

## New floristic records in the Balkans: 48\*

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**Abstract.** New chorological data are presented for 106 species and subspecies from Bulgaria (40-60, 62-70, 74, 75, 77, 78, 95, 96), Greece (14-39, 71-73, 76, 79-94, 97-106), and Turkey-in-Europe (1-13, 61). The taxa belong to the following families: *Acanthaceae* (93), *Alliaceae* (36), *Apiaceae* (14-16, 41, 42, 81, 95-97), *Apocynaceae* (98), *Aristolochiaceae* (99), *Asteraceae* (17-18, 43-46, 71, 84, 85, 100), *Athyriaceae* (41), *Boraginaceae* (47, 101, 102), *Brassicaceae* (1, 48, 76, 103), *Cactaceae* (78), *Campanulaceae* (19), *Caryophyllaceae* (2-4, 20, 21, 49-53, 86, 104), *Chenopodiaceae* (22), *Convolvulaceae* (72), *Crassulaceae* (54), *Cucurbitaceae* (94), *Cuscutaceae* (55), *Cyperaceae* (37, 65, 82), *Dipsacaceae* (23), *Dryopteridaceae* (80), *Euphorbiaceae* (5, 56, 87), *Fabaceae* (24-28, 57, 58, 88, 89), *Fagaceae* (59), *Gentianaceae* (75), *Iridaceae* (106), *Lamiaceae* (29, 30), *Lentibulariaceae* (77), *Liliaceae* s.l. (60), *Lythraceae* (31), *Malvaceae* (32), *Oleaceae* (6), *Oxalidaceae* (90), *Phrymaceae* (79), *Poaceae* (38, 39, 66-70), *Primulaceae* (7), *Ranunculaceae* (8-10, 33, 61), *Rosaceae* (11, 34, 62), *Rubiaceae* (12, 63, 64), *Santalaceae* (91), *Scrophulariaceae* s.l. (73, 92, 105), *Solanaceae* (74), *Typhaceae* (83), *Verbenaceae* (13) and *Veronicaceae* (35).

A new taxon for science is: *Centaurea kofinasii* Kit Tan (84).

A new taxon for a country is: for Greece – *Mimulus moschatus* (79).

The publication includes contributions by: M. Aybeke (1-13); B. Biel & Kit Tan (14-39); D. Dimitrov (40-70); K. Giannopoulos & Kit Tan (71-71); P. Glogov (74); K. Lakovski (75); D. Mermygkas, V. Kati & Kit Tan (76); R. Natcheva (77); R. Natcheva & D. Ivanova (78); A. Strid (79); K. Sutorý (80-83); Kit Tan & G. Kofinas (84-92); I.T. Tsialtas & Kit Tan (93-94); V. Vladimirov & D. Borshukov (95); V. Vladimirov, T. Karakiev & D. Gyurova (96); G. Zarkos, V. Christodoulou & Kit Tan (97-106).

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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.

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

## Reports 1–13

### Mehmet Aybeke

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This is a report of 13 new records from European Turkey.

### Brassicaceae

#### 1. *Cardaria draba* (L.) Desv. subsp. *draba*

**Tu(E)** A1(E) Çanakkale: Eceabat, Eceabat – Anafartalar, 10.05.1987, coll. & det. *F. Dane* (EDTU 652).

New for A1(E) Çanakkale in European Turkey. According to Hedge (1965a), this taxon was recorded in A1(E) Tekirdağ and A2(E) Istanbul.

### Caryophyllaceae

#### 2. *Moenchia mantica* (L.) Bartl. subsp. *mantica*

**Tu(E)** A1(E): Kırklareli, Dereköy, 1 km from the Dereköy border, 12.06.1984, coll. *G. Dalgıç*, det. *F. Dane* & *M. Aybeke* (EDTU 61); Kofcaz, 3 km from Kofcaz along the way to Elmacık, 10.06.1987, coll. *G. Dalgıç*, det. *F. Dane*, *N. Polat* & *M. Aybeke* (EDTU 1230).

New for A1(E) Kırklareli in European Turkey. According to Cullen (1967), this taxon was recorded in A1(E) Tekirdağ and A2(E) Istanbul.

#### 3. *Saponaria officinalis* L.

**Tu(E)** A1(E): Edirne, Merkez, Söğütlük riverbank, under the forest, 04.07.1987, coll. *N. Polat*, det. *F. Dane* & *N. Polat* (EDTU 1755).

New for A1(E) Edirne in European Turkey. According to Hedge (1967) this taxon was recorded in A2(E) Istanbul.

#### 4. *Silene compacta* Fischer

**Tu(E)** A1(E): Edirne, Süleoğlu dam, grassland, 10.05.1986, coll. *Güler* & *A. Dalgıç*, det. *F. Dane* (EDTU 361).

New for A1(E) Edirne in European Turkey. According to Coode & Cullen (1967), this taxon was recorded in A1(E) Kırklareli and A2(E) Istanbul.

