New floristic records in the Balkans: 23*

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Abstract: New chorological data are presented for 122 species and subspecies from Bulgaria (31-35, 43-64, 81-86, 105-112), Greece (16-24, 30, 65-80, 113-122) and Turkey-in-Europe (1-15, 25-29, 36-42, 87-104). The taxa belong to the following families: *Adiantaceae* (31), *Aizoaceae* (116), *Amaryllidaceae* (23), *Apiaceae* (65, 92-94), *Asteraceae* (16, 17, 36-39, 43-46, 55, 66-68, 98-100, 105, 106, 117), *Berberidaceae* (81), *Boraginaceae* (87), *Brassicaceae* (7-9, 40, 113), *Campanulaceae* (18, 118), *Caryophyllaceae* (2, 3, 56, 69, 70, 96, 97, 107), *Chenopodiaceae* (19, 71, 108, 119), *Cistaceae* (57), *Cucurbitaceae* (101), *Ephedraceae* (1), *Equisetaceae* (32, 33), *Euphorbiaceae* (20, 72, 120), *Fabaceae* (73, 84, 95), *Fagaceae* (85, 109), *Geraniaceae* (89-91), *Huperziaceae* (34), *Iridaceae* (77), *Lamiaceae* (21, 102, 121), *Liliaceae* s.l. (42, 61, 78, 79, 111), *Linaceae* (88), *Ophioglossaceae* (35), *Orchidaceae* (80, 115), *Papaveraceae* (4), *Phytolaccaceae* (47), *Pinaceae* (83), *Poaceae* (24, 52, 53, 62-64, 112), *Polygalaceae* (10-12, 48), *Polygonaceae* (13-15, 25-29, 86), *Portulacaceae* (122), *Primulaceae* (22), *Ranunculaceae* (5, 6, 74, 103, 104), *Rosaceae* (58, 75, 82), *Rubiaceae* (49, 59, 60), *Salviniaceae* (54), *Sambucaceae* (76), *Santalaceae* (30), *Scrophulariaceae* (41, 50, 110, 114), and *Vitaceae* (51).

New for science: *Aethionema saxatile* subsp. *corinthiacum* Kit Tan & al. (113) and *Galanthus samothracicus* Kit Tan & Biel (23), both from Greece.

New status proposed: *Euphorbia deflexa* subsp. *purpureo-suffusa* (Rech. f.) Biel & Kit Tan (20).

The publication includes contributions by: M. Aybeke (1-3), M. Aybeke & F. Dane (4-6), M. Aybeke, C. Kurt & A. Semerci (7-12), M. Aybeke & C. Yarcı (13-15), B. Biel & Kit Tan (16-24), F. Dane & S. Tütüncü Konyar (25-29), K. Giannopoulos, Kit Tan & G. Vold (30), D. Ivanova (31-35), B. Köse, S. Leventer & F. Dane (36-39), S. Tütüncü Konyar (40-42), A. Petrova (43-53), A. Petrova, R. Vassilev, D. Venkova & I. Gerasimova (54-64), K. Polymenakos & Kit Tan (65-80), A. Tashev & A. Gavrilova (81-82), A. Tashev, K. Koev & N. Tashev (83-86), S. Tütüncü Konyar & F. Dane (87-88), S. Tütüncü Konyar, F. Dane & S. Tütüncü (89-91), S. Tütüncü Konyar & S. Tütüncü (92-94), S. Tütüncü Konyar, S. Tütüncü & M. Aybeke (95), S. Tütüncü Konyar, S. Tütüncü & F. Dane (96-97), S. Tütüncü Konyar, S. Tütüncü & N. Güler (98-100), S. Tütüncü Konyar, S. Tütüncü & E. Konyar (101-102), S. Tütüncü Konyar, S. Tütüncü & B. Köse (103-104), V. Vladimirov (105-112), G. Zarkos, V. Christodoulou, Kit Tan & G. Vold (113-115), A. Zografidis & Kit Tan (116-122).

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

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

Reports 1–3

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Ephedraceae

1. *Ephedra major* Host

Tu(E) A1(E) Edirne: Keşan, Mecidiye, at the coast, 61 m, 40°38'20"N, 26°32'14"E, 10.10.2009, coll. *G. Dalgıç*, det. *M. Aybeke* (EDTU 10344, 11790).

A new species for the European Turkey. So far the species has been known from A2 Bilecik. According to Coode & Cullen (1965), this taxon is common across the Mediterranean area.

Caryophyllaceae

2. *Cerastium gracile* Duf.

Tu(E) A1(E) Edirne: Keşan, Altıntaş (04 C 02), in a pasture, 85 m, 41°01'00"N, 26°41'60"E, 12.05.2004, coll. *C. Kurt*, *A. Semerci* & *M. Aybeke*, det. *M. Aybeke* (TTAE 27); Enez, Abdurrahim village (04-H-04), 40 m, 40°38'31"N, 26°15'25"E, 01.07.2004, coll. *C. Kurt*, *A. Semerci* & *M. Aybeke*, det. *M. Aybeke* (TTAE 1056).

A new species for the European Turkey. So far the species has been known from A2 Bursa. According to Cullen (1967), this taxon is common for S Europe, Romania, S Russia, NW Africa.

3. *Cerastium semidecandrum* L.

Tu(E) A1(E) Edirne: Centre, Uzgaç (04-F-03), in a pasture, 145 m, 41°46'60"N, 26°25'60"E, 09.06.2004, coll. *C. Kurt*, *A. Semerci* & *M. Aybeke*, det. *M. Aybeke* (TTAE 790); Süloğlu, Geçkinli (04 E 05), in a pasture, 183 m, 41°43'00"N, 26°51'00"E, 02.06.2004, coll. *C. Kurt*, *A. Semerci* & *M. Aybeke*, det. *M. Aybeke* (TTAE 1043).

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

Reports 4–6

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Papaveraceae

4. *Papaver hybridum* L.

Tu(E) A1(E) Çanakkale: Gelibolu, from Bolayır, 3rd km, 80 m, 40°30'45"N, 26°45'20"E, 10.05.1987, coll. *F. Dane*, det. *V. Altay* (EDTU 640).

— A1(E) Kırklareli: Lüleburgaz, Karaağaç village, 161 m, 41°30'12"N, 27°28'28"E, 20.05.1992, coll. *F. Dane* & *N. Başak*, det. *V. Altay* (EDTU 4934).

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

Ranunculaceae

5. *Adonis aestivalis* L. subsp. ***aestivalis***

Tu(E) A1(E) Edirne: Centre, Musabeyli village, in a pasture, 109 m, 41°40'60"N, 26°40'00"E, 28.04.1989, coll. *F. Dane*, det. *F. Dane* & *M. Aybeke* (EDTU 3530); Edirne, Centre, at the back of Faculty of Medicine, 41 m, 41°40'28"N, 26°33'39"E, 23.05.1985, coll. *F. Dane* & *G. Dalgıç*, det. *M. Aybeke* (EDTU 132); Edirne, Centre, between Budakdoğanca and Ahiköy, 98 m, 41°45'37"N, 26°20'33"E, 02.06.1987, coll. *G. Dalgıç* & *N. Başak*, det. *M. Aybeke* (EDTU 811); Edirne, between Domurcalı and Taşlımüsellim, 2nd km, 196 m, 41°49'00"N, 26°49'00"E, 01.06.1987, coll. *A. Asan* & *H. Arda*, det. *M. Aybeke* (EDTU 912); Edirne, Centre, 48 m, 41°32'60"N, 26°55'00"E, 05.05.1987, coll. *F. Dane*, det. *M. Aybeke* (EDTU 2838); Edirne, İpsala, Koyunyeri village, 38 m, 40°49'60"N, 26°25'60"E, 05.05.1987, coll. *F. Dane*, det. *M. Aybeke* (EDTU 2852).

— A1(E) Kırklareli: Pınarhisar, between Pınarhisar and Demirköy, 206 m, 41°37'27"N, 27°31'12"E, 16.06.1987, coll. *G. Olgun* & *A. Aydın*, det. *M. Aybeke* (EDTU 1344).

A new species for the European Turkey. So far the species has been known from A1(A) Çanakkale (Davis 1965).

6. *Ranunculus brutius* Ten.

Tu(E) A2(E) Istanbul: Silivri, Beyciler village, 163 m, 41°13'59"N, 28°07'03"E, 25.05.1987, coll. *F. Dane*, det. *F. Dane* (EDTU 688).

— A1(E) Kırklareli: Lüleburgaz, Türkgeldi, 90 m, 41°31'23"N, 27°07'31"E, 21.04.1991, coll. *G. Dalgıç*, det. *G. Dalgıç* & *F. Dane* (EDTU 4708).

A new species for the European Turkey. So far the species has been known from A2(A) Bursa. According to Davis (1965), this taxon is common for Italy, Balkans, Caucasus and N Iran, and is an Euro-Siberian element.

Reports 7–12

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Brassicaceae.

7. *Erysimum repandum* L.

Tu(E) A1(E) Edirne: Centre, Menekse – Sofular village (04-F-06), 119 m, 41°46'00"N, 26°38'60"E, 09.06.2004, coll. *C. Kurt*, *A. Semerci* & *M. Aybeke*, det. *M. Aybeke* (TTAE 863).

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

8. *Sisymbrium altissimum* L.

Tu(E) A1(E) Edirne: Çöpköy (04-C-03), 145 m, 26°41'60"E, 26°49'22"E, 12.05.2004, coll. *C. Kurt*, *A. Semerci* & *M. Aybeke*, det. *M. Aybeke* (TTAE 422).

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

9. *Sisymbrium officinale* (L.) Scop.

Tu(E) A1(E) Edirne: Çöpköy (04-C-03), 145 m, 26°41'60"E, 26°49'22"E, 12.05.2004, coll. *C. Kurt*, *A. Semerci* & *M. Aybeke*, det. *M. Aybeke* (TTAE 423).

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

Polygalaceae

10. *Polygala anatolica* Boiss. & Heldr.

Tu(E) A(1) Edirne: Centre, Budakdoganca village (04-F-01), 98 m, 41°45'37"N, 26°20'33"E, 09.06.2004, coll. *C. Kurt*, *A. Semerci* & *M. Aybeke*, det. *M. Aybeke* (TTAE 778).

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

11. *Polygala comosa* Schkuhr

Tu(E) A1(E) Edirne: Kesan, Kilickoy (04-B-01), 24 m, 40°46'60"N, 26°33'00"E, 05.05.2004, coll. *C. Kurt*, *A. Semerci* & *M. Aybeke*, det. *M. Aybeke* (TTAE 300).

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

12. *Polygala monspeliaca* L.

Tu(E) A1(E) Edirne: Centre, Buyukdolluk village (04-F-04), 50 m, 41°45'00"N, 26°36'00"E, 09.06.2004, coll. *C. Kurt*, *A. Semerci* & *M. Aybeke*, det. *M. Aybeke* (TTAE 821).

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

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Reports 13–15

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Polygonaceae

13. *Rumex acetosella* L.

Tu(E) A1(E) Kırklareli: Demirköy, between Demirköy and Pınarhisar, 3 km, 244 m, 41°49'17"N, 27°45'38"E, 27.05.1990, coll. *C. Yarcı*, det. *C. Yarcı* (EDTU 5320).

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

14. *Rumex conglomeratus* Murray

Tu(E) A1(E) Kırklareli: between Terzidere – Taştepe villages, 1 km, in a mixed forest, 482 m, 41°59'42"N, 27°07'39"E, 27.06.1997, coll. *C. Yarcı*, det. *C. Yarcı* (EDTU 6775).

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

15. *Rumex tuberosus* L. subsp. ***tuberosus***

Tu(E) A1(E) Kırklareli: between Demirköy – Iğneada, 0 m, 41°52'28"N, 27°59'02"E, 20.06.1990, coll. *C. Yarcı*, det. *C. Yarcı* (EDTU 5321).

