

## New floristic records in the Balkans: 35\*

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**Abstract:** New chorological data are presented for 69 species and subspecies from Bulgaria (29-41, 49-69), Greece (12-28, 42-45, 46-48), and Turkey-in-Europe (1-11). The taxa belong to the following families: *Amaryllidaceae* (24), *Apiaceae* (49-51, 62), *Aristolochiaceae* (29), *Asteraceae* (1, 30, 42), *Boraginaceae* (15), *Brassicaceae* (16-18, 31, 43), *Caryophyllaceae* (52, 53, 63), *Chenopodiaceae* (2-5, 44), *Euphorbiaceae* (19), *Fabaceae* (32, 33, 54-56), *Geraniaceae* (6, 20, 46), *Hydrocharitaceae* (64), *Hypericaceae* (57), *Iridaceae* (25, 26, 36), *Juncaceae* (67), *Lamiaceae* (21, 34, 58), *Liliaceae* s.l. (27), *Orchidaceae* (12, 37-40), *Orobanchaceae* (48), *Papaveraceae* (65), *Poaceae* (28, 41, 45, 68, 69), *Primulaceae* (7), *Ranunculaceae* (8-11, 13, 22, 35), *Rosaceae* (59, 66), *Rubiaceae* (60), *Scrophulariaceae* s.l. (61), *Valerianaceae* (14), and *Violaceae* (23).

A new species for science is: *Hypericum icaricum* Kit Tan (47).

New species for the countries are: Greece – *Geranium subacutum* (46).

The publication includes contributions by: M. Aybeke (1-11), R.M. Burton & Kit Tan (12), C. Cattaneo & M. Grano (13-14), K. Giannopoulos, Kit Tan & G. Vold (15-28), G. Kunev (29-41), K. Polymenakos & Kit Tan (42-45), A. Robinson & Kit Tan (46), Kit Tan & A. Strid (47-48), K. Vassilev & E. Filipova (49-61), K. Vassilev & M. Gumus (62-69).

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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.

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

## Reports 1–11

### Mehmet Aybeke

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#### Asteraceae

##### 1. *Aster squamatus* (Sprengel) Hieron.

**Tu(E)** A1(E) Tekirdağ: Şarköy, 10 m, 40°36'50"N, 27°06'56"E, 28.07.2014, coll. *F. Dane*, det. *M. Aybeke* (EDTU 13520-13521).

A new species for Tekirdağ in European Turkey. The taxon was indicated as a new record for the European Turkey (Meriç & al. 2013). It is widely naturalized in Central and South America, and introduced and spreading in the Mediterranean and Caucasia. In Europe, the species is extending its distribution area to the Balkan Peninsula.

#### Chenopodiaceae

##### 2. *Atriplex patula* L.

**Tu(E)** A1(E) Edirne: Uzunköprü, Harmanlı village cemetery, 252 m, 41°05'47"N, 26°44'42"E, 25.04.1989, coll. *F. Dane* & *N. Polat*, det. *A. Baytop* (EDTU 3638); Edirne, Centre, around the University Campus, 35 m, 41°40'33"N, 26°33'31"E, 14.09.1989, coll. *F. Dane*, det. *M. Aybeke* (EDTU 3977).

This is a new species for Edirne in European Turkey. According to Aellen (1967), this taxon was found only in A2(E) Istanbul.

##### 3. *Atriplex rosea* L.

**Tu(E)** A1(E) Edirne: Centre, around the University Campus, 35 m, 41°40'33"N, 26°33'31"E, 14.09.1989, coll. *F. Dane*, det. *M. Aybeke* (EDTU 3961, 3983); Edirne, Centre, Binevler, 42 m, 41°40'33"N, 26°33'31"E, 14.09.1989, coll. *F. Dane*, det. *M. Aybeke* (EDTU 3970); Edirne, Centre, Hasköy village cemetery, 102 m, 41°38'18"N, 26°51'27"E, 23.10.1994, coll. *N. Başak*, det. *M. Aybeke* (EDTU 5922).

This is a new species for European Turkey. According to Aellen (1967), this taxon was found only in A2(A) Istanbul, and indicated as a Mediterranean taxon.

##### 4. *Chenopodium album* L. subsp. *album* var. *album*

**Tu(E)** A1(E) Tekirdağ: Şarköy, 10 m, 40°36'50"N, 27°06'56"E, 16.08.1989, coll. *F. Dane*, det. *M. Aybeke* (EDTU 4058); Edirne, Centre, Musabeyli village, in a meadow, 252 m, 41°41'50"N,

26°39'41"E, 15.09.1989, coll. *F. Dane* & *N. Polat*, det. *M. Aybeke* (EDTU 3987); Edirne, Centre, Binevler, 42 m, 41°40'33"N, 26°33'31"E, 14.09.1989, coll. *F. Dane*, det. *M. Aybeke* (EDTU 3971); Edirne, Centre, 26 m, 41°40'33"N, 26°33'31"E, 15.06.1989, coll. *F. Dane*, det. *M. Aybeke* (EDTU 3985).

This is a new species for Tekirdağ and Edirne in European Turkey. According to Aellen (1967), this taxon was identified only in A2(E) Istanbul.

##### 5. *Kochia scoparia* (L.) Schrad.

**Tu(E)** A1(E) Edirne: Centre, Musabeyli village, in a meadow, 252 m, 41°41'50"N, 26°39'41"E, 15.09.1989, coll. *F. Dane* & *N. Polat*, det. *M. Aybeke* (EDTU 3990).

This is a new species for European Turkey. According to Aellen (1967), this taxon was found in the Anatolian region of Turkey, A3 Bolu, A5 Kastamonu.

#### Geraniaceae

##### 6. *Geranium asphodeloides* Burnm. fil. subsp. *asphodeloides*

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy – İğneada, 1<sup>st</sup> km, 250 m, 41°49'30"N, 27°45'35"E, 06.05.1990, coll. & det. *C. Yarcı* (EDTU 5042).

This is a new species for Kırklareli in European Turkey. According to Davis (1967), this taxon was registered only in A2(E) Istanbul.

#### Primulaceae

##### 7. *Cyclamen coum* Mill. var. *coum*

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy – İğneada, 1 km, 215 m, 41°49'30"N, 27°45'35"E, 03.03.1990, coll. *C. Yarcı*, det. *C. Yarcı* & *M. Aybeke* (EDTU 5292, 5305); Edirne, Keşan, Mecidiye, 21 m, 40°41'17"N, 26°27'53"E, 16.03.1990, coll. *G. Dalgıç*, det. *G. Dalgıç* & *M. Aybeke* (EDTU4543); Vize, lake Saka, 35 m, 41°48'03.5"N, 27°59'07.8"E, 07.03.1992, coll. & det. *M. Aybeke* (EDTU 5162).

This is a new species for Edirne and Kırklareli in European Turkey. According to Meikle (1978), this taxon was found only in A2(E) Istanbul.