### Euphorbiaceae

#### 5. *Euphorbia macroclada* Boiss.

**Tu(E)** A1(E) Çanakkale: Gelibolu, Bolayır, Ilgardere park, seaside, 10.05.1987, coll. & det. *F. Dane* (EDTU 593).

New for European Turkey. According to Radcliffe-Smith (1982), this taxon was recorded in Inner and Southern Anatolia. Outside Turkey, it is distributed in W Syria, Syrian Desert, N Iraq, NW, W & C Iran, Armenia and it is stated to be an Ir.-Tur. element.

### Oleaceae

#### 6. *Jasminum fruticans* L.

**Tu(E)** A1(E) Çanakkale: Eceabat, Eceabat – Anafartalar, 10.05.1987, coll. & det. *F. Dane* (EDTU 649).

New for A1(E) Çanakkale in European Turkey. According to Yaltırık (1978), this taxon was recorded only in A1(E) Edirne.

### Primulaceae

#### 7. *Anagallis arvensis* L. var. *arvensis*

**Tu(E)** A1(E) Edirne: Keşan, Mecidiye, around Mercan pond, 11.06.1987, coll. *G. Dalgıç* & *H. Arda*, det. *F. Dane* & *M. Aybeke* (EDTU 1310).

New for A1(E) Edirne in European Turkey. According to Leblebici (1978), this taxon was recorded in A2(E) Istanbul.

### Ranunculaceae

#### 8. *Consolida orientalis* (Gay) Schröd.

**Tu(E)** A1(E) Kırklareli: Babaeski, 1 km from Alpululu to Hayrabolu, 22.06.1987, coll. *F. Dane*, *G. Dalgıç* & *N. Başak*, det. *F. Dane* (EDTU 1473); 11 km from Demirköy to İğneada, 08.06.1988, coll. *F. Dane*, *G. Dalgıç* & *N. Başak*, det. *F. Dane* (EDTU 2096).

New for A1(E) Kırklareli in European Turkey. According to Davis (1965), this taxon was recorded only in A1(E) Çanakkale.

#### 9. *Nigella arvensis* L. var. *glauca* Boiss.

**Tu(E)** A1(E) Tekirdağ: Şarköy, around the cemetery,

15.07.1988, coll. *F. Dane*, det. *F. Dane* & *M. Aybeke* (EDTU 2580).

New for A1(E) Tekirdağ in European Turkey. According to Davis (1965), this taxon was recorded in A1(E) Çanakkale and A2(E) Istanbul.

#### 10. *Ranunculus brutius* Ten.

**Tu(E)** A1(E) Istanbul: Silivri, Beyciler village, 25.05.1987, coll. & det. *F. Dane* (EDTU 688).

New for European Turkey. According to Cook (1965), this taxon was recorded in A2(A) Bursa, A3 Bolu, A4 Kastamonu and is considered as an Euro.-Sib. element.

#### Rosaceae

#### 11. *Fragaria vesca* L.

**Tu(E)** A1(E) Edirne: 5 km from Uzunköprü on the way to Çöpköy, 25.04.1987, coll. & det. *F. Dane* (EDTU 627).

New for A1(E) Edirne in European Turkey. According to Peşmen & Chamberlain (1972), this taxon was recorded in A1(E) Kırklareli and A2(E) Istanbul.

#### Rubiaceae

#### 12. *Galium verum* L. subsp. *verum*

**Tu(E)** A1(E) Tekirdağ: Muratlı, 15 km from Muratlı to Lüleburgaz, 22.06.1987, coll. *F. Dane* & al., det. *F. Dane* & *M. Aybeke* (EDTU 1547).

New for A1(E) Tekirdağ in European Turkey. According to Ehrendorfer & Schönbeck-Temesy (1982), this taxon was recorded in A1(E) Edirne and A2(E) Istanbul.

#### Verbenaceae

#### 13. *Verbena officinalis* L.

**Tu(E)** A1(E) Tekirdağ: Şarköy, cemetery, 27.07.1987, coll. & det. *F. Dane* (EDTU 1798); Şarköy, coastal path, 02.08.1987, coll. & det. *F. Dane* (EDTU 1815).

New for A1(E) Tekirdağ in European Turkey. According to Townsend (1982), this taxon was recorded in A1(E) Kırklareli and A2(E) Istanbul.

## Reports 14–39

### Burkhard Biel<sup>1</sup> & Kit Tan<sup>2</sup>

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This is the seventh report of new plant-records for the island of Milos (phytogeographical region Kiklades, Nomos Kikladon, Eparchia Milou) based on visits in March/April and May 2022. The 26 records listed are new for the island unless otherwise stated. Five 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 floristic region to 92. Occurrence on the other Kikladean islands is briefly summarized.

