

New floristic records in the Balkans: 33*

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Abstract: New chorological data are presented for 246 species and subspecies from Albania (125), Bulgaria (1, 119-124, 126-143, 150-157, 193, 194, 212, 236-246), Macedonia (195-208), Greece (14-118, 125, 144-149, 158-192, 209-211, 213-235), and Turkey-in-Europe (2-13). The taxa belong to the following families: *Alliaceae* (38, 39, 70), *Amaryllidaceae* (113), *Apiaceae* (50-52, 77, 78, 158-161, 195, 196), *Araceae* (40, 114), *Araliaceae* (15), *Asteraceae* (16-23, 53-57, 74, 79-85, 127-129, 162-164, 197, 198, 213), *Berberidaceae* (190), *Betulaceae* (86), *Boraginaceae* (58, 165), *Brassicaceae* (24, 59, 75, 130, 144, 199, 209, 214, 215, 236), *Campanulaceae* (60, 87, 88, 131), *Cannabaceae* (166), *Caprifoliaceae* (89), *Caryophyllaceae* (61, 62, 76, 90-94, 145, 146, 167, 168, 200, 212, 237), *Chenopodiaceae* (201), *Cistaceae* (202), *Colchicaceae* (115), *Cornaceae* (95), *Crassulaceae* (96, 147, 152, 169, 238), *Cucurbitaceae* (170), *Cupressaceae* (14, 119), *Cyperaceae* (41, 183), *Dipsacaceae* (203, 239), *Elaeagnaceae* (63), *Ericaceae* (216, 217), *Euphorbiaceae* (120), *Fabaceae* (25-29, 97, 132-135, 171, 172, 191, 192, 210, 218-222), *Fumariaceae* (148), *Geraniaceae* (30, 98, 173), *Grossulariaceae* (99), *Hyacinthaceae* (42-45, 71, 184), *Hypericaceae* (174, 204, 223, 224), *Iridaceae* (116-118, 124), *Juglandaceae* (225), *Juncaceae* (185, 208, 246), *Lamiaceae* (31, 64-67, 100, 149, 175, 189, 226-228, 240-243), *Lemnaceae* (186), *Liliaceae* s.l. (156, 157, 194), *Linaceae* (68, 121), *Menyanthaceae* (205), *Nymphaeaceae* (136), *Oleaceae* (69, 101, 137), *Onagraceae* (125), *Orchidaceae* (2-13, 72, 73, 141), *Orobanchaceae* (153, 154), *Papaveraceae* (32), *Poaceae* (46-49, 142, 143, 187, 188, 211, 235), *Polygalaceae* (138, 229), *Polypodiaceae* (151), *Primulaceae* (1, 230), *Rafflesiaceae* (33), *Ranunculaceae* (102, 103, 155, 176, 177, 231), *Rhamnaceae* (193), *Rosaceae* (104-108, 122, 139, 178, 179, 244), *Rubiaceae* (34, 35, 232), *Salicaceae* (233), *Santalaceae* (245), *Scrophulariaceae* s.l. (36, 109, 123, 140, 180, 181, 206, 207, 234), *Valerianaceae* (37), *Veronicaceae* (110, 111, 182), and *Violaceae* (112).

A new species for science is: *Genista willingii* (192).

New species for the countries are: Albania – *Oenothera speciosa* (125); Bulgaria – *Stachys byzantina* (243); Macedonia – *Bidens subalternans* (198).

The publication includes contributions by: A. Asenov (1), M. Aybeke (2-13), B. Biel & Kit Tan (14-49), C. Cattaneo (50-73), C. Cattaneo & M. Grano (74-76), K. Giannopoulos, Kit Tan & G. Vold (77-118), P. Glogov (119-124), A. Mullaj, L. Kashta, M. Meço, A. Mesiti, Kit Tan & Gert Vold (125), A. Petrova, I. Gerasimova & L. Domozetsky (126-143), K. Polymenakos & Kit Tan (144-149), K. Stoyanov & Ts. Raycheva (150-157), A. Strid (158-188), K. Sutorý (189), Kit Tan & G. Vold (190), Kit Tan & J. Zieliński (191-192), A. Tashev (193-194), A. Teofilovski (195-208), I. Tsialtas & Kit Tan (209-211), V. Vladimirov (212), G. Zarkos, V. Christodoulou, Kit Tan & G. Vold (213-235), A. Petrova (236-246).

This is an ongoing report in the 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 Albania and Greece by Kit Tan, for Macedonia by V. Matevski, and for Turkey-in-Europe by M. Aybeke.

Report 1

Asen Asenov

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Primulaceae

1. *Primula elatior* (L.) Hill

Bu Znepole region: Mt. Cherna Gora, in a hornbeam forest, on sandstone and mergel baserock, six generative individuals growing on an area of 1 m², 1068 m, 42°37'14"N, 22°51'44"E, 08.04.2017, A. Asenov obs.; Mt Golo Bardo, on the western slope of peak Ostritsa, in a hornbeam forest on limestone baserock, four generative individuals growing on an area of 1 m², 1093 m, 42°33'27"N, 23°03'02"E, 09.04.2017, A. Asenov obs.

This species is new for the Znepole floristic region.

Reports 2–13

Mehmet Aybeke

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Orchidaceae

2. *Epipactis helleborine* (L.) Crantz

Tu(E) A1(E) Edirne: Keşan, Mecidiye, İbrice harbor, 2.6 km towards the Italian bay, on the left side of the road, in a *Pinus* forest, 252 m, 40°41'17"N, 26°27'53"E, 22.06.2001, coll. & det. M. Aybeke (EDTU 8234); Keşan, between Beyköy-Çeltik, 200 m to Çeltik, on the left side of the road, under *Pinus* trees, on a path, 252 m a.s.l., 40°41'04"N, 26°33'36"E, 18.05.2002, coll. & det. M. Aybeke (EDTU 8370);

— A1(E) Kırklareli: Soğucak, 370 m a.s.l., 41°38'22"N, 27°39'25"E, 23.05.1993, coll. G. Dalgıç, det. M. Aybeke (EDTU 5592).

A new species for A1(E) Edirne and Kırklareli in European Turkey. According to Renz & Taubenheim (1984), this taxon was reported only for A1(E) Tekirdağ and A2(E) Istanbul.

3. *Ophrys apifera* Hudson

Tu(E) A1(E) Edirne: Keşan, 2.5 km at the Çeltik-Dişbudak road, Çamlık locality, near the fountain, in a *Pinus* forest, 252 m, 40°41'04"N, 26°33'36"E, 07.05.1995, coll. & det. M. Aybeke (EDTU 6046).

A new species for A1(E) Edirne in European Turkey. According to Renz & Taubenheim (1984), this taxon was reported only from A1(E) Kırklareli and A2(E) Istanbul.

4. *Ophrys mammosa* Desf.

Tu(E) A1(E) Çanakkale: Gelibolu, before entering the Büyük Anafartalar village, after passing the Sögütlü fountain, on a scrub-covered hillside, 252 m, 40°16'53"N, 26°19'53"E, 17.03.2001, coll. & det. M. Aybeke (EDTU 8172); at the 13th km of Gelibolu-Eceabat road, on the left side of the road, on macchie, in an eroded pasture, 20 m, 40°11'03"N, 26°21'27"E, 07.04.2001, coll. & det. M. Aybeke (EDTU 8196);

— A1(E) Edirne: Centre, behind the Medicinal Faculty, in a cherry garden, 26 m, 41°40'33"N, 26°33'31"E, 26.04.1992, coll. H. Jan, det. E. Sezik (EDTU 5907); Keşan, Mecidiye, at the seashore, 82 m, 40°38'20"N, 26°32'21"E, 17.04.1992, coll. G. Dalgıç, det. M. Aybeke (EDTU 6042); Centre, at Yurt-Kur Selimiye Student Dormitories, in grass, 32 m, 41°40'33"N, 26°33'31"E, 18.04.2001, coll. & det. M. Aybeke (EDTU 8207);

— A1(E) Kırklareli: Dereköy, on Kırklareli-Dereköy road, on the left side of the road, in a quarry, 508 m, 41°55'48"N, 27°22'14"E, 28.04.2001, coll. & det. M. Aybeke (EDTU 8225); between Kofçaz-Kocayazı, 1.2 km to Kocayazı turnout, on the right side of the road, in an oak and hornbeam forest, 637 m, 41°57'56"N, 27°12'19"E, 29.04.2001, coll. & det. M. Aybeke (EDTU 8229).

A new species for A1(E) Edirne, Kırklareli and Çanakkale in European Turkey. According to Renz & Taubenheim (1984), this taxon was found only in A1 Tekirdağ and A2(E) Istanbul.

5. *Ophrys oestriifera* M. Bieb. subsp. *oestriifera*

Tu(E) A1(E) Kırklareli: Saray, on Saray-Kıyıköy road, at the entrance to Kıyıköy, 15–20 m from the beach, on the left side of the road, in the hills, 30 m, 41°38'05"N, 28°05'41"E, 07.06.2002, coll. & det. M. Aybeke (EDTU 8376).

A new species for A1(E) Kırklareli in European Turkey. According to Renz & Taubenheim (1984), this taxon was found only in A1(E) Edirne and A2(E) Istanbul.

6. *Ophrys speculum* Link [syn.: *O. vernixia* Brot. subsp. *vernixia*]

Tu(E) A1(E) Çanakkale: Eceabat, 2.2 km on Alçitepe-Abide road, on the right side of the road,

in an open *Pinus* forest, 10 m a.s.l., 40°04'40.7"N, 26°12'56.0"E, 16.03.2001, coll. & det. *M. Aybeke* (EDTU 8175); Eceabat, behind Kerevizdere locality, among olive and *Pinus* trees, 20 m, 40°03'05.0"N, 26°13'10.8"E, 16.03.2001, coll. & det. *M. Aybeke* (EDTU 8178); Eceabat, Abide – at Seddülbahir junction to Abide, on the left side of the road, on a dirt road, under a *Pinus* tree, 25 m, 40°03'05.2"N, 26°13'00.6"E, 16.03.2001, coll. & det. *M. Aybeke* (EDTU 8180).

A new species for Çanakkale in European Turkey. According to Renz & Taubenheim (1984), this taxon was found only in A2E İstanbul.

7. *Ophrys sphegodes* Mill.

Tu(E) A1(E) Edirne: Keşan, Yerlisu village, Kurtdaşı locality, in an open *Pinus* forest, at the riverside, 95 m, 40°45'43"N, 26°40'27"E, 04.06.1995, coll. *M. Aybeke* & *N. Güler*, det. *M. Aybeke* (EDTU 6045, 7092).

A new species for A1(E) Edirne in European Turkey. According to Renz & Taubenheim (1984), this taxon was found only in A1(E) Çanakkale (Koru Mountain).

8. *Orchis laxiflora* Lam.

Tu(E) A1(E) Edirne: Keşan, Mecidiye, at the sea-shore, 4 m, 40°41'17"N, 26°27'53"E, 17.04.1992, coll. *G. Dalgıç*, det. *E. Sezik* (EDTU 5905).

A new species for A1(E) Edirne in European Turkey. According to Renz & Taubenheim (1984), this taxon was found only in A1(E) Tekirdağ and A2(E) İstanbul.

9. *Orchis morio* L. subsp. *morio*

Tu(E) A1(E) Edirne: Lalapaşa, Kalkansöğüt village, at the riverside, 502 m, 41°58'16"N, 26°48'42"E, 08.05.1988, coll. *N. Başak* & *G. Dalgıç*, det. *E. Sezik* (EDTU 2017); Keşan, Mecidiye, 42 m, 40°38'20"N, 26°32'21"E, 11.05.1992, coll. *G. Dalgıç*, det. *N. Güler* & *M. Aybeke* (EDTU 4792, 5896); Keşan, Çeltik village, in a grove, 252 m, 40°41'04"N, 26°33'36"E, 23.04.1992, coll. *G. Dalgıç*, det. *E. Sezik* (EDTU 5900); Enez, Yayla village, in a football field, 102 m, 40°37'49"N, 26°23'31"E, 22.04.2001, coll. & det. *M. Aybeke* (EDTU 8215);

— A1(E) Kırklareli: Dereköy, at the entrance of Koruköy village, on the left side of the road, on limestone, 508 m, 41°51'27"N, 27°19'28"E, 28.04.2001, coll. & det. *M. Aybeke* (EDTU 8223).

A new species for A1(E) Edirne and Kırklareli in

European Turkey. According to Renz & Taubenheim (1984), this taxon was seen only in A1(E) Tekirdağ and A2(E) İstanbul.

10. *Orchis papilionacea* L. var. *rubra* (Murray) Brot.

Tu(E) A1(E) Edirne: Keşan, on Gökçetepe road, in Pınar village about the 2nd turnout, 2.4 km, on the right side of the road, 252 m, 40°42'29"N, 26°38'14"E, 05.05.2002, coll. & det. *M. Aybeke* (EDTU 8343); Lalapaşa, on the way out of Hanlıyenice, 1.5 km towards Çatma village, on the right side of the road, in an oak forest, 252 m, 41°52'13"N, 26°41'35"E, 16.05.2002, coll. & det. *M. Aybeke* (EDTU 8361).

A new species for A1(E) Edirne in European Turkey. According to Renz & Taubenheim (1984), this taxon was reported only from A1(E) Tekirdağ, Kırklareli and A2(E) İstanbul.

11. *Orchis purpurea* Huds.

Tu(E) A1(E) Çanakkale: Eceabat, 16 km on Kilitbahir-Abide road, on the left side of the road, in a *Pinus* forest, 42 m, 40°06'46.3"N, 26°15'13.8"E, 16.03.2001, coll. & det. *M. Aybeke* (EDTU 8177);

— A1(E) Edirne: Lalapaşa, Hasanağa village, in grass, 67 m, 41°43'31"N, 26°37'29"E, 19.05.1987, coll. *F. Dane*, det. *E. Sezik* (EDTU 2728); Lalapaşa, Kalkansöğüt village, 508 m, 41°58'16"N, 26°48'42"E, 05.06.1998, coll. *N. Başak* & *G. Dalgıç*, det. *M. Aybeke* (EDTU 7942); Keşan, Seydiköy in an old cemetery, under an oak, 61 m, 40°47'22"N, 26°43'58"E, 06.04.2001, coll. & det. *M. Aybeke* (EDTU 8190);

— A1(E) Kırklareli: between Osmancık-Ertuğrul, 3 km to Ertuğrul, in an oak forest, 71 m, 41°26'49"N, 26°59'50"E, 11.05.2002, coll. *M. Aybeke* & *H. Ersoy*, det. *M. Aybeke* (EDTU 8351).

A new species for A1(E) Edirne, Kırklareli and Çanakkale in European Turkey. According to Renz & Taubenheim (1984), this taxon was seen only in A1(E) Tekirdağ and A2(E) İstanbul.

12. *Orchis simia* Lam.

Tu(E) A1(E) Çanakkale: Eceabat, from Eceabat in the direction of Gelibolu, 4.2 km on Çamlıyayla-Yalova road, on the left side of the road, among olive trees, on a hillside, 76 m, 40°15'42"N, 26°24'52"E, 17.03.2001, coll. & det. *M. Aybeke* (EDTU 8186); Gelibolu, 3.5 km towards Findıklı village, Tatardere locality, in scrub, 252 m,

40°26'03"N, 26°32'58"E, 06.04.2001, coll. & det.

M. Aybeke (EDTU 8194).

A new species for A1(E) Çanakkale in European Turkey. According to Renz & Taubenheim (1984), this taxon was reported only from A1(E) Tekirdağ.

13. *Orchis tridentata* Scop.

- Tu(E)** A1(E) Çanakkale: Eceabat, between Kumköy – B. Anafartalar, 2.5 km after the junction, on the left side of the road, on limestone and macchie, 43 m, 40°17'23"N, 26°23'48"E, 07.04.2001, coll. & det. *M. Aybeke* (EDTU 8185);
- A1(E) Edirne: Enez, Yayla village, in a football field, 102 m, 40°37'49"N, 26°23'31"E, 22.04.2001, coll. & det. *M. Aybeke* (EDTU 8213);
- A1(E) Kırklareli: 2.6 km between Çukurpınar-Armutveren, on the left side of the road and on a hillside, in an open *Carpinus* forest, in grass, 573 m, 41°50'08"N, 27°28'14"E, 28.04.2001, coll. & det. *M. Aybeke* (EDTU 8224); 22 km on Kırklareli-Demirköy road, on the left side of the road, in a pasture, in an oak forest, 252 m, 41°49'30"N, 27°45'35"E, 28.04.2001, coll. & det. *M. Aybeke* (EDTU 8230).

A new species for A1(E) Edirne, Kırklareli and Çanakkale in European Turkey. According to Renz & Taubenheim (1984), this taxon has occurred only in A1(E) Tekirdağ and A2(E) Istanbul.

Reports 14–49

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This is the seventh report of new plant-records for the island of Amorgos (phytogeographical region Kiklades, Nomos Kikladon, Eparchia Thiras) based mainly on two independent visits in April, May and June 2017. The 33 records listed are new to the island unless otherwise stated, and three species were found to be new for the floristic region Kiklades (Kik) as circumscribed in Flora Hellenica (Strid & Tan 1997), bringing the total number of new records we have found for this area to 47. Occurrence on the other Kikladean islands is briefly summarized. In addition, two new records of *Taraxacum* are provided for the N Aegean island of Thasos (Nomos Kavalas, Eparchia Thasou).

Cupressaceae

14. *Juniperus macrocarpa* Sm.

- Gr** Amorgos: SW of Kalotaritisa, *Sarcopoterium-phrygana* at northern slope of Vighles, 90 m, 36°47'10"N, 25°45'52"E, 07.06.2016, *Biel* obs. (photo); Vroutsis to ancient Arkesini, along part of E3 walking route, 100–200 m, 36°48'N, 25°49'E, 26.05.2017, *Kit Tan* & *G. Vold* obs.
- On several islands in N and C Kiklades.

Araliaceae

15. *Hedera helix* L.

- Gr** Amorgos: Arkesini, waste ground, walls above village, 210 m, 36°47'11"N, 25°48'10"E, 11.11.2014, *Biel* obs. (photo); Ano Potamos, 150 m, 36°54'N, 25°59'E, 25.05.2017, *Kit Tan* & *G. Vold* s.n.; in village of Egiali, 20 m, 36°54'N, 25°59'E, 30.05.2017, *Kit Tan* & *G. Vold* s.n.
- On several islands in N and C Kiklades. Also noted at Aghia Thekla.

Asteraceae

16. *Anthemis arvensis* L.

- Gr** Amorgos: E-NE of Lagadha near Lakko, abandoned terraces in phrygana, along part of E5 route, 360 m, 36°54'39"N, 26°00'57"E, 26.02.2014, *Biel* obs. (photo).
- Recorded from Andros (N Kiklades).

17. *Carthamus caeruleus* L.

- Gr** Amorgos: NW of Arkesini, grazed terrace with *Pistacia* near Dihstrata, 160 m, 36°47'41"N, 25°47'24"E, 03.05.2017, *Biel* 17.122; abandoned fields near Rachoula, 200 m, 36°48'N, 25°48'E, 01.06.2017, *Kit Tan* & *G. Vold* obs.
- In the Kiklades reported only from Astipalea. Also noted E of Arkesini.

18. *Crepis fraasii* Sch. Bip.

- Gr** Amorgos: E of Lagadha, phrygana at cliffs west of Krikelos, 720 m, 36°54'22"N, 26°01'15"E, 01.06.2016, *Biel* 16.120.
- Mainly N and C Kiklades (Andros, Folegandros, Kea, Naxos and Sifnos). Also noted N of Egiali.

19. *Crepis setosa* Haller f.

- Gr** Amorgos: N-NW of Egiali, Levrosos, coastal *Sarcopoterium-phrygana* slope, 40 m, 36°54'31"N, 25°58'12"E, 19.04.2017, *Biel* 17.002.
- Recorded from Andros. Also noted at Egiali, Lagadha and Tholada.

20. *Onopordum caulescens* d'Urv.

Gr Amorgos: E of Tholaria, *Spartium*-phrygana at saddle near Astratios, 210 m, 36°55'01"N, 25°59'46"E, 28.05.2014, *Biel* obs. (photo); heavily grazed fields along road from Chora to Egiali, 420 m, 36°51'N, 25°54'E, 27.05.2017, *Kit Tan* & *G. Vold* s.n.