#### Ranunculaceae

##### 8. *Aquilegia olympica* Boiss.

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy – İğneada, 18 km, 12 m, 41°52'28"N, 27°59'02"E, 18.05.1991, coll. & det. *C. Yarcı* (EDTU 5051).

This is a new species for European Turkey. According to Cullen (1965), this taxon was found in Anatolian region at A5 Amasya, and was allied to *A. ottonis* Boiss. and *A. amaliae* Boiss. from Greece.

### 9. *Consolida ambigua* (L.) P.W. Ball

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy – İğneada, 18 km, 12 m, 41°52'28"N, 27°59'02"E, 18.05.1991, coll. & det. C. Yarcı (EDTU 5048).

This is a new species for Kırklareli in European Turkey. According to Davis (1965), this taxon was registered only in A2(E) Istanbul.

### 10. *Ranunculus repens* L.

**Tu(E)** A1(E) Kırklareli: Demirköy, İğneada, on the edges of lake Mert, 32 m, 41°52'03.4"N, 27°58'21.1"E, 03.06.1990, coll. & det. C. Yarcı (EDTU 5053).

This is a new species for Kırklareli in European Turkey. According to Davis (1965), this taxon was reported from A1(E) Çanakkale and A2(E) Istanbul.

### 11. *Ranunculus sphaerospermus* Boiss. & Blanche

**Tu(E)** A1(E) Kırklareli: Demirköy, İğneada, on the edges of lake Mert, 32 m, 41°52'03.4"N, 27°58'21.1"E, 03.06.1990, coll. & det. C. Yarcı (EDTU 5054).

This is a new species for Kırklareli in European Turkey. According to Cook (1965), this taxon was identified only in A2(E) Istanbul.

## Report 12

### Rodney M. Burton<sup>1</sup> & Kit Tan<sup>2</sup>

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The following plant record from the island of Simi is amended (published in *Phytologia Balcanica* 23: 418, 2017).

#### Orchidaceae

### 12. *Cephalanthera epipactoides* Fisch. & C.A. Mey.

**Gr** Simi: locality details not known (photo received from L. Savage).

Recorded from Lesvos, Chios, Samos, Kos and Rodos. The photograph received represents this species and is correctly named. However, in the absence of a voucher specimen and the uncertainty of provenance of the

photo the record is currently treated as doubtful. An image on the website of Lyndon Savage stated to be *Cephalanthera epipactoides* represented *Neotinea maculata*. This has been corrected.

## Reports 13–14

### Cristina Cattaneo<sup>1</sup> & Mauro Grano<sup>2</sup>

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Two new records are provided for the island of Chalki (phytogeographical region E Aegean, Nomos Dodekanisou, Eparchia Rodou).

#### Ranunculaceae

### 13. *Delphinium peregrinum* L.

**Gr** Chalki: phrygana near Areta, 106 m, 36°14'39"N, 27°35'55"E, 24.04.2015, Cattaneo 467 (herb. Cattaneo).

Widespread in Greece. The only other *Delphinium* reported from Chalki is *D. staphisagria*.

#### Valerianaceae

### 14. *Centranthus calcitrapae* (L.) Dufur.

**Gr** Chalki: Kania, rocky limestone ravine, 73 m, 36°14'03"N, 27°37'03"E, 26.04.2015, Cattaneo & Grano obs. (photo).

Widespread on southeastern mainland and Aegean area.

## Reports 15–28

### Konstantinos Giannopoulos<sup>1</sup>, Kit Tan<sup>2</sup> & Gert Vold<sup>3</sup>

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#### Boraginaceae

### 15. *Anchusella cretica* (Mill.) Bigazzi & al.

**Gr** Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1040 m, 37°54'N, 21°45'E, 04.03.2018, Giannopoulos obs.

New for Mt Skiadovouni. Widespread in W and C Greece.

**Brassicaceae****16. *Arabis alpina* L.**

**Gr** Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, in *Quercus coccifera* scrub, 1220 m, 37°54'N, 21°44'E, 17.03.2018, *Giannopoulos* obs.; limestone rock ledges along forest road to Astras Plateau, 1205–1220 m, 37°54'N, 21°47'E, 04.04.2016, *Kit Tan, G. Vold & Giannopoulos* obs.; *loc. ibid.*, 08.04.2012, *Kit Tan, G. Vold & Giannopoulos* 31261 (herb. *Giannopoulos*).

New for Mt Skiadovouni, nomos and eparchia Ilias.

**17. *Capsella grandiflora* (Fauché & Chaub.) Boiss. (Fig. 1)**

**Gr** Nomos & Eparchia Ilias: Near Oinoi village, 180 m, 37°50'N, 21°31'E, 04.03.2018, *Giannopoulos* obs.; near Ag. Triada village, 440 m, 37°51'N, 21°39'E, 04.03.2018, *Giannopoulos* obs.; Foloï plateau, 770 m, 37°45'N, 21°44'E, 26.12.2009, *Giannopoulos* obs.

New for nomos and eparchia. Occurring in western mainland Greece and Ionian islands, few records from NW Peloponnese.

**18. *Erophila verna* (L.) Chevall.**

**Gr** Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1042 m, 37°55'N, 21°45'E, 17.03.2018, *Giannopoulos* obs.

New for Mt Skiadovouni.



**Fig. 1.** *Capsella grandiflora* (photo K. Giannopoulos).

**Euphorbiaceae****19. *Euphorbia characias* subsp. *wulfenii* (W.D.K. Koch) Radcl.-Sm.**

**Gr** Nomos & Eparchia Ilias: Mt Lambia, pendent on limestone rocks, 960 m, 37°52'N, 21°45'E, 03.03.2018, *Giannopoulos* obs.

New for Mt Lambia. Rarely recorded from W Peloponnese.

**Geraniaceae****20. *Erodium acaule* (L.) Bech. & Thell. (Fig. 2)**

**Gr** Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1070 m, 37°54'N, 21°45'E, 04.03.2018, *Giannopoulos* obs.

New for Mt Skiadovouni and eparchia Ilias. Second record for W Peloponnese; previously recorded from Mt Minthi in eparchia Olimbias. There are a few records from NE Peloponnese.

**Lamiaceae****21. *Lamium amplexicaule* L.**

**Gr** Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1050 m, 37°54'N, 21°45'E, 04.03.2018, *Giannopoulos* obs.

New for Mt Skiadovouni. Widespread in Greece.

**Ranunculaceae****22. *Ranunculus ficaria* L.**

**Gr** Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1100 m, 37°54'N, 21°45'E, 04.03.2018, *Giannopoulos* obs.

New for Mt Skiadovouni. Widespread in Greece.



**Fig. 2.** *Erodium acaule* (photo K. Giannopoulos).



**Violaceae****23. *Viola odorata* L.**

**Gr** Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1120 m, 37°54'N, 21°44'E, 04.03.2018, *Giannopoulos* obs.

New for Mt Skiadovouni. Widespread in Greece.