#### Apiaceae

#### 14. *Bupleurum greuteri* Snogerup

**Gr** Nomos Kikladon, Eparchia Milou: SW of Adamas, rocky phrygana slope at dirt road above coast, 20 m, 36°43'24"N, 24°26'23"E, 07.05.2022, *Biel* 22.190; S-SE of Embourios, phrygana at dirt road east of valley, 12 m, 36°42'06"N, 24°23'46"E, 13.05.2022, *Biel* 22.281.

New for the Kiklades, easily misidentified as *B. glumaceum*. Also observed at Adamas, Ag. Marina, Embourios and Kato Komia.

#### 15. *Scandix australis* subsp. *balcanica* Vierh.

**Gr** Nomos Kikladon, Eparchia Milou: N of Prof. Ilias, phrygana slope with olive trees, SW of Ag. Georgios chapel, 170 m, 36°41'37"N, 24°23'01"E, 10.04.2022, *Biel* 22.172.

Reported from several islands in the Kiklades as *S. australis* L. The bracts are leaf-like and the bractlets small and simple. In *S. australis* subsp. *australis* bracts are absent.

#### 16. *Scandix stellata* Banks & Sol. (Fig. 1)

**Gr** Nomos Kikladon, Eparchia Milou: NW of Zefiria, phrygana slope and fallow field at dirt road, 75 m, 36°42'44"N, 24°28'44"E, 19.05.2022, *Biel* 22.348.



Fig. 1. *Scandix stellata* (photo B. Biel).



Fig. 2. *Carthamus caeruleus* (photo B. Biel).

New for the Kiklades, scattered in Greece. On the islands, only reported from the East Aegean (Lesvos and Samos).

#### **Asteraceae**

##### **17. *Carthamus caeruleus* L. (Fig. 2)**

**Gr** Nomos Kikladon, Eparchia Milou: W of Zefiria, road and field margins, ruderal slopes, 15 m, 36°42'03"N, 24°29'15"E, 12.05.2022, *Biel* 22.271.

Reported from Amorgos and Astipalaea in the Kiklades. Also noted SW of Embourios.

##### **18. *Picris pauciflora* Willd.**

**Gr** Nomos Kikladon, Eparchia Milou: N of Prof. Ilias, *Sarcopoterium-Thymbra* phrygana with olive trees E of Ag. Georgios, above dirt road, 170 m, 36°41'38"N, 24°23'08"E, 10.05.2022, *Biel* 22.230.

Widespread, almost throughout Kiklades.

#### **Campanulaceae**

##### **19. *Legousia pentagonia* (L.) Druce [syn.: *L. speculum-veneris* subsp. *pentagonia* (L.)Wahlsteen]**

**Gr** Nomos Kikladon, Eparchia Milou: S-SE of Embourios, phrygana with olive trees beside stream, 20 m, 36°41'59"N, 24°23'42"E, 13.05.2022, *Biel* 22.283; SW of Embourios, cereal field by dirt road, 150 m, 36°41'51"N, 24°22'40"E, 14.05.2022, *Biel* 22.306.

Confirming the report of Rechinger (1944: 603) which was a first record for the western Kiklades.

#### **Caryophyllaceae**

##### **20. *Herniaria glabra* L.**

**Gr** Nomos Kikladon, Eparchia Milou: S-SW of Zefiria, dirt track near Stavros chapel, 115 m, 36°40'43"N, 24°28'42"E, 12.05.2022, *Biel* 22.270.

New for the Kiklades, for the islands only reported from Thasos (N Aegean) and Lesvos (E Aegean). Distributed mainly in northern Greece, with scattered occurrences in Sterea Ellas and the Peloponnese, both verified. Also noted NW of Kipos.

##### **21. *Silene subconica* Friv.**

**Gr** Nomos Kikladon, Eparchia Milou: W-SW of Ag. Kyriaki, *Calicotome-Sarcopoterium* phrygana at ridge above Kalami coastline, 135 m, 36°40'06"N, 24°29'05"E, 12.05.2022, *Biel* 22.267.

New for west Kiklades, reported from Amorgos in the east Kiklades.

#### **Chenopodiaceae**

**22. *Chenopodium giganteum* D. Don**

**Gr** Nomos Kikladon, Eparchia Milou: S edge of Zefiria, road margins and vegetable fields, olive groves, 15 m, 36°41'55"N, 24°29'24"E, 12.05.2022, *Biel* obs. (photo).

Reported from Kea and Paros in the Kiklades.