Widespread in the Kiklades. Also noted NW of Arkesini.

21. *Onopordum illyricum* L.

Gr Amorgos: E-NE of Lagadha, abandoned field terraces with *Quercus* scrub (pasture) near chapel Ag. Varvara, 480 m, 36°54'51"N, 26°01'19"E, 30.05.2016, *Biel* obs. (photo); *loc. ibid.*, 24.05.2017 & 28.05.2017, *Kit Tan* & *G. Vold* obs.; grazed fields from Chora to Egiali, 420 m, 25°54'E, 27.05.2017, *Kit Tan* & *G. Vold* obs.; abandoned fields near Ag. Paraskevi, 60–80 m, 36°48'N, 25°46'E, 27.05.2017, *Kit Tan* & *G. Vold* obs.

New for Kiklades. Also noted NW of Kalotaritisa.

22. *Taraxacum calocephalum* Hand.-Mazz.

Gr Thasos: E-SE of Limenaria, hill slope with *Pinus* in park area, 40 m, 40°37'29"N, 24°34'55"E, 07.03.2017, *Biel* obs. (photo; det. J. Richards, July 2017).

New for Thasos and second record for the N Aegean area and Greek islands. First reported from Samothraki (see *Biel* & *Kit Tan* 2013: 134, photo).

23. *Taraxacum capricum* van Soest

Gr Thasos: W of Potamia, steep slope with phrygana and *Pteridium* on path to Prof. Ilias, 700 m, 40°43'05"N, 24°42'02"E, 15.03.2017, *Biel* 17.084 (det. J. Richards, July 2017).

New for Thasos and second record for Greece, the first being from Samothraki (see *Biel* & *Kit Tan* 2013: 134, photos).

Brassicaceae**24. *Neslia apiculata* Fisch., C.A. Mey. & Avé-Lall.**

Gr Amorgos: Kolofana to Ag. Paraskevi, in cultivated fields, 60–80 m, 36°48'N, 25°46'E, 22.05.2017, *Kit Tan* & *G. Vold* obs.

Reported from N Kiklades (Andros) and W Kiklades (Kithnos and Kimolos).

Fabaceae**25. *Medicago sativa* L. subsp. *sativa***

Gr Amorgos: NE of Katapola, seasonal wet pas-

ture behind coast, 5 m, 36°49'50"N, 25°52'01"E, 27.04.2017, *Biel* 17.056.

N and C Kiklades. The hybrid between subspecies *sativa* and *falcata* was also noted SE of Katapola.

26. *Medicago scutellata* (L.) Mill.

Gr Amorgos: N of Egiali, beach and waste ground near houses, 3 m, 36°54'19"N, 25°58'38"E, 22.04.2017, *Biel* 17.031.

Recorded from Astipalea, Milos, Paros and Siros.

27. *Melilotus neapolitanus* Ten.

Gr Amorgos: NE of Lagadha, phrygana slope near stairway, 200 m, 36°54'29"N, 26°00'05"E, 21.04.2017, *Biel* 17.028.

On several islands, mainly S and C Kiklades.

28. *Ononis variegata* L.

Gr Amorgos: N-NE of Kolofana, phrygana at western slope of Poulakas, 50 m, 36°48'05"N, 25°46'52"E, 03.05.2017, *Biel* 17.118.

On Naxos and Iraklia in C Kiklades.

29. *Vicia sibthorpii* Boiss. (Fig. 1)

Gr Amorgos: NW of Arkesini, grazed terrace with *Pistacia* near Dihstrata, 160 m, 36°47'41"N, 25°47'24"E, 03.05.2017, *Biel* 17.123.

Recorded from N Kiklades (Andros) and C Kiklades (Naxos, Paros). Also noted E of Arkesini.

Geraniaceae**30. *Geranium dissectum* L.**

Gr Amorgos: S of Chora, small stream valley below path, 230 m, 36°49'30"N, 25°53'50"E, 27.04.2017, *Biel* 17.061.

Recorded from several islands in N, W and C Kiklades.



Fig. 1. *Vicia sibthorpii* (photo B. Biel).

Lamiaceae**31. *Salvia virgata* Jacq.**

Gr Amorgos: S of Chora, terraced pasture above small stream valley, 230 m, 36°49'30"N, 25°53'50"E, 27.04.2017, *Biel* 17.060.

Recorded from Andros.

Papaveraceae**32. *Hypecoum torulosum* Å.E. Dahl**

Gr Amorgos: NW of Egiali, sandy beach of Psili Ammos, 2 m, 36°54'29"N, 25°57'59"E, 19.04.2017, *Biel* 17.004.

W and C Kiklades (Despotiko, Kithnos, Paros and Serifos). Also noted near Egiali and Katapola.

Rafflesiaceae**33. *Cytinus ruber* (Fourr.) Willd. (Fig. 2)**

Gr Amorgos: NW of Chora, *Cistus*-phrygana slope, along E2 walking route, 230 m, 36°50'05"N, 25°53'35"E, 18.03.2016, *Biel* obs. (photo).

On several islands in Kiklades. In 2015, already observed in two localities near Chora.

Rubiaceae**34. *Galium divaricatum* Lam.**

Gr Amorgos: E-NE of Lagadha, at base of steep

rocks beside path to Stavros, 680 m, 36°54'35"N, 26°02'23"E, 23.04.2017, *Biel* 17.038; *loc. ibid.*, 28.05.2017, *Kit Tan* & *G. Vold* obs.

N and C Kiklades (Andros, Ios, Mikonos, Naxos, Paros and Tinos). Also noted near Potamos and Chora.

35. *Rubia tinctorum* L.

Gr Amorgos: Lagadha to Ag. Varvara and Ag. Ioannis Theologos, phrygana on rocky limestone slopes and fields, 360–500 m, 36°55'N, 26°01'E, 24.05.2017, *Kit Tan* & *G. Vold* obs.

On several islands in Kiklades.

Scrophulariaceae**36. *Linaria simplex* Desf.**

Gr Amorgos: S-SW of Apano Potamos, rocky phrygana with *Juniperus* at S slope of Skafo, 400 m, 36°53'06"N, 25°57'55"E, 24.04.2017, *Biel* 17.046.

On several islands in the Kiklades.

Valerianaceae**37. *Valerianella microcarpa* Loisel.**

Gr Amorgos: S-SW of Lagadha, phrygana enclosed by walls, 400 m, 36°53'56"N, 25°59'43"E, 20.04.2017, *Biel* 17.019.

N and C Kiklades. Also noted near Agios Pavlos, Katapola and Lagadha.

Alliaceae**38. *Allium nigrum* L.**

Gr Amorgos: SW of Chora, fallow field and phrygana slope at path, 270 m, 36°49'39"N, 25°53'48"E, 08.06.2016, *Biel* obs. (photo); uncultivated field NE of Lagadha on way to plateau of Ag. Ioannis Theologos, 400 m, 36°55'N, 26°02'E, 28.05.2017, *Kit Tan* & *G. Vold* obs. (noted in fruit in same locality by *Biel* in 2014).

New for Kiklades.

39. *Allium roseum* L.

Gr Amorgos: S of Katapola, edge of main road with phrygana, 350 m, 36°48'09"N, 25°51'47"E, 30.04.2017, *Biel* 17.090.

Widespread in the Kiklades.

Araceae**40. *Arum italicum* Mill.**

Gr Amorgos: E-NE of Lagadha near Lakko, phrygana with shrubs at ravine, 340 m, 36°54'51"N, 26°01'19"E, 23.04.2017, *Biel* 17.037; at base of dry stone walls and old fields, Lagadha to



Fig. 2. *Cytinus ruber* (photo B. Biel).

Ag. Varvara, 360–480 m, 36°55'N, 26°01'E, 24.05.2017, *Kit Tan & G. Vold* obs.; SW of Asfodilitis, foot of cliffs at eastern ridge of Kastelas, 430 m, 36°51'32"N, 25°56'03"E, 01.05.2017, *Biel* 17.098.

Reported from Andros, Folegandros, Paros, Siros and Tinos.

Cyperaceae

41. *Carex halleriana* Asso

Gr Amorgos: NW of Katapola-Xilokeratidi, rocky phrygana with *Juniperus* and *Pistacia* on peninsula near chapel Ag. Pandeimonas, 15 m, 36°50'03"N, 25°51'21"E, 26.04.2017, *Biel* 17.053. C and S Kiklades.

Hyacinthaceae

42. *Ornithogalum arabicum* L. (Fig. 3)

Gr Amorgos: E-NE of Aghia Thekla, terraced slope with olives and shrub, 80 m, 36°48'41"N, 25°51'07"E, 29.04.2017, *Biel* 17.080a.

C and S Kiklades. Also noted near Chora, Kamari and Tholaria.

43. *Ornithogalum dictaeum* subsp. *naxense* Landström (Fig. 4)

Gr Amorgos: NE of Kamari, phrygana and scrub in depression at path to Vighles, 190 m, 36°47'55"N, 25°49'47"E, 07.04.2015, *Biel* obs. (photo).

In the Kiklades, only known from Naxos; *O. dictaeum* subsp. *dictaeum* occurs in Kriti.

44. *Ornithogalum montanum* Cirillo

Gr Amorgos: NE of Kamari, open phrygana, waste ground on saddle near Dhokatismata, 190 m, 36°48'07"N, 25°50'14"E, 07.04.2015, *Biel* obs. (photo).

Reported from N and C Kiklades.

45. *Ornithogalum pannonicum* Chaix ex Vill. (Fig. 5)

Gr Amorgos: E-NE of Lagadha, abandoned field terraces with *Quercus* scrub (pasture), 480 m, 36°54'51"N, 26°01'19"E, 29.05.2014, *Biel* 14.149; E-NE of Lagadha, rocky phrygana on hill above monastery Ag. Ioannis Theologos, 505 m, 36°55'02"N, 26°01'27"E, 29.05.2014, *Biel* 14.152; *loc. ibid.*, 28.05.2017, *Kit Tan & G. Vold* 32429; NW of Katapola-Xilokeratidi, rocky phrygana with *Juniperus* and *Pistacia* on peninsula near chapel Ag. Pandeimonas, 15 m, 36°50'03"N, 25°51'21"E, 01.04.2015, *Biel* 15.008; SE of



Fig. 3. *Ornithogalum arabicum* (photo B. Biel).



Fig. 4. *Ornithogalum dictaeum* subsp. *naxense* (photo B. Biel).



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

Lagadha, *Sarcopoterium*-phrygana at northern slope of Machos, 410 m, 36°54'04"N, 26°00'01"E, 29.05.2016, *Biel* 16.101; SE of Lagadha, steep phrygana slope with cliffs near chapel Stavros,

440 m, 36°54'05"N, 26°00'06"E, 29.05.2016, *Biel* 16.103; S-SE of Katapola, phrygana at coastal cliffs near Choristaries, 330 m, 36°47'34"N, 25°51'49"E, 30.04.2017, *Biel* 17.093; N-NW of Kolofana, *Sarcopoterium*-phrygana with *Juniperus*, NE of monastery Ag. Paraskevi, 80 m, 36°47'57"N, 25°46'10"E, 03.05.2017, *Biel* 17.115; NW of Kolofana, *Calicotome*-phrygana with *Juniperus* on ridge near Aghriomelisa, 100 m, 36°48'02"N, 25°46'14"E, 03.05.2017, *Biel* 17.117; N of Chozoviotisa monastery, phrygana and gravelly slopes below Prof. Ilias, 300 m, 36°50'N, 25°55'E, 21.05.2017, *Kit Tan & G. Vold* 32310; S-SE of Katapola, near Skopi, phrygana along old mule path, 340 m, 36°48'N, 25°52'E, 22.05.2017, *Kit Tan & G. Vold* 32337; N of Ag. Paraskevi, phrygana and abandoned fields, 60-80 m, 36°48'N, 25°46'E, 22.05.2017, *Kit Tan & G. Vold* 32367; Asfodilitis to Exo Meria along E1 walking route, old terraces and phrygana, 260 m, 36°52'N, 25°57'E, 25.05.2017, *Kit Tan & G. Vold* 32430; Vroutsi to acropolis of ancient Arkesini, flagstone path forming part of E3 walking route, 100–200 m, 36°48'N, 25°49'E, 26.05.2017, *Kit Tan & G. Vold* 32460; along footpath leading up to windmills at Machos, phrygana, 450–500 m, 36°54'N, 26°00'E, 31.05.2017, *Kit Tan & G. Vold* 32524.

On several islands mainly in C Kiklades. Widely distributed on Amorgos, 21 localities have been noted. Plants were formerly labelled as with affinities to *O. umbellatum*.

Poaceae

46. *Aegilops neglecta* Req. ex Bertol.

Gr Amorgos: NE of Katapola, phrygana slope below road to Pira Rachidi, 15 m, 36°49'50"N, 25°52'11"E, 27.04.2017, *Biel* 17.057.

C and S Kiklades (Folegandros, Ios, Milos, Naxos, Serifos, Sikinos and Thira).

47. *Aira cupaniana* Guss.

Gr Amorgos: S-SE of Katapola, phrygana and wet ground along path near Skopi, 300 m, 36°48'19"N, 25°52'21"E, 30.04.2017, *Biel* 17.084; *loc. ibid.*, 21.05.2017, *Kit Tan & G. Vold* s.n.

Fairly widespread in Kiklades.

48. *Phleum subulatum* (Savi) Asch. & Graebn.

Gr Amorgos: S-SE of Apano Potamos, rocky phrygana at summit area of Sellada, 595 m, 36°53'19"N, 25°59'03"E, 24.04.2017, *Biel* 17.043.

Scattered, reported from Andros, Kea, Mikonos, Milos, Naxos and Thira.

49. *Rostraria obtusiflora* (Boiss.) Holub (Fig. 6)

Gr Amorgos: NE of Tholaria, gravelly beach of Meg. Vlichada, 2 m, 36°55'33"N, 26°00'07"E, 02.06.2016, *Biel* 16.129.

New for Kiklades. In Cretan area and E Aegean islands.



Fig. 6. *Rostraria obtusiflora* (photo B. Biel).

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

Reports 50–73

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The following records from NE Greece are new for their eparchia unless otherwise stated.

Apiaceae**50. *Bupleurum lancifolium* Hornem. (Fig. 7)**

Gr Nomos Rodopis, Eparchia Sapon: Chamilo, at the edge of cultivated field, 116 m, 40°58'58"N, 25°40'45"E, 26.05.2017, *Cattaneo* 170 (herb. Cattaneo).

New for nomos and eparchia.

51. *Bupleurum odontites* L.

Gr Nomos Rodopis, Eparchia Sapon: Chamilo, in cultivated cereal field, 123 m, 40°59'12"N, 25°40'51"E, 26.05.2017, *Cattaneo* 138 (herb. Cattaneo); 3.5 km SW of Arsakeio, on road to Alexandroupolis, dry meadows and cultivated fields by graveyard, 50 m, 40°59'N, 25°39'E, 30.05.1997, *Strid, Kit Tan & Vold* 43336 (ATH, G, LD).

52. *Smyrniium perfoliatum* L.

Gr Nomos Evrou, Eparchia Alexandroupoleos: Avantas, at the edge of cultivated field, 113 m, 40°56'09"N, 25°54'18"E, 29.05.2017, *C. Cattaneo* obs.; 4 km N of Leptokarya, meadow in opening of deciduous oak woodland, on schist, 800 m, 41.06'N, 25°54'E, 08.06.1991, *Strid & Kit Tan* 31604 (C, G, UPA).

Asteraceae**53. *Centaurea benedicta* (L.) L.**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Kirki, fallow field, 184 m, 40°58'38"N, 25°47'53"E, 30.05.2017, *C. Cattaneo* obs.; SW of Atami, ca. 18 km from Sapes along main road to Alexandroupolis, field margins, 220 m, 40.54'N, 25°41'E, 07.06.1991, *Strid & Kit Tan* 31494 (ATH, G, UPA).

54. *Crepis micrantha* Czerep.

Gr Nomos Evrou, Eparchia Alexandroupoleos: Makri, at the edge of an olive grove, 37 m, 40°50'57"N, 25°44'53"E, 27.05.2017, *Cattaneo* 114 (herb. Cattaneo).

55. *Lactuca tuberosa* Jacq.

Gr Nomos Evrou, Eparchia Alexandroupoleos: Mesimvria, phrygana, 59 m, 40°52'00"N, 25°38'15"E, 20.05.2017, *Cattaneo* 126 (herb. Cattaneo).

56. *Tolpis umbellata* Bertol.

Gr Nomos Evrou, Eparchia Alexandroupoleos: Sikorrachi, grassy meadow, 230 m, 40°58'51"N, 25°43'55"E, 19.05.2017, *Cattaneo* obs.



Fig. 7. *Bupleurum lancifolium* (photo C. Cattaneo).

57. *Tyrimnus leucographus* (L.) Cass.

Gr Nomos Evrou, Eparchia Alexandroupoleos: Amfitriti, fallow field, 45 m, 40°53'24"N, 25°54'33"E 21.05.2017, *Cattaneo* 199 (herb. Cattaneo).

Boraginaceae**58. *Anchusa azurea* Mill.**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Nea Hili, near sandy coast, 7 m, 40°51'05"N, 25°49'24"E, 25.05.2017, *C. Cattaneo* obs.

Brassicaceae**59. *Erysimum cuspidatum* (M. Bieb.) DC.**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Kirki, ruderal places, 196 m, 40°58'33"N, 25°47'37"E, 30.05.2017, *Cattaneo* 164 (herb. Cattaneo).

Campanulaceae**60. *Campanula sparsa* Friv.**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Perama, grassy meadow, 196 m, 40°54'40"N, 25°38'21"E, 18.05.2017, *Cattaneo* 208 (herb. Cattaneo).

Caryophyllaceae**61. *Dianthus cruentus* Griseb.**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Avantas, sandy soil near stream, 71 m, 40°55'56"N, 25°54'33"E, 29.05.2017, *Cattaneo* 252 (herb. Cattaneo).

62. *Dianthus viscidus* Bory & Chaub.

Gr Nomos Evrou, Eparchia Alexandroupoleos: Kirki, dry meadow on sedimentary soil, 270 m, 40°58'10"N, 25°48'03"E, 30.05.2017, *Cattaneo* 177 (herb. Cattaneo).

Elaeagnaceae**63. *Elaeagnus angustifolia* L.**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Avantas, ruderal places, 71 m, 40°55'38"N, 25°54'36"E, 24.05.2017, *Cattaneo* 153 (herb. Cattaneo).

Lamiaceae**64. *Acinos arvensis* (Lam.) Dandy**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Kirki, dry meadow with phrygana, 205 m, 40°58'28"N, 25°47'13"E, 30.05.2017, *Cattaneo* 212 (herb. Cattaneo).

65. *Phlomis herba-venti* subsp. *pungens* (Willd.) Maire ex DeFillips

Gr Nomos Rodopis, Eparchia Sapon: Chamilo, cultivated field, 115 m, 40°58'57"N, 25°40'44"E, 26.05.2017, *Cattaneo* 219 (herb. Cattaneo).

66. *Phlomis tuberosa* L. (Fig. 8)

Gr Nomos Rodopis, Eparchia Sapon: Chamilo, at the edge of cereal field, 94 m, 40°58'18"N, 25°40'37"E, 26.05.2017, *Cattaneo* 237 (herb. Cattaneo).

New for nomos and eparchia.



Fig. 8. *Phlomis tuberosa* (photo C. Cattaneo).

67. *Prunella vulgaris* L.

Gr Nomos Evrou, Eparchia Alexandroupoleos: Sikorrachi, grassy meadow near stream, 249 m, 40°59'05"N, 25°44'37"E, 26.05.2017, *Cattaneo* 156 (herb. Cattaneo).

Linaceae**68. *Linum strictum* L.**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Nea Hili, on sedimentary soil near the coast, 34 m,

40°51'21"N, 25°49'37"E, 25.05.2017, *Cattaneo* 204 (herb. Cattaneo); SW of Atami, ca. 18 km from Sapes along main road to Alexandroupolis, field margins, 220 m, 40.54'N, 25°41'E, 07.06.1991, *Strid & Kit Tan* 31511 (C).