**Amaryllidaceae****24. *Galanthus reginae-olgae* subsp. *vernalis* Kamari**

**Gr** Nomos & Eparchia Ilias: Mt Lamba, southern lower slopes, 1330 m, 37°54'N, 21°49'E, 03.03.2018, *Giannopoulos* obs.

New for Mt Lamba, conspicuous in full flower. Occurring on Kerkira and western mainland Greece.

**Iridaceae****25. *Crocus nivalis* Bory & Chaub.**

**Gr** Nomos & Eparchia Ilias: Mt Lamba, southern lower slopes, 1320 m, 37°53'N, 21°49'E, 03.03.2018, *Giannopoulos* obs.

New for Mt Lamba; large populations noted together with *Crocus olivieri* subsp. *olivieri*. In the Peloponnese, mainly in the north and central.

**26. *Romulea linaresii* subsp. *graeca* Bég.**

**Gr** Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1050–1250 m, 37°54'N, 21°44'E, 04.03.2018, *Giannopoulos* obs.

New for Mt Skiadovouni, in astonishing numbers all the way from 1000 m to the summit. Widely distributed in Greece but scattered in occurrence.

**Liliaceae****27. *Gagea bohémica* (Zauschn.) Schult. & Schult. f. (Fig. 3)**

**Gr** Nomos & Eparchia Ilias: Mt Skiadovouni,



**Fig. 3.** *Gagea bohémica* and *Mibora minima* (photo K. Giannopoulos).

southern lower slopes, 1150 m, 37°54'N, 21°44'E, 04.03.2018, *Giannopoulos* obs.; Astras Plateau, 1350–1400 m, 37°54'N, 21°47'E, 08.04.2012, *Kit Tan, G. Vold & Giannopoulos* 31249 (herb. *Giannopoulos*).

New for Mt Skiadovouni, nomos and eparchia Ilias. Of scattered occurrence in Greece.

**Poaceae****28. *Mibora minima* (L.) Desv. (Fig. 3)**

**Gr** Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1100 m, 37°54'N, 21°45'E, 04.03.2018, *Giannopoulos* obs.

New for Mt Skiadovouni, nomos and eparchia Ilias. Of scattered occurrence in Greece, this is apparently the first record from W Peloponnese.

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**Reports 29–41**
**Georgi Kunev**

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**Aristolochiaceae****29. *Aristolochia rotunda* L. (Fig. 4)**

**Bu** Valley of River Struma (*Southern*): E of Palat village, Strumyani Municipality, Blagoevgrad district, at the outskirts of an oak forest, on sandy soil, 400 m, 41°35'33.54"N, 23°11'43.16"E, with flowers, 17.05.2014, coll. *G. Kunev* (SO 107823, 107824).

This is a new locality of this species assessed as Endangered in the *Red Data Book of the Republic of Bulgaria* (Dimitrova 2015) and listed in Annex III of the Biodiversity Act. This protected species is already known from the subregion of the Valley of Struma River (*Southern*), but this locality is new for the floristic subregion located approximately 20 km northwards of the already known localities. The established population consists of no more than 50 individuals.

**Asteraceae****30. *Anthemis virescens* Velen. (Fig. 5)**

**Bu** Rhodopi Mts (*Eastern*): SW of Chorbadziysko village, Kirkovo Municipality, Kurdzhali district, in communities of *Genista rumelica*, 360 m, 41°21'8.01"N, 25°23'15.13"E, with flowers, 31.05.2016, coll. *G. Kunev* (SO 107830); E of



Fig. 4. *Aristolochia rotunda* (photo G. Kunev).

Dyulitsa village, Kirkovo Municipality, in a xerothermic grassland, 350 m, 41°23'22.52"N, 25°19'19.41"E, with flowers, 01.06.2016, coll. G. Kunev (SO 107831)

These are new localities of the species assessed as Endangered in the *Red Data Book of the Republic of Bulgaria* (Vladimirov 2015) and listed in Annex III of the Biodiversity Act. This protected species is already known from the Eastern Rhodopi Mts but these localities are new for the floristic subregion, located approximately 25 km westwards of the known localities. In the first spot, only three individuals were observed, whereas in the locality near Dyulitsa village 25 individuals were counted.

#### Brassicaceae

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

**Bu** Rhodopi Mts (*Western*): E from Eleshnitsa village, Razlog Municipality, Blagoevgrad district, on a SW-facing slope, in communities of *Genista rumelica*, on sandy soil, 850 m, 41°51'31.98"N, 23°37'55.92"E, with flowers and seeds, 09.04.2017, G. Kunev obs.



Fig. 5. *Anthemis virescens* (photo G. Kunev).

This early spring ephemeral species, comparatively widespread in the southern part of the country, was found in a xerothermic grassland, in eroded places with shallow soil. It has not been recorded so far for this floristic subregion (Ančev 2007; Assyov & Petrova 2012).

#### Fabaceae

32. *Vicia lutea* L.

**Bu** Rhodopi Mts (*Central*): Chepelare town, Smolyan district, in communities of *Genista rumelica*, 1118 m, 41°44'9.36"N, 24°41'12.72"E, with fruits, 20.07.2017, coll. G. Kunev (SO 107825); W of Lyaskovo village, Devin Municipality, Smolyan district, on a southeast-facing slope, in communities of *Genista rumelica*, 1066 m, 41°47'32.04"N, 24°28'10.26"E, with flowers, 20.06.2017, coll. G. Kunev (SO 107827)

This is a new species for this floristic subregion (see Assyov & Petrova 2012).

33. *Vicia onobrychioides* L.

**Bu** Rhodopi Mts (*Western*): SE of Selcha village, Devin Municipality, Smolyan district, on a



south-facing slope, in open shrub communities, 1060 m, 41°49'45.51"N, 24°23'36.41"E, with flowers, 20.06.2017, coll. G. Kunev (SO 107828)

This is a new species for this floristic subregion (see Assyov & Petrova 2012).

#### Lamiaceae

##### 34. *Lavandula angustifolia* Mill.

**Bu** Rhodopi Mts (*Western*): close to Eleshnitsa village, Razlog Municipality, Blagoevgrad district, 780 m, 41°51'41.67"N, 23°36'50.10"E, 25.05.2016, G. Kunev obs.; close to Eleshnitsa village, Razlog Municipality, Blagoevgrad district, 850 m, 41°52'4.10"N, 23°36'43.71"E, with flowers, 24.06.2016, G. Kunev obs.

The new data relate to the new localities of this adventive species for the Bulgarian flora, and are first records for this floristic subregion (Assyov & Petrova 2012; Petrova & al. 2013; Vladimirov 2014). In both fields there was self-seeding and a diverse age structure of the populations. The first spot showed about fifteen individuals, in the second one they were more than fifty.



