ritter-Studnička 1956), around lake Buško (Šilić & Abadžić 1989), Cigelj and Gnjljovita Kosa nearby Drvar (Ritter-Studnička 1957), and around Lastva and across the surrounding it dolomite hills (Ritter-Studnička 1959). Records from the continental zone of Bosnia and Herzegovina are scattered and restricted to the warm limestone habitats in gorges and on mountain slopes: on Mts Džermanica and Bikavac in the vicinity of Višegrad (Malý in Beck von Mannagetta 1927), Balvan Karaula

and Mt Macute nearby Vardište (550 m) (Malý in Beck von Mannagetta 1927), in Razdolina gorge close to village Dobrun (Malý in Beck von Mannagetta 1927), on the slopes of Beš-Kita in NP Sutjeska (Fukarek 1969) and in river Ugar canyon near its confluence into river Vrbas (Milanović & al. 2007). This new record is the northernmost reach of the species. The locality lies about 50 km northwards of the nearest known locality in the river Ugar canyon.

Ranunculaceae

69. *Eranthis hyemalis* (L.) Salisb. (Fig. 15)

BH Šargovac village nearby Banja Luka, 165 m, 44°49'13"N, 17°11'25"E, 15.04.2010, coll. N. Kalaba (Herb. Fac. Silv.); Stražbenica hill in the surrounding of Banja Luka, ca. 160 m, 44°51'02"N, 17°15'31"E, 02.02.2007, coll. V. Stupar & J. Brujić (Herb. Fac. Silv.); Veliko Blaško village in the vicinity of Banja Luka, at the roadside, 135 m, 44°52'12"N, 17°17'40"E, 15.03.2010, coll. V. Stupar, J. Brujić, Đ. Milanović & J. Kuburić (Herb. Fac. Silv.).

This species has had Probably Extinct status in the Proposal for a Red List of Vascular Plants of Bosnia and Herzegovina (Šilić 1996). However, it has been recently discovered in several new locations. The latest researches (Brujić & al. 2006) have confirmed its presence in North Bosnia. Presently, *E. hyemalis* grows with certainty in the following localities: the Usora confluence into river Bosna (Blau in Beck von Mannagetta 1909; Šilić confirmed 2008), Brenica and Krupa in the river Vrbas canyon (Brujić & al. 2006), Slatina nearby Banja Luka (Brujić & al. 2006), besides Mlječanica Spa on the northern slopes of Mt Kozara (Brujić & al. 2006). The species is extinct in the localities: between Vranduk and Topčići villages in the river Bosnia valley (Sendtner in Beck von Mannagetta 1909), besides Vranduk (Sendtner in Beck von Mannagetta 1909), nearby Lašva (Horak in Beck von Mannagetta 1909), besides river Fojnica nearby Visoko (Formanek in Beck von Mannagetta 1909), and in the orchards around Sarajevo (Bijelić in Beck von Mannagetta 1909). Records of the species between Novi and Otoka and between Blatna and Otoka (Beck von Mannagetta 1909) have not been confirmed yet.

Cyperaceae

70. *Carex elongata* L. (Fig. 14)

BH Semberija, Gromželj swamp, ass. *Alnetum glutinosae*, 83 m, 44°51'57"N, 19°18'59"E,

29.05.2010, coll. Đ. Milanović, J. Brujić, V. Stupar & D. Nikić (Milanović Đ. Private Herbarium 22b/01–134; Herb. Fac. Silv.); Mt Sljemenska, Han Kram peat-bog, ass. *Pino-Betuletum pubescentis*, ca. 1050 m, 44°02'20" N, 18°54'24" E, 28.06.2010, coll. Đ. Milanović, J. Brujić & J. Travar (Milanović Đ. Private Herbarium 22b/01–156; Herb. Fac. Silv.).

Only two records of this species in Bosnia are known, both in the surroundings of Gradiška (Kovačević 1959), in ass. *Cynosuretum cristati*, as a casual “relict forest species” cited in two phytocoenological relèves. Šilić has had doubts about the accuracy of these data and did not take them into account in the List of Vascular Plants (*Pteridophyta* and *Spermatophyta*) for the *Red book of flora of Bosnia and Herzegovina* (Šilić 1996). The species is not so rare in Serbia, but it has a status of Data Deficient (DD) in Croatia (Nikolić & al. 2004). This species is very rare in Bosnia due to habitat fragmentation and destruction caused by the strong anthropogenic impact on the alluvial and swamp forests in the northern parts of the state.

71. *Carex ferruginea* Scop. (Fig. 15)

BH Mt Klekovača, Kraljeve Livade, ass. *Carici kitaibelianae-Helianthemum alpestris*, ca. 1690 m, 44°25'41" N, 16°31'18" E, 27.07.2006, coll. Đ. Milanović & V. Stupar (Milanović Đ. Private Herbarium 22a/01–68; Herb. Fac. Silv.); Mt Zelengora, beside lake Štirinsko, all. *Jasionion orbiculatae*, ca. 1820 m, 43°22'29" N, 18°29'38" E, 28.06.2010, coll. Đ. Milanović (Private Herbarium 22b/01–156).