Oleaceae**69. *Fraxinus excelsior* L. (Fig. 9)**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Avantas, edge of field near stream, 155 m, 40°56'15"N, 25°54'11"E, 29.05.2017, C. *Cattaneo* obs.

New for nomos and eparchia.



Fig. 9. *Fraxinus excelsior* (photo C. Cattaneo).

Alliaceae**70. *Allium scorodoprasum* subsp. *rotundum* (L.)**

Stearn

Gr Nomos Evrou, Eparchia Alexandroupoleos: Sikorrachi, grassy meadow, 218 m, 40°58'48"N, 25°43'46"E, 19.05.2017, *Cattaneo* 148 (herb. Cattaneo); 3 km from Mati on road to Komotini, *Quercus coccifera* scrub, 100 m, 40°52'N, 25°43'E, 07.06.1991, *Strid & Kit Tan* 31521 (ATH, G, LD, herb. Strid).

Hyacinthaceae**71. *Ornithogalum narbonense* L.**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Avantas, fallow field, 135 m, 40°56'17"N, 25°54'23"E, 29.05.2017, *Cattaneo* 137 (herb. Cattaneo).

Orchidaceae**72. *Anacamptis laxiflora* (Lam.) R.M. Bateman, Pridgeon & M.W. Chase**

Gr Nomos Evrou, Eparchia Alexandroupoleos: Kirki,

damp meadow, 205 m, 40°58'23"N, 25°47'58"E, 30.05.2017, *Cattaneo* 181 (herb. Cattaneo).

73. *Serapias vomeracea* (Burm. f.) Briq.

Gr Nomos Evrou, Eparchia Alexandroupoleos: Kirki, damp meadow, 205 m, 40°58'23"N, 25°47'58"E, 30.05.2017, *Cattaneo* 180 (herb. Cattaneo).

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Reports 74–76

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Three new records are provided for the island of Tilos (phytogeographical region E Aegean, Nomos Dodekanisou, Eparchia Rodou), based on a brief visit in April 2017.

Asteraceae

74. *Lactuca acanthifolia* (Willd.) Boiss.

Gr Tilos: Krialos, near Ag. Pandeimon monastery on the west side of Mt Profitis Ilias, in crevices of limestone cliffs, 259 m, 36°27'10"N, 27°18'13"E, 22.04.2017, *Cattaneo* & *Grano* obs.

Recorded on several islands in the E Aegean.

Brassicaceae

75. *Malcomia nana* (DC.) Boiss.

Gr Tilos: Mesovouno, Tholos Bay, S of Livadia, N-facing limestone cliffs, 159 m, 36°23'24"N, 27°23'30"E, 24.04.2017, *Cattaneo* & *Grano* Tilo 27 (herb. Cattaneo).

Also occurring on the E Aegean islands of Chalki, Kos and Rodos.

Caryophyllaceae

76. *Paronychia macrosepala* Boiss.
(Fig. 10)

Gr Tilos: Eristos beach, 3 m, 36°25'56"N 27°21'11"E, 23.04.2017, *Cattaneo* & *Grano* Tilo 103 (herb. Cattaneo).

On several islands in the E Aegean.

Reports 77–118

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Mt Skiadovouni (1466 m at Lipsouta summit) is a long low mountain at the border of prefectures (nomi) Iliia and Achaia in NW Peloponnisos. It is flanked on the right by Mt Lambia (1793 m) and Mt Erimanthos (2224 m) and has three fairly low summits, viz., Lipsouta (1466 m), Pirgos (1423 m) and Prof. Ilias (1183 m). The name of the mountain derives from the small village of Skiadas on the Achaia side. Skiadas, 'Σκιά του Αδή', means the shadow of the god of the underworld, Hades, who shuns sunlight. The village is always in deep shadow till late in the morning because of the high mountain in front of it.

Considering the ease and accessibility of Mt Skiadovouni we are surprised there are no records or collections from the area. Most botanists aim for the higher peaks of Lambia and Erimanthos including Kallifoni, as these mountains have a known and interesting alpine flora. Mts Skiadovouni and Lambia were also excluded from the work of Maroulis (2003) which dealt primarily with the flora and vegetation of Mt Erimanthos.

We made two visits to Skiadovouni, in early spring (on 1 March 2017) and in early summer (17 June 2017). The most visual development of the flora would



Fig. 10. *Paronychia macrosepala* (photo C. Cattaneo).

be from early to mid-May before the large flocks of sheep and goats move up for their summer grazing. Approximately 200 species new for the mountain were noted during our two visits, most of them also occur on Mts Lambia and Erimanthos. The more interesting taxa are cited in the following list.

We thank Giorgos Vendras (Vasilaki, Ilias) for accompanying us to Mt Skiadovouni. On a previous occasion he had also kindly shown us *Typha minima* in a new locality at the source of the Lefkianias river, near to his fine potato patch. This is the second record for Greece.

Apiaceae

77. *Hellenocarum multiflorum* (Sm.) H. Wolff

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1260 m, 37°53'N, 21°44'E, 01.03.2017, *Kit Tan & G. Vold* obs.; at Lipsouta summit, 1435 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs.

78. *Opopanax hispidus* (Friv.) Griseb.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1260 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs.

Asteraceae

79. *Achillea holosericea* Sm.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1418 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

80. *Centaurea iberica* subsp. *holzmanniana* (Boiss.) Dostál

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1284 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

81. *Centaurea raphanina* subsp. *mixta* (DC.) Runemark

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1425 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

82. *Doronicum orientale* Hoffm.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1422 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

83. *Hieracium pannosum* Boiss.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1435 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs.

84. *Inula verbascifolia* subsp. *parnassica* (Boiss. & Heldr.) Tutin

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1435 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs.

85. *Onopordum illyricum* L.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, lower slopes, 1284 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

Betulaceae

86. *Carpinus orientalis* Mill.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1410 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* 32670 (herb. Giannopoulos & photos).

Tree more than 0.5 m in diameter at base, emerging from vertical rock fissure.

Campanulaceae

87. *Asyneuma limonifolium* (L.) Janch.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, lower slopes, 1306 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

88. *Campanula versicolor* Andrews (Fig. 11)

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1300 m, 37°53'N, 21°44'E, *Kit Tan & G. Vold* obs.; at Lipsouta summit, 1412 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

Caprifoliaceae

89. *Sambucus ebulus* L.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1410 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs.

In ground thick with nitrified waste below *Carpinus orientalis*.

Caryophyllaceae

90. *Cerastium brachypetalum* subsp. *roeseri* (Boiss. & Heldr.) Nyman

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1426 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

91. *Cerastium candidissimum* Correns (Fig. 11)

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1426 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

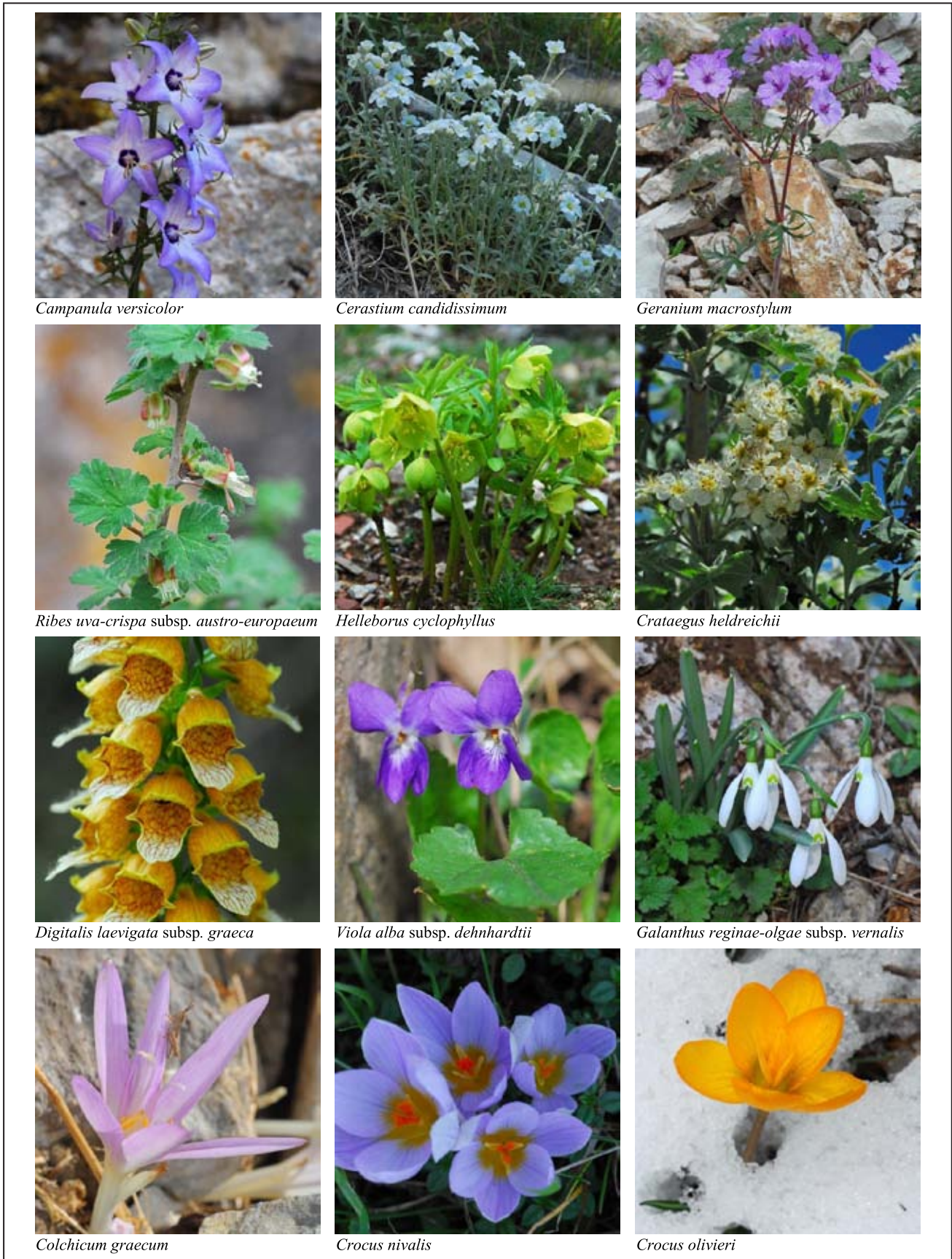


Fig. 11. Flora of Mt Skiadovouni, selected taxa (photos by K. Giannopoulos).

92. *Dianthus viscidus* Bory & Chaub.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, lower slopes, 1282 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

93. *Petrorhagia illyrica* (L.) P.W. Ball & Heywood

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, lower slopes, 1300 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

94. *Silene radicata* Boiss. & Heldr.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, stony and rocky limestone slopes, 1282 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* 32665 (herb. Giannopoulos & photos).

Cornaceae**95. *Cornus mas*** L.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1420 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs.

Crassulaceae**96. *Sedum amplexicaule*** subsp. *tenuifolium* (Sm.) Greuter

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1436 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs.

Fabaceae**97. *Astragalus depressus*** L.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1435 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs.

Geraniaceae**98. *Geranium macrostylum*** Boiss. (Fig. 11)

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1435 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs.

Grossulariaceae**99. *Ribes uva-crispa*** subsp. *austro-europaeum* (Bornm.) Bech. (Fig. 11)

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1260-1307 m, 37°53'N, 21°44'E, 01.03.2017, *Kit Tan & G. Vold* obs.

Lamiaceae**100. *Scutellaria rupestris*** subsp. *parnassica* (Boiss.) Greuter & Burdet

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at

Lipsouta summit, 1405 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

Oleaceae**101. *Fraxinus ornus*** L.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, 1343 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

Growing in crevices of windswept, vertical limestone rock.

Ranunculaceae**102. *Anemone apennina*** subsp. *blanda* (Schott & Kotschy) Nyman

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1260–1300 m, 37°53'N, 21°44'E, 01.03.2017, *Kit Tan & G. Vold* obs.

103. *Helleborus cyclophyllus* A. Braun (Fig. 11)

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1260–1300 m, 37°53'N, 21°44'E, 01.03.2017, *Kit Tan & G. Vold* obs.

Rosaceae**104. *Crataegus heldreichii*** Boiss. (Fig. 11)

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1418 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs. (photos).

105. *Crataegus monogyna* Jacq.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1416 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs.

106. *Potentilla micrantha* DC.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1332 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs.

107. *Prunus prostrata* Labill.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1300 m, 37°53'N, 21°44'E, 01.03.2017, *Kit Tan & G. Vold* obs.

108. *Rosa pulverulenta* M. Bieb.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1332 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan & al.* obs.

Scrophulariaceae**109. *Verbascum epixanthinum*** Boiss. & Heldr.

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, lower slopes, 1300 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan & al.* obs.

Veronicaceae

- 110. *Digitalis laevigata* subsp. *graeca*** (Ivanina) Werner (Fig. 11)
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1298 m, 37°53'N, 21°44'E, 01.03.2017, *Kit Tan* & *G. Vold* obs.
- 111. *Veronica glauca* subsp. *peloponnesiaca*** (Boiss. & Orph.) Maire & Petitm.
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1410 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan* & *al.* obs.

Violaceae

- 112. *Viola alba* subsp. *dehnhardtii*** (Ten.) W. Becker (Fig. 11)
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1230 m, 37°53'N, 21°43'E, 01.03.2017, *Kit Tan* & *G. Vold* obs.; at Lipsouta summit, 1424 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan* & *al.* obs.

Amaryllidaceae

- 113. *Galanthus reginae-olgae* subsp. *vernalis*** Kamari (Fig. 11)
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, 1430 m, 37°53'N, 21°44'E, 17.06.2017, *Kit Tan* & *al.* obs. (not flowering).

Araceae

- 114. *Arum cylindraceum*** Gasp.
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, at Lipsouta summit, 1429 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan* & *al.* obs. (photos).

Colchicaceae

- 115. *Colchicum graecum*** K.M. Perss. (Fig. 11)
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, lower slopes, 1335 m, 37°53'N, 21°43'E, 17.06.2017, *Kit Tan* & *al.* obs. (photos).

Iridaceae

- 116. *Crocus nivalis*** Bory & Chaub. (Fig. 11)
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1260 m, 37°53'N, 21°44'E, 01.03.2017, *Kit Tan* & *G. Vold* obs.
 Forming bluish-lilac carpets.
- 117. *Crocus olivieri*** J. Gay (Fig. 11)
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1260 m, 37°53'N, 21°44'E, 01.03.2017, *Kit Tan* & *G. Vold* obs.
 Forming golden-yellow carpets.

118. *Moraea sisyrinchium* (L.) Ker-Gawl.

- Gr** Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1260 m, 37°53'N, 21°44'E, 01.03.2017, *Kit Tan* & *G. Vold* obs.

Reports 119–124**Plamen Glogov**

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Cupressaceae

- 119. *Juniperus oxycedrus*** L. (Fig. 12)
Bu Mt Sredna Gora (*Western*): Mt Lozen, on the northern slope, in Peshunitsa village zone, Gorni Lozen, above the river and near the Shooting Complex, 42°36'10.24"N, 23°28'48.54"E, 15.05.2017, coll. *P. Glogov* (SO 107760)



Fig. 12. *Juniperus oxycedrus* (photo P. Glogov).

The species was found in a shrubland rock community co-dominated by *Carpinus orientalis*, along with *Juniperus communis*, *Fraxinus ornus* and *Pinus sylvestris*. In the herbaceous cover, the species *Onobrychis arenaria*, *Dorycnium herbaceum*, *Alyssum murale*, and *Trifolium alpestre* prevailed.

This sub-Mediterranean species is new for the territory of Mt Lozen. It was reported for Sashtinska Sredna Gora and Ihtimanska Sredna Gora (Velchev & al. 1968). To the best of our knowledge, this new locality is the westernmost for this species in the Sredna Gora floristic region.

Euphorbiaceae

120. *Euphorbia oblongata* Griseb.

Bu Mt Sredna Gora (*Western*): Mt Lozen, in Obrochishteto locality, above Pasarel village, on the margin of a trail, 42°33'35.96"N, 23°29'30.26"E, 27.05.2017, coll. P. Glogov (SO 107763).

This characteristic species for the xerophytic woodlands and shrublands is new for the Sredna Gora floristic region (Assyov & Petrova 2012).

Linaceae

121. *Linum bienne* Mill.

Bu Mt Sredna Gora (*Western*): Mt Lozen, in grasslands, on a south-facing slope, near Pasarel village, 42°56'70,5"N, 23°49'16,8"E, 27.05.2017, coll. P. Glogov (SO 107764).

This species has not been reported so far for the Sredna Gora floristic region. According to Cheshmedzhiev (2003), *L. bienne* was found in dry places at the Black Sea Coast (*Southern*), Danubian Plain, Forebalkan, Balkan Range (*Eastern*), Sofia region, Znepole region, Vitosha region, Valley of River Struma, Valley of River Mesta, Rhodopi Mts (*Eastern*), Thracian Lowland, Tundzha Hilly Country, and Mt Strandza. According to Assyov & Petrova (2012), the species does not occur in Sofia region, Znepole region, Vitosha region, and the Valley of River Mesta.

Rosaceae

122. *Sanguisorba officinalis* L.

Bu Mt Sredna Gora (*Western*): Mt Lozen, in a mesophilous grassland near artificial stands of poplar, above German village, 42°35'24,46224"N, 23°26'16,95624"E, 28.05.2017, coll. P. Glogov (SO 107762).

The species has not been reported so far for the

Sredna Gora floristic region. It was reported from the Balkan Range, Sofia region, Znepole region, Vitosha region, West Frontier Mts, Rila Mts, and Rhodopi Mts (*Western, Central*) (Markova 1992; Popova 2011; Assyov & Petrova 2012).

Scrophulariaceae

123. *Pedicularis leucodon* Griseb. (Fig. 13)

Bu Mt Sredna Gora (*Western*): Mt Lozen, in a marshy meadow near a swamp under peak Golyama Rakovitsa, 42°35'14.73"N, 23°26'49.56"E, 28.05.2017, coll. P. Glogov (SO 107765).



Fig. 13. *Pedicularis leucodon* Griseb. (photo P. Glogov).

This Balkan endemic species was reported in two earlier studies conducted on the territory of Mt Lozen, but it was not mentioned for the floristic region of Sredna Gora by Cheshmedzhiev (2003) and Assyov & Petrova (2012). Ganchev (1961) reported the species as part of the association *Agrostis capilaris* + *Festuca pseudoovina* + *Trifolium* sp. div. in the locality of Bucheto (German village). The species was also found in a meadow under peak Lalina Mogila (Apostolova 1982, SOM 149649).

Iridaceae**124. *Iris pseudacorus* L. (Fig. 14)**

Bu Mt Sredna Gora (Western): Mt Lozen, near peak Golyama Rakovitsa, 42°35'14,54"N, 23°26'50,49"E, 28.05.2017, coll. P. Glogov (SO 107761).

This new species for the flora of the Sredna Gora floristic region was found in a wet meadow, together with *Iris sibirica*, *Veratrum album* subsp. *lobelianum*, *Juncus effusus*, *Alopecurus pratensis*, *Ranunculus repens*, etc. So far the species has been reported from all floristic regions, except for the Pirin Mts, Mt Slavyanka, Mt Belasitsa, and Mt Sredna Gora (Assyov & Petrova 2012).



Fig. 14. *Iris pseudacorus* (photo P. Glogov).

Report 125

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Onagraceae**125. *Oenothera speciosa* Nutt. (Figs. 15-17)**

Al Durrës district: Apollonia sector, Durrës beach, on vacant land between the streets and buildings in the city, 3-4 m, 41°18'N, 19°29'E, 19.07.2017, *Mullaj* obs.;

— Divjaka district: Mizë, centre of the town of Divjakë, near road to the park, 4-5 m, 41°00'N, 19°32'E, 09.06.2017, *Kit Tan* & *G. Vold* 32600 (ATH, C, TIR);

— Vlorë district: Narta area, NW of Vlorë, along road connecting National Road to the coast, passing through the saline Narta Lagoon and salt-works, ca. 2 m, 40°33'N, 19°26'E, 02.05.2015, *Mullaj* obs.

Gr Nomos Ioanninon, Eparchia Dodonis: edge of field near Kalpaki, 400 m, 39°54'N, 20°36'E, 12.06.2017, *Kit Tan* & *G. Vold* obs.