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

Reports 16–24

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This is the twenty-second report of new plant-records for the island of Samothraki (N Aegean islands, Nomos Evrou, Eparchia Samothrakis) based on fieldwork carried out over several years. The records are listed as new to the island, or to the floristic region N Aegean (NAe) as circumscribed in *Flora Hellenica* (Strid & Tan 1997). The occurrence on the other N Aegean islands is also provided.

Asteraceae

16. *Andryala integrifolia* L.

Gr Samothraki: E of Therma, phrygana and wasteground, 20 m, 40°29'55"N, 25°36'45"E, 10.02.2011, *Biel* 13.020.

New for the N Aegean area.

17. *Eupatorium cannabinum* var. ***indivisum*** DC.

Gr Samothraki: S of Therma, rocky gorge at Tsivdogianni waterfall, 90 m, 40°29'34"N, 25°36'21"E, 10.07.2013, *Biel* 13.071.

Recorded from Thasos.

Campanulaceae

18. *Campanula delicatula* Boiss.

Gr Samothraki: E-SE of Chora, rocky hill with open phrygana, 900 m, 40°27'46"N, 25°33'33"E, 11.06.2008, *Biel* 08.122; *loc. ibid*., 28.06.2010, *Biel* 10.745; 28.06.2010, *Biel* 10.747 & 07.07.2013, *Biel* 13.057.

New for the N Aegean area, furthest record north.

Chenopodiaceae

19. *Atriplex halimus* L.

Gr Samothraki: SW of Kamariotissa, ruderal places in port area, 3 m, 40°28'40"N, 25°28'20"E, 01.07.2013, *Biel* 13.001.

Confirming report by Katsikopoulos (1936: 10).

Euphorbiaceae

20. *Euphorbia deflexa* subsp. ***purpureo-suffusa*** (Rech. f.) Biel & Kit Tan, **stat. nov.** (Fig. 1) ≡ *Euphorbia deflexa* var. *purpureo-suffusa* Rech. f. in Feddes Repert. Spec. Nov. Regni Veg., Beih. 100: 119 (1938).

Gr Samothraki: In monte Phengari, substr. silic., 800 m, 18.06.1936, *Rechinger* 9768 (LD); E-SE of Chora, track from Therma to summit, rocky slope with phrygana, on schist and porphyr, 740 m, 40°27'39"N, 25°33'15"E, 05.10.2006, *Biel* 06.552 (sterile); NE of Profitis Ilias, *Juniperus-Cerasus-Thymus* phrygana at summit, 1400 m, 40°26'41"N, 25°34'03"E, 20.05.2010, *Biel* (photo); E-NE of Profitis Ilias, *Juniperus-Berberis* phrygana on steep rocky slope of Ag. Ilias, 1350 m, 40°26'37"N, 25°34'10"E, 09.07.2013, *Biel* 13.065.

Flowering May to July, on gravelly schistose slopes, 740–1400 m. Rare, probably endemic to Samothraki. The taxon was treated as a variety of *E. deflexa* by Rechinger who described it thus: "*Caules purpurei*, *folia carnosa*, *valde glauca*, *purpureo-suffusa*; *umbellae radii 3*, *bifidi*". We note that it differs from typical *E. deflexa* from other parts of Greece by its branched purplish stems, fleshy glaucous leaves 2.5–10 × 2–3.6 mm which are suffused purple especially on the lower surface and at margin, staminate flowers surrounded by 5 elliptic to semi-circular horned glands, cyathium of hermaphrodite flow-

Fig. 1. *Euphorbia deflexa* subsp. *purpureo-suffusa* (photo B. Biel).

ers surrounded by 4 glands, and the pale to dark brown seeds measuring 2.2–2.5 × 1.6–1.8 mm.

Lamiaceae

21. *Satureja montana* L. s.l. (Fig. 2)

Gr Samothraki: E-SE of Alonia, damp pasture on steep slope with *Platanus*, 700 m, 40°27'35"N, 25°33'04"E, 25.10.2002, *Biel* 02.146; E-NE of Pachia Ammos, Vatos estuary with *Platanus*, gravelly beach area, 15 m, 40°23'43"N, 25°36'13"E, 09.02.2011, *Biel* 11.034; NW of Therma, heavily grazed open scrub on both sides of stream, 20 m, 40°29'57"N, 25°37'23"E, 28.06.2011, *Biel* 11.245; E of Therma, Fonias estuary with alluvial forest, 3 m, 40°29'30"N, 25°39'23"E, 12.07.2011, *Biel* 11.392; NE of Therma, degraded macchie near dirt road, 15 m, 40°29'60"N, 25°36'38"E, 02.07.2013, *Biel* 13.016; E of Therma, phrygana and wasteground, 20 m, 40°29'55"N, 25°36'45"E, 03.07.2013, *Biel* 13.022.

Widely distributed and common in phrygana (87 separate records).

Ade & Rechinger (1938: 132) reported the presence of *S. montana* var. *pisidica* (Heldr.) Hal. with (?) and stated that the non-flowering material collected cannot be identified with certainty. Stojanov & Kitanov (1943: 50) listed the existence of *S. montana* var. *aegaea* Stoj. & Kitan.

The material collected does not represent typical *S. montana* as there are dissimilarities in indumentum, leaf shape, inflorescence, calyx and seeds. Some gatherings resemble *S. pilosa* Velen. or intermediates between *S. montana* and *S. pilosa* (see Strid & Tan 1991: 127), others resemble *S. parnassica* Boiss. The geographical isolation of Samothraki seems to support speciation, a feature reflected in the rather high number of local endemics.

Primulaceae

22. *Lysimachia nummularia* L.

Gr Samothraki: SW of Profitis Ilias, ruderal places and road margins in village, 320 m, 40°25'53"N, 25°32'36"E, 09.07.2013, *Biel* 13.061.

Recorded from Thasos.

Amaryllidaceae

23. *Galanthus samothracicus* Kit Tan & Biel, **sp. nov.** (Fig. 3)

Galanthus samothracicus differs conspicuously from *Galanthus nivalis* L. by its somewhat glossy green leaves at maturity, the initial glaucous bloom disappearing with age. They are never with a distinct white median stripe. In *G. nivalis* the leaves remain glaucescent to dull-glaucous on both surfaces, and are with a pale glaucescent median upper stripe. *Galanthus nivalis* is also absent in the area of *G. samothracicus* (as well as in NE Greece), and there is

Fig. 2. *Satureja montana* s.l. (photo B. Biel).

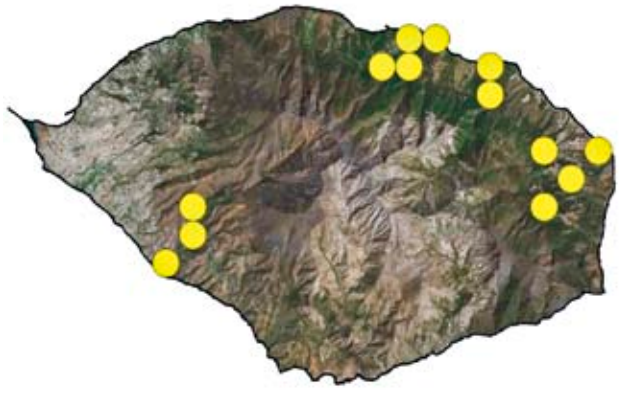

Fig. 3. *Galanthus samothracicus* (photo B. Biel).

no molecular data to support a relationship with the latter. A full account of *G. samothracicus* is in preparation, we are now validating the name in this contribution.

Gr Samothraki: NE of Therma, gravelly sand along the banks of the Tsivdogianni stream, 20 m, 40°29'N, 25°36'E, 10.02.2011, *Biel* 11.046 (**holotype** C; **isotypes** ATH, herb. Biel); **Paratype**: NW of Makrilies, gravelly sand in alluvial forest of *Platanus* on the banks of the Xiropotamos, 80 m, 40°26'33"N, 25°31'26"E, 11.04.2006, *Biel* 06.298.

Occurring in large populations in seasonally wet to damp places near streams and springs, at low altitudes from 5 to 80 m, in the southwest and northeast of island.

Poaceae

24. *Molinia caerulea* (L.) Moench

Gr Samothraki: S of Therma, rocky gorge at Tsivdogianni waterfall, 90 m, 40°29'34"N, 25°36'21"E, 10.07.2013, *Biel* 13.072.

New for the N Aegean area.

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

Reports 25–29

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Polygonaceae

25. *Rumex acetosella* L.

Tu(E) A1(E) Kırklareli: Değirmencik, 11 km on the road from Değirmencik to Kavaklı, in a pasture, 162 m, 41°36'10"N, 27°12'32"E, 06.07.1987, coll. *F. Dane* & *al.* (EDTU 1614); between Kırklareli and Babaeski, 10 km before Babaeski, 55 m, 41°25'57"N, 27°05'35"E, 03.06.1988, coll. *F. Dane* & *G. Dalgıç* (EDTU 2789).

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

26. *Rumex conglomeratus* Murray

Tu(E) A1(E) Edirne: Enez, Karaincirlik village, 20 m, 40°37'00"N, 26°16'60"E, 21.06.1994, coll. *M. Kireç* (EDTU 6899).

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

27. *Rumex crispus* L.

Tu(E) A1(E) Edirne: Centre, Balkan Campus of Trakya Unıversity, 26 m, 41°40'28"N, 26°33'39"E, 23.05.1989, coll. *F. Dane* (EDTU 3427).

— A1(E) Kırklareli: Vize, around lake Saka, 186 m, 41°34'21"N, 27°45'57"E, 12.06.1991, coll. *F. Dane* & *G. Dalgıç* (EDTU 4665).

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

28. *Rumex obtusifolius* subsp. ***subalpinus*** (Schur) Čelak.

Tu(E) A1(E) Edirne: Centre, in the pasture of Musabeyli village, 109 m, 41°40'60"N, 26°40'00"E, 23.06.1989, coll. *F. Dane* (EDTU 3554); at the roadside, 2 km from Karaağaç to Pazarkule, 74 m, 41°02'60"N, 26°31'60"E, 24.05.1998, Karakasım village, in a rice paddy, 29 m, 41°31'00"N, 26°37'60"E, 07.06.1989, coll. *F. Dane* (EDTU 3297).

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

29. *Rumex tuberosus* L.subsp. ***tuberosus***

Tu(E) A1(E) Edirne: Centre, Söğütlük, in the Izzet Arseven forest, on the bank of river Meriç, 23 m, 41°39'28"N, 26°31'25"E, 25.05.1987, coll. *F. Dane* (EDTU 2703); Uzunköprü, Değirmenci Dam, 20 m, 41°18'37"N, 26°42'02"E, 25.04.1989, coll. *F. Dane* (EDTU 3461).

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

Report 30

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Santalaceae

30. *Viscum album* L. subsp. ***album*** (Figs. 4 & 5)

Gr Nomos Arkadias, Eparchia Gortinias: Mt Likeo, 1190 m, 37°26'N, 21°59'E, 01.12.2013, *Kit Tan*, *G. Vold* & *Giannopoulos* s.n. (ATH, C, herb. Giannopoulos).

Fig. 4. *Viscum album* subsp. *album* (photo K. Giannopoulos).

Fig. 5. Seed of *Viscum album* subsp. *album* (photo K. Giannopoulos).

New for Mt Likeo, eparchia and nomos; first record for the Peloponnese. Hemi-parasitic in large quantities on *Crataegus monogyna*. *Viscum album* subsp. *album* is rather rare in Greece, being recorded only from the Northeast (Didimoticho, on *Pyrus* and in the west of Dadia, on *Populus*), in the Northcentral (Vourinos) and in Northern Pindos (on Timfi and Mitsikeli, on deciduous oak and *Crataegus*). *Viscum album* subsp. *abietis* occurs on *Abies cephalonica* and is fairly common in Greece. We have recorded the latter subspecies from the plateau of Astras, NW of Mt Lambia as a new taxon for Nomos Ilias and the first record for W Peloponnese (see Giannopoulos & al. 2011).