This species is very rare in mountains of Bosnia and Herzegovina (Šilić 1996). It was recorded only from two localities: in Kotlovi below Velika Vlahinja in Mt Bjelašnica (Horvat 1952) and below Studenac spring in Mt Volujak (Bjelčić 1956). The record by O. Sendner from Mt Vlašić is erroneous: misidentification of *Carex kitaibeliana* (Horvat 1952). *Carex ferruginea* is also a rare species in Montenegro, Serbia and Macedonia, distributed in the high-mountain regions of Mts Durmitor, Prokletije, Šarplanina and Korab Mts (V. Stevanović, pers. comm.). In Croatia it is rated as Near Threatened – NT (Nikolić & al. 2004).

72. *Cladium mariscus* (L.) Pohl (Fig. 14)

BH Gerzovo village in the vicinity of Šipovo, ass. *Cladietum marisci* Zobrist, ca. 610 m, 44°17'31" N, 17°00'42" E, 03.07.2010, coll. J.

Brujić, Đ. Milanović & V. Stupar (Milanović Đ.

Private Herbarium 22c/01–06; Herb. Fac. Silv.).

This species occurs sporadically in seasonally flooded areas and along the banks of standing waters in the Mediterranean and Submediterranean zone. It was recorded from: NW of Mostar city (Struschka in Beck von Mannagetta 1903), Mostarsko Blato wetland (Beck von Mannagetta 1903), between Metković and Gabela (Beck von Mannagetta 1903), Hutovo Blato wetland (Fiala in Beck von Mannagetta 1903), Skočigrm in Mt Bijela Gora (Pantocsek in Beck von Mannagetta 1903), Ždrlovac in Livanjsko Polje (Malý 1923), lake Boračko (Malý 1923), in Lukavac quagmire beside river Neretva (Malý 1923). *Cladium mariscus*, however, was so far recorded from a single locality in the continental zone of the state, besides lake Pliva in the vicinity of Jajce (Hofmann in Beck von Mannagetta 1903).

Report 73

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Iridaceae

73. *Romulea bulbocodium* (L.) Sebast. & Mauri (Fig. 17)

Bu Pirin Mts (*Southern*): E of Nova Lovcha village, in dry semi-open calcareous grasslands, with considerable cover of the moss *Pleurochaete squarrosa* and scattered shrubs of *Juniperus oxycedrus* and *Quercus pubescens*, on relatively deep soil, 730 m, 41°25'41.4" N, 23°43'47.3" E, GL-29, 03.02.2011, coll. R. Natcheva & D. Ivanova (SOM 166888).

A total of 11 plants in a late stage of flowering were observed. Individuals were growing solitary or in small groups on a relatively small area. In the same place *Merendera attica* also occurs. *Romulea bulbocodium* is included in the *Red List of Bulgarian vascular plants* in the category Vulnerable (Meshinev 2009). The species is new to the Pirin Mts floristic region. The nearest locality of the species is in Mt Slavyanka above Petrovo village (Pashaliev & Dimitrov 1995). It is also known from the Valley of River Struma (*Southern*) and West Frontier Mts (Assyov & Petrova 2006).



Fig. 17. *Romulea bulbocodium* (photo R. Natcheva).

Acknowledgements. This species was found during field work financed under the project Life 08/NAT/BG/00279.

Reports 74–83

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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

74. *Cirsium heldreichii* Halácsy (Fig. 18)

Gr Nomos & Eparchia Fthiotidos: Mt Iti, northern slopes, 1500 m, 38°50' N, 22°15' E, 13.08.2008, Polymenakos obs. (photo); along the path to the peak of Pirgos, 1940–2050 m, 38°47' N, 22°15' E, 07.08.2009, Polymenakos obs. (several photos, conf. Kit Tan, February 2011).



Fig. 18. *Cirsium heldreichii* (photo K. Polymenakos).

New for Mt Iti. About 20 plants were noted scattered along the path and in the valley below the highest peak. Other species in the immediate area were *Centaurea nervosa* subsp. *promota*, *C. affinis*, *Veronica orsiniana*, *Daphne oleoides*, *Petrorhagia phthiotica*, *Thymus leucotrichus*, *Acinos alpinus*, *Viola aetolica* and *Ptilostemon afer*.

Caryophyllaceae

75. *Dianthus haematocalyx* subsp. *pindicola* (Vierh.) Hayek (Fig. 19)

Gr Nomos & Eparchia Kastorias: N Pindos, Mt Voion, in open *Pinus nigra* forest, roadside, 1250 m, 40°12' N, 21°03' E, 14.08.2009, Polymenakos & Fakas obs. (several photos, conf. Kit Tan, February 2011).



Fig. 19. *Dianthus haematocalyx* subsp. *pindicola* (photo G. Fakas).

New for Mt Voïon. In Greece *D. haematocalyx* subsp. *haematocalyx* and *D. h.* subsp. *pindicola* are not quite distinct. *Dianthus haematocalyx* subsp. *haematocalyx* is recorded from Ossa (East Central) to Voras (North Central) but not in N Pindos. The collection from Voïon, with its taller stems, longer calyces and non-scabridulous leaf margin, has more similarities with *D. h.* subsp. *haematocalyx* than *D. h.* subsp. *pindicola* which is the more familiar subspecies occurring in the mountains of NW Greece and S Albania. Plants rather similar to *D. h.* subsp. *haematocalyx* have been observed in July 2007 by Kit Tan & G. Vold on Mt Trapezitsa in N Pindos and Voïon lies between Trapezitsa and the E and N Central mountain ranges. However, based on the character of the more abruptly contracted epicalyx scales (see fig.) we have referred our plants to *D. h.* subsp. *pindicola*.

Chenopodiaceae

76. *Chenopodium pumilio* R. Br.