Fig. 6. *Delphinium balcanicum* (photo G. Kunev).

#### Ranunculaceae

##### 35. *Delphinium balcanicum* Pawł. (Fig. 6)

**Bu** Thracian Lowland: N of Kalugerovo village, Pazardzhik Municipality, in a dry grassland with *Xeranthemum annuum*, 400 m, 42°20'33.29"N, 24°11'55.46"E, with flowers, 15.06.2016, G. Kunev obs.

This is a new locality of this species assessed as Endangered in the *Red Data Book of the Republic of Bulgaria* (Bancheva 2015) and listed in Annex III of the Biodiversity Act. Several localities are already known from the Thracian Lowland floristic region. This one was located about 25 km to the northwest from the closest known locality. The population consisted of only five individuals.

#### Iridaceae

##### 36. *Crocus tommasinianus* Herbert (Fig. 7)

**Bu** Danubian Plain: E from Makresh village, Vidin Municipality and district, at the roadside, in a mixed deciduous forest dominated by *Tilia cordata* and *Quercus cerris*, 180 m, 43°46'3.88"N, 22°43'25.35"E, with flowers, 21.02.2016, coll. G. Kunev & I. Kostadinov (SO 107829).



Fig. 7. *Crocus tommasinianus* (photo G. Kunev).

This species has been already known for the neighboring floristic sub-region of the Forebalkan (*Western*) and the current report is for a new locality and a new floristic region for this protected species evaluated as Vulnerable (Vladimirov 2015) and listed in Annex III of the Bulgarian Biodiversity Act. The identified population consisted of several hundred (400–500) individuals, growing together with *Primula acaulis* subsp. *acaulis*, *Scilla bifolia*, *Isopyrum thalictroides*, *Lathraea squamaria*, *Pulmonaria officinalis*, *Hedera helix*, *Ranunculus ficaria*, and *Helleborus odoratus*.

#### Orchidaceae

##### 37. *Dactylorhiza kalopissii* E. Nelson (Fig. 8)

**Bu** Pirin Mts (*Northern*): NE from Ilindentsi village, Strumyani Municipality, Blagoevgrad district, 650 m, 41°39'45.03"N, 23°15'36.86"E and 41°39'44.84"N, 23°15'34.39"E, with flowers, 24.05.2014, coll. G. Kunev (SO 107829).

This species has been known for this floristic sub-region from the meadows in the vicinities of Razlog and Bansko towns (Griebl 2007) and, most recent-



Fig. 8. *Dactylorhiza kalopissii* (photo G. Kunev).

ly, from the neighboring Mt Slavyanka (Petrova & al. 2012). Some populations of this species, which is of high conservation significance, evaluated as Critically Endangered (Petrova 2015) and listed in Annex II and III of the Bulgarian Biodiversity Act, were found in 2012 under the project “Mapping and Assessment of the Conservation Status of Natural Habitats and Species – Phase I” of Consortium NATURA BULGARIA. The habitat represented an alkaline fen dominated by the sedges *Carex* spp., *Eleocharis* spp., *Holoschoenus vulgaris*, grasses – *Poa pratensis*, *Holcus lanatus* and other herbaceous plants – *Cirsium* spp., *Lysimachia punctata*, *Ranunculus acris*, and *Equisetum palustre*. The population was divided into two subpopulations by the road between Ilindentsi village and the Ilindentsi Mramor JSC marble quarry. Approximately 110 specimens were counted, 80 in the early phase of flowering and about 30 non-flowering individuals in the two spots. Twelve individuals of another orchid species, *Orchis laxiflora*, were counted in the same habitat. Other species of conservation interest in the closest dry grasslands around were: *Centaurea immanuelis-loewii*, *Orchis tridentata*, *Ophrys cornuta*, *Ophrys mammosa*. In 2017, this locality was monitored again and the habitat was found severely damaged by drainage, cattle trampling and overgrazing. Only 12 flowering and six non-flowering individuals were observed in the western (smaller) subpopulation, where there were no signs of activities of the domesticated animals.

##### 38. *Goodyera repens* (L.) R. Br. (Fig. 9)

**Bu** Rhodopi Mts (*Central*): N from Chepelare town, Smolyan Municipality, in a coniferous forest dominated by *Pinus sylvestris*, on a slope with SE exposition, 1180 m, 41°44'5.01"N, 24°41'1.72"E, with flowers, 06.07.2016, G. Kunev obs.

This is a new locality of this species, assessed as Endangered in the *Red Data Book of the Republic of Bulgaria* (Petrova 2015) and listed in Annex III of the Biodiversity Act. This protected species has been already known from the Rhodope Mts but this locality is new for this floristic subregion. The most recent records were from the vicinities of Petkovo (Tashev 2013) and Yagodina villages (Popatanasov 2014). The population consisted of approximately 30 aerial stems, in the undergrowth of a forest together with other species like *Juniperus communis*, *Vaccinium myrtillus*, *Luzula luzuloides*, *Fragaria vesca*, *Veronica chamaedrys*, *Trifolium alpestre*, *Hieracium* spp., and *Galium* spp.



**39. *Orchis laxiflora* Lam. (Fig. 10)**

**Bu** Pirin Mts (*Northern*): W from Oshtava village, Kresna Municipality, Blagoevgrad district, on a south-facing slope, along a stream flowing from an artificial lake, 700 m, 41°47'44.84"N, 23°12'27.64"E, 24.05.2014, coll. G. Kunev (SO 107835, 107836); S from Senokos village, Simitli Municipality, Blagoevgrad district, at the roadside, 840 m, 41°48'22.82"N, 23°13'43.95"E, 24.05.2014, coll. G. Kunev (SO 107837); Mechkul village, Strumyani Municipality, Blagoevgrad district, at the roadside, in a grassland used as pasture or hay meadow, 735 m, 41°49'22.00"N, 23°12'14.90"E, 24.05.2014, coll. G. Kunev (SO 107838); NE from Ilindentsi village, Strumyani Municipality, Blagoevgrad district, on a west-facing slope, in a meadow surrounded by a pasture with active grazing, 650 m, 41°39'45.03"N, 23°15'36.86"E, 24.05.2014, coll. G. Kunev (SO 107833).

These are new localities of this vulnerable orchid species for the Pirin Mts (*Northern*) floristic subregion,



**Fig. 9.** *Goodyera repens* (photo G. Kunev).

recently reported from the surroundings of the neighboring village of Senokos (Petrova 2009; Assyov & Petrova 2012; Popatanasov 2014).

**40. *Orchis papilionacea* L.**

**Bu** Pirin Mts (*Northern*): E from Kornitsa village, Gotse Delchev Municipality, Blagoevgrad district, in communities of *Genista rumelica*, 629 m, 41°38'6.30"N, 23°42'4.50"E, with flowers, 19.05.2017, G. Kunev obs.