— Nomos Ioanninon, Eparchia Konitsis: Ag. Paraskevi, 700 m, 40°08'N, 20°51'E, 12.06.2017, *Kit Tan* & *G. Vold* obs.

— Nomos & Eparchia Ilias: near Savalia, SE of Gastouni, 15 m, 37°48'N, 21°17'E, 16.06.2017, *Kit Tan* & *al.* 32649 (ATH).

Officially documented as new for Albania, N Pindos and Peloponnese in Greece. *Oenothera speciosa* is a herbaceous perennial growing to 50 cm tall and spreading easily by its runners and seeds. The flowers open in the evening and early morning, they close only in strong sunshine. The petals are white and turn rose-pink from the outer edge inwards as they age. The throat of the flower, stamens and stigmas are greenish-yellow or pale yellow. It is native to Mexico and southeastern United States and in some areas there, has developed into an aggressive invasive weed along roadsides and in disturbed places. Several varieties have been bred horticulturally.

According to Rakaj & Rostański (2009) there are five naturalized species of *Oenothera* in Albania and one commonly cultivated as an ornamental, viz., *O. fruticosa* L. All five species are in sect. *Oenothera* – four belonging to subsect. *Oenothera* (*O. biennis* L., *O. glazioviana* Micheli, *O. suaveolens* Pers. and *O. ×fallax* Renner), and one (*O. parodiana* Munz) belonging

to subsect. *Munzia*. However, there was no mention of the beautiful *O. speciosa*.

In Divjakë, this plant is common in the town parks, playground areas, self-sown on roadside pavements, around street lamp posts, car parks, abandoned ground, building plots and other ruderal areas. It has a long flowering period from May to July, fruiting from late June to August. Seed is abundantly produced. Although thriving on well-watered ground it is also drought-resistant, this factor contributing to its spread and survival. It is now widespread in the coastal areas of S Albania, mostly in sporadic populations and of course, in or near gardens, but not spontaneous, e.g., noted at Shengjin and Velipoje. However, in the Narta area (see Fig. 15) and beach of Durrës there is a tendency for the species to become invasive unless control measures are taken.



Fig. 15. *Oenothera speciosa* at Narta (photo A. Mullaj).

In Greece the species became a popular ornamental within the last decade on account of its attractive and fragrant flowers (the specific name, *speciosa*, means 'showy'), and frequently escapes. The first report of naturalized populations is from the Boeotian plain in Sterea Ellas, at the northwestern margin of the dried-up lake Kopias. Since then it has been recorded from Crete and S Pindos where the plants are stated to have arisen spontaneously at roadsides, originating from plants in nearby gardens and olive groves. In N Pindos, Greece it was noted at Kalpaki and Ag. Paraskevi on the way to Fourka. It was collected in Ilias (W Peloponnisos) ca. 50 km from Pyrgos, on a grassy verge a few metres from a small nursery which has been in operation for many years. The owner informed us that the plant first

appeared near his nursery ca. 25 years ago but had not been planted, grown or sold by him as an ornamental. It has since spread a short distance along the main road, on both sides of the nursery. As the species has persisted for at least a quarter century without human intervention, we can consider it a well-established rather than a casual alien.

The localities in the maps (Figs. 16 & 17) are of naturalized populations.

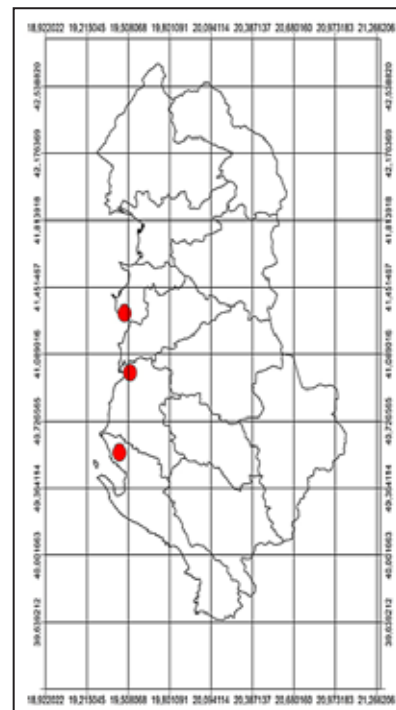


Fig. 16. Distribution of *Oenothera speciosa* in Albania (prepared by A. Mesiti).

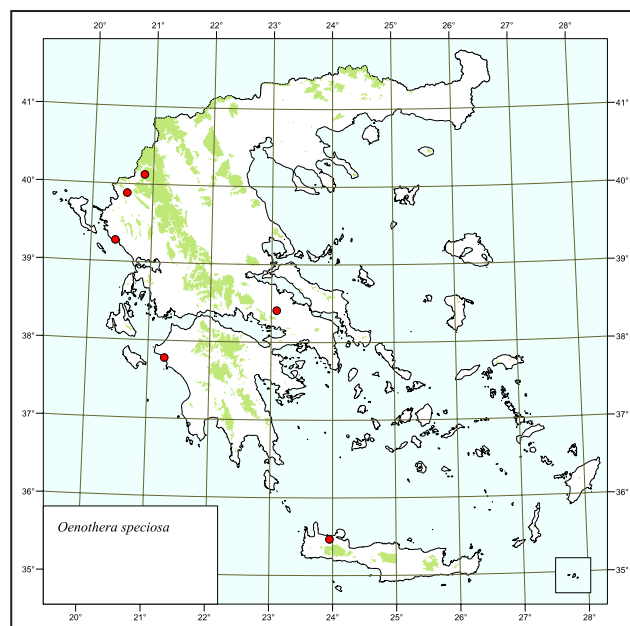


Fig. 17. Distribution of *Oenothera speciosa* in Greece.

ReporDs 126–143

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Vlahina frontier mountain lies in SW Bulgaria (highest peak Kadiytza – 1924 m) and has a diverse geomorphology, lithology and climatic conditions. There are no detailed studies of the flora of the mountain, although some rare for Bulgaria plants have their singular localities there (Vladimirov 2014). New data for the flora of the West Frontier Mts floristic region in Bulgaria, collected from Mt Vlahina, are presented below.

Asteraceae

127. *Artemisia alba* L.

Bu West Frontier Mts: Mt Vlahina, SW of Luchishte Stonepit, above Logodazh village, Blagoevgrad district, in dry grassy places, on limestone, 42.01507°N, 22.91780°E, 03.06.2017, coll. A. Petrova (SOM 173722).

A new species for this floristic region (Gussev 2012).

128. *Tragopogon dubius* Scop.

Bu West Frontier Mts: Mt Vlahina, along the road to Gabrovo village, Blagoevgrad district, 41.904465°N, 22.972131°E, 03.06.2017, A. Petrova obs.

Distribution of this common species is not well documented across the floristic regions (Peev 1992; Delipavlov 2011).

129. *Tragopogon pterodes* Pančić

Bu West Frontier Mts: Mt Vlahina, SE of Luchishte Stonepit, above Logodazh village, Blagoevgrad district, in dry grassy places, on limestone, 42.01507°N, 22.91780°E, 03.06.2017, coll. A. Petrova, I. Gerasimova & L. Domozetsky (SOM 173826).

This is a Balkan-Anatolian geoelement, new for this floristic region (Assyov & Petrova 2012).

Brassicaceae

130. *Hesperis tristis* L.

Bu West Frontier Mts: Mt Vlahina, SE of Luchishte

Stonepit, above Logodazh village, Blagoevgrad district, in dry grassy places, on limestone, app. 42.015411°N, 22.917764°E, 03.06.2017, coll. A. Petrova & I. Gerasimova (SOM 173761).

A new species for this floristic region (Ančev 2007).

Campanulaceae

131. *Asyneuma limonifolium* (L.) Janch. subsp. *limonifolium*

Bu West Frontier Mts: Mt Vlahina, SE of Luchishte Stonepit, above Logodazh village, Blagoevgrad district, in dry grassy places, on limestone, 42.017250°N, 22.917320°E, 03.06.2017, coll. A. Petrova, I. Gerasimova & L. Domozetsky (SOM 173725).

This is a new species for the region (Ančev 2012).

Fabaceae

132. *Astragalus spruneri* Boiss.

Bu West Frontier Mts: Mt Vlahina, in grassy places along the road to Luchishte Stonepit, above Logodazh village, Blagoevgrad district, 42.00535°N, 22.93417°E, 03.06.2017, coll. L. Domozetsky (SOM 173723).

A new species for the region (Tersiisky 2011).

133. *Colutea arborescens* L.

Bu West Frontier Mts: Mt Vlahina, along the road to Sushitsa village, Simitli district, 41.81862°N, 23.08047°E, 16.07.2017, coll. L. Domozetsky (SOM 174060).

A new species for the region (Kuzmanov 1974; Assyov & Petrova 2012).

134. *Coronilla scorpioides* (L.) C. Koch

Bu West Frontier Mts: Mt Vlahina, SE of Luchishte Stonepit, above Logodazh village, Blagoevgrad district, in dry grassy places, on limestone, 42.015411°N, 22.917764°E, 03.06.2017, coll. A. Petrova & I. Gerasimova (SOM 173741).

A new species for the region (Assyov & Petrova 2012).

135. *Trigonella gladiata* M. Bieb.

Bu West Frontier Mts: Mt Vlahina, SE of Luchishte Stonepit, above Logodazh village, Blagoevgrad district, in dry grassy places, on limestone, 42.015411°N, 22.917764°E, 03.06.2017, coll. A. Petrova, I. Gerasimova & L. Domozetsky (SOM 173827).

A new species for the region (Tersiisky 2011; Assyov & Petrova 2012).

Nymphaeaceae**136. *Nymphaea alba* L.**

Bu West Frontier Mts: Mt Vlahina, in a small artificial pond in the surroundings of Debochitsa village, Blagoevgrad district, 1090 m, 41.855104°N, 22.955867°E, with flowers, 2012–2015, *L. Domozetsky*, repeated observations, 03.06.2017, *L. Domozetsky*, *A. Petrova* & *I. Gerasimova* obs.

Recent distribution of this hydrophyte species in Bulgaria is local and at lower altitudes (Peev & Tsoneva 2015). The origin of this locality is artificial, the White Waterlilies were planted there about 20 years ago (according to the personal communication of a family living nearby). Presently, the population is vigorous (Fig. 18).



Fig. 18. *Nymphaea alba* in the artificial pond near Debochitsa village, Mt Vlahina, July 2015 (photo *L. Domozetsky*).

Oleaceae**137. *Jasminum fruticans* L.**

Bu West Frontier Mts: Mt Vlahina, in rocky places along the road to Sushitsa village, Simitli district, 41.81918°N, 23.07912°E, 16.07.2017, coll. *L. Domozetsky* (SOM 174062).

A new species for this floristic region (Assyov & Petrova 2012).

Polygalaceae**138. *Polygala oxyptera* Rchb.**

Bu West Frontier Mts: Mt Vlahina, in a wet meadow close to the artificial pond with White Waterlilies in the surroundings of Debochitsa village, Blagoevgrad district, 1090 m, 41.856834°N, 22.95639°E, 03.06.2017, coll. *A. Petrova* (SOM 173801).

A new species for the region (Kožuharov & Petrova 1979; Assyov & Petrova 2012).

Rosaceae**139. *Rosa pumila* Jacq.**

Bu West Frontier Mts: Mt Vlahina, along the dirt road to Debochitsa village, Blagoevgrad district, 41.878740°N, 22.955807°E, with flowers, 03.06.2017, coll. *A. Petrova* & *I. Gerasimova* (SOM 173810).

A new species for the region (Popova 2011).

Scrophulariaceae**140. *Linaria simplex* (Willd.) DC.**

Bu West Frontier Mts: Mt Vlahina, SE of Luchishte Stonepit, above Logodazh village, Blagoevgrad district, in dry grassy places on limestone, 42.015411°N, 22.917764°E, 03.06.2017, coll. *A. Petrova* (SOM 173776).

A new species for the region (Delipavlov & Popova 1995).

Orchidaceae**141. *Himantoglossum jankae* Somlyay, Kreutz & Óvári**

Bu West Frontier Mts: Mt Vlahina, in grassy places along the dirt road between the neighborhoods of Debochitsa village, Blagoevgrad district, 1100 m, 41.858236°N, 22.957044°E, 03.06.2017, *A. Petrova* & *I. Gerasimova* obs.; in a pasture along the road between Logodazh and Obel villages, Blagoevgrad district, 41.98159°N, 22.93129°E, 03.06.2017, *A. Petrova* & *L. Domozetsky* obs.

Himantoglossum jankae is native to Southeast Europe and is included in Annex II of the Council Directive 92/43 EEC (the Habitats Directive). Such species are registered and monitored in the special areas of conservation of the European NATURA 2000 network. The first reported locality lies in SCI BG0001022 Oranovski Gorge – Leshko and our data are the first report for the presence of the species in this SCI (MOEW 2017).

The observed population in the vicinity of Debochitsa village numbers 50–60 individuals in generative age; the population near Obel village is smaller. Other orchid species observed in the first locality are *Orchis coriophora*, *O. morio* and *O. ustulata*; while in the second locality *Anacamptis pyramidalis* is very abundant.

Poaceae**142. *Aegilops biuncialis* Vis.**

Bu West Frontier Mts: Mt Vlahina, in grassy plac-

es along the road between Logodazh and Obel villages, Blagoevgrad district, 41.98134°N, 22.93142°E, 03.06.2017, coll. A. Petrova (SOM 173714).

A new species for this floristic region (Assyov & Petrova 2012).

143. *Piptatherum virescens* (Trin.) Boiss.

Bu West Frontier Mts: Mt Vlahina, in wet grassy places along the dirt road between neighborhoods of Debochitsa village, Blagoevgrad district, 41.858236°N, 22.957044°E, 03.06.2017, coll. A. Petrova (SOM 172798).

A new species for this floristic region (Delipavlov 2011).

Acknowledgements. This report is part of continuous work on the project *Conspectus of the Bulgarian Vascular Flora*.

Reports 144–149

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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).

Brassicaceae

144. *Draba muralis* L.

Gr Nomos & Eparchia Korinthias: Mikri Ziria, near “Isomata”, 3 km NW of Kefalari, stony limestone slope in opening of *Abies cephalonica* woodland, 1280 m, 37°56'N, 22°29'E, 06.05.2017, Polymenakos, Zarkos & Goula 211 (ATHU).

New for Killini and second record for Korinthias.

Caryophyllaceae

145. *Cerastium brachypetalum* subsp. *atheniense* (Lonsing) P.D. Sell & Whitehead

Gr Nomos & Eparchia Korinthias: Mikri Ziria, near “Isomata”, 3 km NW of Kefalari, stony limestone slope in opening of *Abies cephalonica* woodland, 1255 m, 37°56'N, 22°29'E, 06.05.2017, Polymenakos, Zarkos & Goula 207 (ATHU).

New for Killini and second record for Korinthias, extending distribution of the subspecies further to the

west in the Peloponnese. Collected together with *C. brachypetalum* subsp. *roeseri*.

146. *Cerastium dubium* (Bastard) Guépin (Fig. 19)

Gr Nomos & Eparchia Korinthias: southern edge of Lake Stimfalia, on wet ground with *Phragmites australis*, 610 m, 37°54'N, 22°27'E, 18.03.2017, Polymenakos, Goula & Koutsogiannopoulos 145 (ATHU; photo, confirmed Kit Tan, July 2017).

New for the Peloponnese, rare and scattered in wet places on mainland Greece, E and W Aegean islands. Only a few plants were noted in this first observation for the Peloponnese, distinct by their flowers with three styles. Found together with *Corrigiola litoralis* and *Potentilla supina*.



Fig. 19. *Cerastium dubium* (photo K. Polymenakos).

Crassulaceae**147. *Crassula alata*** (Viv.) A. Berger

Gr Nomos Lakonias, Eparchia Epidavrou Limiras: island of Elafonisos, north side, disturbed ground c. 2 km W of Kappari, near small church on the way to Kato Nisi, 3 m, 36°29'N, 22°57'E, 01.04.2017, *Polymenakos, Kofinas & Goula* 152 (ATHU; photo, confirmed Kit Tan, July 2017).

New for Elafonisos. This is apparently the second record for the Peloponnese, the first being from Cape Tainaron at the tip of the Mani Peninsula. Occurring in C and S Aegean area.

Fumariaceae**148. *Fumaria gaillardotii*** Boiss. (Fig. 20)

Gr Nomos Lakonias, Eparchia Epidavrou Limiras: small town of Neapoli, disturbed ground at edge of abandoned field, 5 m, 36°30'N, 23°03'E, 01.04.2017, *Polymenakos, Kofinas & Goula* 151 (ATHU; photo, confirmed Kit Tan, July 2017).



Fig. 20. *Fumaria gaillardotii* (photo K. Polymenakos).

New for nomos, eparchia and the Malea Peninsula. It has been reported in the Peloponnese from the Messinian Peninsula (Methoni), the Methana Peninsula and near Nafplio in Argolidos.

Lamiaceae**149. *Thymus atticus*** Čelak. (Fig. 21)

Gr Nomos Evvias, Eparchia Karistias: Mt Ochi, 2.5 km S-SW of summit Profitis Ilias, on forest road to Kastanologos, limestone rock and scree at roadside, 840 m, 38°02'N, 24°27'E, 18.06.2017, *Polymenakos & Kofinas* 293 (ATHU; photo, confirmed Kit Tan, July 2017).

New for Mt Ochi and S Evvia, recorded from NC Evvia.



Fig. 21. *Thymus atticus* (photo K. Polymenakos).

Reports 150–157**Kiril Stoyanov* & Tsvetanka Raycheva**

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Polypodiaceae**151. *Polypodium interjectum*** Shivas

Bu Rhodopi Mts (*Central*): in the gorge of river Ustina, on rocks, 598 m, KG95, 42.02785°N, 24.52992°E, 02.06.2016, with sporangia, coll. *K. Stoyanov & Ts. Raycheva* (SOA 061824); along river Chepelarska, SW from peak Dragiytsa, on rocks near the estuary of river Kutseva, NW of Lilekovo, 843 m, LG03, 41.80179°N, 24.71025°E, 05.07.2016, with sporangia, coll. *K. Stoyanov & Ts. Raycheva* (SOA 061846).

This species was first mentioned for Bulgaria by Ivanova (2006). So far it has been reported for the fol-

lowing regions: Forebalkan (*Western*), Mt Belassitsa, Valley of River Struma (*Northern*), Rhodopi Mts. (*Eastern*) (Ivanova 2006; Assyov & Petrova 2012), Mt Strandzha (Assyov & Petrova 2012), 200–700 m. Our data add a new subregion and increase the span of its vertical distribution.

Crassulaceae

152. *Sedum roseum* (L.) Scop. [syn.: *Rhodiola rosea* L.]

Bu Rhodopi Mts (*Central*): peak Kalugeritsa, W of Hvoyna, in habitat 8220, 926 m, LG03, 41.88141°N, 24.68613°E, 07.07.2016, with flowers, coll. *Ts. Raycheva* & *K. Stoyanov* (SOA 061845).

This critically endangered species was reported for the Balkan Range (*Western, Central*), Pirin Mts, Rila Mts (Assyov & Petrova 2012; Meshinev 2015), and Rhodopi Mts (*Western, Central*) (Assyov & Petrova 2012), between 1800 and 2600 m. Our data display a locality 900 m below the known altitudes.

Orobanchaceae

153. *Orobanche laserpitii-sileris* Jord.

Bu Rhodopi Mts (*Central*): on rocks on a slope of peak Chamdzhaztepe, southwards of Krichim, host unknown, 350 m, KG95, 42.0336111°N, 24.4734444°E, 02.06.2016, with flowers, coll. *K. Stoyanov* & *Ts. Raycheva* (SOA 061811); between Assenovgrad and Assenova Fortress Historical Highlight, 300 m, LG25, 21.06.2003, coll. *K. Stoyanov* (SOA 059455).

This species is sparsely distributed on the territory of Bulgaria. The existing reports are from the Forebalkan (*Western*) (Dimitrov & Vutov 2015), Pirin Mts (Petrova 2011) and Rhodopi Mts (*Central*) (Uhlich & al. 1995; Petrova 2011). Our data represent a new locality in the Rhodopi Mts and confirm the distribution of the species in this floristic region.

154. *Orobanche amethystea* Thuill.