Gr Nomos & Eparchia Korinthias: Mt Killini, flat limestone area 1 km SW of Lake Dhasios, in opening of *Pinus nigra* forest, 1500 m, 37°58' N, 22°24' E, 18.09.2010, obs. K. Polymenakos, G. Zarkos & V. Christodoulou (photos, det. Kit Tan, March 2011).

New for the Peloponnese. Native to Australia, introduced to and naturalized in S and C Europe and other parts of the world probably through the wool trade. First documented in Greece in 1986 (Nomos Larisis in North Central); since then it has been reported from several places, all on mainland Greece (Serron in 2000, Pendeli and Thesprotias in 2007, and Florinis in 2010). It has so far, not been collected from Mt Killini or the Peloponnese. Plants were flowering and fruiting in September in the locality which is heavily grazed.

Fabaceae

77. *Anthyllis montana* L. (Fig. 20)

Gr Nomos & Eparchia Fthiotidos: Mt Iti, below the highest peak Pírgos, 2140 m, 38°47' N, 22°15' E, 12.06.2010, Polymenakos obs. (photo, conf. Kit Tan, January 2011).

New for Mt Iti and eparchia Fthiotidos although known from Mts Giona and Parnassos in Sterea Ellas. Only 4–5 plants were found, growing together with *Dianthus haematocalyx* subsp. *ventricosus*, *Acantholimon ulicinum* and *Paronychia macedonica* subsp. *macedonica*.



Fig. 20. *Anthyllis montana* (photo K. Polymenakos).

Rubiaceae

78. *Asperula taygetea* Boiss. & Heldr.

Gr Nomos Messinias, Eparchia Pilias: Pylos, cliffs at Paleokastro, 10 m, 36°57' N, 21°39' E, 05.05.2009, Bonetti obs. (photo, conf. Kit Tan, December 2010).

New for the whole Messinian Peninsula, the westernmost finger of south Peloponnese. Rare, growing only on the cliffs together with *Stachys canescens*, *Dianthus fruticosus* subsp. *occidentalis*, *Limonium pylum* and *Erysimum corinthum*.

Scrophulariaceae

79. *Verbascum speciosum* subsp. *megaphlomos* (Boiss. & Heldr.) Nyman (Fig. 21)

Gr Nomos Argolidos/Arkadias, Eparchia Argous/Mandiniyas: Mt Olygirtos, on schist at foot of



Fig. 21. *Verbascum speciosum* subsp. *megaphlomos* on Mt Olygirtos (photo A. Bonetti).

scree slope within *Abies cephalonica* forest, 1300 m, 37°47' N, 22°24' E, 18.06.2009 & 22.05.2009, Bonetti obs. (photos, conf. Kit Tan December 2010).

New for Mt Olygirtos, eparchia and nomos. Not common, only found in this locality and not observed along the path all the way to the summit. Growing together with *Alkanna* sp., *Astragalus lacteus*, *Centaurea affinis* subsp. *laconiae*, *C. raphanina* subsp. *mixta* and *Onosma erecta*.

Amaryllidaceae

80. *Galanthus reginae-olgae* Orph. subsp. *reginae-olgae*

Gr Nomos Arkadias, Eparchia Gortinias: path from Prodromos monastery to Philosophos monastery, in gorge above river Lousios, 415 m, 37°33' N, 22°03' E, 13.11.2010, flowering, Polymenakos obs. (photos, conf. Kit Tan, November 2010). First noted in area three years earlier, on 11.11.2007.

New for both eparchia and nomos. The population comprising ca. 30 individuals lies close to a path which, during the weekend of observation and photography, was trodden by nearly 50 visitors. If the path is widened, as has occurred further up the gorge, this population will surely disappear. However, there are probably other populations along the river in the lower part of the gorge and they are currently sought for. The spring-flowering *G. reginae-olgae* subsp. *vernalis* has been reported by Apergis & Sfikas (2002) from Mt Menalon in the same eparchia.

Liliaceae s.l.

81. *Colchicum soboliferum* (Fisch. & C.A. Mey.) Stef. (Fig. 22)

Gr Nomos & Eparchia Attikis: 1–2 km E of the Asopos estuary by the Oropos lagoon near the village of Ag. Konstantinos, 22.01.2011, Bonetti & Polymenakos obs. (several photos).

Colchicum soboliferum was first described as a species of *Merendera* based on an 1828 collection from Khoi in Iran. As the name implies, it has *sobols* – short swollen underground stems 4–10 cm in length, which develop vegetative and aerial shoots and also propagate the plant vegetatively. The species has a very wide range, being distributed from the Eastern Balkans to Southwest and Central Asia. Within Greece it is probably under-collected because it flowers early in the year (January to February) and its wet habitats, subjected to seasonal flooding, are



Fig. 22. *Colchicum soboliferum* (photo A. Bonetti).

not greatly visited by botanists without rubber boots. According to the new Red Data Book of Greece (Phitos & al. 2009) it has been recorded near the Asopos estuary in Attiki (Sterea Ellas), near the lakes Petron and Begoritida (North Central), near the village of Nea Redhestos in Thessalonikis (North East) and near Plomario on the southeastern coast of Lesvos (East Aegean islands). It also occurs at the border region with FYROM, and near the village of Kadinkoy on the Turkish side of the Evros river in the province of Edirne. The habitats are invariably wet or damp meadows, marshes, sandy fields, near springs, rivers and pools, from sea level to ca. 700 m. A report by Voliotis from Mt Orvilos at an altitude of 1500 m is surely incorrect.