The white, 1.0–1.2 cm in diameter globose fruits usually produce a single, ovoid seed covered with sticky mucilage which can be drawn out into a fine thread more than 30 cm in length, thus aiding to suspend the seed or glue it to a branch during bird-dispersal.

Reports 31–35

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Adiantaceae

31. *Adiantum capillus-veneris* L. (Fig. 6)

Bu Valley of River Mesta: on calcareous terrains about 3 km SW of Slashten village, Satovcha Municipality, on the slopes of the left bank of River Mesta, at a karsts spring or in the vicinities, at about 460–470 m, 41.473431°N, 23.999687°E; 41.473350°N, 23.999331°E; 41.473300°N, 23.999824°E; 16.05.2012 & 16.04.2013, *D. Ivanova* obs.

The species was initially found in this location by Dimitrov & al. (2013), but the authors have noticed only the tuffs at the karst spring which are few in number. During our visits in 2012 and 2013 we have found that the population consists of four patches, spaced 5–40 m from each other. Contrary to all so far known locations, where *A. capillus-veneris* grows exclusively on sheer rocks, the species occurs here in a very untypical habitat. There is some old stone masonry near the spring and at its foundations, as well as very close to them there are three large tuffs. The water from the spring flows along a dirt road, but subsequently crosses it and drains away as a natural stream across a plantation of *Robinia pseudoacacia*. At the beginning of this plantation, at an area of about 2 m^2, there are suitable places among stones and mosses by the water, which are occupied by several small tuffs of *A. capillus-veneris*.

Fig. 6. *Adiantum capillus-veneris* (photo D. Ivanova).

On the slope towards River Mesta, 2–3 m under the dirt road and under the sping there is a terrace with a small arable field on it. Some of the spring water is deviated through an old irrigation canal, about 20–25 m long. In some places the slope was fortified with stones many years ago. Some individuals of *A. capillus-veneris* grow in the crevices between the stones, as well as among the mosses overgrowing the larger stones. Most of them, however, grow on the high bank of the canal, both on the stony bed and directly in the soil.

The fourth patch is situated lower down the slope. The individuals there grow directly in the soil, on an almost vertical terrain. No rock outcrops have been noticed, only several small stones.

The population of Maidenhair Fern is strongly threatened in the location. It occupies a small total area. Two of the patches are strongly overgrown by *Rubus* sp., *Salix alba*, *Ostrya carpinifolia*, *Eupatorium cannabinum*, *Potentilla reptans*, *Cirsium canum*, *Epilobium hirsutum*, and other species. A great threat is posed by the change in water regime, which affects strongly the individuals. This was noted in the group of plants near the arable field during our visit in 2013. The water that used to flow for years in the old 20–25 m long irrigation canal is now diverted and follows a new course nearby. The water in the old watercourse bed was too low and the plants on the bank definitely suffered from lack of sufficient air and soil humidity; some have even already withered. If the new regime continues and the water is not returned to the old canal, the plants would soon die.

The plants from the lowermost patch are most strongly jeopardized by immediate destruction, owing to the landmasses sliding down the slope, which is very steep there. Apparently, there was an active landslide in the region and during our 2012 visit we have seen several deep fissures in the ground, as well as earth mass which has already slid in close proximity to the fern growth. There is a pressing need to undertake some measures against the landslide.

Equisetaceae

32. *Equisetum hyemale* L.

Bu Danubian Plain: along young forests in a very humid gully eastwards of Smirnenski village, Lom region, at about 200 m, FP63, 19.10.1950, coll. *D. Jordanov* & *B. Kitanov* (SO 32560, 32561; SOA 07600).

— Balkan Range (*Central*): in humid places at Berov's Factory in Gabrovo, LH64, 04.1897, coll. *I. Nejčeff* (SO 1170); mt. Balkan central: ad urbem Gabrovo, LH64, 04.1897, coll. *I. Nejčeff* (SOM 1090, 1092, 1093).

— Thracian Lowland: ad Philippopel, LG16, LG17, 06.1899, coll. *V. Stříbrný* (SOA 801); along river Maritsa, nearby Sadovo, Plovdiv region, LG26, 05.1899, coll. *V. Stříbrný*, sub *E. ramosum* DC. var. *elongatum* L. (SO 1250) or sub *E. elongatum* L. (SO 1251), rev. *Z. Barina*, 18.03.2009, sub *E. hyemale* L.

Achtarov (1963), Stojanov & al. (1966) and Kozhuharov (1968) had cited the above-mentioned location at Smirnenski village in the Danubian Plain. Later on, however, it was not taken into consideration by Andreev (1992), Delipavlov (2003) and Assyov & Petrova (2012).

Some authors report the entire Balkan Range as an area of distribution of *E. hyemale* (Stojanov & al. 1966), while others do not mention it at all (Andreev 1992), or cite only some subregions (e.g. Eastern Balkan Range – Delipavlov 2003; Western and Eastern Balkan Range – Assyov & Petrova 2012). The locations at the town of Gabrovo were mentioned in literature by Nejčeff (1909) and Achtarov (1932), and subsequently by Achtarov (1963) and Kozhuharov (1968). In fact, although not numerous, materials from all three subregions exist in the Bulgarian herbaria. We report here the data for the Central Balkan Range, so as to fill in the gaps in the general literary sources of recent years.

Herbarium material from the Thracian Lowland did not find its way into the Floras and Field Guides (Achtarov 1963; Stojanov & al. 1966; Andreev 1992; Delipavlov 2003; Assyov & Petrova 2012). On the other hand, Kozhuharov (1968) pointed out that herbarium samples were collected by V. Stříbrný from Plovdiv and Sadovo. Velenovský (1891) also mentioned Plovdiv. Considering all that, the omission of the floristic region of Thracian Lowland by the authors in the last 20 years seems unjustified.

There is also a report in literature about the distribution of *E. hyemale* in Northeast Bulgaria, namely near Razgrad (Yavashov 1890). Considering the remote date of that communication and absence of herbarium material, it is necessary to study the area and clarify if this species occurs in Northeast Bulgaria.

Equisetum hyemale should become object of purposeful search not only in the floristic regions of the Central Balkan Range and Thracian Lowland, but in other regions of the country, too, because most of the available data on it are too old and practically any da-

ta about the distribution of this species on the territory of Bulgaria are incomplete, inaccurate or outdated.

33. *Equisetum sylvaticum* L.

Bu Rhodopi Mts (*Central*): along the dirt road and in a spruce forest just before the Chairski Lakes, KG80, 18.06.2002, coll. *D. Ivanova* (SOM 169828); in the meadows around the second Chairsko Lake (Kadirev Gyol), close to the water, KG80, 18.06.2002, coll. *D. Ivanova* (SOM 169829); Chairski Lakes, KG80, 15.09.1998, coll. *D. Vasilev* (SO 99497).

This is a new species for the floristic subregion of Central Rhodopes. So far the species has been known from the Forebalkan, Balkan Range (*Western*, *Central*), Vitosha Region, Znepole Region, Rila Mts and Rhodopi Mts (*Western*) (Andreev 1992; Delipavlov 2003; Assyov & Petrova 2012). There is herbarium material only from Rila Mts and Western Rhodopes. Its distribution in all other regions needs confirmation.

Huperziaceae

34. *Huperzia selago* (L.) Schrank & Mart.

Bu West Frontier Mts: Mt Osogovska, in grassy places above Zhilentsi village, FM37, 08.05.1936, coll. *B. Kitanoff* (SO 1484, sub *Lycopodium selago* L.).

In spite of the above mentioned herbarium sample in the SO Herbarium and the publication by Kozhuharov (1968), in which he reports that the plant had been collected by B. Kitanov in Mt Osogovska in 1936, the West Frontier Mts floristic region was omitted in all later published general botanical works (Achtarov 1963; Stojanov & al. 1966; Andreev 1992; Delipavlov 2003; Assyov & Petrova 2012).

The inclusion of Mt Osogovska in the distribution area of *H. selago* is also supported by an article by Urumoff (1935), in which he mentioned that the species grows on the peaks Ruen and Bozhdaritsa. Apparently, this species does not have only one single location and should be object of more careful searching on the territory of Mt Osogovska.

There is a communication in literature about the distribution of *H. selago* in the alpine belt of Mt Slavyanka (Drenowski 1934), which should be verified with a herbarium sample.

Ophioglossaceae

35. *Botrychium lunaria* (L.) Sw.

Bu Forebalkan (*Western*): Vratsa Divide, in pratis sub cacum. Sokoletz in cca. 1280 m, solo calcareo, FN97, 19.07.1949, coll. *B. Achtaroff* & *B. Kitanoff* (SO 32411).

This herbarium sample was not taken into consideration by the authors of all later general botanical works.

Reports 36–39

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Asteraceae

36. *Chondrilla juncea* L.

Tu(E) A1(E) Edirne: Centre, Koop. Evleri, at the roadside, 23 m, 41°39'28"N, 26°31'25"E, 10.07.2013, coll. & det. *F. Dane* & *B. Köse* (EDTU 13377); Uzunköprü, Centre, at the roadside, 41°16'16.5324"N, 26°41'58.992"E, 15.07.2013, coll. *B. Köse*, det. *F. Dane* & *B. Köse* (EDTU 13378).

A new species for A1(E) Edirne in the European Turkey. So far the species has been reported from A2(E) Istanbul and A1(E) Tekirdağ (Matthews 1975).

37. *Lactuca saligna* L.

Tu(E) A1(E) Tekirdağ: Şarköy, Centre, at the roadside, 40°36'58"N, 27°06'03"E, 18.07.2013, coll. *F. Dane* (EDTU 13383).

A new species for A1(E) Tekirdağ in the European Turkey. So far the species has been known from A2(E) Istanbul, A1(E) Edirne and B1 Çanakkale (Jeffrey 1975).

38. *Lactuca serriola* L.

Tu(E) A1(E) Edirne: Centre, the Balkan Campus, at the roadside, 41°39'28"N, 26°31'25"E, 18.07.2013, coll. *F. Dane* (EDTU 13379); Uzunköprü, 41°16'16.5324"N, 26°41'58.992"E, 15.07.2013, coll. *B. Köse*, det. *F.Dane* & *B. Köse* (EDTU 13381).

— A1(E) Tekirdağ: Sarkoy, Centre, at the roadside, 0 m, 40°36'58"N, 27°06'03"E, 18.07.2013, coll. *F. Dane*, det. *F. Dane* (EDTU 13382).

A new species for A1(E) Edirne and Tekirdağ in the European Turkey. So far the species has been known from A2(E) Istanbul, A1(E) Çanakkale (Jeffrey 1975).

39. *Sonchus oleraceus* L.

Tu(E) A1(E) Edirne: Centre, Binevler, 41°39'28"N, 26°31'25"E, 10.06.2010, coll. *F. Dane* (EDTU 13373); Keşan, Erikli village, at the sea side and roadside, 40°38'17"N, 26°27'15"E, 24.05.2012, coll. *S. Leventer*, det. *F. Dane* (EDTU 13384).

— A1(E) Tekirdağ: Şarköy, at the seaside and roadside, 0 m, 40°36'58"N, 27°06'03"E, 16.05.2011, coll. *F. Dane* (EDTU 13357).

A new species for A1(E) Edirne and Tekirdağ in the European Turkey. So far the species has been known from A2(E) Istanbul (Matthews 1975).

Reports 40-42

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Brassicaceae

40. *Cardaria draba* (L.) Desv. subsp. ***draba***

Tu(E) A1(E) Edirne: Lalapaşa, at the exit on the roadside, 172 m, 41°49'60"N, 26°43'60"E, 03.05.2013, coll. & det. *S. Tütüncü Konyar* (EDTU 13291).