**Dipsacaceae****23. *Lomelosia divaricata* (Jacq.) Greuter & Burdet (Fig. 3)**

**Gr** Nomos Kikladon, Eparchia Milou: SE of Ag. Marina, *Calicotome-Thymbra* slope below saddle of Koutsounarachi, 295 m, 36°40'57.81"N, 24°24'48.62"E, 11.05.2022, *Biel* 22.256.

Mainly central Kiklades.

**Fabaceae****24. *Astragalus echinatus* Murr. (Fig. 4)**

**Gr** Nomos Kikladon, Eparchia Milou: N-NE of Ag. Marina, rocky *Calicotome-Erica* phrygana at dirt track, 40 m, 36°41'43.25"N, 24°24'23.02"E, 13.05.2022, *Biel* 22.277.

First reported by Dumont d'Urville in 1822, not recently confirmed. Also noted SE of Embourios.

**25. *Hippocrepis multisiliquosa* L.**

**Gr** Nomos Kikladon, Eparchia Milou: S-SE of Embourios, olive trees and phrygana beside stream, 20 m, 36°41'59"N, 24°23'42"E, 13.05.2022, *Biel* 22.288.

Reported only from Paros and Anafi in the Kiklades.

**26. *Lathyrus odoratus* L.**

**Gr** Nomos Kikladon, Eparchia Milou: SW of Embourios, phrygana by road and field margins near the chapel Isodia Theotokou, 150 m, 36°41'48.38"N, 24°22'14.39"E, 18.05.2022, *Biel* 22.341.

New for the Kiklades.

**27. *Medicago tuberculata* (Retz.) Willd.**

**Gr** Nomos Kikladon, Eparchia Milou: S-SE of Embourios, olive trees and phrygana beside stream, 20 m, 36°41'59"N, 24°23'42"E, 13.05.2022, *Biel* 22.286.



**Fig. 3.** *Lomelosia divaricata* (photo B. Biel).



**Fig. 4.** *Astragalus echinatus* (photo B. Biel).

Second report for Milos, first reported by Dumont d'Urville in 1822, not recently confirmed.

**28. *Trifolium purpureum* Loisel.**

**Gr** Nomos Kikladon, Eparchia Milou: NW of Adamas, phrygana and earth deposits by dirt road, 70 m, 36°43'42"N, 24°26'27"E, 07.05.2022, *Biel* 22.194.

Reported from Andros, Naxos and Tinos. Also noted in the vicinity of Adamas and Arieti.

**Lamiaceae****29. *Sideritis curvidens* Stapf**

**Gr** Nomos Kikladon, Eparchia Milou: SE of Ag. Marina, *Calicotome-Thymbra* phrygana slope below saddle of Koutsounarachi, 295 m, 36°40'57"N, 24°24'48"E, 11.05.2022, *Biel* 22.254; SW of Ag. Kyriaki, *Calicotome* phrygana at old mine with

waste deposits, 105 m, 36°39'58"N, 24°29'21"E, 12.05.2022, *Biel* 22.266.

Widespread in Kiklades.

**30. *Stachys cretica* L.** (Fig. 5)

**Gr** Nomos Kikladon, Eparchia Milou: SE of Adamas, open phrygana at road junction on saddle, 80 m, 36°42'51"N, 24°28'34"E, 19.05.2022, *Biel* 22.349.

Reported from Andros, Naxos, Serifos and Tinos.

**Lythraceae**

**31. *Lythrum borysthenicum* (Schrank) Litv.**

**Gr** Nomos Kikladon, Eparchia Milou: S-SW of Zefiria, ephemeral pool surrounded by phrygana, 100 m, 36°40'43"N, 24°28'51"E, 12.05.2022, *Biel* 22.268; NW of Emborios, open *Juniperus* woodland with pond, near ruined building, 80 m, 36°44'06"N, 24°21'30"E, 14.05.2022, *Biel* 22.305; SW of Kipos, rocky phrygana with *Juniperus* and pond, at road bend, 75 m, 36°39'54"N, 24°25'47"E, 15.05.2022, *Biel* 22.314.



Fig. 5. *Stachys cretica* (photo B. Biel).

Reported from Mykonos, Serifos and Sifnos in the Kiklades. Also noted at Chivadolimni, Provatas and Zefiria.

**Malvaceae**

**32. *Malva cretica* Cav.**

**Gr** Nomos Kikladon, Eparchia Milou: S-SE of Embourios, small pine wood above stream, near dirt road, 20 m, 36°42'03.25"N, 24°23'43.79"E, 13.05.2022, *Biel* 22.282.

Widespread in the Kiklades.

**Ranunculaceae**

**33. *Ranunculus sardous* Crantz**

**Gr** Nomos Kikladon, Eparchia Milou: N of Zefiria, edge of dirt road junction and abandoned vine field, near well, 15 m, 36°42'46"N, 24°29'27"E, 08.05.2022, *Biel* 22.211; N-NE of Chodro Vouno, rocky slope with open phrygana and olive trees, on path, 180 m, 36°41'32"N, 24°22'36"E, 10.05.2022, *Biel* 22.247.