This is a new locality of this vulnerable orchid species for this floristic subregion, recently reported from the western slopes of the mountain, in the vicinity of Rakitna village, Simitli Municipality (Petrova 2009; Assyov & Petrova 2012; Popatanasov 2014). Only two individuals were observed.

**Poaceae****41. *Cleistogenes serotina* (L.) Keng.**

**Bu** Rhodopi Mts (*Western*): S from Eleshnitsa village, Razlog Municipality, Blagoevgrad district, on a south-facing slope above the road to the village,



**Fig. 10.** *Orchis laxiflora* (photo G. Kunev).

in xerothermic grass communities, on sandy soil, 818 m, 41°49'44.07"N, 23°36'30.30"E, with flowers and seeds, 25.07.2017, G. Kunev obs.

This is a new species for this floristic subregion (see Assyov & Petrova 2012).

**Acknowledgements.** The author is grateful to Dr. Antoaneta Petrova, Botanical Garden, Bulgarian Academy of Sciences, for the determination of the here reported orchid species *Dactylorhiza kalopissii* and *Orchis laxiflora*.

## Reports 42–45

### Kostas Polymenakos<sup>1</sup> & Kit Tan<sup>2</sup>

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

#### Asteraceae

#### 42. *Artemisia vulgaris* L. (Fig. 11)

**Gr** Nomos Fokidos, Eparchia Parnassidos: Mt Iti, 1.45 km NW of Kaloskopoi, on the main road to Pyra, 1220 m, 38°41'N, 22°18'E, 03.08.2017, Polymenakos & G. Fakas 347 (ATHU).



Fig. 11. *Artemisia vulgaris* (photo K. Polymenakos).

New for Mt Iti, southernmost record on mainland Greece. At road sides in openings of *Abies cephalonica* woodland overlying limestone.

#### Brassicaceae

#### 43. *Diplotaxis eruroides* (L.) DC.

**Gr** Nomos Viotias, Eparchia Thivon: East side of Lake Paralimni, on the way from Mouriki to Paximada, in olive plantation, limestone, 70 m, 38°27'N, 23°23'E, 09.12.2017, Polymenakos & Koutsogiannopoulos 396 (ATHU).

New for nomos and eparchia; second record in Sterea Ellas. A fine and healthy population of at least 200 plants.

#### Chenopodiaceae

#### 44. *Oxybasis urbica* (L.) S. Fuentes & al.

**Gr** Nomos Viotias, Eparchia Thivon: East side of Lake Yliki, 2.6 km SW of Mouriki village, 80 m, 38°25'N, 23°19'E, 09.12.2017, Polymenakos & Koutsogiannopoulos 397 (ATHU).

New for nomos and eparchia. Mud patches at dry margin of lake, limestone substrate, together with *Rumex dentatus* and *Glinus lotoides*.

#### Poaceae

#### 45. *Crypsis schoenoides* (L.) Lam. (Fig. 12)

**Gr** Nomos Kikkladon, Eparchia Sirou: island of Mikonos, mud flat of small dried-out pool just SE of the airport terminal, on schist, 125 m, 37°25'N, 25°20'E, 13.08.2017, Polymenakos 353 (ATHU).



Fig. 12. *Crypsis schoenoides* (photo K. Polymenakos).



New for Kiklades, of scattered occurrence in Greece. Together with *Heliotropium supinum*, *Juncus* sp., *Lythrum* sp., *Pulicaria vulgaris* and *Spergularia marina*.

## Report 46

Allan Robinson<sup>1</sup> & Kit Tan<sup>2</sup>

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### Geraniaceae

#### 46. *Geranium subacutum* (Boiss.) Aedo (Figs. 13–15)

Syn.: *Geranium subcaulescens* var. *subacutum* Boiss. (isosyntype C!).

**Gr** Nomos Attikis/Viotias, Eparchia Megaridos/Thivon: Mt Kitheronas, summit area, along ridge to the second summit, 1400 m, 38°11'N, 23°15'E, 05.06.2008, A. & M. Robinson s.n. (cultivated in South Lincolnshire, England, specimens pressed in 2009; det. Kit Tan, March 2018); *loc. ibid.*, 1350–1400 m, 09.06.2015, Strid 58162 (G, private herb. Strid); *loc. ibid.*, 20.06.1911, Tuntas 1253 (WU-Hal).

New for Greece. At the summit area of Mt Kitheronas (Cithaeron), on open rocky limestone slopes and flats. Also collected in the same locality by Heldreich. Petals pale pink lightly veined purple, fading to almost white; calyx indumentum as in *G. subcaulescens*. Apparently summer dormant (see Fig. 14) a feature not noted in *G. subcaulescens*.



Fig. 13. *Geranium subacutum* at summit of Mt Kitheronas (photo A. Robinson).

A. & M. Robinson first visited Mt Kitheronas in July 2000 looking for *Erodium chrysanthum*. After walking between the two summits for several hours they gave up searching as the plants were not sighted. Starting to descend they walked past a few Pine trees and in the shade, a single pink flower showed itself. It was a *Geranium* but it did not resemble the pink forms of *G. subcaulescens* that they had previously found on Mt Killini.

In mid-June 2007, they decided to pay another visit to Mt Kitheronas as they were nearby. On arriving at the summit they could not believe their eyes. Instead of the fairly barren landscape of July 2000, they were met by a huge number of the pale pink *Geranium* with a small minority of white-flowered plants. The whole of the summit was colonized by this *Geranium*, there were probably several thousand plants in total. All were growing in the limestone outcrops through to shady places near shrubs.

The following year they arrived a week earlier than in 2007 and this time there were far fewer *Geraniums* in leaf and flower, approximately one third of the number seen previously. Looking around the colony they noticed that as the plants set seed they started to enter summer dormancy. The leaves turned brown and in some cases, they were already falling away. 2008 was an earlier spring than 2007 and the plants were more advanced, thus the rocks were devoid of this *Geranium* in July 2000.

Herbarium material was then sent to Knud Christensen (Copenhagen) with a request for identification. He informed the Robinsons that the plant was *G. subcaulescens*, and there the matter ended. His



Fig. 14. *Geranium subacutum* in July, summer dormant (photo A. Robinson).





Fig. 15. Isosynotype of *Geranium subcaulescens* var. *subacutum* from NE Anatolia (reproduced with permission of the Natural History Museum of Denmark).

untimely death ended further communication and it was not until some years later that Kit Tan re-determined the material as *G. subacutum*. A photograph of the isosyntype from Turkey is appended.

## Reports 47–48

### Kit Tan<sup>1</sup> & Arne Strid<sup>2</sup>

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### Hypericaceae

#### 47. *Hypericum icaricum* Kit Tan, sp. nov.

(*Hypericum* sect. *Adenosepalum* Spach) (Fig. 16)

**Gr** Nomos Samou, Eparchia Ikarias: island of Ikaria, near village of Hrysostomos, damp, sandy-clayey ground, 300–350 m, 28.05.1970, flowering, *Stamatiadou* 9106 (holotype ATH; isotype BM).