As the species was included in the Red Data Book Bonetti and Polymenakos were interested to see the plant at the Asopos estuary especially when there are no other documented records since it was first collected there in 1930 (15 February 1930, F. Guiol s.n., BM! sub *Merendera attica* Spruner). They were shown the locality at Oropos lagoon by Panagiotis

Latsoudis, a forester who visits the area frequently for ornithological surveys on a voluntary basis. The latter informed Kit Tan it was not rare and he had first observed it in 1994 and since then has seen it flowering every year in February. The *Colchicum* grows in the salt marsh on open calcareous grassy areas in-between *Sarcocornia fruticosa*, the dominant species. The grass and *Colchicum* occur on the slightly raised areas above water level where the *Sarcocornia* does not grow. These open clearings were once made by local sheep which by going to and fro, keep the thick vegetation away. Grazing sheep were observed even in the spring of 2010. The risk of stepping on the flowers is high because if one does not wish to have wet feet the only dry areas in the marsh are where the *Colchicum* grows. At the Oropos lagoon the population is fragmented 40 to 80 m apart in various places. A total of at least 300 individuals were observed. There are probably other populations but the area was not thoroughly explored as no waterproof boots were brought at the time of visit. There are similar habitats in the Asopos estuary and the nearby fields, once wetlands, are now dotted with residential homes. We predict that the *Colchicum* will certainly survive because the *Sarcocornia* and other competing species are eliminated or kept at bay by the constant trampling.

Orchidaceae

82. *Epipactis palustris* (L.) Crantz

Gr Nomos & Eparchia Fthiotidos: Mt Iti, edge of small stream on south side of mountain, 1200 m, 38°50' N, 22°15' E, 20.07.2010, Polymenakos & Fakas obs. (photo, conf. Kit Tan, February 2011).

New for Mt Iti; other mountain localities in Sterea Ellas include the botanically well-known Timfristos and Vardousia. Less than 10 plants were growing by a small pool 5–15 cm deep which had been carved out by the stream. All was in the deep shade of *Abies cephalonica* and *Salix alba*, the pond was edged by *Ilex aquifolium* and *Podocytisus caramanicus*; the latter species seems to be also new for Mt Iti.

83. *Gymnadenia conopsea* (L.) R. Br. (Fig. 23)

Gr Nomos Achaia, Eparchia Kalavriton: Mt Chelmos, Krathis river, 1175 m, 37°59' N, 22°13' E, 10.07.2010, Polymenakos obs. (photo, conf. Kit Tan, January 2011).

Confirmation of existence on Mt Chelmos. Only 4 individuals were discovered amongst hundreds of



Fig. 23. *Gymnadenia conopsea* (photo K. Polymenakos).

thousands of *Dactylorhiza saccifera* ca. 500 m S from the place where the Krathis meets the Mavroneri, with *Pinus nigra* and *Abies cephalonica* on the slopes and *Salix elaeagnos*, *Stachelina uniflosculosa* and *Platanus orientalis* in the valley. Lafranchis & Sfikas (2009) record the distribution in Greece as from Chelmos northwards so it is possible they may also have noted this species on the mountain. A search for *Dactylorhiza iberica* in the Styx valley led to the unexpected discovery of the *Gymnadenia*, and one individual of *D. iberica*, albeit in poor flowering state.

Acknowledgements. We thank Panagiotis Latsoudis for sharing with us his discovery of *Colchicum soboliferum*, Maria Panitsa for translating part of the *Colchicum* entry in the Red Data Book of Greece and Vladimir Vladimirov for locating Guio's specimen at the Natural History Museum, London.

Reports 84–85

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Fabaceae**84. *Trifolium echinatum* M. Bieb.**

Tu(E) A1(E) Edirne: Musabeyli village, 109 m, 41°41'00"N, 26°40'00"E, 23.06.1989, coll. *F. Dane* & *N. Aktac* (EDTU 3563); Budakdoganca village, 98 m, 41°45'37"N, 26°20'33"E, 02.06.1987, coll. *N. Basak* & *H. Arda* (EDTU 797); Havsa: near Sinit lake, 65 m, 41°33'01"N, 26°49'13"E, 20.05.1999, coll. *G. Savas* (EDTU 7365); Kesan: Kizkapan village, 21 km, 157 m, 40°44'00"N, 26°29'00"E, 22.05.1999, coll. *G. Savas* (EDTU 7394); Celebi village, 113 m, 40°40'00"N, 26°21'00"E, 22.05.1999, coll. *G. Savas* (EDTU 7399); Yerlisu village, 162 m, 40°44'00"N, 26°43'00"E, 25.05.1999, coll. *N. Basak* & *N. Guler* (EDTU 7461); Enez: Mecidiye, at the seashore, 0 m, 40°38'20"N, 26°32'14"E, 11.06.1997, coll. *N. Basak* & *N. Guler* (EDTU 7473); Lalapasa: Taslimusellim village, 193 m, 41°49'00"N, 26°47'00"E, 06.07.1987, coll. *N. Basak* (EDTU 3425).

New for A1(E) Edirne. So far the species has been known from A1(E) Tekirdag and A2(E) Istanbul (Zohary 1970).

85. *Trifolium latinum* Sebast.

Tu(E) A1(E) Edirne: Centre, Kucukdolluk village, 132 m, 41°45'00"N, 26°40'00"E, 16.07.1999, coll. *G. Savas* (EDTU 7486); Kesan: Yerlisu village, around Mt Koru, 162 m, 40°44'00"N, 26°43'00"E, 05.06.1999, coll. *N. Basak* & *N. Guler* (EDTU 7485).