Bu Balkan Range (*Eastern*): in the Chumerna gorge, near peak Kaleto, on rocks, 251 m, MH22, 42.69135°N, 26.07953°E, 14.07.2016, with flowers, parasitises on *Eryngium campestre*, coll. *K. Stoyanov* & *Ts. Raycheva* (SOA 061712).

The known distribution is in the regions of the Black Sea Coast, Sofia region, Znepole region, Mt Slavyanka, Pirin Mts (*Northern*), Rila Mts, 2 Rhodopi Mts (*Western, Central*), Thracian Lowland, Tundzha Hilly Country, and Mt Strandzha (Stoyanov 2009; Assyov & Petrova 2012).

Ranunculaceae

155. *Ranunculus chius* DC.

Bu Black Sea Coast (*Southern*): Burgas, in the Marine Park, 2 m, NH30, 42.50867°N, 27.4833°E, 02.05.2016, with fruits and flowers, coll. *K. Stoyanov* (SOA 061700); at the coastline, in Kyosheto locality, in damp places, 5 m, NH40, 42.53712°N, 27.49488°E, 02.05.2016, obs. *K. Stoyanov*.

A new species for this floristic region. According to Assyov & Petrova (2012), this species was reported for the Valley of River Struma, Rhodopi Mts (*Eastern*), Tundzha Hilly Country, and Mt Strandzha.

Liliaceae

156. *Tulipa agenensis* DC. [syn. *Tulipa praecox* Ten.] (Fig. 22)

Bu Black Sea Coast (*Southern*): at the Marine Park in Burgas, 18 m, on a slope of 40°, NH30, 42.49658°N, 27.48297°E, 15.04.2017. coll. *K. Stoyanov* (SOA 062056), obs. 10.04.2017.

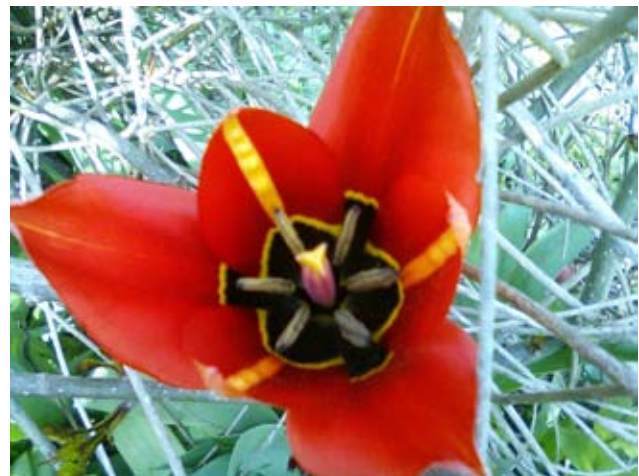


Fig. 22. *Tulipa agenensis* – flower (photo D. Damyanova).

This species is easily recognizable with its much shorter internal perianth segments, each with a yellow stripe inside, starting from the base and ending at the tip (fig. 22).

This species is native to Turkey (Asiatic part) (Marais 1984; WCSPF 2010), East Aegean Islands, Cyprus, Israel, Syria, and Lebanon (WCSPF 2010). Naturalized populations are known in France, Greece, Italy, Portugal, Turkey (European part) (Grey-Wilson & Matthews 1970; WCSPF 2010), and Tunisia (WCSPF 2010).

The encountered plants form a dense naturalised population covering about 300 m² (Fig. 23). Probably,

this population was formed by introduced bulbs in the past. The observed flowering lasted between April 4–23, 2017.



Fig. 23. *Tulipa agenensis* – naturalized population (photo D. Damyanova).

157. *Tulipa rhodopea* Velen. (Fig. 24)

Bu Rhodopi Mts (*Central*): Parakolovo locality, SE of peak Anatema, on the western slope of peak St. Iliya, LG25, 20.04.2015 (obs.), 29.04.2016 (obs.), 29.04.2017, coll. K. Stoyanov & Ts. Raycheva (SOA 063057).

The population (Fig. 24) has low density and covers an area with the following borders: 41.98411°N, 24.89424°E, 713 m; 41.98190°N, 24.89617°E, 736 m; 41.98143°N, 24.89656°E, 747 m; 41.98193°N, 24.89633°E, 737 m. The area lies 3 km westwards from the Lale Bair locality (LG26, 41.96269°N, 24.90602°E, 730–909 m) which was reported as the only location in the *Red Data Book* (Tsoneva & Vladimirov 2015).



Fig. 24. Locality of *Tulipa rhodopea* (photo Ts. Raycheva).

The reported locality is on the borderline of the floristic region of Thracian Lowland.

The species is protected and with a national IUCN conservation status of Critically Endangered (Tsoneva & Vladimirov 2009). Our data add a new locality to the known floristic region. The species was reported without confirmation for Mt Slavyanka (Kitanov 1964; Popova 2011), Valley of River Mesta (Popova 2011), Rhodopi Mts (*Eastern*) (Kitanov 1964; Assyov & Petrova 2012), and Thracian Lowland (Assyov & Petrova 2012).

Reports 158–188

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The north-eastern corner of Greece is poorly explored floristically, especially areas east and north of Orestiada. Many new records were gathered on a four-day excursion in the first half of June, 2017. Species new for the mainland part of Nomos Evrou, an area of 4,064 km², are listed below. The island of Samothraki (178 km²), which also belongs to Nomos Evrou, is comparatively well explored (cf. Biel & Tan 2014).

Apiaceae

158. *Eryngium creticum* Lam.

Gr Nomos Evrou, Eparchia Didimotichou: near the village of Rigia (Rigion), grassland around an ancient tomb, 40 m, 41°23'N, 26°36'E, 10.06.2017, *Strid* obs.; between the villages of Valtos and Chandras, low hills with damp to dry grassland, 160 m, 41°32'N, 26°20'E, 10.06.2017, *Strid* obs. Scattered throughout Greece, absent from the Kiklades.

159. *Foeniculum vulgare* Mill.

Gr Nomos Evrou, Eparchia Orestiados: just S of Orestiada along main road to Didimotichon, 30 m, roadsides and field margins, 41°29'N, 26°32'E, 10.06.2017, *Strid* obs.

Common on roadsides almost throughout Greece, but less so in the far north.

160. *Pimpinella peregrina* L.

Gr Nomos Evrou, Eparchia Orestiados: between the villages of Dikea and Dilofos, 50 m, roadsides and deciduous scrub, 41°42'N, 26°21'E, 09.06.2017, *Strid* obs.; Ditto, just S of Orestiada along main

road to Didimotichon, 30 m, roadsides and field margins, 41°29'N, 26°32'E, 10.06.2017, *Strid* obs.; Nomos Evrou, Eparchia Didimotichou: 3 km S of Metaxades, 240 m, deciduous scrub, 11.06.2017, *Strid* obs.

Common almost throughout Greece, but less so in the far north.

161. *Torilis nodosa* L.

Gr Nomos Evrou, Eparchia Orestiadou: between the villages of Valtos and Chandras, 160 m, low hills with damp to dry grassland, 41°32'N, 26°20'E, 10.06.2017, *Strid* 58997 (UPA, herb. *Strid*).

Common almost throughout Greece.

Asteraceae

162. *Artemisia vulgaris* L.

Gr Nomos Evrou, Eparchia Orestiadou: SE of the village of Nea Vissa, 30 m, roadsides in agricultural area, 41°34'N, 26°34'E, 09.06.2017, *Strid* obs.; Ditto, between the villages of Dikea and Dilofos, 50 m, roadsides and deciduous scrub, 41°42'N, 26°21'E, 09.06.2017, *Strid* obs.

Scattered in N & C mainland Greece, rare on the islands; a common weed in most of Europe.

163. *Crepis micrantha* Czerep.

Gr Nomos Evrou, Eparchia Orestiadou: between the villages of Dikea and Dilofos, 50 m, roadsides and deciduous scrub, 41°42'N, 26°21'E, 09.06.2017, *Strid* 58952 (herb. *Strid*).

Common in the East Aegean islands.

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

Gr Nomos Evrou, Eparchia Orestiadou: SE of the village of Nea Vissa, 30 m, roadsides in agricultural area, 41°34'N, 26°34'E, 09.06.2017, *Strid* 58915 (UPA).

This species was only rather recently reported from Greece; the first collection appears to be Stamatiadou 13410, 23.07.1971 (ATH, herb. *Strid*) from the Konitsa area. It is probably spreading and there are now several records from the Greek mainland, especially in the north-west.

Boraginaceae

165. *Cynoglossum creticum* Mill.

Gr Nomos Evrou, Eparchia Didimotichou: near the village of Rigia (Rigion), 40 m, grassland around an ancient tomb, 41°23'N, 26°36'E, 09.06.2017, *Strid* 58970 (UPA).

Otherwise more or less common throughout Greece.

Cannabaceae

166. *Cannabis sativa* L.

Gr Nomos Evrou, Eparchia Orestiadou: SE of the village of Nea Vissa, 30 m, damp roadsides in agricultural area, 41°34'N, 26°34'E, 09.06.2017, *Strid* 58908 (herb. *Strid*).

Occasionally naturalized in agricultural and ruderal habitats throughout Greece.

Caryophyllaceae

167. *Silene otites* (L.) Wibel

Gr Nomos Evrou, Eparchia Orestiadou: 2 km NE of the village of Kanadas, 80 m, sandy hill and road embankment with dry grassland, 41°40'N, 26°25'E, 09.06.2017, *Strid* 58938 (UPA).

Several previous collections from N Greece, but recorded eastwards only to c. 24°40'E in Nomos Kavallas.

168. *Stellaria graminea* L.

Gr Nomos Evrou, Eparchia Didimotichou: just E of the village of Mikro Derio, 110 m, deciduous scrub and wet place by a stream, 41°19'N, 26°07'E, 11.06.2017, *Strid* 59036 (UPA).

Not uncommon in wet grassland in northern Greece, mostly at high altitude, scattered southwards to Mt Iti in Sterea Ellas.

Crassulaceae

169. *Sempervivum ruthenicum* Schnittsp. & C. B. Lehm.

Gr Nomos Evrou, Eparchia Soufliou: near place called Tris Vrises ca. 10 km SW of Kotronia, 610 m, rocky road embankment in deciduous oak scrub, serpentine substrate, 41°06'N, 26°00'E, 12.06.2017, *Strid* obs. and photo.

A few previous records from northern Greece, mostly at high altitude.

Cucurbitaceae

170. *Bryonia alba* L.

Gr Nomos Evrou, Eparchia Orestiadou: between the villages of Dikea and Dilofos, 50 m, roadsides and deciduous scrub, 41°42'N, 26°21'E, 09.06.2017, *Strid* obs.

Scattered throughout the Greek mainland; also reported from the island of Samothraki.

Fabaceae

171. *Astragalus fraxinifolius* DC.

Gr Nomos Evrou, Eparchia Didimotichou: S of the village of Petrolofos, 700 m, mixed deciduous for-

est and schistose road embankments, 41°12'N, 25°58'E, 12.06.2017, *Strid* 59059 (herb. *Strid*, fruiting specimen).

Second record in Greece for this species which is related to *A. glycyphyllos* L., but appears distinct, differing in the suberect stems, larger, oblong leaflets, rather densely black-pubescent calyx, reddish corollas and straight legumes. A single collection from Mt Oxia in Sterea Ellas (Gustavsson 9534; G, herb. *Strid*) also matches *A. fraxinifolius*. Podlech & Zarre (2013: 258) reported this species only from Turkey and Armenia.

172. *Robinia pseudoacacia* L.

Gr Nomos Evrou, Eparchia Orestiados: between the villages of Dikea and Dilofos, 50 m, roadsides and deciduous scrub, 41°42'N, 26°21'E, 09.06.2017, *Strid* obs.

Occasionally naturalized from plantations almost throughout Greece, but scarcely invasive (as it is in east central Europe).

Geraniaceae

173. *Geranium dissectum* L.

Gr Nomos Evrou, Eparchia Orestiados: SE of the village of Nea Vissa, 30 m, damp roadsides in agricultural area, 41°34'N, 26°34'E, 09.06.2017, *Strid* obs.

Otherwise common almost throughout Greece.

Hypericaceae

174. *Hypericum spruneri* Boiss.

Gr Nomos Evrou, Eparchia Didimotichou: halfway between the villages of Mega Derio and Sidiro, 350 m, road embankment in deciduous oak scrub, and weeds in a cultivated field, on schist, 41°14'N, 26°05'E, 11.06.2017, *Strid* 59046 (UPA).

Fairly common on the Greek mainland and the Ionian Islands, but less so in the far north.

Lamiaceae

175. *Salvia aethiopsis* L.

Gr Nomos Evrou, Eparchia Didimotichou: roadside by the village of Petrades, 80 m, 41°21'N, 26°36'E, 10.06.2017, *Strid* obs.; Ditto: roadside 3 km E of the village of Mikro Derio, 100 m, 41°19'N, 26°09'E, 11.06.2017, *Strid* obs.

The first Greek collection of this distinctive species appears to be one by Rechinger in 1932 from Nomos Florinis in the north-west (see Rechinger 1936: 657). It is spreading along new roads in northern Greece, and most of the records are fairly recent.

Ranunculaceae

176. *Consolida phrygia* (Boiss.) Soó

Gr Nomos Evrou, Eparchia Orestiados: 2 km NE of the village of Kanadas, 80 m, sandy hill and road embankment with dry grassland, 41°40'N, 26°25'E, 09.06.2017, *Strid* 58939 (UPA).

Several previous records from C & NE Greece, including the island of Samothraki.

177. *Ranunculus fontanus* C. Presl

Gr Nomos Evrou, Eparchia Didimotichou: S of the village of Petrolofos, 700 m, mixed deciduous forest and schistose road embankments, in a wet spot, 41°12'N, 25°58'E, 12.06.2017, *Strid* 59058 (UPA).

Several previous records from northernmost Greece, but eastwards only to the village of Dimario (24°50'E); an isolated locality also in E Kriti.

Rosaceae

178. *Rosa arvensis* Huds.

Gr Nomos Evrou, Eparchia Didimotichou: S of the village of Petrolofos, 700 m, mixed deciduous forest and schistose road embankments, 41°12'N, 25°58'E, 12.06.2017, *Strid* 59064 (UPA).

At moderate altitude throughout the Greek mainland and Peloponnisos southwards to Mt Parnonas.

179. *Pyrus pyraaster* (L.) Burgsd. (Fig. 25)



Fig. 25. *Pyrus pyraaster* (photo A. Strid).

Gr Nomos Evrou, Eparchia Soufliou: Pessani area, on road from Dadia to Loutros, 300 m, deciduous scrub, 41°04'N, 26°04'E, 13.06.2017, *Strid* obs. and photo.

This species is otherwise scattered on the Greek mainland (especially in the north) and on some of the larger islands. *Pyrus pyraster*, *P. elaeagrifolia* and *P. spinosa* all occur in Nomos Evrou. They are sometimes used for grafting twigs of cultivated pears.

Scrophulariaceae

180. *Verbascum blattaria* L.

Gr Nomos Evrou, Eparchia Didimotichou: roadside 3 km E of Didimoticho, 50 m, 41°21'N, 26°28'E, 10.06.2017, *Strid* 59071 (herb. *Strid*).

Throughout the Greek mainland and on some of the larger islands, including Samothraki.

181. *Verbascum speciosum* Schrad. (Fig. 26)

Gr Nomos Evrou, Eparchia Alexandroupoleos/Soufliou: NE of the village of Leptokaria, 720 m,



Fig. 26. *Verbascum speciosum* (photo A. Strid).

roadside in deciduous scrub, 41°06'N, 25°59'E, 12.06.2017, *Strid* obs. and photo.

Scattered throughout the mainland and Peloponnisos; plants from the north-east belong to *V. s.* subsp. *speciosum*, the others mostly to *V. s.* subsp. *megaphlomos* (Boiss. & Heldr.) Nyman. Thanks are due to Aris Zografidis for identifying the plants from Leptokaria, based on photographs. *Zografidis* 234 from Mt Sapka is close to the locality indicated above (but in Nomos Rodopis).

Veronicaceae (Scrophulariaceae s.l.)

182. *Veronica beccabunga* L.

Gr Nomos Evrou, Eparchia Didimotichou: S of the village of Petrolofos, 700 m, mixed deciduous forest and schistose road embankments, in a wet spot, 41°12'N, 25°58'E, 12.06.2017, *Strid* obs.

Throughout the Greek mainland, Peloponnisos and some of the larger islands, including Samothraki.

Cyperaceae

183. *Bolboschoenus glaucus* (Lam.) S.G. Sm.

Gr Nomos Evrou, Eparchia Orestiadis: between the villages of Valtos and Chandras, 160 m, wet spot among low hills with damp to dry grassland, 41°32'N, 26°20'E, 10.06.2017, *Strid* 58993 (herb. *Strid*).

Scattered and fairly rare throughout Greece, but previously often not distinguished from the more widespread *B. maritimus* (cf. Hroudová & al. 2007).

Hyacinthaceae

184. *Muscari tenuiflorum* Tausch (Fig. 27)

Gr Nomos Evrou, Eparchia Orestiadis: between the villages of Valtos and Chandras, 160 m, low hills with damp to dry grassland, 41°32'N, 26°20'E, 10.06.2017, *Strid* 58995 (herb. *Strid*).

Known from a few localities in NE Greece; records from elsewhere in the country need confirmation. *Muscari tenuiflorum* differs from the widespread *M. comosum* (L.) Mill. in the shape of the fertile flowers with sharply angled shoulders.

Juncaceae

185. *Juncus effusus* L.

Gr Nomos Evrou, Eparchia Didimotichou: S of the village of Petrolofos, 700 m, mixed deciduous forest and schistose road embankments, in a wet spot, 41°12'N, 25°58'E, 12.06.2017, *Strid* obs.

Scattered throughout the Greek mainland and on some of the larger islands, including Samothraki.



Fig. 27. *Muscari tenuiflorum* (photo A. Strid).



Fig. 28. *Aegilops speltoides* (photo A. Strid).

Lemnaceae

186. *Lemna minor* L.

Gr Nomos Evrou, Eparchia Orestiadou: between the villages of Valtos and Chandras, 160 m, low hills with damp to dry grassland, locally gregarious in a pool, 41°32'N, 26°20'E, 10.06.2017, *Strid* obs.

Scattered throughout Greece and probably under-represented in the records.

Poaceae

187. *Aegilops speltoides* Tausch (Fig. 28)

Gr Nomos Evrou, Eparchia Orestiadou: between the villages of Valtos and Chandras, 160 m, low hills with damp to dry grassland, 41°32'N, 26°20'E, 10.06.2017, *Strid* 59001 (UPA, herb. *Strid*).

Lateral spikelets with long-awned lemmas, thus referable to *A. s.* var. *ligustica*. The species is very rare in Greece (cf. Phitos & al. 2009: 46-47), but widespread in Anatolia, W Syria, Iraq and Iran. It is believed to be one of the wild ancestors of cultivated wheat.

188. *Phalaris brachystachys* Link

Gr Nomos Evrou, Eparchia Didimotichou: near the

village of Rigia (Rigion), 40 m, grassland around an ancient tomb, 41°23'N, 26°36'E, 09.06.2017, *Strid* 58962 (UPA).

Scattered in E Greece; a few recent records also from the Ionian Islands.

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Lamiaceae

189. *Salvia tomentosa* Mill. (Fig. 29)

Gr Nomos Chalkidikis, Eparchia Athou: Athos peninsula, Mt Athos, on the road from Ag. Pavlou monastery to Karyes, 0.7 km above the monastery, 380 m, 40°10'01"N, 24°17'20"E, 17.06.2016, *K. Sutorý* (BRNM 783009); *loc. ibid.*, 576 m, 40°10'08"N, 24°17'24"E, 22.06.2017, *K. Sutorý* (BRNM 789627); *loc. ibid.*, 496 m, 40°10'01"N, 24°17'21"E, *K. Sutorý* obs.



Fig. 29. *Salvia tomentosa* (photo K. Sutory).

New for nomos and eparchia. The species is distributed in SE Bulgaria (Assyov & Petrova 2012), Greece (Dimopoulos & al. 2013) and Anatolia extending to Armenia and Crimea.

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Berberidaceae

190. *Gymnospermium peloponnesiacum* (Phitos) Strid (Figs. 30–32)

Gr Nomos Fokidos, Eparchia Parnassidos: summit

of Alafókastró, limestone rock, 1207–1223 m, 38°29'N, 22°30'E, 08.05.1998, V. Pilous obs. (tubers collected, in cultivation).