Occurring on several islands in the Kiklades.

**Rosaceae**

**34. *Cydonia oblonga* Mill.**

**Gr** Nomos Kikladon, Eparchia Milou: N of Provatas, *Juniperus* and *Pistacia* scrub at NE margin of *Bolboschoenus* swamp, 20 m, 36°40'53"N, 24°26'36"E, 15.05.2022, *Biel* 22.316.

Discarded remnant of cultivation.

**Veronicaceae**

**35. *Linaria chalepensis* (L.) Mill.** (Fig. 6)

**Gr** Nomos Kikladon, Eparchia Milou: W-NW of Zefiria, large fallow field south of main road, 10 m, 36°42'20"N, 24°28'28"E, 08.05.2022, *Biel* 22.215.

New for western Kiklades. Also noted W of Zefiria.

**Alliaceae**

**36. *Nothoscordum gracile* (Aiton) Stearn**

**Gr** Nomos Kikladon, Eparchia Milou: NE of Adamas, waste ground in and around Taxiarchis cemetery, 20 m, 36°43'40"N, 24°27'11"E, 16.05.2022, *Biel* 22.330.



Fig. 6. *Linaria chalepensis* (photo B. Biel).

New for the Kiklades, established alien.

#### **Cyperaceae**

##### **37. *Eleocharis palustris* (L.) Roem. & Schult.**

**Gr** Nomos Kikladon, Eparchia Milou: NW of Embourios, open *Juniperus* woodland with pond, near ruined building, 80 m, 36°44'06"N, 24°21'30"E, 14.05.2022, *Biel* 22.301; SW of Kipos, rocky phrygana with *Juniperus* and pond, at road bend, 75 m, 36°39'54"N, 24°25'47"E, 15.05.2022, *Biel* 22.311.

Occurring on several islands in the Kiklades. Also noted NW of Kipos and N of Provatas.

#### **Poaceae**

##### **38. *Poa trivialis* L.**

**Gr** Nomos Kikladon, Eparchia Milou: W edge of Achivadolimni, wet places by stream near Ag. Konstantinos, 5 m, 36°41'15"N, 24°26'24"E, 11.05.2022, *Biel* 22.263.

Confirming a report by Kalheber cited in Raus (2012:

226), widespread in Kiklades.

##### **39. *Polypogon viridis* (Gouan) Breistr.**

**Gr** Nomos Kikladon, Eparchia Milou: W edge of Achivadolimni, wet places by stream near Ag. Konstantinos, 5 m, 36°41'15"N, 24°26'24"E, 11.05.2022, *Biel* 22.262.

Widespread in Kiklades. Also noted SW of Embourios.

Cited vouchers are provisionally kept in the private herbarium of B. Biel at H6chberg (herb. Biel).

## **Reports 40–70**

### **Dimitar S. Dimitrov**

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#### **Athyriaceae**

##### **40. *Athyrium filix-femina* (L.) Roth.**

**Bu** Valley of River Struma (*Northern*): on the left river-bank of Rilska River, before the village of Stob, FM76, 23.07.2021, leg. & det. *D. Dimitrov* (SOM 177527).

#### **Apiaceae**

##### **41. *Angelica archangelica* L.**

**Bu** Black Sea Coast (*Northern*): Varna city under Morskata gradina [Seaside Garden], damp places, NH78, 18.09.2021, leg. & det. *D. Dimitrov* (SOM 177500).

##### **42. *Seseli peucedanoides* (M. Bieb.) Koso-Pol.**

**Bu** Sofia Region: on calcareous steppe eastwards from Seslavtsi suburb of Sofia, GN04, 13.09.2021, leg. & det. *D. Dimitrov* (SOM 177504).

#### **Asteraceae**

##### **43. *Centaurea ovina* Willd.**

**Bu** Valley of River Struma (*Northern*): Rila town, FM76, 11.07.2021, leg. & det. *D. Dimitrov* (SOM 177522).

##### **44. *Centaurea ovina* subsp. *besseriana* (DC.) Dostál**

**Bu** Balkan Range (*Western*): Mala Planina – Natural Landmark Katinski Piramidi [Katina pyramids],

FN34, 28.10.2021, leg. & det. *D. Dimitrov* (SOM).

**45. *Centaurea rutifolia* Sm.**

**Bu** Znepole Region: Mt Golo Bardo: above the Struma motorway, FN70, 09.08.2021, leg. & det. *D. Dimitrov* (SOM 177490).