Fig. 16. *Hypericum icaricum* (photo A. Strid).

### Specimens from Ikaria

**Gr** Nomos Samou, Eparchia Ikarias: along the road between the villages of Ozea and Monokabion, crevices of schistose rock, 600 m, 29.05.1970, *Stamatiadou* 9162 (ATH, herb. Kit); roadside between Ploumarion and Mileopora, in crevices of schistose rock, 250–300 m, 02.05.1976, *Stamatiadou* 18889 (ATH, herb. Strid); in declivibus borealis inter Mileopora et Plumaria, substr. silic., 500 m, in rupium fissuris, 02.05.1976, *Rechinger* 54034 (W, herb. Strid); NE of Fradato, in crevices of schistose rocks in small wetland, 500 m, 37°36'N, 26°09'E, 11.05.2008, *Strid* 56452 (herb. Strid); ca. 1.5 km N of Ag. Nikolaos, N-exposed siliceous cliffs, 300 m, 21.04.1958, *Runemark & Snogerup* 6205 (LD); 2 km E to ESE of Mesaria, gorge with rivulet, 300 m, 24.04.1958, *Runemark & Snogerup* 6876 (LD); E part of Mt Atheras, schistose cliffs, 12.07.1958, *Runemark & Snogerup* 12453 (LD); Kaka raphija, siliceous rock in stream valley, 10–100 m, 15.07.1958, *Runemark & Snogerup* 12453 (LD); 3 km NNW of Ag. Kirikos, cliffs, 500–800 m, 10.07.1964, *Bothmer & Strid* 21827 (LD); 1 km NE of Ormos Papas, damp valley, 500–270 m, 15.06.1958, *Runemark & Snogerup* 11093 (LD); the pass W of Mt Melissa, siliceous rock, 700–910 m, 20.06.1960, *Runemark & Nordenstam* 16335 (LD).

### Specimens from Samos

**Gr** Nomos & Eparchia Samou: N side of Mt Karvouni, micaceous schist, 860 m, *Nielsen & Christensen* 12268 (C); Vathy, in saxosis schist, 16.06.1932, *Rechinger* 1897 (LD).

### Specimens from Chios

**Gr** Nomos & Eparchia Chiou: N slopes of Mt Pelineon, above Vikion, 550 m, 22.06.1991, *Snogerup* 8514 (LD); in rivulet valley SW of Vikion, 300–400 m, 04.05.1990, *Snogerup* 7582 (LD).

Herbaceous, caespitose perennial with woody rootstock. Flowering stems 15–40, procumbent-ascending, unbranched, slender, 6–20 cm long, subterete, reddish-brown towards base, greyish- to yellowish-pubescent in leafy parts. Non-flowering shoots absent from axils of the main leaves. Leaves opposite, simple, sessile, entire, elliptic- to oblong-ovate, 5–20 × 3–10 mm (middle cauline), subacute to obtuse,

rounded at base, conspicuously 1-veined (laterals not pronounced), flat at margins, densely pubescent on both surfaces, with numerous conspicuous translucent glandular dots on surface together with black intramarginal glands; superficial black glands absent. Inflorescence subcorymbose, short (1.5–2 cm long), 10–18(–25)-flowered; buds erect, not nodding. Bracts lanceolate-ovate, with black-glandular tipped fimbriae on each side. Sepals oblong-ovate or oblong-elliptic, 2.5–3 mm long, obtuse, green, glabrous, with a few superficial black dots especially towards the apex, margin with subsessile to shortly stipitate black glands. Petals entire, oblong to elliptic-ovate, 6–7 mm long, subacute, glabrous, yellow, tinged reddish in bud, not fringed with black glands but with a few scattered superficial black dots. Stamens numerous, in 3 fascicles; anthers with black dots. Capsule ovoid, ca. 3.5 mm. Seeds numerous, small, cylindrical, white-papillose. Flowering from late April to June; fruiting June to mid-July.

Plants from the islands of Chios and Ikaria have previously been referred to *H. cuisinii* Barbey (Robson 1996: 205–206, Robson & Strid 1986: 602). The habit of *H. icaricum* is certainly similar to that of *H. cuisinii*, an endemic of the Karpathos island group. The latter has also erroneously been reported from Chios and Ikaria by Forsyth Major & Barbey (1897: 280) and Rechinger (1936: 617); based on morphological similarities, the plants were then more correctly referred to *H. atomarium* Boiss. by Strid (2016: 342). *Hypericum*

*cuisinii* has much smaller (2.5–4 × 1.5–2.5 mm), broadly obovate to oblong-elliptic leaves which partly overlap each other due to the short stem internodes. The leaf margin is slightly thickened beneath and there are both superficial (on the leaf surface) and intramarginal black glandular dots. Only translucent glands and black intramarginal glands are present on the leaves of the Ikarian plants, superficial black glands are absent.

Although with some similarities to *H. atomarium*, *H. icaricum* can be readily distinguished by its much lower stature and caespitose habit. The flowering stems are several to numerous, decumbent to procumbent-ascending, slender and flexuous. In *H. atomarium* (see Fig. 17 from *locus classicus* in W Anatolia and Table 1) the stems are fewer in number, erect and rather stiff. The plants are taller (up to 80 cm), with longer inflorescences (3–8 cm) bearing numerous flowers. The leaves are larger (15–55 × 8–30 mm) and less densely pubescent on the upper surface. Translucent glandular dots are fewer or absent and less conspicuous in mature leaves.

*Hypericum icaricum* occurs on the islands of Ikaria, Samos and Chios, growing in crevices of schistose and siliceous rock and cliffs, in stream valleys, at low to moderate altitudes from sea level to 1000 m. The caespitose habit with numerous, procumbent slender stems, smaller leaves and inflorescences with fewer flowers, combined with a clear geographical distribution and different ecological substrate warrant recognition of the plants at species rank.

**Table 1.** Comparison of morphological characters in *H. atomarium*, *H. icaricum* and *H. cuisinii*.

Species	<i>H. atomarium</i>	<i>H. icaricum</i>	<i>H. cuisinii</i>
<b>Characters</b>			
Habit	not caespitose	caespitose	caespitose
Flowering stems	few, 4–8, erect, green	several to numerous, 15–40, procumbent-ascending, reddish-brown towards base	several, procumbent-ascending to decumbent, green
Flowering stem length (cm)	20–80	6–20	4–15
Middle cauline leaves (mm)	15–55 × 8–30	5–20 × 3–10	2.5–4 × 1.5–2.5
Leaf indumentum	puberulous on upper surface	densely pubescent on both surfaces	glabrous to puberulous on upper surface
Leaf surface	superficial black glands present	superficial black glands absent	superficial black glands present
Inflorescence	cylindrical, 20–c. 200-flowered	subcorymbose, 10–18 (–25)-flowered	subcorymbose, 1–7-flowered
Sepal length (mm)	3.5–5	2.5–3	2.5–3.5
Petal length (mm)	9–12, not tinged red	6–7, tinged reddish in bud	5–8, not tinged red
Capsule length (mm)	5	c. 3.5	3–4





Fig. 17. *Hypericum atomarium* (holotype G-Boiss; reproduced with permission of Conservatoire et jardin botaniques, Geneva).