New for Sterea Ellas and mainland Greece; first report outside Peloponnisos.

Alafókastró is a relatively low mountain (summit 1223 m) in the Parnassos range from the Livadia side. It is ca. 2.5 km NE of Delphi and had never been visited by any botanist although well marked on 1: 50000 scale maps of the area. The higher summits of Parnassos, Vardousia, Iti and Giona attract more thorough botanical investigation. It was a surprise when one of us (KT) was contacted by Vlastimil Pilous, a Czech geomorphologist and well-known plant grower who announced he had several species of *Gymnospermium* in his private garden, including many plants of *G. peloponnesiacum* which had greatly multiplied from just four tubers he had collected from Parnassos nearly twenty years ago (Fig. 30). This species had hitherto been known only from the Peloponnese. Pilous kindly provided information concerning the location, and we went there on 4 June 2017.

The flat mountain summit was bare except for a few shrubs, no trees. It comprised hard limestone karren (*lapiés*) and the *Gymnospermium* plants were reported from several small patches in a total area ca. 1 hectare in size. We hoped to see it in fruit but it was too late in the season. Plants have been observed flowering and fruiting (Fig. 31) between 5 April to 13 May on Mts Panachaiko, Klokos, Chelmos, Killini, Skepastro, Kamarovrissi, Menalon and Parnonas. 15 March was the earliest on Mt Rouskio, and 22 June the latest in fruit on Mt Panachaiko. We watched vivid lightning zigzagging down on the distant peaks and descended the mountain in heavy rain to find our field vehicle



Fig. 30. *Gymnospermium peloponnesiacum* in cultivation (photo V. Pilous).



Fig. 31. *Gymnospermium peloponnesiacum*: B, from Mt Rouskio (photo T. Lafranchis); A, C & D, from Kamarovrissi (photos Kit Tan). From Phytotaxa 25: 11 (2011).



Fig. 32. Distribution of *Gymnospermium peloponnesiacum* in Greece.

bogged down in mud, surrounded by some mournful-looking cows.

The discovery of *G. peloponnesiacum* on the other side of the Gulf of Corinth should be no great surprise (Fig. 32). It parallels the report recently contributed by Mermigkas & Skouras (2017) on the occurrence of *Iris hellenica* on Mt Iti in Sterea Ellas, and indicates the strong phytogeographical connection of this mountain to the mountains of N Peloponnese. The Gulf of Corinth separating the Peloponnese peninsula from central mainland Greece is a young geological rift possibly formed only 1–2 million years ago. It is the site of numerous major earthquakes both recent (in the last 30 years) and historical (since 480 BC) which attest to the seismic activity of the region. In June 1995 we witnessed a major earthquake which severely damaged the town of Egio on the northern coast of Peloponnese. Sterea Ellas and the Peloponnese have

remained connected until topographic and climatic changes in the Mediterranean Basin happened. It is likely that *Gymnospermium* or a *Gymnospermium* ancestor already inhabited the area before a division by the Gulf in the late Pliocene. The species should be looked for on other mountains of Sterea Ellas.

Reports 191–192

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Fabaceae

191. *Genista melia* Boiss. (sect. *Scorpioides* Spach)

Gr Nomos Kikladon, Eparchia Milou: island of Milos, ann. 1840, *Fauché* (G-Boiss!).

In Dimopoulos & al. (2013: 277) the text for this species reads, “A vanished and enigmatic taxon described by Boissier (1849: 2), disregarded according to Halácsy (1900: 330) and Rechinger (1944: 382)”.

This statement is ambiguous as neither Halácsy nor Rechinger disregarded *Genista melia*. And fortunately, there is nothing enigmatic or vanished about *G. melia*. The type specimen in G-Boiss was examined by one of the authors (KT) and proved to be *G. scorpius* (L.) DC. (syn. *Spartium scorpius* L., Sp. Pl. 2: 708, 1753) which is very abundant in the Iberian peninsula. *Spartium scorpius* Sm., *Fl. Graec.* 2: 53 (1813) is

a later homonym. This begs the question as to whether there had been an erroneous labelling of locality since Boissier published the name *Genista aspalathoides* in *Voy. Bot. Espagne* Vol. 2 in 1840 and the type specimen of *G. melia* was labelled *Spartium “aspalatoides”* in the same year, 1840. *Genista aspalathoides* Lam. was described from N Africa and published in *Encycl.* 2(2): 620 (1788) as “*aspalatoides*”.

If the locality is correct it is possible M. Fauché had collected *G. scorpius* 177 years ago as from today, on the island of Milos, probably as an introduced planting which had never become naturalized as the only species of *Genista* now occurring on Milos is *G. acanthoclada* DC. As far as we know it had only been collected once. Introductions of *Genista* from the C and W Mediterranean to Greece are not uncommon, e.g., we have seen a whole avenue of *G. aetnensis* which obviously has not originated from Greece but from Mt Etna in Sicily.

To sum up, *G. melia* was described from the Cycladean island of Milos and published in *Diagn. Pl. Orient.* ser. 1, 9: 2 (Jan-Feb 1849) and *Flora Orientalis* 2: 41 (1872). It was doubtfully recorded for the Troad (region of Troy in NW Anatolia) in Rechinger, *Fl. Aegaea* 382 (1944). It is conspecific with *G. scorpius* (L.) DC. in Lam. & DC., *Fl. Fr.* ed. 3, 4: 498 (1805) which occurs in the W Mediterranean. The type specimen in the Boissier herbarium may have been erroneously labelled, “in insula Melos Archipelagi, ann. 1840, herb. Fauché”.

192. *Genista willingii* Kit Tan & Zieliński, sp. nov.
(Fig. 33)

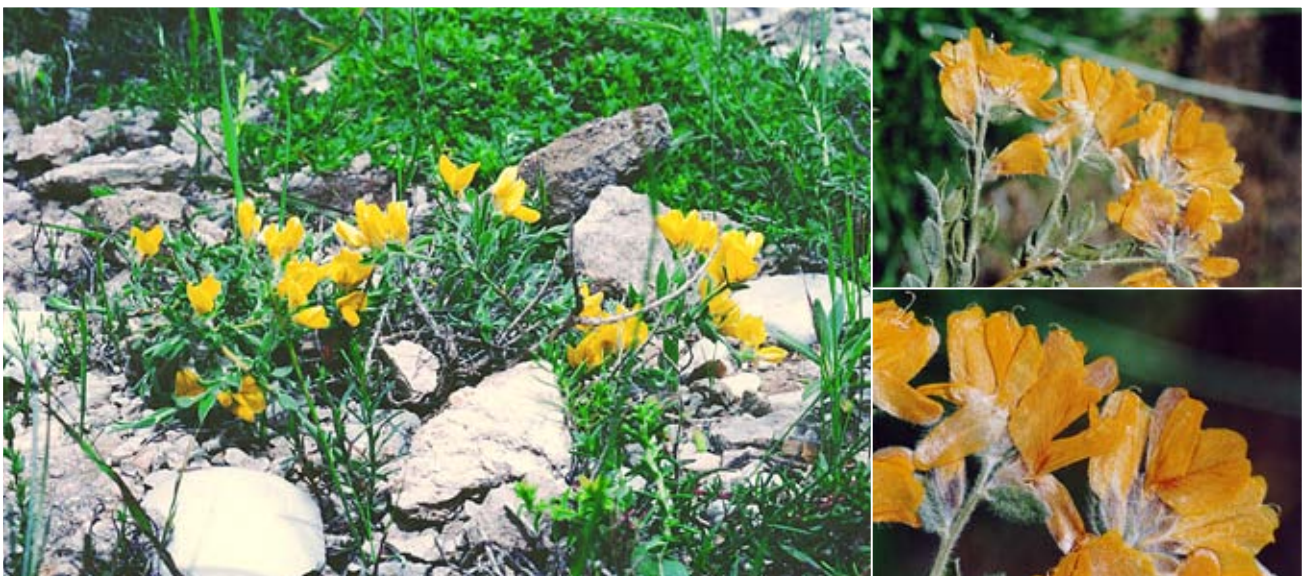


Fig. 33. *Genista willingii*, habit and inflorescences (photos E. Willing).

Gr Nomos Thesprotia, Eparchia Souliou: 2.6 km NE of Gliki, calcareous rock and scree in *Quercus coccifera* scrub, 520 m, 39°20'N, 20°37'E, 28.05.2004, R. & E. Willing 132781 (holotype B; isotype C); *loc. ibid.*, 28.05.2004, R. & E. Willing 132793 (B); *loc. ibid.*, ca. 500 m, 30.05.1994, R. & E. Willing 35422 (B).

Stems prostrate-decumbent, ca. 35 cm long and reaching 15 cm in height, patent-pilose, glabrescent on old shoots, obtusely striate, furrows with remains of hair bases; bark decorticated at base of stem. Flowering stems (0.6-)1-4 cm long. Leaves broadly ovate to ovate-orbicular, 6-7 × 5-6 mm on non-flowering stems, uniformly patent to sub-patent pilose on both surfaces, fresh-green; lower surface a duller green and less pilose. Flowers terminal, solitary or in clusters of 2-4, borne at end of current year's growth, 11-13 mm, bright yellow. Calyx campanulate, 5-6 mm, stramineous, tipped maroon-purple at anthesis; tube ca. 2 mm, patent-pilose; upper lip ca. 1-1.3 mm; lower lip 1.8 mm; upper teeth triangular, 0.8-0.9 mm; lower teeth narrowly triangular, 0.5-0.6 mm. Standard broadly obovate, 10-12 mm, slightly shorter than keel, retuse-emarginate, uniformly white patent-pilose. Wings equalling standard, glabrous. Keel 11-13 mm, patent-pilose without. Pedicels 1-2.5 mm, patent-pilose. Bracts foliaceous. Bracteoles situated at middle of pedicel, triangular-lanceolate, 0.3 mm. Legume (immature) flattened, oblong, ca. 15 mm, patent-pilose, dark blackish-brown, at least 4-seeded; rostrum (beak) ca. 1 mm, persistent. Flowering late May to June.

Differing from *G. halacsyi* Heldr., endemic to S Peloponnisos (Taigetos and Paronosas), by its long creeping stems, usually shorter flowering shoots, broadly ovate to ovate-orbicular leaves and conspicuously patent to subpatent-pilose indumentum. Together with *G. millii* Boiss. from SE Greece (Evvia, Mts Iti and Oxia), the three species form a taxonomic group. *Genista millii* and *G. halacsyi* are very close, the differences between them are quantitative and rather subtle; however, they are geographically disjunct as in the case of *G. willingii*.

Genista willingii seems to be very rare and locally restricted in S Pindos. In the words of the collector, E. Willing, "Even in the *locus classicus* it was not easily found within the first 20 minutes. The road had been widened and much of the rocky ground removed. But then I found two wonderful plants. They are collected, unfortunately without fruits; photos have been taken". A later diversion revealed hundred of plants on the

rocks behind the road, all uniformly similar with patent-spreading hairs and surviving despite the many goats.

Eponymy: named after Dr Eckhard Willing (Dessau, Germany), enthusiastic plant-collector extraordinary, Willing by name and willing by nature. He has stated that his collections are to be used for the preparation of the work *Flora Hellenica*.

Reports 193-194

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Rhamnaceae

193. *Frangula alnus* subsp. *saxatilis* Gančev (Fig. 34)

Bu Balkan Range (*Eastern*): in the Kutelka Reserve, close to the Sinite Kamani Nature Park, Rakavichkata (Kuklite) locality, in rock crevices, along with *Sorbus umbellata*, *Genista rumelica* and *Rumex acetosella*; the slope is of southern exposition, with inclination of 30° and the rock is a Lower Triass quartz and porphirium, 884 m, 42°43'55.5"N, 26°19'57.8"E, 08.06.2010, with fruits, coll. A. Tashev (SOM 165936).

The herbaceous layer is formed by more than 30 species, including some endemic plants. The most representative are: *Poa nemoralis*, *Festuca valesiaca*, *Festuca* sp., *Anthemis carpatica*, *Aurinia saxatilis*, *Campanula jordanovii*, *Geranium macrorrhizum*, *Iris reichenbachii*, *Ferulago sylvatica*, *Galium verum*, *Hieracium olympicum*, *Hypericum perforatum*, *Linaria dalmatica*, *L. genistifolia*, *Minuartia bulgarica*, *Neottia nidus-avis*, *Nepeta nuda* subsp. *albiflora*, *Potentilla obscura*, *P. rupestris*, *Rumex acetosella*, *Sedum acre*, *S. hispan-*



Fig. 34. *Frangula alnus* subsp. *saxatilis* (photo A. Tashev).

icum, *Scleranthus perennis*, *Sempervivum erythraeum*, *Seseli peucedanoides*, *S. rigidum*, *Thymus jankae*, *Trifolium montanum*, *Veronica austriaca* subsp. *jaquinii*, *Verbascum humile*, *Viola arvensis*, etc.

This is a new subspecies for the floristic region of the Balkan Range. So far it has been reported for the Forebalkan, Vitosha region, Mt Sredna Gora (Eastern), Thracian Lowland, and Tundzha Hilly Country (Ganchev 1979: 278-279).

Liliaceae

194. *Lilium rhodopaeum* Delip.

Bu Rhodopi Mts (Central): above the motorway between Progled village and Pamporovo locality – at about 150 m on a beeline from the motorway; the species was found 15 m away from a 130-year-old *Picea abies* forest, in Mitkovi Livadi locality, in habitat 16E2 Mountain hay meadows (EUNIS: E2.31 Alpic mountain hay meadows; PAL. CLASS.: 38.31 Alpic mountain hay meadows; HD 92/43: 6520 Mountain hay meadows), protected by the Bulgarian Biodiversity Act and Habitats Directive; it occurred in a polydominant herbaceous community in the upper part of a slope of northwestern exposition and inclination of 15°, at 1521 m, 41°39'17.9"N, 24°42'10.3"E, 09.07.2017, with fruits, coll. A. Tashev (SOM 174079); above a dirt road to Grashtitsa village from Stoykite village in Livaditsa locality, in a cow pasture encircled by an electric fence, in the proximity of a 100-year-old forest of *Picea abies* and above some trees of *Populus tremula*; in an overgrazed and overtrampled herbaceous community in the central part of a slope of southwestern exposition and inclination of 20°, 1429 m, 41°38'15.6"N, 24°38'15.4"E, 09.07.2017, with fruits, coll. A. Tashev (SOM 174077; 174078).

In the first locality, some 100 generative individuals have been identified, on an area of 0.1 ha (Fig. 35). The remaining individuals stand out singly, or in small groups of 2–3 plants among the other herbs. The projection cover of the grass community reaches 100%. It is dominated by *Knautia drymeja* and *Trifolium alpestre*. Also occur: *Agrostis capillaris*, *Brachypodium pinnatum*, *Briza media*, *Cynosurus cristatus*, *Dactylis glomerata*, *Deschampsia flexuosa*, *Festuca nigrescens*, *F. rubra*, *Holcus mollis*, *Luzula luzuloides*, *Chamaespartium sagittale*, *Trifolium aureum*, *T. montanum*, *Achillea millefolium*, *Anthriscus sylvestris*, *Astrantia major*, *Campanula glomerata*, *C. patula* subsp. *epigea*, *C. rapunculoides*,



Fig. 35. *Lilium rhodopaeum* in Mitkovi Livadi locality (photo A. Tashev).

Carex sp., *Centaurea* sp., *Cirsium appendiculatum*, *Clinopodium vulgare*, *Crepis viscidula*, *Cruciata glabra*, *Galium verum*, *Gymnadenia conopsea*, *Hypericum maculatum*, *Leucanthemum vulgare*, *Pastinaca hirsuta*, *Rhinanthus rumelicus*, *Rumex acetosa*, *Silene vulgaris*, *Stachis alpina*, *Stellaria graminea*, *Veronica chamaedrys*, *Vicia cracca*, *Viola tricolor*, etc. The locality lies in a private property with cadastral No. 80371.170.1.

In the second locality of about two decares, up to 150 generative stems of *Lilium rhodopaeum* have been identified, with nearly half of them trampled on and lying on the ground (Fig. 36). The plants have not been grazed by the cows. The individuals are situated in groups of up to 10 stems and seldom of single plants. The grass cover was overgrazed and trampled on. Best preserved were the individuals of: *Veratrum lobelianum*, *Verbascum densiflorum*, *Pteridium aquilinum*, and *Filipendula ulmaria*. Among the other grasses there were remnants of: *Clinopodium vulgare*, *Dactylis glomerata*, *Betonica officinalis*, *Pastinaca hirsuta*, *Knautia drymeja*, *Potentilla recta*, *Veronica chamaedrys*, *Vicia cracca*, *Rumex acetosa*, *Acillea millefolium*, *Luzula luzuloides*, *Silene vulgaris*, *Centaurea* sp., *Hypericum maculatum*, *Dianthus* sp.,



Fig. 36. *Lilium rhodopaeum* in Livaditsa locality (photo A. Tashev).

Ranunculus acris, *Galium verum*, *Agrostis capillaris*, *Briza media*, *Cynosurus cristatus*, *Lerchenfeldia flexuosa*, *Festuca nigrescens*, *F. rubra*, *Poa pratensis*, etc.

Failure to undertake urgent measures to protect the location from overtrampling and overgrazing would lead to its destruction in a couple of years! The location is on the territory of a private property with cadastral No. 69345.17.2XX.

These are new locations in the Rhodopi Mts (*Central*) of this endemic and critically endangered species, protected by the Bulgarian Biodiversity Act and Bern Convention. It has been included in the 1997 IUCN Red List of Threatened Plants (Walter & Gillett 1998) with the category 'Rare'. So far it has been mentioned for the Rhodopi Mts (*Central*), in the villages of Sivino, Progled, Stoykite, Gerzovitsa locality near Smolyan town, and Kechikaya (Kozi Kamak) locality near Rudozem town, as well as on peak Tsigansko Gradishte (Ivanova 2015: 271).

Reports 195–208

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In this report, new data are presented regarding the chorology and habitats of 14 vascular plant species (10 native and four alien) in the flora of Macedonia. Most of them previously were known only from one or few localities, while *Bidens subalternans* is reported as a new alien species for the country.

Apiaceae

195. *Dichoropetalum schottii* (DC.) Pimenov & Kljuykov [(Syn.: *Peucedanum schottii* DC.) (Fig. 37)

Mk Mt Jablanica, 0.8 km NW of Lakavica village, 1520 m, 18.08.2016, coll. A. Teofilovski (herb. A.T.); Mt Jablanica, 2.2 km SW of Višni village, 1410 m, 01.06.2017, coll. A. Teofilovski (herb. A.T.); Mt Jablanica, 1.5 km NW from Čafasan pass, 1230 m, 27.07.2017, coll. A. Teofilovski (herb. A.T.)

Dichoropetalum schottii is mainly a S European species, reported earlier from Mt Galičica (Černjavski 1943, sub *Peucedanum schottii*; Matevski 2005, sub *P. schottii* var. *petraeum*), Mt Vraca (Krakornica, Brodec), Radika (Nistrovo, Dlaboka Reka), and Mt Stogovo (Gari) (Matevski 2005, sub *P. schottii* var. *petraeum*).

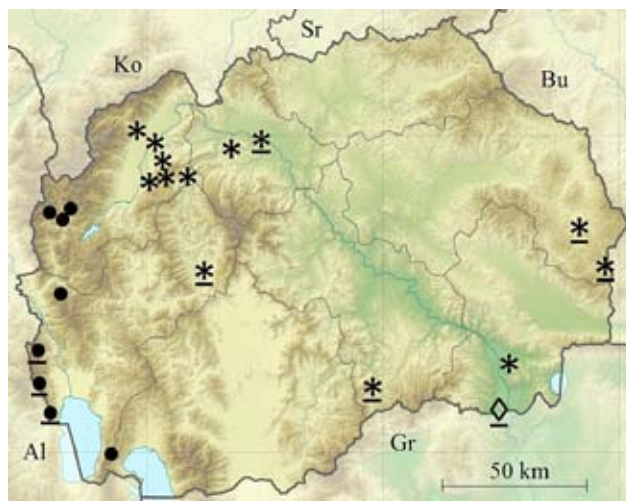


Fig. 37. Distribution of *Dichoropetalum schottii* (●), *Chenopodium hybridum* (*), and *Bidens subalternans* (◇) in Macedonia. Underlined symbols represent new records.