New for European Turkey. So far the species has been known from B1 Izmir and C1 Aydin (Zohary 1970).

Reports 86–102**Alexey P. Seregin¹ & Kit Tan²**

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The following records are based on collections made and identified by A.P. Seregin during a short visit to the Saronic islands (Hydra, Poros, Spetses) in Nomos Attikis from 28 August to 2 September 2010. They include a few from the Methana Peninsula. The taxa listed appear to be new records for each named island or the peninsula although they are common elsewhere in

Greece. Several are naturalized aliens. None are new for the floristic region Sterea Ellas (StE) or the prefecture Nomos Attikis but the records fill an obvious distribution gap. They also highlight the important contribution one can make, even in a few days, to increase the floristic knowledge of a place. These islands are populated areas much visited by tourists and already considered botanically well-documented.

Ephedraceae**86. *Ephedra foeminea* Forssk.**

Gr Nomos Attikis, Eparchia Attikis: Spetses, Cape Fanari, coastal limestone rocks with open phrygana, 5–10 m, 37°15'45"N, 23°10'10"E, 01.09.2010, *Seregin* E-1125.

Widespread in Greece.

Amaranthaceae**87. *Amaranthus viridis* L.**

Gr Nomos Attikis, Eparchia Attikis: Spetses, old port in town, along pavement, 5–10 m, 37°15'35"N, 23°10'00"E, 01.09.2010, *Seregin* E-1126.

Naturalized, probably tropical America in origin.

Apiaceae**88. *Crithmum maritimum* L.**

Gr Nomos Attikis, Eparchia Attikis: Spetses, Agia Marina, SE of town of Spetses, coastal slopes, 2–5 m, 37°15'05"N, 23°09'45"E, 01.09.2010, *Seregin* E-1132.

89. *Foeniculum vulgare* Mill.

Gr Nomos Attikis, Eparchia Trizinias: Poros, SE part of Sphairia, roadside stony slope, 30 m, 37°29'45"N, 23°27'50"E, 02.09.2010, *Seregin* E-1148.

Asteraceae**90. *Eclipta prostrata* (L.) L.**

Gr Nomos Attikis, Eparchia Trizinias: Poros, SE part of town, coastal embankment by channel, weed in flowerbed, 2 m, 37°29'55"N, 23°27'25"E, 02.09.2010, *Seregin* E-1168.

Naturalized and well-established in lawns and flowerbeds due to frequent watering. Widespread weed in the tropics.

Brassicaceae**91. *Cakile maritima* Scop.**

Gr Nomos Attikis, Eparchia Idras: Hydra, stony beach at Molos, 5.5 km W-SW of town, 0–2 m, 37°19'25"N, 23°24'45"E, 31.08.2010, *Seregin* E-1121.

Caryophyllaceae**92. *Herniaria incana* Lam.**

Gr Nomos Attikis, Eparchia Trizinias: Methana Peninsula, above Vathy, along road to Megalochori, stony place near temporary stream (drying out in summer), 60 m, 37°35'45" N, 23°20'40" E, 29.08.2010, *Seregin* E-1091.

Chenopodiaceae**93. *Chenopodium ambrosioides* L.**

Gr Nomos Attikis, Eparchia Trizinias: Poros, SE part of Sphairia, wet places by roadside rocks, 20 m, 37°29'50" N, 23°27'45" E, 02.09.2010, *Seregin* E-1151.

Naturalized, native to tropical America.

94. *Salsola kali* L.

Gr Nomos Attikis, Eparchia Idras: Hydra, stony beach at Molos, 5.5 km W-SW of town, 0–2 m, 37°19'25" N, 23°24'45" E, 31.08.2010, *Seregin* E-1120.

95. *Salsola soda* L.

Gr Nomos Attikis, Eparchia Idras: Hydra, stony beach at Molos, 5.5 km W-SW of town, 0–2 m, 37°19'25" N, 23°24'45" E, 31.08.2010, *Seregin* E-1119.

Cucurbitaceae**96. *Ecballium elaterium* (L.) A. Rich.**

Gr Nomos Attikis, Eparchia Trizinias: Poros, SE part of Sphairia, roadside rocks, 30 m, 37°29'45" N, 23°27'50" E, 02.09.2010, *Seregin* E-1147.

Euphorbiaceae**97. *Chrozophora obliqua* (Vahl) Spreng.**

Gr Nomos Attikis, Eparchia Trizinias: Methana Peninsula, above Vathy, stony slope along road to Megalochori, 20 m, 37°35'35" N, 23°20'30" E, 29.08.2010, *Seregin* E-1085.

Fabaceae**98. *Medicago arborea* L.**

Gr Nomos Attikis, Eparchia Attikis: Spetses, Kouzounos (opposite Spetsopoula), mouth of temporary stream, 2–5 m, 37°14'35" N, 23°09'45" E, 01.09.2010, *Seregin* E-1136.

Cyperaceae**99. *Cyperus longus* L.**

Gr Nomos Attikis, Eparchia Trizinias: Poros, SE part of town, coastal embankment by channel, crack in wet asphalt, 2 m, 37°29'50" N, 23°27'30" E, 02.09.2010, *Seregin* E-1166.

Naturalized; well established due to permanent freshwater supply.