**Orobanchaceae**

48. *Rhinanthus pumilus* (Sterneck) Pau (syn.: *R. mediterraneus* (Sterneck) Adamović) (Fig. 18)

**Gr** Nomos & Eparchia Florinis: Mt Boutsi, E slopes of summit area, grassy places and rocky limestone outcrops just above *Fagus* timberline, 1600–1750 m, 40°39'N, 21°09'E, 15.06.2016, *Kit Tan & al.* 32162 (herb. Kit); *loc. ibid.*, 08.07.1981, *Strid & al.* 18735 (C, G).

New for Mt Boutsi, nomos and eparchia Florinis and phytogeographical region North Central. Both collections were erroneously named *R. minor* L., a species of wet meadows at moderate altitudes of 800–1500 m. *R. pumilus* grows on rather dry, rocky calcareous slopes at 1500–2300 m. In Greece it occurs in N and S Pindos, this is the first record for North Central. It was recorded by Teofilovski (2011: 117) from Mt Galičica as new for FYR of Macedonia. Concerning nomenclature, see Dimopoulos & al. (2016: 345).

**Reports 49–61**

**Kiril Vassilev<sup>1</sup> & Eva Filipova<sup>2</sup>**

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**Apiaceae**

49. *Pimpinella peregrina* L.

**Bu** Rila Mts: in dry grasslands near Beli Iskar village, 42.30777N, 23.54026E, GM08, 23.07.2015, coll. *K. Vassilev* (SOM 175707).

This is a new species for this floristic region.

50. *Seseli pallasii* Besser

**Bu** Mt Vitoshka region: in dry grasslands near Dolni Pasarel village, 42.5406N, 23.5156E, GN01, 06.07.2015, coll. *K. Vassilev* (SOM 175695).



**Fig. 18.** *Rhinanthus pumilus* from Mt Boutsi (left) and *R. minor* from the Prespa area (photos A. Strid).



Confirming the distribution of this species for this floristic region (cf. Delipavlov & Cheshmedzhiev 2011). It is a companion species in the xerothermic rocky grassland close to the village.

**51. *Torilis leptophylla* L. Rchb. f.**

**Bu** Balkan Range (*Western*): in dry grasslands near Buchin Prohod village, 42.97145N, 23.16265E, FN76, 03.08.2015, coll. *K. Vassilev* (SOM 175698).

This is a new species for this floristic region.

**Cariophyllaceae**

**52. *Minuartia bosniaca* (Beck) K. Maly**

**Bu** Thracian Lowland: on rocky calcareous terrains near Matochina village, northeast of Svilengrad town, 27.05.1962 MG63, coll. *D. Yordanov* & *A. Yanev* (SOM 27009).

This is a Balkan endemic (Petrova & Vladimirov 2010), which has not been reported so far for this floristic region.

**53. *Moenhia graeca* Boiss. & Heldr.**

**Bu** Balkan Range (*Central*): in dry grassland communities near Pirdop town, 42.70475N, 24.19302E, KH63, 30.05.2015, coll. *K. Vassilev* (SOM 175703).

This is a new species for this floristic region. It was found in dry grasslands on the southern slopes of the Balkan Range, on silicate substrates in the communities of alliance *Chrysopogono-Danthonion* of class *Festuco-Brometea*.

**Fabaceae**

**54. *Trifolium glomeratum* L.**

**Bu** Mt Vitosha region: in dry grasslands near Dren village, 42.41815N, 23.16697E, FM79, 05.06.2012, coll. *K. Vassilev* (SOM 175710).

This species is reported for the first time for this floristic region.

**55. *Vicia incisa* M. Bieb.**

**Bu** Thracian Lowland: in grasslands between Razdel and Filipovo villages, 42.91936N, 26.50775E, MG65, 27.05.2015, coll. *K. Vassilev* (SOM 175696).

This species has not been reported for this floristic region before. According to Assyov & Petrova (2012), it has been distributed so far only in three floristic regions: Rhodopi Mts (*Eastern*), Mt Strandzha and the Black Sea Coast (*Southern*).

**56. *Vicia lutea* L.**

**Bu** Znepole region: in dry grasslands near Dolno

Selo village, 42.30249N, 22.48667E, FM28, 06.09.2009, coll. *K. Vassilev* (SOM 175708).

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

**Hypericaceae**

**57. *Hypericum linarioides* Bosse**

**Bu** Sofia region: in dry grassland communities near Chavdar village, 42.65224N, 24.0542E, KH52, 20.06.2015, coll. *K. Vassilev* (SOM 175697).

This species was found for the first time in this floristic region.

**Lamiaceae**

**58. *Satureja montana* subsp. *kitaibelii* (Wierzb. ex Heuff.) Ball**

**Bu** Mt Vitosha region: in a dry grasslands near Dolni Pasarel village, 42.5406N, 23.5156E, GN01, 06.07.2015, coll. *K. Vassilev* (SOM 175692).

— Northeast Bulgaria: in calcareous pastures near Basarbovo village, MJ14, 26.06.1977, coll. *S. Stanev* (SOM 139768).

This is a new species for these floristic regions.

**Rosaceae**

**59. *Potentilla detommasii* Ten.**

**Bu** Mt Vitosha region: in a dry grassland between Dolni Pasarel and Kokalyane villages, 42.7121N, 23.26674E, GN01, 06.07.2015, coll. *K. Vassilev* (SOM 1757063).

— Sofia region: Sofia town, 02.05.1984, coll. *P. Panov* & *D. Stoyanov* (SOM 161050).

This is a new species for these floristic regions.

**Rubiaceae**

**60. *Galium glaucum* L.**

**Bu** Northeast Bulgaria: in dry grasslands near Trastika village, 43.41928N, 26.42171E, MJ50, 15.07.2014, coll. *K. Vassilev* (SOM 169233).

This species has not been reported for this floristic region before. It is a companion species in the communities of alliance *Festucion valesiacae* of class *Festuco-Brometea*.

**Scrophulariaceae**

**61. *Veronica acinifolia* L.**

**Bu** Balkan Range (*Central*): in dry grassland communities near Pirdop town, 42.70475N, 24.19302 E, KH63, 30.05.2017, coll. *K. Vassilev* (SOM 175704).

This is a new species for this floristic region.