On Mt Jablanica, this species has been frequently observed across the entire massif, between 1200 m and 1600 m, inhabiting open forests (*Fagus*, *Ostrya*), forest clearings, and stony places, on various geological substrates. All populations on Mt Jablanica belong to var. *petraeum*, which differs from the typical *D. schottii* by its gray and dimorphic leaves. According to Matevski (2005), it is the only variety occurring in Macedonia.

196. *Heracleum orphanidis* Boiss. (Fig. 38)

Mk Mt Jablanica, Strižak, 1600 m, 27.07.2016, coll. A. Teofilovski (herb. A.T.); Mt Jablanica, W-SW of Jablanica village, 1540 m, 41°18'0.35"N, 20°32'59.05"E, 07.07.2016, coll. A. Teofilovski (herb. A.T.); Mt Jablanica, 3.6 km NW-W from Labuništa village, 1600 m, 11.07.2017, coll. A. Teofilovski (herb. A.T.); Mt Jablanica – Višni village, Tri Šilka, 1650 m, 11.08.2017, coll. A. Teofilovski (herb. A.T.).

Heracleum orphanidis is a S Balkan endemic with distribution range in some Macedonian mountains westwards from Vardar River, including the adjacent Kosovo part of Mt Šar Planina and the Greek part of Mt Baba. On the territory of Macedonia, it has been earlier reported from Mt Jakupica (Begovo, Šaškovica), Mt Baba (Pelister) (Matevski 2005), Mt Šar Planina (Plat), and Mt Nidže (Suvi Dol) (Teofilovski 2014). The report from Kajmakčalan (Mt Nidže) (Halácsy 1906) was not sufficiently accurate, whenever it refers to its Macedonian or Greek side. The newly discovered localities shift the westernmost point of the species range from Mt Šar Planina to Mt Jablanica.

On Mt Jablanica, this species occurs very sporadically in the upper part of the beech forest belt, almost across the entire massif.

Asteraceae

197. *Ambrosia artemisiifolia* L. (Figs. 38, 39)

Mk Tetovo, train station, 30.08.2009, coll. A.

Teofilovski (herb. A.T.).

Ambrosia artemisiifolia is a N American species introduced in parts of S America, Europe, Asia, Africa, and Australia. In most European countries, it is considered a naturalized and invasive species. The only earlier report of this species in Macedonia refers to the vicinity of Skopje: near the highway and the farms close to the Bellevue Hotel (Milkovska & al. 2013).

At the train station on the periphery of Tetovo town, this species was observed for the first time in the summer of 2009. Then, *ca.* 60 vital individu-

als were observed to inhabit the lawn and the waste places between the office building and the storehouse. According to the latest field observation carried out in the autumn of 2016, the size of recorded population has significantly decreased.

198. *Bidens subalternans* DC. (Figs. 37, 40)



Fig. 38. Distribution of *Ambrosia artemisiifolia* (●), *Heracleum orphanidis* (*), and *Spargula arvensis* (◇) in Macedonia. Underlined symbols represent new records.



Fig. 39. *Ambrosia artemisiifolia* (photo A. Teofilovski).

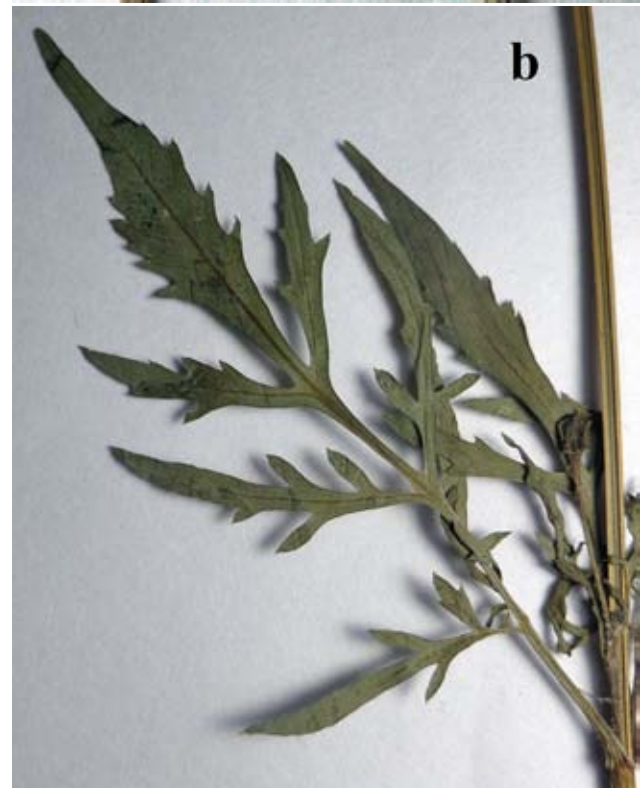


Fig. 40. *Bidens subalternans* (a – fruiting capitulae, b – leaf) (photo A. Teofilovski)

Mk Gevgelija, S periphery, 28.10.2009, coll. A.

Teofilovski (herb. A.T.).

Bidens subalternans is a new alien species in the flora of Macedonia. The recorded population at the time of observation comprised *ca.* 40 individuals inhabiting a waste ruderal place. Since further field observations have not been carried out, the recent condition of this population and the possible invasiveness of this species in the locality are unknown.

Bidens subalternans has a native range of distribution in most of S America, but as an introduced species, usually with a strong invasive potential, it occurs also in Europe, Australia and E Asia (S Korea). In Europe, it was observed for the first time in 1903 (Duvigneaud 1975), but now it is present in most of the W, C & S European countries, and in some of them is already being considered naturalized (Greuter 2006–2009). On the Balkan Peninsula, this species was recorded for the first time in 1975 in a coastal area of Croatia (Trinajstić 1993), with subsequent records also in Montenegro (Pulević 2005), Bosnia and Herzegovina (Mostar) (Lašić & al. 2010), and Serbia (Niš) (Bogosavljević & Zlatković 2015).

Bidens L. is a large genus comprising more than 250 species, which are widespread mainly in the subtropical, tropical, and warm-temperate area of N & S America. In Europe, this genus is represented by 19 species, among which only three are native, while the other 16 are alien species (Greuter 2006–2009, Euro+Med Plant Base, accessed 15.01.2017). From the territory of Macedonia another two species of this genus have been known – *B. cernua* and *B. tripartita* – both of a native origin.

Brassicaceae

199. *Chorispora tenella* (Pall.) DC. (Figs. 41, 42)

Mk Tetovo, train station, 13.04.2000, 10.04.2016, coll.

A. *Teofilovski* (herb. A.T.);

— Skopje, Rail Shipping Service, on an abandoned rail track and nearby waste places, 41°59'55.08"N, 21°28'21.47"E, 11.04.2014, coll. A. *Teofilovski* (herb. A.T.).

Chorispora tenella is an alien species on the territory of Macedonia, so far reported only from Skopje – Madžari Railway Station – based on a field record from 1999 (Matevski 2016).

At the train station in Tetovo, this species was recorded for the first time in 2000, represented by a large population of *ca.* 1000 individuals, growing on and

around the rail tracks. According to the field observations in April 2002, the size of the population has rapidly decreased to *ca.* 100–150 individuals confined to places with deepest soil. This population was observed in a similar condition several times in the following years (including 2017).

In the second locality (Skopje – Rail Shipping Service), *Chorispora tenella* was observed in 2014, with *ca.* 50 individuals, growing near and on an abandoned rail track.

In both new localities, this species has been most probably introduced by the rail transport, as was already assumed by Matevski (2016) regarding the site at the Madžari Railway Station, Skopje. The native distribution range of *Chorispora tenella* comprises parts of C & S Europe, much of E Europe and SW Asia, while as introduced species it occurs also in some



Fig. 41. *Chorispora tenella* (Tetovo) (photo A. Teofilovski)

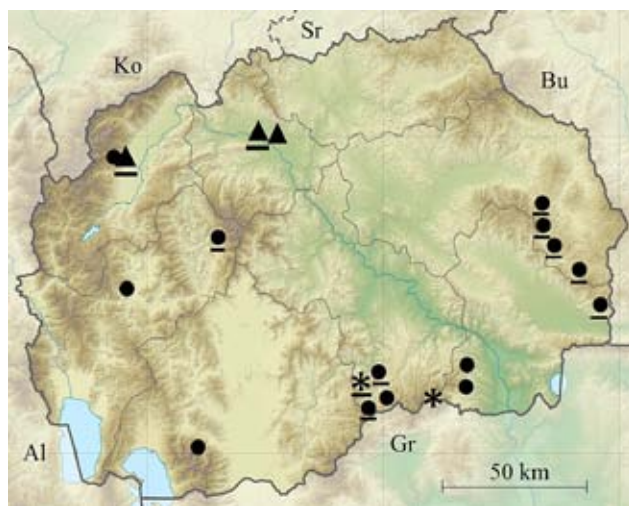


Fig. 42. Distribution of *Juncus tenuis* (●), *Knautia ambigua* (*), and *Chorispora tenella* (▲) in Macedonia. Underlined symbols represent new records.

other parts of Eurasia and some temperate areas of America, Africa and Australia.

Caryophyllaceae

200. *Spergula arvensis* L. (Fig. 38)

Mk Mt Ogražden, above Stinik village, 1430 m,
41°29'34.88"N, 22°56'57.69"E, 26.08.2016, coll. A.
Teofilovski (herb. A.T.).

Spergula arvensis is a sub-cosmopolitan, mainly weed species in Macedonia, earlier known only from three rather old reports: Kriva Palanka (Urumov 1923), Valandovo, and Strumica (Veljusa) (Soška 1953). The presence of this species in the Macedonian flora has been not confirmed either by any recent author or by Micevski (1993) in the treatment of genus *Spergula* in *The Flora of the Republic of Macedonia*.

Above the village of Stinik (Mt Ogražden) this species has been observed as an abundant weed in potato fields.

Chenopodiaceae

201. *Chenopodium hybridum* L. (Fig. 37)

Mk Skopje, 0.8 km SE-S from the train station, 41°59'12.30"N, 21°27'10.94"E, in a lawn, 15.05.2017, coll. A. Teofilovski (herb. A.T.);
— Poreče, near the trail to Pešna cave, 09.06.2016, coll. A. Teofilovski (herb. A.T.);
— Kavadarci, N periphery of Rožden village, 14.08.2014, coll. A. Teofilovski (herb. A.T.);
— Berovo, C & N part of the city area, 14.10.2015, coll. A. Teofilovski (herb. A.T.); Berovo, near Dvorište village, in a waste place, 41°35'3.06"N, 22°56'18.41"E, 885 m, 01.10.2016, coll. A. Teofilovski (herb. A.T.).

Chenopodium hybridum is a rare ruderal species reported earlier from Valandovo (Marvinci), Mt Vodno, (Micevski 1995), Tetovo (bus station, Saraćino), and Mt Suva Gora (Gurgurnica, Gorna Lešnica, Volkovija) (Teofilovski 2011). Its range comprises Europe, Caucasus, Siberia, and Altai.

Cistaceae

202. *Cistus incanus* L. subsp. *incanus* (Fig. 43)

Mk Mt Jablanica, 1.15 km N of the Lakavica military facility, in a forest clearing, 1460 m,
20°30'09.01"E, 41°20'09.76"N, 31.08.2016, coll. A.
Teofilovski (herb. A.T.).

Cistus incanus is a Mediterranean species, distributed from Corse and W Italy eastwards to the Crimea, and in Macedonia is represented only by subsp. *incanus*.



Fig. 43. *Cistus incanus* subsp. *incanus* (habitat) (photo A. Teofilovski).

The earlier known distribution range of this taxa in Macedonia comprises the lower part of the Vardar River valley (northwards to the mouth of river Crna), including the upper part of Crna river valley and the valley of river Raec, in the vicinity of lake Dojran, Strumica valley, and Kavadarci (Mrežičko) (Em 1967, sub *C. villosus*, Micevski 1995, sub *C. incanus*). According to Em (1967), this species occurs also in “some localities around the Ohrid Lake”, but so far this report has not been confirmed.

In the newly discovered locality, only few shrubs have been observed growing in a small clearing in a beech forest, on rather skeletal soil and siliceous substrate (probably serpentine), at an altitude of 1460 m. The occurrence of this sub-Mediterranean plant in a mountain beech forest belt seems very unusual for *Cistus incanus* s.l., not only in Macedonia but probably within its entire range of distribution. In Macedonia, all earlier reports refer to the thermophilous oak forest belt (below 900 m).

Dipsacaceae

203. *Knautia ambigua* Boiss. & Orph. (Figs. 42, 44)

Mk Mt Kozjak (Kavadarci), S & W slopes of Mešnik and SW slope of Petle, 1160–1320 m, 23.07.2014, 23.06.2015, coll. A. Teofilovski (herb. A.T.).

Knautia ambigua is a Balkan endemic species with a distribution range confined to SE Serbia, Macedonia, Bulgaria, and N Greece. In Macedonia, the only earlier



Fig. 44. *Knautia ambigua* (Mešnik) (photo A. Teofilovski).

report is from Mt Dudica (Mala Rupa) (Bornmüller 1926). In Mešnik and the adjacent locality Petle (Mt Kozjak), this species is rather abundant, inhabiting mainly *Pinus nigra* forests, and less frequent in dry open places, on calcareous substrate. According to the morphological analysis of numerous herbarium specimens and appropriate photographs of live plants from both subpopulations, the greater proportion of individuals (*ca.* 60%) have completely undivided leaves, not representing the typical *Knautia ambigua*, which usually bears more or less divided middle cauline leaves.

Hypericaceae

204. *Hypericum spruneri* Boiss. (Fig. 45)

Mk Struga, Elen Kamen, at the roadside and forest margin, 735 m, 22.06.2016, coll. A. Teofilovski (herb. A.T.).

This is a rare *Hypericum* in Macedonia, earlier reported only from two localities: Mt Jablanica (Lukovo), and Resen (between Stenje and Konjsko) (Micevski 1995). There was a report from Mt Belasica (Stojanov 1921), but it is unclear if it refers to the Macedonian,

Bulgarian or Greek part of the mountain. The presence of this species has been so far confirmed only for the Greek part of this mountain (Willing & Willing 2007). Its distribution range includes SW Balkans and S Italy.

Menyanthaceae

205. *Menyanthes trifoliata* L.

Mk Mt Jablanica, 3 km W-NW of Lakavica village, 1430–1460 m, 07.08.2016, coll. A. Teofilovski (herb. A.T.).

This species has been earlier known from the surroundings of the Ohrid Lake (Struga, Dobovjani, Kališta, Studenčišta), Prespa Lake (Perovo, Tumenica), Mt Bistra (Mavrovo and Leunovo villages, Toni Voda), Radika river valley near Mavrovo, Mt Krčin, and Mt Dešat (Lokov, Trebište) (see Matevski 2010).

On Mt Jablanica near the village of Lakavica, this species creates dense stands in relatively large boggy places (*ca.* 2 ha), mostly in shallow water, but also occurs less abundantly in the peripheral wet places.

Scrophulariaceae

206. *Veronica montana* L. (Fig. 45)

Mk Mt Suva Gora, 2.8 km E-SE of Miletino village, near a recently constructed forest road in an *Ostrya carpinifolia* forest, on carbonate substrate, 1100 m, 20.10.2016, coll. A. Teofilovski (herb. A.T.);

— Mt Jablanica, 3.2 km NW from Labuništa village, near a mountain stream in a beech forest, 1470 m, 41°16'52.18"N, 20°33'39.83"E, 11.07.2017, coll. A. Teofilovski (herb. A.T.).

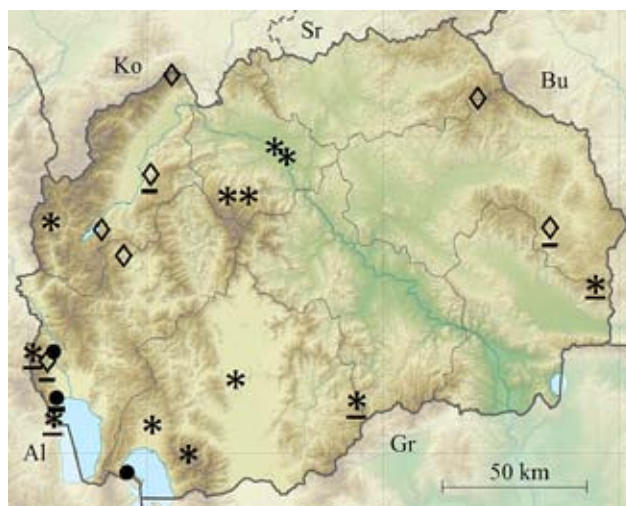


Fig. 45. Distribution of *Hypericum spruneri* (●), *Veronica scutellata* (*), and *Veronica montana* (◇) in Macedonia. Underlined symbols represent new records.

- Maleševski Planini Mts, 5.4 km E from Smilanci village, in a beech forest close to a mountain stream, 1000 m, 41°42'12.89"N, 22°40'8.11"E., 04.05.2017, coll. A. Teofilovski (herb. A.T.).

This is a rare representative of the genus *Veronica* in the Macedonian flora, earlier reported only from Mt Šar Planina (Ljuboten) (Bornmüller 1928; Stojanoff 1928; Fischer & Fischer 1981), Mt Bistra (Arap Kula, river Leunovska) (Rizovski & Džekov 1990), and Mt Osogovo (Fischer & Fischer 1981). The range of this species comprises W, C & S Europe and Algeria.

207. *Veronica scutellata* L. (Fig. 45)

- Mk** Mt Jablanica, 2.1 km W of Lakavica village, in a wet place, 1400 m, 41°19'34.44"N, 20°30'36.77"E, 13.07.2016, coll. A. Teofilovski (herb. A.T.);
- Struga, 0.4 km NE from the Čafasan Pass, in a marshy place, 985 m, 07.2017, coll. A. Teofilovski (herb. A.T.);
 - Mt Kozjak (Kavadarci), Tribor, 1420 m, in a wet place, 20.07.2014, coll. A. Teofilovski (herb. A.T.);
 - Mt Ogražden, Crveno Pole, in a wet place, 1245 m, 41°30'25.64"N, 22°53'15.10"E, 27.08.2016, coll. A. Teofilovski (herb. A.T.).

This is an European and Mediterranean species, earlier reported from several localities in the western half of Macedonia: Skopje (Ognjanci, Dolno Lisiče) (Micevski 1963), Bitola (Čepigovo), Resen (Micevski 1964), Mt Jakupica (Mumadžica, Dračevski Vis, Prazna Torba, Kitka), Mt Korab (Kukolj), and Pelister (Golemo Ezero) (Krpáč 2000).

Juncaceae

208. *Juncus tenuis* Willd. (Fig. 42)

- Mk** Maleševski Planini Mts, frequent in a large area between villages Mitrašinci and Suvi Laki, 800–1300 m, 29.09.2015, coll. A. Teofilovski (herb. A.T.);
- Mt Ogražden, Suvi Laki, 1000–1300 m, 15.10.2015, coll. A. Teofilovski (herb. A.T.); Mt Ogražden, 3.1 km NE-N of Stinik village, 1330 m, 26.08.2016, coll. A. Teofilovski (herb. A.T.);
 - Mt Kozjak (Kavadarci), frequent in a large area between Klinovo village and the Macedonian – Greek border, 700–1700 m, 08.2014, coll. A. Teofilovski (herb. A.T.);
 - Makedonski Brod, in the Belica village, near a stream, 15.06.2016, coll. A. Teofilovski (herb. A.T.).

Juncus tenuis is a N American species, already naturalized across the world. In Macedonia, it was report-

ed for the first time nearly half a century ago, from its southern parts: Mt Kožuf (Visoka Čuka) and Pelister (Niže Pole) (Micevski 1970). It was further reported a few decades later from Kavadarci – Mrežičko (Micevski 1995), Mt Kožuf (Srmenin, Konopište), Kičevo (Javorec), and Tetovo (Teofilovski 2011). Presently, *Juncus tenuis* should be considered an invasive species on the territory of Macedonia, spreading fast in several mountain ranges, particularly in the southern and eastern parts of the country. It usually inhabits dry to wettish places, mostly on or close to the forest roads.