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

Scrophulariaceae

41. *Linaria genistifolia* subsp. ***artvinensis*** Davis

Tu(E) A1(E) Edirne: Centre, Trafik plantation, 26 m, 41°40'28"N, 26°33'39"E, 13.07.2013, coll. & det. *S. Tütüncü Konyar* (EDTU 13302).

A new species for the European Turkey. So far the species has been known only from A8 Çoruh – Artvin in Turkey (Davis 1978). It is similar to *L. g.* subsp. *genistifolia* but differs from it by its reddish-brown venation of the flowers.

Liliaceae **s.l.**

42. *Allium scorodoprasum* subsp. ***rotundum*** (L.) Stearn

Tu(E) A1(E) Edirne: Centre, between Karaağaç and Pazarkule, 23 m, 41°39'28"N, 26°31'25"E, 25.06.2013 & 10.06.2013, coll. & det. *S. Tütüncü Konyar* (EDTU 13298).

A new species for A1(E) Edirne in the European Turkey. So far the species has been known from A2(E) Istanbul and A1(E) Kırklareli (Kollmann 1984).

Reports 43–53

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Asteraceae

43. *Bidens frondosus* L.

Bu Rhodopi Mts (*Western*): along river Chepinska in Elidere gorge, KG66, 15.08.2013, coll. *A. Petrova* (SOM 169648).

The population is abundant and spreads across at least few kilometers.

44. *Erigeron annuus* (L.) Pers.

Bu Rila Mts: in ruderal places along the road E of Raduil village, GM28, 15.08.2013, coll. *A. Petrova* (SOM 169645).

— Pirin Mts (*Southern*): Melnik town, along and on stony supporting walls, as well as in ruderal places, GL09, 10.06.2013, coll. *A. Petrova* (SOM 169568).

45. *Helianthus tuberosus* L.

Bu Black Sea Coast (*Northern*): St. St. Konstantin & Elena Resort near Varna town, in the park area near Chaika and Sirius Beach hotels, NH88, 20.09.2013, *A. Petrova* obs.

— Black Sea Coast (*Southern*): Arkutino locality, in ruderal places behind the restaurant, NG68, 17.06.2013, coll. *A. Petrova* (SOM 169580).

This is an alien species, which has spread in many floristic regions in Bulgaria (Petrova & al. 2012). Here it was possibly used as an ornamental plant and then discarded. Because of the unfavorable sandy conditions, the plants are quite low and suppressed.

46. *Xeranthemum cylindraceum* Sm.

Bu Pirin Mts (*Southern*): in dry grasslands near Rozhen Monastety, GM00, 11.06.2013, coll. *A. Petrova* (SOM 169568).

Its presence confirms the distribution of the species in this floristic region. When Assyov & Vassilev (2004) summurised the information on this species in Bulgaria, there were no data in the Bulgarian herbaria from the Pirin Mts.

Phytolaccaceae

47. *Phytolacca esculenta* Van Houtte

Bu Black Sea Coast (*Northern*): Varna town – on abrasive coastal slopes at Ofitserski Beach, NH78, 01.09.2013, coll. *A. Petrova* (SOM 169644).

— Northeast Bulgaria: Zlatar village, on a wet slope in a park area in the village, MH97, 07.07.2013, coll. *A. Petrova* (SOM 169543).

This alien species has been reported recently for Bulgaria (Zieliński & al. 2012) and data about its distribution in the country are still very limited. Only few individuals were observed at the Ofitserski Beach in Varna town. Observations during the same season have shown that at the Flower Market in the town

center the branches of *Phytolacca* were used for bunch decoration (similarly to some other species collected in the wild: *Ruscus aculeatus*, *R. hyppoglossum*, *Limonium* spp., etc.). It could be assumed that somewhere in the vicinities of the town a large population exists.

Polygalaceae

48. *Polygala oxyptera* Rchb.

Bu Tundzha Hilly Country: in meadows at Elaka locality, near Gabarevo village, LH42, 11.11.2012, coll. *A. Petrova* (SOM 169374).

Rubiaceae

49. *Galium rubioides* L. (Fig. 7)

Bu Black Sea Coast (*Southern*): in a humid dune slack at the southern beach of Kiten town, NG67, 31.05.2013, coll. *A. Petrova* (SOM 169558).

This is a new region of this protected species. The population is small (about 15 individuals) and very vulnarable, as it is very close to the road along the beach and the pathway to the sea.

Scrophulariaceae

50. *Antirrhinum majus* L.

Bu Pirin Mts (*Southern*): Melnik town, on stony supporting walls, GL09, 10.06.2013, coll. *A. Petrova* (SOM 169571).

Fig. 7. *Galium rubioides* (photo A. Petrova).

Vitaceae

51. *Parthenocissus inserta* (A. Kern.) Fritsch

Bu Black Sea Coast (*Northern*): St. St. Konstantin & Elena Resort near Varna town, in the shoreline area in front of the Sirius Beach Hotel, NH88, 20.09.2013, coll. *A. Petrova* (SOM 169683).

— Black Sea Coast (*Southern*): Primorsko town, grown as ornamental on fences of the houses and restaurants, as well as on the supporting wall in the cape area, NG67, 29.05.2013, *A. Petrova* obs.; Kiten, grown on fences and in hotels along the coastal road at the southern beach of Kiten, NG67, 31.05.2013, *A. Petrova* obs.; grown as ornamental in flower-beds at a beach-bar in the Green Life Resort south of Sozopol town, NG59, 04.07.2013, *A. Petrova* obs.

— Pirin Mts (*Southern*): Melnik town, on stony supporting walls (including those along the river), GL09, 10.06.2013, coll. *A. Petrova* (SOM 169572).

This ornamental species, with a great potenial for dispersion and spreading, was reported recently as a naturalized alien for the country (Zielinski & al. 2012). In Melnik town many induviduals were observed, easily recognized as self-established. At St. St. Konstantin & Elena Resort the plant is locally used as ornamental, but near the Sirius Beach Hotel there is an area of about 25 m^2 covered by these plants, obviosly self-established at the margins of the stony beach. At the Southern Black Sea Coast, the species was observed almost entirely as planted and, for the moment, still man-controled. Only some small single individuals on a support stone basements in Primorsko town were self-established. Its extremely wide use as an ornamental plant in those settlements is a strong risk factor for possible invasion. Mention deserves the fact that its wide use in those resort places is a recent practice of the last 10 years.

Poaceae

52. *Lophochloa cristata* (L.) Hyl.

Bu Pirin Mts (*Southern*): Melnik town, near Eli Greco Hotel at the end of town, GL09, 10.06.2013, coll. *A. Petrova* (SOM 169582).

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

Bu Pirin Mts (*Southern*): Melnik town, near Eli Greco Hotel at the end of town, GL09, 10.06.2013, coll. *A. Petrova* (SOM 169574).

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Reports 54–64

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Salviniaceae

54. *Salvinia natans* L.

Bu Forebalkan (*Western*): Trasteno Blato locality, N of Gavril Genovo village, 43°24'31.6"N; 23°03'16.5"E, FP60, 04.10.2012, coll. *A. Petrova* & *al.* (SOM 168749).

This is a compareratively rare fern species in Bulgaria, evaluated as Vulnarable in the national Red List (Ivanova 2009). Trasteno Blato is an artificial pond, partially covered by reed. The population of *Salvinia* was numerous.

Asteraceae

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

Bu Danubian Plain: in a pasture near Vartop village, Vidin district, FP45, 18.07.2012, coll. *A. Petrova* (SOM 169022).

— Forebalkan (*Western*): SW of Borovtsi village, 43.32346°N, 23.13281°E, FN79, 20.07.2012, coll. *A. Petrova* (SOM 169023); on limestone slopes NW of Varbovo village, 43.54975°N, 22.65775°E, FP32, 19.07.2012, coll. *A. Petrova* (SOM 169024); in pastures westwards of Salash village, 43.62230°N, 22.50089°E, FP23, 26.08.2012, coll. *A. Petrova*, *R. Vassilev* & *I. Gerasimova* (SOM 169025).

Our observations have shown that this is a quite common species in the extensively used pastures in the area of NW Bulgaria.

Caryophyllaceae

56. *Dianthus noeanus* Boiss.

Bu Northeast Bulgaria: on limestone rocks in Marina Dupka locality near Targovishte town, MH68, 24.06.1986, coll. *N. Popova*, *M. Delcheva* & *D. Peev* (SOM 146778, sub *D. petraeus*).

— Balkan Range (*Eastern*): in Sinite Kamani Nature Park, on limestone rocks along the road to Karandila, MH42, 20.06.2011; on slopes of peak Peschenik, 21.06.2011 and on rocks at Dolapite locality, 18.07.2011, *A. Petrova* & *D. Venkova* obs.; on dry hills near Zheravna village, MH54, 1907, coll. *I. Urumov* (SOM 26039).

— Znepole Region: Mt Chepan, on southern slopes above Dragomansko Blato marsh, FN55, 16.07.2012, coll. *A. Petrova* & *R. Vassilev* (SOM 169029) & 23.07.1932, coll. *A. Radoslavov*, det. *B. Achtarov* (SOM 26035, sub *D. strictus* subsp. *noeanus*).

— Valley of River Struma (*Northern*): near Skakavitsa railway stop (in the Zemen Gorge), FM39, 12.07.1987, coll. *P. Panov* (SOM 161762 & 163337, sub *D. petraeus* subsp. *nöeanus*).

— Mt Slavyanka: Summer post No. 1 of the State Boundary service, 1500 m, GL18, 07.1936, coll. *A. Drenovsky* (SOM 25605); at Hambardere locality above Paril village, GL28, 09.07.1991, coll. *I. Pashaliev* (SOM 151356, sub *D. petraeus* subsp. *nöeanus*).

— Pirin Mts (*Northern*): in Goren Razkol locality along river Razkolska, on rocks, 1400 m, FM92, 16.07.1981, coll. *S. Kozhuharov* & *C. Denchev* (SOM 143630, sub *D. petraeus* subsp. *nöeanus*).

— Rila Mts: in stony places above river Kriva in Mt Zelena Rila, GM37, 12.07.1893, coll. *B. Davidov*, det. *N. Stoyanov* & *B. Achtarov* (SOM 26036 & 26037, sub *D. strictus* subsp. *nöeanus*).

— Mt Sredna Gora Mts (*Western*): Mt Lozenska, in limestone rocky places in Garvanetski Dol locality, near Dolni Pasarel village, GN01, 12.08.1955, coll. *I. Ganchev* (SOM 93579, sub *D. petraeus*).

— Rhodopi Mts (*Central*): in rocky places between Bachkovo and Narechen villages, LG14/LG24, 1906, coll. *I. Urumov* (SOM 26033, sub *D. strictus* subsp. *nöeanus*).

This Balkan endemic was included in the intraspecific variability of *D. petraeus* Walds. & Kit. in the general works on Bulgarian flora (Stojanov 1966; Petrova 1992; etc.). That is why, its distribution in the country was not well outlined in those sources. A comparison with the distribution data given by Stojanoff &

Achtaroff (1935) shows that Rhodopi Mts (*Western*) should be added to the above cited floristic regions.

Cistacea

57. *Cistus incanus* L.

Bu Pirin Mts (*Southern*): on slopes along the road between Kalimantsi and Belyovo villages, 41.46775°N, 23.51295°E, GL19, 10.07.2012, coll. *A. Petrova*, *D. Venkova* & *R. Vassilev* (SOM 168751).

Vegetation on those south-facing stony slopes of the Pirin Mts shows strong Mediterranean influence, with growes of *Quercus coccifera* L.

Rosaceae

58. *Sanguisorba officinalis* L.