**46. *Tragopogon orientalis* L.**

**Bu** Valley of River Struma (*Northern*): Rila town, FM76, 11.07.2021, leg. & det. *D. Dimitrov* (SOM 177515).

**Boraginaceae**

**47. *Nonea obtusifolia* (Willd.) DC.**

**Bu** Tundzha Hilly Country: Bakadzhika, MG79, 12.08.1947, leg. & det. *P. Varbanov* (SOA 48502).

**Brassicaceae**

**48. *Erysimum crassistylum* C. Presl (*E. moesiicum* Velen.)**

**Bu** Valley of River Struma (*Northern*): S of Rila town, sandy place on siliceous bedrock, 11.07.2021, FM76, leg. & det. *D. Dimitrov* (SOM 177513).

**Caryophyllaceae**

**49. *Dianthus gracilis* Sm.**

**Bu** Tundzha Hilly Country: locality Kazankata, stones above the village of Cherepovo, Harmanli Municipality, MG25, 13.10.2007, leg. *G. Gruychev*, det. *D. Dimitrov* (SOM 177555).

**50. *Dianthus pinifolius* subsp. *rumelicus* (Vel.) Stoj. & Acht.**

**Bu** Valley of River Struma (*Northern*): Rila town, FM76, 11.08.2021, leg. & det. *D. Dimitrov* (SOM 177542).

**51. *Minuartia anatolica* (Boiss.) Woronow**

**Bu** Balkan Range (*Eastern*): on calcareous grassy places, E of the village of Sotirya, Sliven district, MH52, 27.07.2009, leg. & det. *D. Dimitrov* (SOM 165025).

— West Frontier Mts: Osogovska Mt: by the road from Kyustendil town to the village of Bogoslov, 30.06.2003, FM37, leg. *B. Assyov*, det. *D. Dimitrov* (SOM 177085).

**52. *Minuartia rumelica* Panov**

**Bu** Forebalkan (*Eastern*): cave Prohodna near Karlukovo village, exit to Iskar river, limestone, 01.08.2021, KH68, leg. & det. *D. Dimitrov* (SOM 177523).

**53. *Silene roemerii* Friv.**

**Bu** Valley of River Struma (*Northern*): FM76, 11.07.2021, leg. & det. *D. Dimitrov* (SOM 177514).

**Crassulaceae**

**54. *Sedum atratum* subsp. *carinthiacum* (Pacher) D. A. Webb**

**Bu** Znepole Region: Mt Strazha (Paramunska): on calcareous rocky places, 1200 m, FN43, 13.07.2021, leg. & det. *D. Dimitrov* (SOM 177547).

**Cuscutaceae**

**55. *Cuscuta epilinum* Weihe**

**Bu** Valley of River Struma (*Northern*): Rila town, FM76, 11.07.2021, leg. & det. *D. Dimitrov* (SOM 177510).

**Euphorbiaceae**

**56. *Euphorbia lathyris* L.**

**Bu** Valley of River Struma (*Northern*): on a street in Rila town, FM76, 11.07.2021, leg. & det. *D. Dimitrov* (SOM 177505).

**Fabaceae**

**57. *Genista rumelica* Velen.**

**Bu** Black Sea Coast (*Northern*): N of Byala town, calcareous rocks, NH74, 17.09.2021, leg. & det. *D. Dimitrov* (SOM 177495).

**58. *Trifolium badium* subsp. *pseudobadium* (Velen.) Kozuharov**

**Bu** West Frontier Mts: Mt Vlahina, grassy places on peak Momina Salza, 1100 m, FM63, 03.08.1981, leg. & det. *Y. Koeva*, *V. Meshineva* & *D. Dimitrov* (SO 92075).

**Fagaceae**

**59. *Quercus longipes* Steven**

**Bu** Valley of River Struma (*Northern*): on the right bank of Rilska River before the village of Stob, Kocherinovo Municipality, FM76, 25.09.2021, leg. & det. *D. Dimitrov* (SOM 177496).



**Liliaceae s.l.****60. *Ornithogalum sphaerocarpum* A. Kern.**

**Bu** Znepole Region: Mt Strazha (Paramunska): on calcareous places above the village of Lyalintsi, FN43, 13.07.2021, leg. & det. *D. Dimitrov* (SOM 177508).

**Ranunculaceae****61. *Ranunculus oxyspermus* Willd.**

**Tu(E)** A1(E) Edirne: The village of Karasakli, Edirne district, 05.1913, leg. & det. *Iv. Neicev* (SOM 28517).

New for Turkey in Europe (*cf.* Hörandl & Raab-Straube 2015).

**Rosaceae****62. *Alchemilla bulgarica* Rothm.**

**Bu** Mt Slavyanka: above the forest of *Pinus heldreichii* on the trail to Shabran peak, 1900 m, GL19, 01.08.2011, leg. & det. *D. Dimitrov* (SOM 167638).