Poaceae**100. *Digitaria sanguinalis* (L.) Scop.**

Gr Nomos Attikis, Eparchia Attikis: Spetses, old port in town, crack in pavement, 5–10 m, 37°15'35" N, 23°10'00" E, 01.09.2010, *Seregin* E-1127.

Weed of cultivated and waste land, widespread in Mediterranean region and Asia.

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

Gr Nomos Attikis, Eparchia Attikis: Spetses, old port in town, weed in flowerbed, 5–10 m, 37°15'35" N, 23°10'00" E, 01.09.2010, *Seregin* E-1129.

Widespread in warm temperate and tropical regions, probably originating from Asia.

102. *Lolium rigidum* Gaud.

Gr Nomos Attikis, Eparchia Attikis: Spetses, Agia Marina, SE of town of Spetses, coastal slopes, 2–5 m, 37°15'05" N, 23°09'45" E, 01.09.2010, *Seregin* E-1131.

The gathering is closer to *L. r.* subsp. *lepturoides* (Boiss.) Sennen & Mauricio than *L. r.* subsp. *rigidum*; however, the longest lemmas in the spikelets are *ca.* 6 mm long.

All vouchers are deposited in the herbarium of Moscow State University (MW).

Report 103
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Scrophulariaceae**103. *Verbascum anisophyllum* Murb. (Fig. 24)**

Bu Valley of River Struma (*Northern*): N and NE of Vukovo village (above Skrino gorge), Boboshevo district, in dry stony pastures on shallow calcareous soil, 770 m, FM-67, 42.20417° N, 22.97216° E, with flowers, 04.07.2010, coll. S. Stoyanov (SOM 166572).

Until recently, this species was considered a Bulgarian endemic with local distribution in the Viden divide of Mt Konyavska (Znepole floristic region) (Gushev & al. 2002). It was referred to the group of Balkan endemics after being reported by Randelović & al. (2008) for the

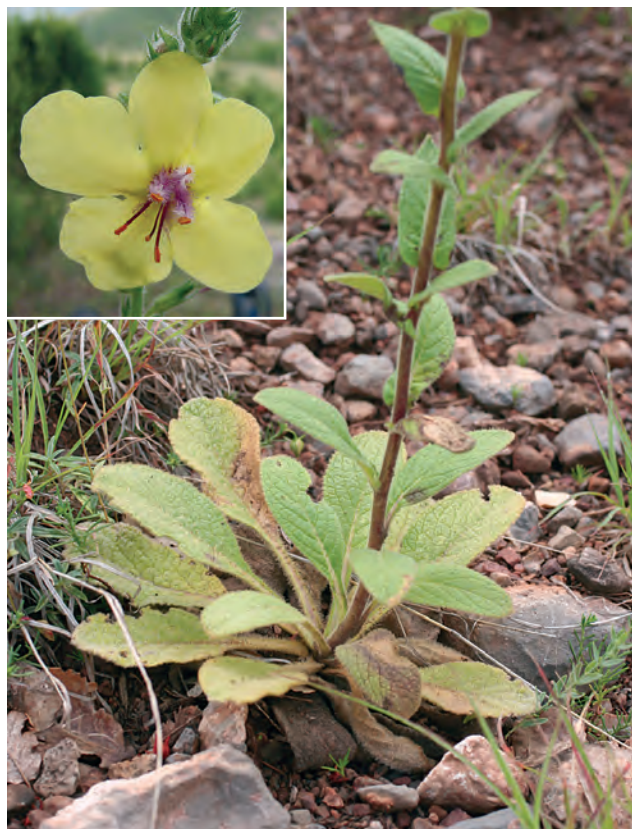


Fig. 24. *Verbascum anisophyllum* (photo S. Stoyanov).

vicinities of Bosilegrad (SE Serbia). The new Bulgarian locality of *V. anisophyllum* is situated 20 km to the SE of the *locus classicus* known at Konyavo village, Kyustendil district.

The species is in need of urgent conservation measures, owing to its few and small sized populations, as well as to the fact that it occurs in regions of strong anthropogenic impact. For these reasons, *V. anisophyllum* was selected as target species of the project “A pilot network of small protected sites for plant species in Bulgaria using the plant micro-reserve model” (financed by the European Commission, Life+ Programme, Life 08/NAT/BG/279). Within the framework of this project, the location in the vicinities of Vukovo village is intended to be proclaimed a protected area.

Reports 104–127

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Aceraceae

104. *Acer heldreichii* Orph.

Bu Pirin Mts (*Northern*): in the coniferous belt of the Bayuvi Dupki locality, on marbled limestone, 01.09.1993, coll. V. Velchev & P. Vassilev (SOM 166940).

The species is a Balkan endemic (Petrova & Vladimirov 2010), so far known from eight floristic regions (Palamarev 1979; Assyov & Petrova 2006), and assessed as Vulnerable according to the IUCN Criteria (Dimitrova 2009). Its distribution in the Pirin Mts is reported for the first time.

Campanulaceae

105. *Symphyandra wanneri* (Rochel) Heuff. f. *hirsuta* Stef.

Bu Forebalkan (*Western*): in the Kaleto locality, close to Belogradchik town, FP-33, on rocks, 02.06.1965, coll. V. Velchev & S. Ganchev (SOM 166941).

The species has a limited distribution in the country, so far known from the Balkan Range (*Western & Central*), Pirin, Rila and Rhodopi Mts (*Central*) (Anchev 1992) and West Frontier Mts (Jordanov & Markova 1970), but it is not considered endangered according to the IUCN Criteria (Anchev & Goranova 2009).