Bu Tundzha Hilly Country: in wet meadows between Golyamo Dryanovo and Dunavtsi village, LH52, 14.09.2012, coll. *A. Petrova*, *R. Vassilev* & *D. Venkova* (SOM 169083).

According to most sources on the Bulgarian flora, this species has a vertical distibution between 800–2200 m (Asenov 1973; Markova 1992; Assyov & Petrova 2012, etc.). In this part of the Upper Toundzha River Valley, the altitude is about 450 m.

Rubiaceae

59. *Galium rivale* L.

Bu Danubian Plain: along river Archar, SW of Darzhanitsa village, Vidin district, FP45, 18.07.2012, coll. *A. Petrova* (SOM 169042).

— Znepole Region: along River Sruma in the Zemen Gorge, FN40, 29.07.2012, coll. *A. Petrova* (SOM 169043).

60. *Galium verticillatum* Lam.

Bu Forebalkan (*Western*): SE of Targovishte village, below peak Bolvan, FP32, 01.10.2012, coll. *A. Petrova* & *al.* (SOM 169099). Observed also north of Replyana village, 43.51515°N, 22.74333°E, FP32, 01.10.2012, *A. Petrova*, *R. Vassilev*, *D. Venkova* & *I. Gerasimova* obs.

This annual species, a Mediterranean geoelement, is distributed in Bulgaria mostly in the southern part of the country. In the Western Forebalkan it is found on dry, stony, south-facing slopes.

***Liliaceae* s.l.**

61. *Allium nigrum* L.

Bu Black Sea Coast (*Northern*): SE of Kavarna town, near the town's waste depot, PJ10, 16.05.2012, coll. *A. Petrova* (SOM 169091).

This species has quite local distribution in Bulgaria, mostly in the southern part of the country. A single individual was observed in roadside sinanthropic vegetation, near a small local waste depot, so it rahter calls for considering this as a casual distribution.

Poaceae

62. *Aegilops genniculata* L.

Bu Pirin Mts (*Southern*): in dry places along the road between Kalimantsi and Belyovo villages, 41.46775°N, 23.51295°E, GL19, 10.07.2012, coll. *A. Petrova* & *I. Gerasimova* (SOM 168749); in Melnik town, near Eli Greco Hotel at the end of town, FL99, 10.06.2013, coll. *A. Petrova* (SOM 169573); in dry grasslands along the trail to Rozhen Monastery, GM00, 11.06.2013, coll. *A. Petrova* (SOM 169576).

63. *Agrostis stolonifera* L.

Bu Forebalkan (*Western*): in wet places along the river westwards of Prevala village, 25.08.2012, FP41, coll. *A. Petrova* (SOM 169012).

64. *Avena barbata* L.

Bu Black Sea Coast (*Northern*): in dry grasslands on the Dobrudzha Plateau, above Rusalka Resort, PJ20, 16.05.2012, coll. *A. Petrova* (SOM 169091).

Acknowledgements. Some of the data were obtained during field work under the projects "*Mapping and identification of conservation status of natural habitats and species – Phase I*" and "*Natural Network for Plants and People*". The financial support of the Ministry of Environment and Water, Bulgaria and Plantlife International is acknowledged.

Reports 65–80

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

Apiaceae

65. *Ferula communis* L.

Gr Nomos Attikis, Eparchia Megaridos: foothills of

Mt Pateras, a few plants in opening of *Arbutus andrachne-Quercus coccifera* macchie, 770 m, 38°07'N, 23°18'E, 26.05.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013).

— Mt Kitheronas, common along roadsides from Villia to Kitheronas, 550 m, 38°10'N, 23°19'E, 20.04.2012, *Polymenakos* obs.

New for Mts Pateras and Kitheronas, not recorded by Constantinidis (1997). Only dried-out inflorescences observed.

Asteraceae

66. *Carlina lanata* L.

Gr Nomos Attikis, Eparchia Megaridos: uncultivated field in Kaza valley at eastern foothills of Mt Pastra, 500–510 m, 38°11'N, 23°21'E, 07.07.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013); uncultivated field E of village Oenoe between Pateras and Pastra, 300 m, 38°09'N, 23°25'E, 25.06.2013, *Polymenakos* obs.

New for Mt Pastra. In Sterea Ellas, recorded from Mts Pendeli, Gerania and Imittos. Together with *Centaurea iberica* subsp. *holzmanniana*, *Eryngium creticum*, *Euphorbia aleppica*, *Lythrum thymifolium* and *Verbascum undulatum*. Extremely common in both localities as well as in the uncultivated fields of west Attiki. Not recorded by Constantinidis (1997).

67. *Centaurea iberica* subsp. ***holzmanniana*** (Boiss.) Dostál (Fig. 8)

Fig. 8. *Centaurea iberica* subsp. *holzmanniana* (photo K. Polymenakos).

Gr Nomos Attikis, Eparchia Megaridos: uncultivated field in Kaza valley at eastern foothills of Mt Pastra, 500 m, 38°11'N, 23°21'E, 07.07.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Pastra. In Sterea Ellas, recorded from Parnitha and Pateras. Endemic to C and S Greece, distinguished from *C. i.* subsp. *iberica* by the lower stature, prostrate-ascending stems and longer apical spine on the phyllaries. Not recorded by Constantinidis (1997).

68. *Filago pygmaea* L.

Gr Nomos & Eparchia Attikis: Mt Pendeli, N of Koukounaria, 390 m, 38°08'N, 23°54'E, 09.04.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Pendeli. Numerous plants on stony slopes in burnt *Pinus* forest, together with *Cistus monspeliensis* and *C. creticus*.

Caryophyllaceae

69. *Silene latifolia* Poir.

Gr Nomos & Eparchia Fthiotidos: northern slopes of Mt Iti, roadside from Kapnochori to Moni Agathonos, 530 m, 38°51'N, 22°13'E, 10.08.2013, *Polymenakos* & *al.* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Iti. In Sterea Ellas, recorded from Akarnanika Ori, Timfristos, Parnassos and Pendeli.

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

Gr Nomos & Eparchia Attikis: Mt Parnitha, on asphalt at Paleochori, 990 m, 38°09'N, 23°42'E, 28.10.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Parnitha, recorded from Pendeli.

Chenopodiaceae

71. *Dysphania multifida* (L.) Mosyakin & Clemants

Gr Nomos Attikis, Eparchia Megaridos: Mt Kitheronas, along main road from Mandra to Thiva, 630 m, 38°11'N, 23°20'E, 07.07.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Kitheronas. Single plant found, occurrence and distribution probably connected with the large roaming flocks of sheep and goats. This is apparently the second record for Sterea Ellas, the first being noted by us from Mt Pendeli (Polymenakos & Kit Tan 2012). Not reported by Constantinidis (1997).

Euphorbiaceae

72. *Euphorbia herniariifolia* Willd.

Gr Nomos Attikis, Eparchia Megaridos: vertical cliff at summit of Mt Gerania (on Korinthias side), 1330 m, 38°01'N, 23°07'E, 16.06.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Gerania, not reported by Constantinidis (1997). A few plants together with *Achillea umbellata* and *Alyssum montanum*.

Fabaceae

73. *Medicago polyceratia* (L.) Trautv.

Gr Nomos Attikis, Eparchia Megaridos: Mt Kitheronas, forest road NW of Villia, 830 m, 38°10'N, 23°18'E, 20.04.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Kitheronas, not reported by Constantinidis (1997). Recorded from Chelmos, Klokos, Timfristos and NE Greece.

Fig. 9. *Delphinium balcanicum* (photo K. Polymenakos).

Ranunculaceae

74. *Delphinium balcanicum* Pawł. (Fig. 9)

Gr Nomos Fokidos, Eparchia Doridos/Parnassidos: Mt Giona, from Stromi along main road to the summit, 880 m, 38°42'N, 22°15'E, 19.07.2010, *Polymenakos* & *G. Fakas* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Giona and Sterea Ellas.

Rosaceae

75. *Potentilla micrantha* DC.

Gr Nomos & Eparchia Attikis: Mt Pendeli, northern slopes of Pyrgari, 1060 m, 38°04'N, 23°52'E, 19.05.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Pendeli, not recorded by Baliousis & Yannitsaros (2011). Numerous plants noted under rocks and in dense *Ostrya carpinifolia-Juniperus oxycedrus* forest at altitudes of 1000 to 1070 m.

Sambucaceae

76. *Sambucus ebulus* L. (Fig. 10)

Gr Nomos Attikis, Eparchia Megaridos: Mt Kitheronas, rocky places on way to summit, 1270 m, 38°10'N, 23°15'E, 25.06.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Kitheronas. Not reported by Constantinidis (1997).

Fig. 10. *Sambucus ebulus* (photo K. Polymenakos).

Iridaceae

77. *Crocus biflorus* subsp. ***melantherus*** B. Mathew (Fig. 11)

Gr Nomos Attikis, Eparchia Megaridos: Mt Pateras, NW foothills, *Quercus coccifera* scrub, 570–625 m, 38°08'N, 23°17'E, 17.11.2013,

Fig. 11. *Crocus biflorus* subsp. *melantherus* (photo K. Polymenakos).

Polymenakos & *G. Kofinas* obs. (photo; conf. Kit Tan, December 2013); NE foothills, valley with *Pyrus*, 310 m, 38°09'N, 23°25'E, 17.11.2013, *Polymenakos* & *G. Kofinas* obs.; Mt Kitheronas, main road from Villia to Porto Germeno, 630 m, 38°10'N, 23°18'E, 17.11.2013, *Polymenakos* & *G. Kofinas* obs.; stony slopes of Mt Villia, 650 m, 38°10'N, 23°19'E, 17.11.2013, *Polymenakos* & *G. Kofinas* obs.

New for Mts Kitheronas and Pateras, not reported by Constantinidis (1997). On Mt Pateras, the crocus was very common, even within the village of Paleochori. Large populations of *Crocus cartwrightianus* were also noted in the plain of Oenoe between Pastra and Pateras, growing near, but never together, with *Crocus biflorus* subsp. *melantherus*.

Liliaceae s.l.

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

Gr Nomos & Eparchia Fthiotidos: northern slopes of Mt Iti, 1250 m, 38°50'N, 22°12'E, 10.08.2013, *Polymenakos* & *al.* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Iti. A few plants noted along forest road. In Sterea Ellas, recorded from Parnitha, Pateras and Pastra.

Fig. 12. *Allium sphaerocephalon* subsp. *trachypus* (photo K. Polymenakos).

79. *Allium sphaerocephalon* subsp. ***trachypus*** (Boiss. & Sprun.) Stearn (Fig. 12)

Gr Nomos & Eparchia Korinthias: along forest road leading to the Flabouritsa gorge, 1315 m, 37°58'N, 22°27'E, 20.07.2013, *Polymenakos* & *Nikitidis* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Killini. Only a few plants observed.

Orchidaceae

80. *Ophrys sphegodes* subsp. ***aesculapii*** (Renz) Soó

Gr Nomos Attikis, Eparchia Megaridos: Mt Kitheronas, outside Villia, 560 m, 38°09'N, 23°19'E, 20.04.2013, *Polymenakos* obs. (photo; conf. Kit Tan, December 2013).

New for Mt Kitheronas, not reported by Constantinidis (1997). Common at road margins from Villia to Porto Germeno.

Reports 81–82

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Berberidaceae

81. *Mahonia aquifolium* (Pursh) Nutt.

Bu Mt Sredna Gora (*Western*): on the territory of Mt Lozenska, above Lake Pancharevo, along a forest trail, among a culture of *Pinus nigra* and *P. sylvestris*, in the lower part of a southern slope with in-

clination of 5°, 658 m, 42°36'43.4"N, 23°24'33.1"E, FN91, 03.10.2013, coll. *A. Tashev* & *A. Gavrilova* (SOM 169663).