Acknowledgment: The author is grateful to the reviewer V. Matevski for his useful suggestions.

Reports 209–211

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Brassicaceae

209. *Brassica napus* L.

- Gr** Nomos & Eparchia Kozanis: on land between buildings in the town of Kozani, ca. 700 m, 40°18'N, 21°48'E, 05.2016 & 06.2016, Tsialtas s.n. (herb. Tsialtas).

New for nomos and eparchia, not established. Several flowering and later mature plants were found in May and June below a tree of *Pyrus spinosa*, obviously brought in accidentally together with building material. *Brassica napus* occurs as a casual in man-made habitats and is widely cultivated as an oil or root crop. It was introduced to the area ca. five years ago, and commercial fields are found 20 km distant. It is not known to be native anywhere and has originated from crosses between cultivated and weedy parents (Snogerup & Snogerup 2002).

Fabaceae

210. *Pisum sativum* L. subsp. *sativum* (Fig. 46)

- Gr** Nomos Kikladon, Eparchia Thiras: island of Schinoussa, featured in a TV documentary, <https://el-gr.facebook.com/PhabaSchoinousas>, Tsialtas obs.; seeds acquired in October 2016 and tested in field between December 2016 and May 2017.



Fig. 46. *Pisum sativum* (photo I. Tsialtas).

New for Schinoussa. In Dimopoulos & al. (2013) *P. sativum* is recorded for the Kiklades only at species level although probably all reports from the Kiklades would refer to subsp. *sativum*. Records from Siros and Milos were first reported as *P. arvense* and *P. sativum* subsp. *arvense*, which are synonymous. *Pisum* was traditionally grown on the island but the crop had been abandoned for years. There has been a recent attempt to revive cultivation using the local landrace called “katsouni” which has purple flowers and a purple or white halo; *P. sativum* subsp. *sativum* usually has purple flowers and a white halo.

Poaceae

211. *Panicum capillare* L. (Fig. 47)

Gr Nomos Kozanis, Eparchia Voiou: on the left of the road to village Apidea, ca. 500 m from the crossroad of Old National Road from Kozani to Ioannina, in a field sown to lentils in spring, ca. 750 m, 40°17'N, 21°19'E, 16.07.2016, Tsialtas s.n. (herb. Tsialtas; photos, det. Kit Tan, July 2017).

New for eparchia, it was already reported by us from eparchia Kozanis (Tsialtas & Tan 2015). Numerous well-grown plants 70–80 cm tall and at early matu-

rity were found on the light-textured soil derived from neogenic sandstone predominant in the region. Abundant species in the spring are *Amaranthus blitum*, *Chenopodium album*, *Cynodon dactylon*, *Heliotropium europaeum*, *Lactuca serriola*, *Polygonum aviculare*, *Mentha* & *Setaria* spp. The main crops are winter cereals (*Triticum aestivum*, *Triticum durum* and *Hordeum vulgare*), lentil (*Lens culinaris*), tobacco (*Nicotiana tabacum*) and lavender (*Lavandula angustifolia*). Although millet is not grown in the region today, it was widely cultivated from the Ottoman period until the mid-20th century (Gekas & Zikas 2014).

Report 212

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Caryophyllaceae

212. *Gypsophila trichotoma* Wender. (Fig. 48)

Bu Znepole region: on the grass median strip between



Fig. 47. *Panicum capillare* in field (photo I. Tsialtas).



Fig. 48. *Gypsophila trichotoma* (photo V. Vladimirov).

the travel lanes and on the verges of the highway from Pernik town to Dupnitsa town (highway 'Struma'), 790–800 m, 42.54898°N, 23.12555°E, 05.08.2017, coll. V. Vladimirov (SOM); Pernik town, on the verges of the road from Pernik town to Radomir town, ca. 720 m, app. 42.60305 N, 23.09614 E, 05.08.2017, V. Vladimirov obs.

New species for this floristic region and for West Bulgaria.

In the first mentioned locality, the species is represented by an abundant population – several hundred individuals grow mostly on the median stripe between the two lanes of Struma highway but also on the verges. The population is somewhat fragmented along the highway but extends from Pernik town to the fork to Dupnitsa town (the distance is ca. 25 km along the highway). The species was first noted in 2015 near the fork to Bosnek village but since then the number of the individuals and the extent of occurrence increased significantly.

In the second locality, along the road from Pernik to Radomir, a few individuals were observed in two locations ca. 1 km apart. Apparently, the species was transferred recently from Struma highway and starts spreading along this road as well.

These new records are rather unexpected and surprising. So far the taxon has been reported only from Eastern Bulgaria, in the Black Sea Coast and Northeast Bulgaria floristic regions (Assyov & Petrova 2012; Petrova 2015). The species has been evaluated as 'Endangered' at national level (Petrova 2009, 2015) and is legally protected under the national Biological Diversity Act. The primary habitats for the species are damp sandy, muddy or clayey coastal places, often with high salinity. However, some years ago it was noted that transport networks like roads and especially railways offer suitable secondary habitats for the species – it has been recorded near a number of railway stations, e.g. Varna, Kardam, Sindel, Vyatovo, etc. (Vladimirov & Petrova 2010), and along the asphalted road between Razdelna and Padina villages, Varna district (pers. obs.).

It is yet unknown how *G. trichotoma* established along the very recently constructed Struma highway in West Bulgaria. The nearest known localities are ca. 400 km to the east, on the Black Sea coast. In East Europe, the species occurs naturally in Bulgaria and Romania (Marhold 2011). So, transportation from the neighbouring Macedonia or Greece to West Bulgaria was not possible. The species has been reported as alien for Germany, Estonia and Latvia (Marhold 2011).

Reports 213–235

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The following are new plant records based on floristic investigations in the prefectures of Achaïas, Korinthias and Arkadias in north and central Peloponnese. A diagonal running from the NE to the SW of the peninsula represents a somewhat surprisingly under-explored area.

Asteraceae

213. *Carduus nutans* subsp. *taygeteus* (Boiss. & Heldr.) Hayek (Fig. 49)

Gr Nomos & Eparchia Korinthias: Mikri Ziria, Zastano peak, 1582 m, 37°53'N, 22°26'E, 22.05.2017, Zarkos obs. (photos); Mt Maurovouni, road margins in *Abies cephalonica* forest, 1192 m, 37°51'N, 22°21'E, 05.06.2017, Zarkos & Christodoulou obs. (several photos).

New for Mt Killini and also for Korinthias with the exception of a record from Lake Vouliagmeni. In the Peloponnese reported from Panachaiko, Erimanthos, Chelmos and Taygetos.

Brassicaceae

214. *Eruca vesicaria* (L.) Cav.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari – Sirna road, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.



Fig. 49. *Carduus nutans* subsp. *taygeteus* (photo V. Christodoulou).



Fig. 50. *Erysimum pseudocuspidatum* (photo V. Christodoulou).

215. *Erysimum pseudocuspidatum* Polatschek
(Fig. 50)

Gr Nomos & Eparchia Korinthias: Mt Killini,
Flabouritsa gorge, 1250 m, 37°57'N, 27°27'E,
09.05.2010, Zarkos & Christodoulou obs.; loc.
ibid., 06.05.2012, Zarkos & Christodoulou obs.

New for Mt Killini. In the Peloponnese, reported from
Chelmos, Menalo, Taigetos and Parnonas.

Ericaceae

216. *Erica arborea* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km
NW of Megalopolis, on Psari - Sirna road, in
Quercus frainetto woodland, 400 m, 37°25'N,
22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.

217. *Orthilia secunda* (L.) House (Fig. 51)

Gr Nomos Achaïas, Eparchia Kalavriton: Mt
Chelmos, Styx ravine, in *Abies cephalonica* forest,
1612 m, 37°59'N, 22°12'E, 29.07.2017, Zarkos obs.
(photos).

New for Mt Chelmos, nomos and eparchia. Reported
by Apergis (1998: 8)
from Mt Taigetos,
otherwise new for the
Peloponnese.



Fig. 51. *Orthilia secunda*
(photo G. Zarkos).

Fabaceae**218. *Anthyllis hermanniae* L.**

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari – Sirna road, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & G. *Vold* obs. New for eparchia.

219. *Astragalus monspessulanus* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari – Sirna road, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & G. *Vold* obs. New for eparchia.

220. *Calicotome villosa* (Poir.) Link

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari – Sirna road, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & G. *Vold* obs. New for eparchia.

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

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari – Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & G. *Vold* obs. New for eparchia.

222. *Vicia villosa* Roth (Fig. 52)

Gr Nomos & Eparchia Korinthias: above Korfiotisa village, 763 m, 38°04'N, 22°31'E, 26.04.2017, *Zarkos* obs.; *loc. ibid.*, 16.05.2017, *Kit Tan*, G. *Vold* & *Zarkos* 32281; Lake Stymfalia, 610 m, 37°50'N, 22°27'E, 15.05.2009, *Zarkos* & *Christodoulou* obs.

The very polymorphic *Vicia villosa* has some white-flowered or white suffused bluish or pale lilac members, e.g., *V. v.* subsp. *maniatissa* from the southern Peloponnese. In the latter taxon, the keel is always tipped blackish-violet. Here in Korinthias, we noted pure white forms of *Vicia villosa* which we did not assign to any of the five recognized subspecies in Greece, some of which can be treated at species rank.

Hypericaceae**223. *Hypericum barbatum* Jacq.**

Gr Nomos Arkadias, Eparchia Gortinias/Mandiniyas: Mt Menalo, along forest road from Vitina to Ostrakina, meadows with rocky limestone outcrops in openings of *Abies cephalonica* forest, 1350 m, 37°40'N, 22°14'E, 19.07.1998, *Strid* & *Kit Tan* 47197; W slopes of Ostrakina peak, 1807 m, 37°38'N, 22°16'E, 05.07.2017, *Zarkos* & *Christodoulou* obs.

Second record for Mt Menalo. In the Peloponnese reported from Panachaiko, Chelmos and Saitas. A poly-

morphic species for which several varieties have been described.

224. *Hypericum perforatum* subsp. *veronense* (Schrank) A. Fröhl

Gr Nomos Arkadias, Eparchia Mandiniyas: Mt Menalo, along forest track 14 km from Levidi to ski centre, shaded places in open *Abies cephalonica* forest, 1170 m, 37°38'N, 22°17'E, 10.07.1991, *Kit Tan* & G. *Vold* 10237; Mt Menalo, edge of road to Ostrakina, 845 m, 37°38'N, 22°18'E, 05.07.2017, *Zarkos* & *Christodoulou* obs.

New for Mt Menalo, widespread on mainland. *Hypericum p.* subsp. *perforatum* occurs in northern Greece.

Juglandaceae**225. *Juglans regia* L.**

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari – Sirna road, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & G. *Vold* obs. New for eparchia; remnant of cultivation struck by lightning.

Lamiaceae**226. *Calamintha nepeta* subsp. *glandulosa* ((Req.) P.W. Ball**

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari – Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & G. *Vold* obs. New for eparchia.



Fig. 52. *Vicia villosa* (photo G. Zarkos).

227. *Clinopodium vulgare* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.

228. *Phlomis samia* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.

Polygalaceae**229. *Polygala subuniflora* Boiss. & Heldr. (Fig. 53)**

Gr Nomos Achaïas, Mt Chelmos, Styx ravine, 1983 m, 37°58'N, 22°12'E, 24.06.2017, Zarkos & Christodoulou obs.

Seldom collected, apparently restricted to *locus classicus*. It was first discovered by Heldreich at 2000–2300 m in the upper part of the Styx ravine, high above the waterfall. The recent gathering in June 2017 confirms that the species still occurs in small populations and is not extinct despite its rarity.

Primulaceae**230. *Lysimachia atropurpurea* L.**

Gr Nomos & Eparchia Korinthias: Feneos plain, at the edge of cultivated fields, 700 m, 37°52'N, 22°16'E, 25.05.2017, Zarkos obs. (photo).

New for Korinthias, apparently not recorded from eastern part of the Peloponnese.



Fig. 53. *Polygala subuniflora* (photo G. Zarkos).

Ranunculaceae**231. *Myosurus sessilis* S. Watson (syn. *M. heldreichii* Heldr. ex H. Lév.) (Fig. 54)**

Gr Nomos & Eparchia Korinthias: Mt Killini, Lake Dasiou, 1478 m, 37°58'N, 22°25'E, 26.04.2017, Zarkos obs.

New for Korinthias where it was noted by observant botanist. Recorded from Nafplio (Nomos Argolidos, Eparchia Navplias, Lassen 91027, LD), otherwise this is a first record for the Peloponnese.

Rubiaceae**232. *Cruciata taurica* subsp. *euboea* (Ehrend.) Ehrend.**

Gr Nomos Arkadias, Eparchia Gortinias/Mandiniyas: Mt Menalo, W slopes of Ostrakina peak, 1789 m, 37°38'N, 22°16'E, 05.07.2017, Zarkos & Christodoulou obs.

New for nomos, eparchia and Mt Menalo. Rarely collected in Peloponnese.



Fig. 54. *Myosurus sessilis* (photo G. Zarkos).

Salicaceae**233. *Populus alba* L.**

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari – Sirna road, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

Scrophulariaceae**234. *Verbascum sinuatum* L.**

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari – Sirna road, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

Poaceae**235. *Andropogon distachyos* L.**

Gr Nomos & Eparchia Korinthias: gravelly serpentine slopes above dry stream bed in *Pinus halepensis* woodland on lower slopes of Mt Gerania, 175 m, 37°58'N, 23°01'E, 09.06.2017, *Zarkos* obs. (photos).

New for Korinthias (Sterea Ellas). Occurring in the vicinity of *Silene supina* which is also new for Sterea Ellas.

Reports 236 – 246**Antoaneta Petrova**

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Brassicaceae**236. *Arabis hirsuta* (L.) Scop.**

Bu Rhodopi Mts (*Central*): Stony places (limestone), Visokata Pesht locality south of Asenovgrad town, LG25, 24.06.2005, coll. *A. Petrova* (SOM 173304); stony slopes above Trigrad village, KG80, 27.06.2006, coll. *A. Petrova* (SOM 173303).

A new species for this floristic subregion (Ančev 2007; Assyov & Petrova 2012).

Caryophyllaceae**237. *Silene colorata* Poir. (Fig. 55)**

Bu Mt Slavyanka: Parilski Dol locality, stony places, GL28, 04.08.2010, coll. *A. Petrova* (SOM 173251).

Silene colorata is a member of sect. *Dipterospermae* (Chater & al. 1964). Seeds of the members of the section are reniform, with flat faces, the back is deeply grooved between two undulate wings. The distribution of *S. colorata* is in the Mediterranean area; the coastal dunes are the most preferable habitat, but is found on rocky and stony habitats as well.

The species was observed in 2 places in Parilski Dol. A group of few individuals was found at the bottom in the lower part of the ravine. Another small group was observed on a rocky slope in the middle part of the ravine.

Hayek (1924) gave it for Bulgaria (without distribution data). Based on this, Chater & al. (1964) gave the species for Bulgaria also. Jordanov & Panov (1966) cited Hayek (1924) but didn't include the species as a numbered species in the Flora. Petrova (1992) listed the species with a question mark.

The data from Mt Slavyanka confirmed the distribution of the species for the Bulgarian flora. The Parilsky Dol ravine is known as a locality of exceptional floristic diversity and since 1951 it is a part of the Ali Botush natural reserve. The regime of the reserve is a strict one. Due to the lack of grazing and other disturbances since decades the vegetation succession towards a forest community takes place and nowadays the conditions for heliophytes like *S. colorata* change for worse, so their populations deteriorate. The comparatively shady conditions are the possible explanation for the pale color of the flowers, which are usually pink.



Fig. 55. *Silene colorata* (photo A. Petrova).

Crassulaceae

238. *Crassula tillaea* Lest.-Garl. (Fig. 56)

Bu Thracian Lowland: Defileto na Reka Harmanliiska Protected Site (Harmanliiska River Gorge) near Harmanly town, MG04, 41.915631°N, 25.885102°E, 25.04.2017, coll. A. Petrova (SOM 173742).

A new region for this tiny annual plant. So far known from the floristic regions in SW Bulgaria: West Frontier Mts, Valley of River Struma, and Belasitsa Mt (Assyov & Petrova 2012). A protected species according the national Biodiversity Act, considered endangered for Bulgaria (Assyov & Denchev 2009, 2015). The population is numerous, on typical very shallow sandy soil, predominantly along the touristic path.

Dipsacaceae

239. *Knautia longifolia* (Waldst. & Kit.) Koch

Bu Vitosha region: a pasture between Yarema locality and Kovachevtsi village, FN90, app. 42.466313°N, 23.331018°E, 10.07.2003, coll. A. Petrova (SOM 173292).

A new region for this species (Petrova 2012).

Lamiaceae

240. *Lamium album* L.

Bu Rila Mts: Rilski Manastir Nature Park, herbaceous vegetation along the road in Buchino Bardo locality, FM96, 30.06.2012, coll. A. Petrova (SOM 173273).

This species has wide distribution in Eurasia but in Bulgaria it is locally known only from the Balkan Range (*Western*), Znepole region and Mt Stedna Gora (*Western*) floristic regions (Asenov 1989).



Fig. 56. *Crassula tillaea* (photo A. Petrova).

241. *Nepeta parviflora* M. Bieb.

Bu Northeast Bulgaria: dry grasslands west of Neikovo village, Dobrich district, PJ12, app. 43.60073°N; 28.40011°E, 15.05.2012, coll. A. Petrova (SOM 173293).

A Pontic element in the Bulgarian flora, for which only few localities are documented in Black Sea Coast (*Northern*) and Danubian Plane floristic regions. Evaluated as 'Vulnerable' for the country (Genova 2009). New for this region, where the Pontic steppe vegetation is well presented. The observed population consists of about 30 dispersed individuals.

242. *Prunella ×intermedia* Link (*P. vulgaris* × *P. laciniata*)

Bu Vitosha region: a meadow along the road to Yarlovo village, FN80, 10.06.2003, coll. A. Petrova (SOM 173804).

A new region for this hybrid (Popova 1989).

243. *Stachys byzantina* K. Koch (Fig. 57)

Bu Rila Mts: pasture at Bely Iskar valley, above the village of Bely Iskar, not far from the beginning of the ecological path, GM08, 41.45414°N, 23.26512°E, 1080 m, 26.06.2016, coll. A. Petrova (SOM 172768).



Fig. 57. *Stachys byzantina* (photo A. Petrova).

Stachys byzantina belongs to *S. germanica* group. It is native to SW Asia: Turkey, Armenia, Iran (Ball 1972; Bhattacharjee 1982). Perennial, with abundant basal sterile leave rosettes. The whole plant is densely white lanate-tomentose. It is widely grown as an ornamental plant – in borders, mix-borders, rock gardens, etc., as it is tolerant to drought, low temperature, soil type. Because of the shape and fur-like indumentum of the leaves it is known as “Lambs-ear” plant. It can escape from cultivation and in Europe it is found as an alien in more than 18 countries, in some of them it is considered “established” (DAISIE 2017).

In Bulgaria its cultivation became popular two decades ago, after the political changes. This is the first report for escaped plants. Two large individuals were observed (Fig. 57). There are cultivated plants in a garden which is about 450 m apart. Origin from both seeds or vegetative means are possible, animals are the probable vector. The locality is just next to the boundary of the Rila National Park and deserve further monitoring. The current status for Bulgaria is ‘casual’.

Rosaceae

244. *Potentilla detommasii* Ten.

Bu Mt Slavyanka: Stargach Mt., dry grasslands above Ilinden village, GL39, app. 41.451505°N; 23.772919°E, 24.05.2015, coll. A. Petrova (SOM 173802).

A new species for this floristic region (Assyov & Petrova 2012).

Santalaceae

245. *Thesium alpinum* L.

Bu Rhodopi Mts (*Central*): Raikovi meadows near Pamporovo resort, along the road to Smolyan town, LG01, 25.06.2005, coll. A. Petrova (SOM 173291).

A new species for this floristic region.

Juncaceae

246. *Juncus ranarius* Song. & Perr. ex Bill.

Bu Rila Mts: Rilski Manastir Nature Park, wet places along the road in Buchino Bardo locality, FM96, 30.06.2012, coll. A. Petrova (SOM 173270).

A new region for this species, often neglected in floristic studies.

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