Caryophyllaceae

106. *Dianthus roseoluteus* Velen.

Bu Balkan Range (*Eastern*): near Aitos town, in the Trite Bratya locality, NH-22, in dry, grassy and stony places, on silicate 18.08.1979, coll. V. Velchev (SOM 166943).
— Mt Slavyanka: in the Hambar Dere locality, GL-28, on marbled limestone, 11.07.1970, coll. V. Velchev & P. Vassilev (SOM 166944).

This species has been reported for the first time for the Balkan Range and Mt Slavyanka.

Cistaceae

107. *Helianthemum lasiocarpum* Willk.

Bu Valley of River Mesta: Nova Lovcha village, Gotse Delchev district, GL-28, 03.06.1963, coll. V. Velchev, H. Kochev & I. Ganchev (SOM 167163).
New for this floristic region.

Euphorbiaceae

108. *Euphorbia aleppica* L.

Bu Balkan Range (*Eastern*): in the region of Tranak village, Aitos district, NH-15, in dry pastures, 24.06.1968, coll. V. Velchev (SOM 166946).

A rare species, so far known from three floristic regions: the Valley of River Struma, Thracian Lowland and Tundzha Hilly Country (Kuzmanov 1979). The species is assessed as Endangered in the Bulgarian flora, according to the IUCN Criteria (Ivanova 2009).

Fabaceae

109. *Coronilla cretica* L.

Bu Mt Strandzha: near Malko Tarnovo town, NG-44, in dry and grassy calcareous places, 23.05.1977, coll. V. Velchev & P. Vassilev (SOM 166947).

New for this floristic region.

110. *Medicago disciformis* var. *strumensis* Velchev & Bondev

Bu Rhodopi Mts (*Eastern*): in the region of Belopolyane village, Ivaylovgrad district, MF-28, in dry, grassy places, 16.05.1966, coll. V. Velchev & P. Vassilev (SOM 166948).

A new species for the Rhodopi Mts, so far unknown for the entire floristic region.

111. *Medicago praecox* DC.

Bu Thracian Lowland: near Lyubimets town, Haskovo district, MG-23, in dry grassy places, 23.04.1977, coll. V. Velchev & P. Vassilev (SOM 166949).

A rare species for the Bulgarian flora, so far known from the Black Sea Coast (*Southern*), Valley of River Struma and Mt Strandzha (Kozhuharov 1976), as well as from the Rhodopi Mts (*Eastern*) (Bondev & al. 1967; Petrova & al. 2006). A new species for the Thracian Lowland.

112. *Trifolium retusum* L.

Bu Black Sea Coast (*Southern*): in the region of Burgas town, NH-30, in dry, grassy places, 21.05.1977, coll. V. Velchev & P. Vassilev (SOM 166952).

A new species for the region of the Black Sea Coast.

113. *Trifolium tenuifolium* Ten.

Bu Mt Strandzha: in the region of Malko Tarnovo town, NG-44, in dry and grassy calcareous places, 16.07.1988, coll. V. Velchev (SOM 166953).

A new species for Mt Strandzha.

114. *Vicia articulata* Hornem.

Bu Thracian Lowland: in the Hisarya locality, northwards of Lyubimets town, MG-23, Haskovo district, 23.04.1977, coll. V. Velchev & P. Vassilev (SOM 166955).

— Mt Strandzha: between Kondolovo and Fazanovo villages, Burgas district, NG-56 & NG-57, in dry,

grassy places, 27.04.1977, coll. V. Velchev & P. Vassilev (SOM 166954).

A rare species for the Bulgarian flora, so far known from five floristic regions (Kuzmanov 1976). Its establishment in the Thracian Lowland and Mt Strandzha supplements the pattern of its distribution in the country.

115. *Vicia laeta* Ces.

Bu Valley of River Mesta: Nova Lovcha village, Gotse Delchev district, GL-28, in a shrub community of *Quercus pubescens* and *Carpinus orientalis*, 03.06.1963, coll. V. Velchev & I. Ganchev (SOM 166957).

Kuzmanov (1976) reported this species (sub *V. barbazitae*) for the Black Sea Coast (*Northern*), Valley of Struma River, Thracian Lowland and Tundzha Hilly Country. It was recorded later for the Rhodopi Mts (*Eastern*) (Dimitrov & Pavlova 2002), West Frontier Mts (Dimitrov & Sidjimova 2003), and Black Sea Coast (*Southern*) (Petrova 2004).

Linaceae

116. *Linum extraaxillare* Kit.

Bu Balkan Range (*Central*): Kozyata Stena locality, peak Kucheto, KH-93, 12.07.1995, coll. V. Velchev & E. Kachaunova (SOM 167162).

The species is very rare for the country (Petrova 1979), so far known only from two localities: in the Balkan Range (*Central*: Karlovska Mt) and in Vitosha region (Mt Vitosha). The species has not been collected in the last 80 years and was put by Stoyanov (2009) in the category of Data Deficient (DD), according to the IUCN Criteria. This collection confirms its distribution in Bulgaria and calls for a new assessment.

Rosaceae

117. *Potentilla pilosa* Willd.

Bu Balkan Range (*Central*): Kozyata Stena locality, KH-93, 11.07.1995, coll. V. Velchev & E. Kachaunova (SOM 167161).

The species is distributed throughout the country up to 1800 m according to Markova (1973). Popova (2003) reported many regions of its distribution, but Central Balkan Range is not among them. We confirm its distribution in this part of Balkan Range.