## Reports 62–69

### Kiril Vassilev<sup>1</sup> & Mediya Gumus<sup>2</sup>

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#### Apiaceae

##### 62. *Sison amomum* L.

**Bu** Sofia region: in wet grasslands near Stolnik village, Elin Pelin Municipality, 42.71438N, 23.64687E, MG56, 09.08.2017, coll. K. Vassilev & M. Gumus (SOM 175668).

— Pirin Mts: in shady places near Rozhenski Monastery, MG56, 1893, coll. I. Urumov (SOM 55380).

This species has not been reported for these floristic regions so far. It was found as a companion species in wetland communities of the class *Phragmito-Magnocaricetea*, dominated by *Typha latifolia*.

#### Caryophyllaceae

##### 63. *Minuartia setacea* (Thuill.) Hayek

**Bu** Balkan Range (*Central*): high in the cracks of the rocks, mostly in shady places around peak Triglav, 1600–2000 m. a. s. l., LG63, 04.08.1956, coll. I. Bandev (SOM 157652).

— Sofia region: in dry grasslands near Ognyanovo Reservoir, Elin Pelin Municipality, 42.61749N, 23.75052E, FM98, 08.08.2017, coll. K. Vassilev & M. Gumus (SOM 175665).

— Pirin Mts: in rocky sites around Parez Grob, Baiovi Dupki Reserve, Golyama Baiova Dupka Circus, 1880 m. a. s. l., LG63, 08.06.1975, coll. N. Andreev (SOM 135503, *M. setacea* subsp. *banatica*).

— Mt Sredna Gora (*Eastern*): in the Mitropolit Metodiy Kusev Forest Park (Ayazmoto), Stara Zagora city, LG63, 07.05.2005, coll. S. Radanova (SOM 163467).

— Rhodopi Mts (*Western*): in dry grasslands near Devin town, 41.5684N, 24.73691E, FM98, 10.08.2015, coll. K. Vassilev & E. Filipova (SOM 171517).

This is a new species for these floristic regions. It was found in dry grasslands of the alliances *Chrysopogono-*

*Danthonion* and *Festucion valesiaca* of class *Festuco-Brometea*.

#### Hydrocharitaceae

##### 64. *Elodea canadensis* Michx.

**Bu** Mt Sredna Gora (*Western*): in wet grasslands near Gabra village, Elin Pelin Municipality, 42.51876N, 23.58453E, GM25, 27.07.2017, coll. K. Vassilev & M. Gumus (SOM 169220).

The species has not been reported for this floristic region so far. It was a dominant species in the communities of *Elodeetum canadensis* association of class *Potamogetonetea*.

#### Papaveraceae

##### 65. *Fumaria schrammii* (Asch.) Velen

**Bu** Sofia region: in a synantropic vegetation community between Galabovtsi and Gurgulyat villages, 42.79514N, FN96, 23.01095E, 19.08.2017, coll. K. Vassilev (SOM 169219).

This is a new species for this floristic region. It is a companion species of the synantropic vegetation of class *Artemisietea vulgaris*.

#### Rosaceae

##### 66. *Potentilla supina* L.

**Bu** Struma Valley (*Northern*): Blagoevgrad town, LF09, 04.05.1977, coll. P. Panov (SOM 170839, 170840 & 170455); along the Struma river near Blagoevgrad town, Belo Pole neighbourhood, FM65, 01.05.2014, coll. P. Zhelev & I. Aneva (SOM 170830), along the Struma river near Blagoevgrad town, Belo Pole neighbourhood, FM65, 31.05.2014, coll. P. Zhelev & I. Aneva (SOM 170831); in wet places along the irrigation channel near the petrol station in the southern part of Blagoevgrad town, FM65, 04.05.1977, coll. P. Panov (SOM 147582); in wet places on the streets of Petrich town, FM65, 24.06.1978, coll. P. Panov (SOM 147581).

— Struma Valley (*Southern*): in wet places on the streets of Petrich town, FM65, 24.06.1978, coll. P. Panov (SOM 147581).

— Rhodopi Mts. (*Eastern*): in wet sandy places eastwards of Shiroko Pole village, Kardzhali district, LF09, 06.08.2002, coll. D. Stoyanov (SOM 157060).

According to Assyov & Petrova (2012), this species was distributed in 11 floristic regions. We found it in a few new floristic regions.

**Juncaceae****67. *Juncus tenageia* L. f.**

**Bu** Sofia region: in wet grasslands near Ognyanovo Reservoir, Elin Pelin Municipality, 42.60651N, 23.74368E, GN42, 26.07.2017, coll. K. Vassilev & M. Gumus (SOM 175675).

This species has not been reported for this floristic region before. Its communities were covering an area of about 20 m<sup>2</sup> on the bank of the Ognyanovo Reservoir and were periodically flooded by the higher waters.

**Poaceae****68. *Elymus elongatus* (Host) Runemark**

- Bu** Balkan Range (*Western*): in xerothermic grasslands near Gradets village, Mt Mala Planina, 42.89149N, 23.18901E, LF09, 03.08.2015, coll. K. Vassilev (SOM 171573).
- Balkan Range (*Eastern*): in dry sandy places near Bilka village, Aitos district, LF09, 22.06.1968, coll. V. Velchev (SOM 154554).
- Sofia region: in wet grasslands near Ravno Pole village, Elin Pelin Municipality, 42.66517N, 23.5209E, GN43, 29.06.2017, coll. K. Vassilev & M. Gumus (SOM 175642).
- Rhodopi Mts (*Western*): below Kribul village, above river Bistritsa, Dabrashki Rid, LF09, 23.09.2011, coll. D. Dimitrov (SOM 167965).
- Rhodopi Mts (*Central*): Chervenata Stena Reserve, Slivov Dol, LF09, 03.08.2011, coll. D. Dimitrov (SOM 167661).

This is a new species for these floristic regions.

**69. *Festuca drymeja* Mert & Koch.**

- Bu** Mt Sredna Gora (*Western*): in the herb layer of *Fagus sylvatica* woodlands near Golema Rakovitsa village, Elin Pelin Municipality, 42.58813N, 23.87201E, FM65, 27.6.2017, coll. K. Vassilev & M. Gumus (SOM 175655).
- Rhodopi Mts (*Eastern*): in a beech forest, Maglenishki Rid, LF09, 10.11.2011, coll. D. Dimitrov (SOM 168083).
- Tundzha Hilly Country: in *Quercus daleschampii* woodland, along with *Carpinus betulus* and *Tilia tomentosa*, Sakar Mt., LF09, 14.10.1967, coll. St. Denchev (SOM 130482); in the forests near Panicherevo village, between Stara Zagora city and Kazanlak town, LF09, 06.1911, leg. Achtarov, det. B. Davidoff (SOM 6293).
- Mt Strandzha: between Balgari and Kosti villages,

LF09, 26.06.1972, coll. St. Kozhuharov (SOM 129700).

This is a new species for these floristic regions. It is a sub-dominant species in the herb layer of *Fagus* woodlands.

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