This is a new location of this adventive species in Bulgaira, so far known from the Black Sea Coast, Danubian Plain, Sofia Region, and Mt Strandzha (Assyov & Petrova 2012: 269). The individual of *M. aquifolium* grows in a plant community jointly with *Fraxinus ornus*, *Quercus daleschampii*, *Q. cerris*, *Crataegus monogyna*, *Viburnum lantana*, *Ligustrum vulgare*, *Mespilus germanica*, *Prunus spinosa*, *Fragaria vesca*, *Viola hirta*, *Poa nemoralis*, *Potentilla argentea*, *Brachypodium sylvaticum*, *etc.*

Rosaceae

82. *Mespilus germanica* L.

Bu Mt Sredna Gora (*Western*): Mt Lozenska, above Lake Pancharevo, along a forest trail, among a culture of *Pinus nigra*, in the central part of a southern slope with inclination of 10°, 730 m, 42°35'58.4"N, 23°25'07.7"E, FN91. 03.10.2013, coll. *A. Tashev* & *A. Gavrilova* (SOM 169662), the individual of *Mespilus germanica* grows under the canopy, jointly with individuals of *Corylus avellana*, *Fraxinus excelsior*, *Prunus avium*, *Crataegus monogyna*, *Acer campestre*, *Hedera helix*, etc.; above Lake Pancharevo, along a forest trail, among a culture of *Pinus nigra*, in the central part of a southern slope with inclination of 8°, 701 m, 42°36'05.4"N, 23°24'45.7"E, FN91, with fruits, 03.10.2013, coll. *A. Tashev* & *A. Gavrilova* (SOM 169659), the individual of *Mespilus germanica* grows under the canopy, jointly with individuals of *Fraxinus angustifolia*, *F. ornus*, *Quercus pubescens*, *Q. cerris*, *Ulmus minor*, *Acer campestre*, *Carpinus betulus*, *Crataegus monogyna*, *Pyrus pyraster*, *Rosa canina*, *Fragaria vesca*, *Potentilla argentea*, *Agrimonia eupatoria*, *Physospermum cornubiense*, *Poa nemoralis*, etc.; above Lake Pancharevo, along a forest trail, among a culture of *Pinus nigra*, in the lower part of a southern slope with inclination of 3°, 671 m, 42°36'09.3"N, 23°24'39.9"E, FN91, with fruits, 03.10.2013, coll. *A. Tashev* & *A. Gavrilova* (SOM 169661), the individual of *Mespilus germanica* grows under the canopy, jointly with individuals of *Fraxinus ornus*, *Ulmus minor*, *Acer campestre*, *Ligustrum vulgare*, *Viburnum lantana*, *Rosa canina*, etc.; above Lake Pancharevo, along a forest trail, among a culture of *Pinus nigra* and *P. sylvestris*, in the lower part of a southern slope with inclination of 5°, 658 m, 42°36'43.4"N, 23°24'33.1"E, FN91, with fruits, 03.10.2013, coll. *A. Tashev* & *A. Gavrilova* (SOM 169660), the individual of *Mespilus germanica* grows jointly with individuals of *Fraxinus ornus*, *Quercus daleschampii*, *Q. cerris*, *Crataegus monogyna*, *Viburnum lantana*, *Ligustrum vulgare*, *Mahonia aquifolium*, *Prunus spinosa*, *Fragaria vesca*, *Viola hirta*, *Poa nemoralis*, *Potentilla argentea*, *Brachypodium sylvaticum*, etc.

This is a new location of this rare Pontic-Mediterranean species in Bulgaria, so far known from Black Sea Coast (*Southern*), Mt Strandzha, Balkan Range (*Eastern*), Sofia Region and Rhodopi Mts (*Central*) (Popova 2011: 196; Tashev 2011: 377; Assyov & Petrova 2012: 276; Vladimirov 2012a: 364). Only the former two floristic regions are part of the native range of the species in Bulgaria, whereas the distribution of the species in the other floristic regions is most likely result of escape from cultivation.

Reports 83–86

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Pinaceae

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

Bu Balkan Range (*Western*): on the territory of the Petrohan Study and Experimental Station, in the land of Barzia village, Gorelite Ratove locality (Ravni Rat – Hranilkata), under the canopy of 60-year-old forest of *Fagus sylvatica* and close to a culture of *P. menziesii*, in the lower part of a western slope with inclination of 30°, 768 m, 43°09'24.4"N, 23°09'39.7"E, 23.04.2013, coll. *A. Tashev* & *N. Tashev* (SOM 169541), the species is represented by single specimens of different age and different height, growing close to a forest dirt

road, along with undergrowth of *Fagus sylvatica*, *Rubus hirtus*, *Luzula luzuloides*, *Potentilla mycrantha*, *Tanacetum corymbosum*, etc.; *loc. ibid.*, under the canopy of 70-year-old forest of *Fagus sylvatica*, in the central part of a western slope with inclination of 15°, 888 m, 43°09'15.6"N, 23°09'55.3"E, 23.04.2013, coll. *A. Tashev* & *N. Tashev* (SOM 169542); the subpopulation was represented by single individuals and small groups of different age and height, occasionally of suppressed growth owing to shadow, along with undergrowth of *Picea abies*, *Abies alba*, *Rubus hirtus*, *Salix caprea*, *Luzula luzuloides*, *Potentilla mycrantha*, *Festuca drymeja*, *Cardamine bulbifera*, *Fragaria vesca*, *Aremonia agrimonoides*, etc.

These are new locations of this adventive species for the Bulgarian flora, which have naturally emerged as a result of natural reproduction of individuals of *Pseudotsuga menziesii* subsp. *menziesii* from artificial plantations in the neighbouring territories. So far such natural groups have been found only in Rila Mts, Mt Sredna Gora (*Western*), Rhodopi Mts (Assyov & Petrova 2012: 333; Tashev & al. 2012; Tashev & al. 2013 a, b).

Fabaceae

84. *Genista rumelica* Velen.

Bu Black Sea Coast (*Southern*): in the area of Primorsko town, on the territory of the Beglik Tash – Ropotamo Protected Area, 20 m inland from the seashore, close to a rock and offshoot forest of *Quercus frainetto*, in the lower part of an eastern slope with inclination of 10°, 25 m, 42°18'59.3"N, 27°46'46.9"E, 01.12.2013, coll. *A. Tashev* (SOM 169721); *loc. ibid.*, in the crack of a rock among an offshoot forest of *Quercus* spp., in the central part of a northwestern slope with inclination of 35°, 71 m, 42°18'52.9"N, 27°46'26.7"E, 01.12.2013, coll. *A. Tashev* (SOM 169741).

This is a new location of this Balkan endemic in Bulgaria, so far known from Balkan Range (*Central*, *Eastern*), Mt Slavyanka, Valley of River Mesta, Pirin Mts, Rila Mts, Mt Sredna Gora (*Western*), Rhodopi Mts, Thracian Lowland, Tundzha Hilly Country, and Mt Strandzha (Petrova & Vladimirov 2010: 301; Terzijski 2011: 205; Assyov & Petrova 2012: 207).

Fagaceae

85. *Quercus rubra* L.

Bu Vitosha Region: Mt Vitosha, above the villa zone of Simeonovo Residential District, in a thinned out place, along a forest trail among 60-year old culture of *Quercus rubra* and *Pinus nigra*, in the lower part of a northern slope with inclination of 15°, 917 m, 42°36'44.5"N, 23°19'23.7"E, 26.10.2013, coll. *A. Tashev* & *N. Tashev* (SOM 169653; SO 107566; SOA 059797).

This was a group of about 20 individuals, reaching 10 m in height. The height of the undergrowth was up to 10–15 m. Mass undergrowth in thinned-out places was found out, close to a culture or to single individuals of *Quercus rubra.* Along with the undergrowth of *Q. rubra*, there was undergrowth of different age of *Q. dalechampii*, *Carpinus betulus*, *Acer platanoides*, *A. pseudoplatanus*, *A. hyrcanum*, *Fagus sylvatica*, *Prunus avium*, *P. cerasifera*, and *Populus tremula*. The identified shrubs were: *Corylus avellana*, *Cornus mas*, *C. sanguinea*, *Ligustrum vulgare*, *Viburnum lantana*, *Crataegus monogyna*, *Rosa canina*, and *Clematis vitalba*. *Poa nemoralis* and *Dactylis glomerata* prevailed in the herbaceous floor, identified were also *Phleum pretense*, *Aremonia agrimonoides*, *Euphorbia cyparissias*, *Festuca heterophylla*, *Fragaria vesca*, *Hieracium* sp., *Hypericum perforatum*, *Potentilla mycrantha*, *Helleborus odorus*, *Lathyrus niger*, *Viola odorata*, etc.

This is a new adventive species for the Bulgarian flora, for which there exist unpublished data on its natural reproduction in other floristic regions of Bulgaria too.

Polygonaceae

86. *Rumex tuberosus* L.

Bu Black Sea Coast (*Southern*): between Chernomorets and Sozopol towns, on the territory of Gradina Camping Site, on a sand substrate, among shrubs and a culture of *Pinus nigra*, close to the seashore, on an eastern slope with inclination of 2°, 4 m, 42°24'51.2"N, 27°39'04.1"E, NG59, 31.10.2012, coll. *A. Tashev* (SOM 169703, 169704; SO 107567).

This is a new location of this boreal species, known from the Danubian Plain, Northeast Bulgaria, Balkan Range, Pirin Mts (*Southern*), Mt Sredna Gora (*Eastern*), Rhodopi Mts (*Central*, *Eastern*), Thracian Lowland, and Tundzha Hilly Country. It is characteristic with its numerous population in the area between the towns of Chernomorets and Sozopol (Delipavlov 2011: 205; Assyov & Petrova 2012: 358).

Reports 87–88

Sevil Tütüncü Konyar & Feruzan Dane

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Boraginaceae

87. *Echium plantagineum* L.

Tu(E) A1(E) Edirne: Karaağaç, 200 m to Lozan Monument, 23 m, 41°39'28"N, 26°31'25"E, 04.06.2013, coll. *S. Tütüncü Konyar* & *S.Tütüncü*, det. *S. Tütüncü Konyar* (EDTU13296).

A new species for A1(E) Edirne in the European Turkey. Previously it has been reported from A1(E) Tekirdağ and A2(E) Istanbul (Edmondson 1978).

Linaceae

88. *Linum tauricum* Willd.

Tu(E) A1(E) Edirne: Süleoğlu, Tatarlar village, on rocky terrain, 156 m 41°46'02"N, 26°54'43"E, 25.05.1987, coll. *F. Dane* & *al.* (EDTU 839); Hüseyinpınar village, 26 m, 41°40'28"N, 26°33'39"E, 11.05.1988, coll. *G. Dalgıç* & *N. Başak* (EDTU 2026); Keşan, Mecidiye, 61 m, 40°38'20"N, 26°32'14"E, 15.05.1997, coll. *G. Dalgıç* & *N. Güler* (EDTU 3926).

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

Reports 89–91

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Geraniaceae

89. *Erodium ciconium* L.

Tu(E) A1(E) Edirne: Centre, Trafik plantation, 26 m, 41°40'28"N, 26°33'39"E, 11.05.2013, coll. & det. *S. Tütüncü Konyar* & *S. Tütüncü* (EDTU 13294).

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

90. *Erodium cicutarium* (L.) L´Herit. subsp. ***cicutarium***

Tu(E) A1(E) Edirne: Lalapaşa, in a pasture, 172 m, 41°49'60"N, 26°43'60"E, 03.05.2013, coll. *S. Tütüncü Konyar* & *S. Tütüncü*, det. *S. Tütüncü Konyar* (EDTU 13292).

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

91. *Geranium columbinum* L.

Tu(E) A1(E) Edirne: Lalapaşa, in a pasture, 172 m, 41°49'60"N, 26°43'60"E, 09.05.2013, coll. *S. Tütüncü Konyar* & *S. Tütüncü*, det. *S. Tütüncü Konyar* (EDTU 13293).