Scrophulariaceae

118. *Verbascum roripifolium* (Halácsy) I.K. Ferguson

Bu Tundzha Hilly Country: in the region of Vetren

village, Burgas district, NH-31, in ditches and clover fields along the motorway to Burgas, 16.07.1988, coll. V. Velchev (SOM 166968).

This is a Balkan endemic species, rare for the Bulgarian flora, distributed in six floristic regions (Stefanova-Gateva 1995) and assessed according to the IUCN Criteria as Vulnerable (Peev & Tsoneva 2009). A new species for the Tundzha Hilly Country.

119. *Verbascum sinuatum* L.

Bu Tundzha Hilly Country: around Grudovo town, district Burgas, NG-18, 26.06.1972, coll. V. Velchev (SOM 167165, 167166).

A new species for this floristic region, so far known for the Black Sea Coast, Valley of River Struma (*Southern*), Rhodopi Mts (*Central, Eastern*) and Thracian Lowland (Stefanova-Gateva 1995).

Liliaceae s.l.

120. *Colchicum turcicum* Janka

Bu West Frontier Mts: Mt Maleshevska, above Gorna Breznitsa village, Blagoevgrad district, FM-72, on a slope with southern exposition, with well developed soil, in a grassy community, 1100 m, 27.10.1994, coll. V. Velchev & P. Vassilev (SOM 166958).

This species has a limited distribution and so far has been known from Northeast Bulgaria, Balkan Range (*Central & Eastern*), Rhodopi Mts (*Central*) and Thracian Lowland (Petrova 1992), and Danubian Plain (Dimitrov & Nikolov 1998).

Poaceae

121. *Avena clauda* Durieu

Bu Rhodopi Mts (*Eastern*): at Belopolyane village, Ivaylovgrad district, MF-28, in dry, grassy places, 16.05.1966, coll. V. Velchev (SOM 166959).

The species has limited distribution in the country and so far has been known from the Black Sea Coast (*Northern*), Valley of Struma River and Thracian Lowland (Kozhuharov 1992).

122. *Bromus madritensis* L.

Bu Northeast Bulgaria: in the region between Balgarevo village and cape Kaliakra, PJ-10, in dry and grassy calcareous places, 29.04.1986, coll. V. Velchev (SOM 166960).

This is the first report for North Bulgaria. So far the species has been known only from the southern part of the country (Kozhuharov 1992).

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

Bu Forebalkan (*Western*): Mt Vrachanska, Krastanova Mogila locality, on calcareous rocks, 1450 m, 16.06.1969, coll. V. Velchev (SOM 166961); Smilyovitsa locality, on dry, grassy rocks, 1350 m, 16.06.1969, coll. V. Velchev (SOM 166962).

— West Frontier Mts: Mt Vlahina, peak Kadiytsa, on silicate rocks, 1900 m, 28.10.1994, coll. V. Velchev & P. Vassilev (SOM 166963).

— Pirin Mts (*Northern*): 10.06.1970, coll. V. Velchev (SOM 166964).

A rare species for the flora of the country, so far known from the Balkan Range (*Western & Central*), Mt Slavyanka and Pirin Mts (*Southern*) (Kozhuharov 1992).

124. *Koeleria simonkaii* Adamović

Bu Balkan Range (*Central*): Kozyata Stena locality, KH-93, 06.07.1995, coll. V. Velchev & E. Kachaunova (SOM 167160).

A Balkan endemic (Petrova & Vladimirov 2010) distributed in many floristic regions of the country (Kozhuharov & al. 1988) and recently has been reported for the West Frontier Mts by Pavlova & al. (2006). It is a first report for the Central Balkan.

125. *Lerchenfeldia flexuosa* (L.) Schur

Bu Forebalkan (*Western*): in Kaleto locality, near Belogradchik town, FP-33, in open grassy places with good humidification, on sandstones, 520 m, 02.06.1965, coll. V. Velchev & S. Ganchev (SOM 166966).

This species is distributed to the south of the Balkan Range (Kozhuharov 1992; Gussev & al. 1998). A new species for the Forebalkan; this location is the northwesternmost in the area of the species in the country.

126. *Pennisetum setaceum* (Forssk.) Chiov. (syn. *P. ciliare* Link)

Bu Black Sea Coast (*Northern*): Varna, SS Konstantin and Elena Resort Complex, NH-78, in dry places along the road to the Botanical Gardens, 22.09.1987, coll. V. Velchev (SOM 166998, 166999).

This is a new exotic alien species for the country. Densely caespitose perennial grass, with 20–100 cm high stems. Inflorescences are 10–30 cm long, linear. It occupies native to open, scrubby habitats in tropical Africa, the Middle East and SW

Asia. It has escaped cultivation and has become established in different parts of the world (Joubert & Cunningham 2002). Because of its invasive behaviour on all continents, it can be considered an emerging invader in Europe, according to the European and Mediterranean Plant Protection Organization (EPPO). The species is included in the list of invasive plant species of the world (Weber 2003). It is also introduced in many parts of the world as an ornamental plant.

127. *Sesleria rigida* Rchb.

Bu Forebalkan (Western): Mt Vrachanska, between Chelopek and Pavolche villages, GN-18 & GN-17, on sheer, dry, calcareous rocks, 14.06.1963, coll. V. Velchev (SOM 166967).

A new species for the Forebalkan, so far known southwards of the Balkan Range (Kozhuharov 1992; Vassilev 2009).

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