**Rubiaceae****63. *Galium pseudoaristatum* Schur**

**Bu** Forebalkan (*Eastern*): cave Prohodna near Karlukovo village, exit to Iskar river, limestone, KH68, 01.08.2021, leg. & det. *D. Dimitrov* (SOM 177524).

— Valley of River Struma (*Northern*): Rila town, south part, FM76, 11.07.2021, leg. & det. *D. Dimitrov* (SOM 177506).

**64. *Galium uliginosum* L.**

**Bu** Valley of River Struma (*Northern*): on right bank of Rilska river before the village of Stob, Kocherinovo Municipality, FM76, 23.10.2021, leg. & det. *D. Dimitrov* (SOM).

**Cyperaceae****65. *Carex hostiana* DC.**

**Bu** Sofia Region: Yuzhen Park [South park], FN93, 05.2010, leg. *A. Assenov*, det. *D. Dimitrov* (SOM 177108).

— Mt Sredna Gora (*Western*): 4 km S of Oborishte village along the road to the village of Muhovo, dolomite rocks, KH51, 03.06.2011, leg. & det. *D. Dimitrov* (SOM 168154).

**Poaceae****66. *Achnatherum bromoides* (L.) P. Beauv.**

**Bu** Valley of River Struma (*Northern*): S of Rila town, FM76, 23.08.2021, leg. & det. *D. Dimitrov* (SOM 177 502).

**67. *Agrostis castellana* Boiss. & Reut.**

**Bu** Valley of River Struma (*Northern*): on the right bank of Rilska river before the village of Stob, Kocherinovo Municipality, FM76, 15.09.2021, leg. & det. *D. Dimitrov* (SOM 177497).

**68. *Elymus caninus* (L.) L.**

**Bu** Valley of River Struma (*Northern*): on the left bank of Rilska river before the village of Stob, Kocherinovo Municipality, FN76, 23.08.2021, leg. & det. *D. Dimitrov* (SOM 177528).

**69. *Festuca gigantea* (L.) Vill.**

**Bu** Valley of River Struma (*Northern*): on the right bank of Rilska river before the village of Stob, Kocherinovo Municipality, FM76, 23.10.2021, leg. & det. *D. Dimitrov* (SOM 177554).

**70. *Poa angustifolia* L.**

**Bu** Forebalkan (*Eastern*): cave Prohodna by the village of Karlukovo, Lukovit Municipality, KH68, 01.08.2021, leg. & det. *D. Dimitrov* (SOM 177511).

**Reports 71–73****Konstantinos Giannopoulos<sup>1</sup> & Kit Tan<sup>2</sup>**

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**Asteraceae****71. *Arctium minus* (Hill) Bernh. [syn.: *Lappa minor* Hill] (Fig. 7)**

**Gr** Nomos Ilias, Eparchia Olimbias: outside Andritsaina near spring, dried-out, seasonally wet channel, 760 m, 37°29'N, 21°54'E, 01.07.2022, *Giannopoulos* s.n. (herb. Giannopoulos).

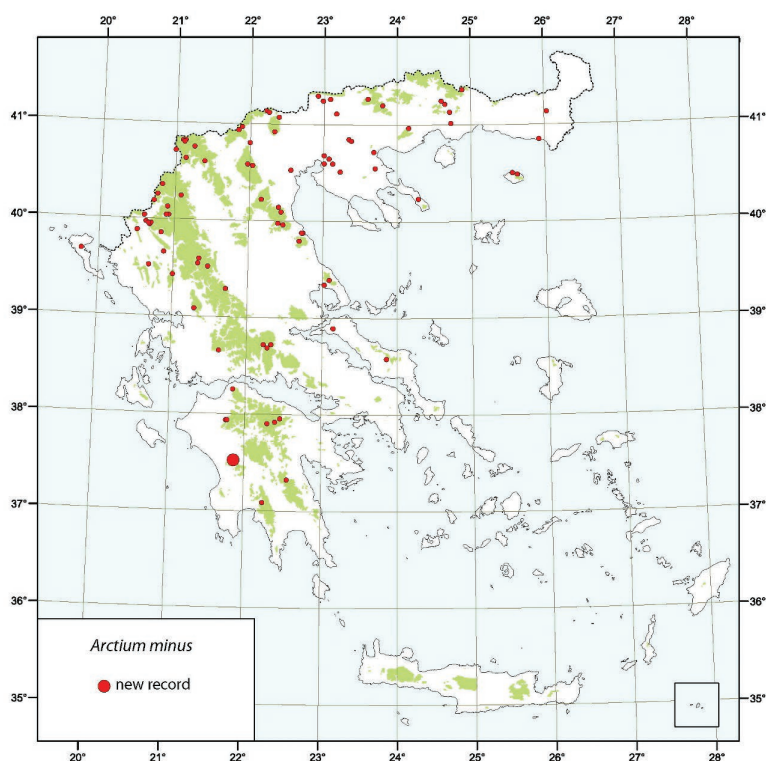


Fig. 7. *Arctium minus* and its distribution in Greece (photo K. Giannopoulos).