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

Reports 92–94

Sevil Tütüncü Konyar & Serpil Tütüncü

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Apiaceae

92. *Bupleurum odontites* L.

Tu(E) A1(E) Edirne: Centre, Trafik plantation, 26 m, 41°40'28"N, 26°33'39"E, 13.07.2013, coll. & det. *S. Tütüncü Konyar* & *S. Tütüncü* (EDTU 13301).

A new species for A1(E) Edirne in the European Turkey. So far the species has been known from A2(E) Istanbul, A1(E) Tekirdağ and A1(E) Çanakkale (Snogerup & Davis 1972).

93. *Daucus carota* L. subsp. ***carota***

Tu(E) A1(E) Edirne: Lalapaşa, in a pasture, 172 m, 41°49'60"N, 26°43'60"E, 05.06.2013, coll. & det. *S. Tütüncü Konyar* (EDTU 13308).

A new species for A1(E) Edirne in European Turkey. So far the species has been known from A2(E) Istanbul (Cullen 1972).

94. *Orlaya grandiflora* (L.) Hoffm.

Tu(E) A1(E) Edirne: Lalapaşa, in a pasture, 172 m, 41°49'60"N, 26°43'60"E, 25.05.2013, coll. *S. Tütüncü Konyar* & *S. Tütüncü*, det. *S. Tütüncü Konyar* (EDTU 13295).

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

Report 95

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Fabaceae

95. *Psoralea bituminosa* L.

Tu(E) A1(E) Edirne: Lalapaşa, between Sinanköy village and Lalapaşa (1 km to Lalapaşa), 172 m, 41°49'60"N, 26°43'60"E, 05.06.2013, coll. & det. *S. Tütüncü Konyar* & *S. Tütüncü* (EDTU 13297).

A new species for A1(E) Edirne in the European Turkey. So far the species has been known from A1(E) Tekirdağ and A2(E) Istanbul (Chamberlain 1970).

Reports 96–97

Sevil Tütüncü Konyar, Serpil Tütüncü & Feruzan Dane

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Caryophyllaceae

96. *Moenchia mantica* (L.) Bartl. subsp. ***mantica***

Tu(E) A1(E) Edirne: Lalapaşa, in a pasture, 172 m, 41°49'60"N, 26°43'60"E, 12.04.2013, coll. & det. *S. Tütüncü Konyar* & *S. Tütüncü* (EDTU 13290).

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

97. *Petrorhagia dubia* (Raf.) G. López & Romo

Tu(E) A1(E) Edirne: Lalapaşa, in a pasture, 172 m, 41°49'60"N, 26°43'60"E, 11.05.2013, coll. & det. *S. Tütüncü Konyar* & *S. Tütüncü* (EDTU 13310).

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

Reports 98–100

Sevil Tütüncü Konyar, Serpil Tütüncü & Necmettin Güler

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Asteraceae

98. *Conyza bonariensis* (L.) Cronquist

Tu(E) A1(E) Edirne: Centre, on waste ground, 26 m, 41°40'28"N, 26°33'39"E, 20.08.2013, coll. & det. *S. Tütüncü Konyar* & *S. Tütüncü* (EDTU 13304).

A new species for A1(E) Edirne in the European Turkey. So far the species has been known from A1(E) Istanbul (Grierson 1975).

99. *Echinops ritro* L.

Tu(E) A1(E) Edirne: Centre, the Balkan Campus of Trakya University, 41°40'28"N, 26°33'39"E, 31.08.2013, coll. & det. *S. Tütüncü Konyar* & *S. Tütüncü* (EDTU 13307).

A new species for A1(E) Edirne in the European Turkey. So far the species has been known from A1(E) Çanakkale (Hedge 1975).

100. *Scolymus hispanicus* L.

Tu(E) A1(E) Edirne: between Edirne and Yeni Bosna village, at the roadside, 18 m, 41°37'35"N, 26°36'12"E, 09.07.2013, coll. & det. *S. Tütüncü Konyar* and *S. Tütüncü* (EDTU 13300).

A new species for A1(E) Edirne in the European Turkey. So far the species has been known from A2(E) Istanbul and A1(E) Tekirdağ (Matthews 1975).

Reports 101–102

Sevil Tütüncü Konyar, Serpil Tütüncü & Ercüment Konyar

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Cucurbitaceae

101. *Ecballium elaterium* (L.) A. Rich

Tu(E) A1(E) Edirne: Karaağaç, in the Faculty of Art Campus, 23 m, 41°39'28"N, 26°31'25"E, 30.08.2013, coll. & det. *S. Tütüncü Konyar* & *S. Tütüncü* (EDTU 13306).

A new species for A1(E) Edirne in the European Turkey. Previously it has been reported from A1(E) Tekirdağ, A1(E) Kırklareli and A2(E) Istanbul (Jeffrey 1972).

Lamiaceae

102. *Mentha pulegium* L.

Tu(E) A1(E) Edirne: Lalapaşa, in a pasture, 172 m, 41°49'60"N, 26°43'60"E, 29.08.2013, coll. *S.*

Tütüncü Konyar & *E. Konyar*, det. *S. Tütüncü Konyar* & *S. Tütüncü* (EDTU 13305).

This is a new record for A1(E) Edirne in the European Turkey. Previously it has been reported from A1(E) Tekirdağ and A2(E) Istanbul (Harley 1982).

Reports 103–104

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Ranunculaceae

103. *Consolida orientalis* (Gay) Schrod.

Tu(E) A1(E) Edirne: Centre, between Karaağaç and Pazarkule, 23 m, 41°39'28"N, 26°31'25"E, 25.06.2013, coll. *S. Tütüncü Konyar* and *S. Tütüncü*, det. *S. Tütüncü Konyar* (EDTU 13299).

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

104. *Nigella arvensis* L. var. ***glauca*** Boiss.

Tu(E) A1(E) Edirne: Centre, Trafik plantation, 26 m, 41°40'28"N, 26°33'39"E, 13.07.2013, coll. *S. Tütüncü Konyar* and *S. Tütüncü*, det. *S. Tütüncü Konyar* (EDTU 13309).

A new species for A1(E) Edirne in the European Turkey. So far the species has been reported from A1(E) Çanakkale, Gelibolu (Davis 1965) and A1(E) Kırklareli (Aybeke & Yarcı 2012).

Reports 105–112

Vladimir Vladimirov

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Asteraceae

105. *Centaurea chrysolepis* Vis.

Bu Balkan Range (*Central*): uppermost part of Koru Dere below Mazalat peak, 1400–1500 m, 42.69645°N, 25.11608°E, 26.07.2913, coll. *V. Vladimirov* (SOM 169821).

New for this floristic subregion. So far the species has been reported for Northeast Bulgaria, Forebalkan, Balkan Range (*Western*), Sofia Region, Znepole Region, Vitosha Region, West Frontier Mts, Valley of River Struma, Rhodopi Mts (Eastern), Tundzha Hilly Country (Petrova & Vladimirov 2010; Assyov & Petrova 2012).

106. *Senecio nemorensis* subsp. ***jacquinianus*** (Rchb.) Čelak.

Bu Balkan Range (*Western*): openings of *Fagus sylvatica* forest by a forest road, *ca*. 1300 m, 43.40974°N, 22.68609°E, 21.08.2013, coll. *V. Vladimirov* (SOM 169822).

A new species and subspecies for this floristic subregion (*cf*. Vladimirov 2012b).

Caryophyllaceae

107. *Dianthus noeanus* Boiss.

Bu Balkan Range (*Eastern*): Sinite Kamani Nature Park, Karandila locality above Sliven town, *ca*. 1000 m, 42.71938°N, 26.36186°E, 28.07.2013, coll. *V. Vladimirov* (SOM 169823).

A new species for this floristic subregion. So far reported for Northeast Bulgaria, Forebalkan, Balkan Range (*Western*, *Central*), Vitosha Region (Delipavlov 2011; Assyov & Petrova 2012; Vladimirov & al. 2012). However, for more floristic records of this species in Bulgaria, see Report 56 in this series.

Chenopodiaceae

108. *Dysphania pumilio* (R. Br.) Mosyakin & Clements [syn.: *Chenopodium pumilio* R. Br.]

Bu Balkan Range (*Central*): Kalofer town, pavement along the streets near River Tundzha, *ca*. 600 m, 42.60815°N, 24.97948°E, 27.07.2013, coll. *V. Vladimirov* (SOM 169824).

A new species for this floristic subregion. So far reported for Black Sea Coast, Northeast Bulgaria, Balkan Range (*Eastern*), Valley of River Struma (*Southern*), Thracian Lowland, Tundzha Hilly Country (Grozeva 2007; Vladimirov 2012a; Petrova & al. 2013b).

Fagaceae

109. *Quercus rubra* L.

Bu Tundzha Hilly Country: Mt Sakar, forest plantation of *ca.* 30–40 years old trees of *Quercus rubra* with numerous seedlings and young individuals of the species along the road from Dervishka mogila village to Planinovo village, MG44, 09.09.2010, *V. Vladimirov* obs.

First report of naturalizing population of the alien *Q. rubra* in this floristic region. *Quercus rubra* is native to North America and it was introduced to

Bulgaria for cultivation more than a century ago. Self-establishment of the species in Bulgaria was first reported by Dimitroff & Stefanoff (1928) in the forest plantations of the King's family near Sofia.

Scrophulariaceae

110. *Linaria simplex* (Willd.) DC. (Fig. 13)

Bu Valley of River Mesta: by a dirt road on the left bank of River Mesta, S-SW of Slashten village, 460–470 m, 41.47409°N, 24.00669°E, 16.04.2013, coll. *V. Vladimirov* obs. (photo).

Not reported so far for this floristic region (*cf.* Delipavlov & Popova 1995; Assyov & Petrova 2012; Goranova & al. 2013).

***Liliaceae* s.l.**

111. *Allium fuscum* Waldst. & Kit.

Bu Balkan Range (*Eastern*): Sinite Kamani Nature Park, Karandila locality above Sliven town, *ca.* 1000 m, 42.71938°N, 26.36186°E, 28.07.2013, coll. *V. Vladimirov* (SOM 169825).

Not reported so far for this floristic subregion (*cf.* Grozeva & al. 2004; Cheshmedzhiev 2011; Assyov & Petrova 2012).

Fig. 13. *Linaria simplex* (photo V. Vladimirov).

Poaceae

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

Bu Forebalkan (*Western*): Montana town, pavement at the open market in the center of the town and near the bus station, *ca.* 150–160 m, 43.40731°N, 23.22878°E, 24.09.2013, coll. *V. Vladimirov* (SOM 169826).

A new species for this floristic subregion. Growing together with other alien species, e.g. with *Euphorbia maculata* and *Oxalis corniculata*. So far this alien for the Bulgarian flora species has been reported for Black Sea Coast, Forebalkan (*Eastern*), Sofia Region, Znepole Region, West Frontier Mts, Mt Belasitsa, Valley of River Struma, Thracian Lowland and Tundzha Hilly Country (Petrova & al. 2007; Vladimirov 2011; Assyov & Petrova 2012; Petrova & al. 2013a).

Acknowledgements. These floristic studies have been carried out under the project "*Research on the flora and vegetation: diversity, distribution, biosystematics, dynamics and conservation significance, phase 1*".

Reports 113–115

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Continuing a series of new plant records based on floristic investigations in the prefecture of Korinthias in north central Peloponnese. New and surprising discoveries of Greek endemics however, still emerge; in this case, a new subspecies of *Aethionema* from the foothills of Mt Gerania.

Brassicaceae

113. *Aethionema saxatile* (L.) R.Br. subsp. ***corinthiacum*** Kit Tan, G. Vold, Zarkos & Christodoulou, **subsp. nov.** (Fig. 14)

Glabrous perennial, sparingly branched and subwoody at base. Flowering stems several, erect to ascending, 4–8 cm long, 2–5 mm in diameter at base. Leaves simple, entire, fleshy, dark greenish- or greyish-glaucous, sometimes suffused purple, glandular-

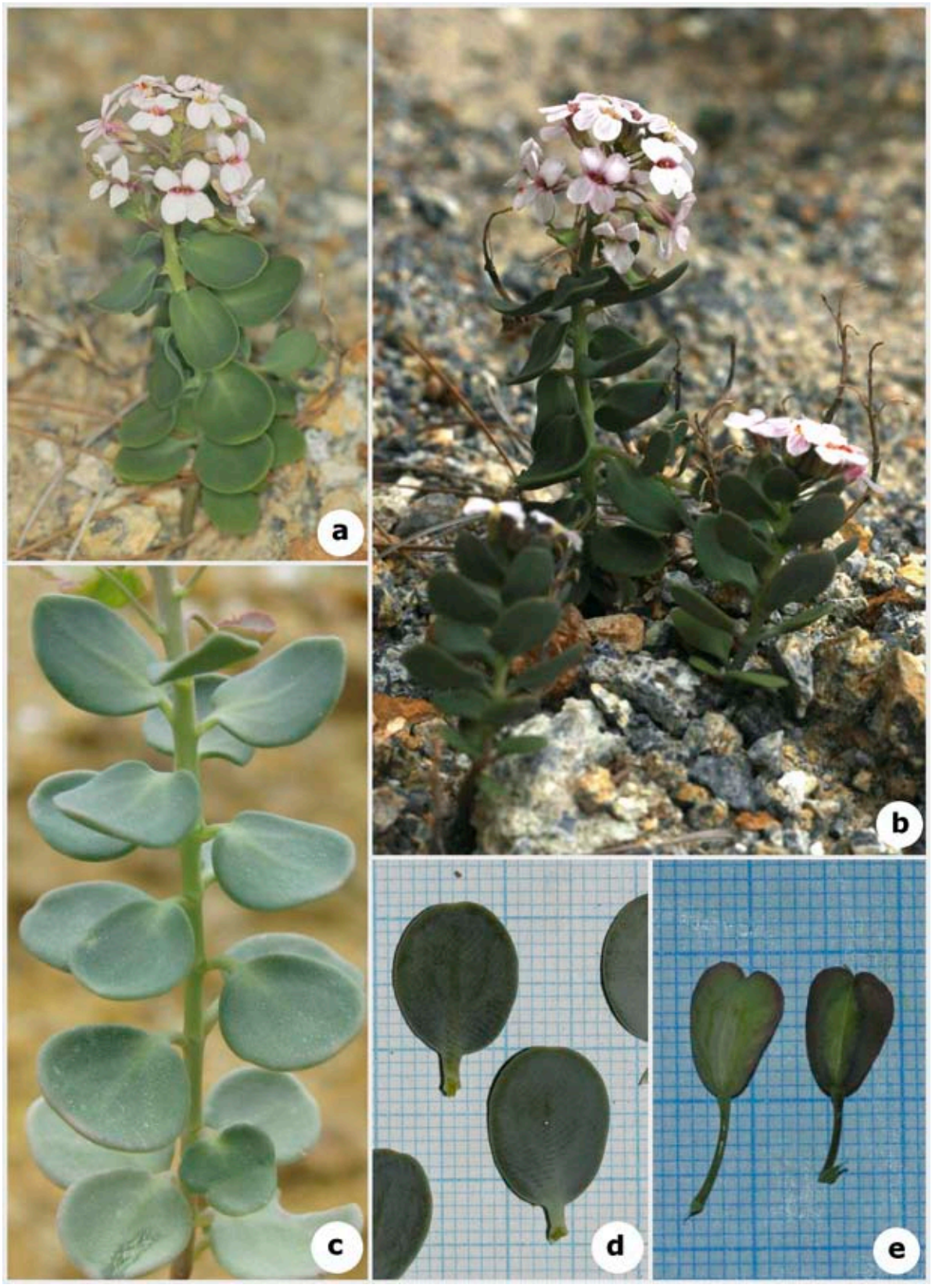

Fig. 14. *Aethionema saxatile* subsp. *corinthiacum*: **a.** flowering stem; **b.** plant with remains of old infructescences; **c.** leaves; **d.** leaves from lower part of stem; **e.** winged siliculae (photo G. Zarkos).

punctate; lower leaves opposite, upper alternate; all leaves shortly petiolate (petioles 2–3 mm long), broadly oblong-elliptic to suborbicular, 4–13 × 3.5–10 mm, obtuse or weakly sub-emarginate. Inflorescence racemose, ebracteate, dense in flower, elongating to 3–8 cm in fruit. Sepals erect, broadly ovate, *ca*. 5 mm long, green suffused pink, with scarious margin, inner slightly saccate at base. Petals entire, oblong-ovate, 5–6 × *ca.* 3 mm, white, suffused dark pink at base, veined pink. Filaments yellow. Fruiting pedicels erect to patent-recurved, 5–8 mm. Siliculae flattened, angustiseptate, winged, all bilocular in upper and lower part of raceme, broadly obovate tapering at base, 9–10 × 5.5–6 mm, opening by 2 valves, with 1–2 seeds per locule. Seed oblong-ovoid, 1.5–2.0 × *ca.* 1.2 mm, smooth, reddish-brown. Style 0.5–1mm long, equalling notch or slightly exserted.

Aethionema saxatile subsp. *saxatile* has unilocular and bilocular siliculae and the leaves are usually smaller and only slightly fleshy. *Aethionema retsina* Phitos & Snogerup which also has fleshy leaves is a suffruticose perennial with a thick woody base; it has unilocular siliculae and styles 1–1.3 mm long. When the account of *Aethionema* for *Flora Hellenica* was prepared (Kit Tan & Suda 2002) two specimens from Korinthia (*Atchley* 1182, BM!, K! & *Guiol* March 1932, BM!) were noted as being more compact in form, with a 2–5 mm diam. woody base and broad fleshy leaves. They were thought to represent a coastal ecotype of *A. saxatile* subsp. *graecum* (Boiss. & Spruner) Hayek as only two gatherings had been seen. After examining the material from Sousaki we believe that these three gatherings from Nomos Korinthias merit recognition at subspecies level.

Gr Nomos & Eparchia Korinthias: Mt Gerania, Sousaki, 130 m, 37°56'N, 23°05'E, 27.07.2013 (fruiting), *Kit Tan*, *G. Vold* & *Zarkos* 31653 (**holotype** ATH, **isotype** C).

Sousaki lies in the area of Ag. Theodori (part of the municipality of Loutraki) at the southern side of Mt Gerania and is an extinct volcano which has been dormant for the last two million years. It is the northernmost edge of the active volcanic S Aegean arc, which includes the volcanoes of Methana, Poros, Milos, Santorini and Nisyros. There is no crater or caldera as such but dozens of holes pitted around a gorge, and these openings (vents) still release carbon dioxide and sulphur.

This interesting *Aethionema* with succulent greyish-green leaves was found on the eroded marl-like substrate in the gorge. The population comprised *ca.* 20 individuals in sparse *Pinus halepensis* woodland. In the near vicinity were *Bufonia stricta*, *Centaurea achaia* subsp. *corinthiaca*, *C. ebenoides*, *Hedysarum grandiflorum* subsp. *bulgaricum*, *Helichrysum luteoalbum* and *Silene fabaria* subsp. *domokina*. *Centaurea ebenoides* was previously considered endemic to the island of Evvia so the locality on the foothills of Mt Gerania is a new and considerable extension of its range. *Hedysarum grandiflorum* was first sighted in full flower on 11.04.2009 and only reported as new for Greece in 2012 (Constantinidis 2012). The area was a botanical surprise.

Scrophulariaceae

114. *Chaenorhinum minus* (L.) Lange (Fig. 15)

Gr Nomos & Eparchia Korinthias: Mt Killini, near plateau, 1520 m, 37°57'N, 22°25'E, 29.07.2013, *Zarkos* obs. (photo; conf. Kit Tan, October 2013).

New for Mt Killini, eparchia and nomos.

Orchidaceae

115. *Spiranthes spiralis* (L.) Chevall

Gr Nomos & Eparchia Korinthias: near village of Sofiko, 275 m, 37°47'N, 23°05'E, 13.11.2013,

Fig. 15. *Chaenorhinum minus* (photo G. Zarkos).

Zarkos & *Christodoulou* obs.; *loc. ibid*., 17.11.2013, *Kit Tan* & *G. Vold* obs.

New for eparchia and nomos. Several plants were found in soil pockets on hard limestone slope in openings of *Pinus halepensis* woodland, together with *Bellis sylvestris*, *Colchicum cupanii*, *Crocus biflorus* subsp. *melantherus*, *Crocus boryi*, *Crocus cancellatus* subsp. *mazziaricus* and *Cyclamen graecum*.

Reports 116–122

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

Aizoaceae

116. *Carpobrotus edulis* (L.) N.E. Br.

Gr Nomos & Eparchia Chiou: island of Psara, Katsouni beach near the Museum, sea level, 38°32'N, 25°33'E, 15.08.2013, *Zografidis* obs. (photo; conf. Kit Tan, August 2013).

New for Psara. An invasive alien from the Cape region of South Africa, under-represented by records in Greece. Planted as ornamental, escaping and becoming naturalized on nearby beach.

Asteraceae

117. *Xanthium spinosum* L.

Gr Nomos & Eparchia Chiou: island of Psara, road margins from Hora to Lakka beach, *ca*. 10 m, 38°32'N, 25°34'E, 15.08.2013, *Zografidis* obs. (photo; conf. Kit Tan, August 2013).

New for Psara. Cosmopolitan invasive weed probably originating from South America.

Campanulaceae

118. *Campanula merxmuelleri* Phitos

Gr Nomos & Eparchia Chiou: island of Psara, vertical rock near 'Pigadakia' spring with an old walnut tree (*Juglans regia*), *ca*. 10 m, 38°32'N, 25°34'E, 15.08.2013, *Zografidis* obs. (photo; conf. Kit Tan, August 2013).

Confirming Sideris' record (herb. Sideris, 05.06.2005, det. Kit Tan) from Psara. Previously known only from the island of Skiros.

Chenopodiaceae

119. *Atriplex portulacoides* L. [Syn.: *Halimione portulacoides* (L.) Aellen]

Gr Nomos & Eparchia Chiou: island of Psara, rocky shore near Katsouni beach, sea level, 38°32'N, 25°33'E, 15.08.2013, *Zografidis* obs. (photo; conf. Kit Tan, August 2013).

New for Psara. Reported from all floristic regions with a coastline except Northern Pindos.

Euphorbiaceae

120. *Euphorbia peplis* L. [Syn.: *Chamaesyce peplis* (L.) Prokh.]

Gr Nomos & Eparchia Chiou: island of Psara, Lakka beach, sea level, 38°33'N, 25°33'E, 15.08.2013, *Zografidis* obs. (photo; conf. Kit Tan, August 2013).

New for Psara. On islands and along coast in Greece.

Lamiaceae

121. *Origanum onites* L.

Gr Nomos & Eparchia Chiou: island of Psara, rocky calcareous/schistose slope near the Monastery of Dormition, 400 m, 38°35'N, 25°35'E, 15.08.2013, *Zografidis* obs. (photo; conf. Kit Tan, August 2013).

New for Psara. Mainly in Aegean and eastern part of the Peloponnese.

Portulacaceae

122. *Portulaca oleracea* L.

Gr Nomos & Eparchia Chiou: island of Psara, at road margins from Hora to Lakka beach, *ca*. 10 m, 38°32'N, 25°34'E, 15.08.2013, *Zografidis* obs. (photo, conf. Kit Tan, August 2013).

New for Psara. *Portulaca oleracea* is a widespread species in Greece, known from all floristic regions.

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