New for nomos and eparchia, scattered in Peloponnese, widespread on mainland, often at roadsides and on waste ground. Distinguished from the other *Arctium* species in Greece by the hollow petioles (see Fig. 7), and florets longer than involucre bracts.

#### **Convolvulaceae**

##### **72. *Convolvulus sabatius* Viv. (Fig. 8)**

**Gr** Nomos Ilias, Eparchia Olimbias: outside Figalia, on courtyard wall of chapel, 470 m, 37°27'N, 21°47'E, 30.04.2022, *Giannopoulos* s.n. (herb. Giannopoulos).

New for nomos and eparchia, first report from Peloponnese and mainland Greece. The plants appear well-established. Native to Italy and NW Africa (Algeria, Morocco). The only report for Greece (based on *Hansen* 851, C), is apparently from the Ionian island of Kerkira where it was found on stone walls in a village south of Corfu town.

#### **Scrophulariaceae**

##### **73. *Lathraea squamaria* L. (Fig. 9)**

**Gr** Nomos Messinias, Eparchia Trifilias: near village of Abeliona, along stream in deciduous woodland, 770 m, 37°26'N, 21°57'E, 06.04.2022, *Giannopoulos* s.n. (herb. Giannopoulos).

New for nomos and eparchia. Second report from the Peloponnese; first recorded in this floristic region from Nomos & Eparchia Korinthias in 2014 (*Zarkos & al.* 2014). Not rare in Greece but rarely noted as it remains underground most of the year.

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## **Report 74**

### **Plamen Glogov**

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#### **Solanaceae**

##### **74. *Datura innoxia* Mill. (Fig. 10)**

**Bu** Black Sea Coast (*Southern*): Nessebar town, South beach, on the road to the beach in the

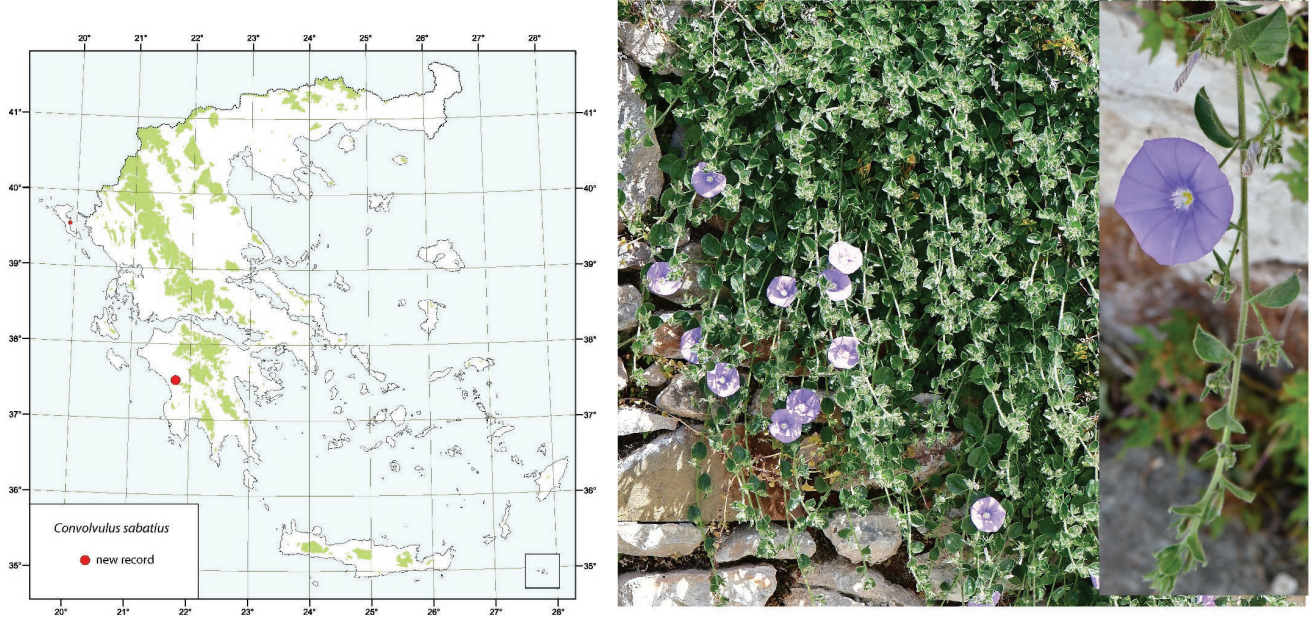


Fig. 8. *Convolvulus sabatius* and its known distribution in Greece (photo K. Giannopoulos).

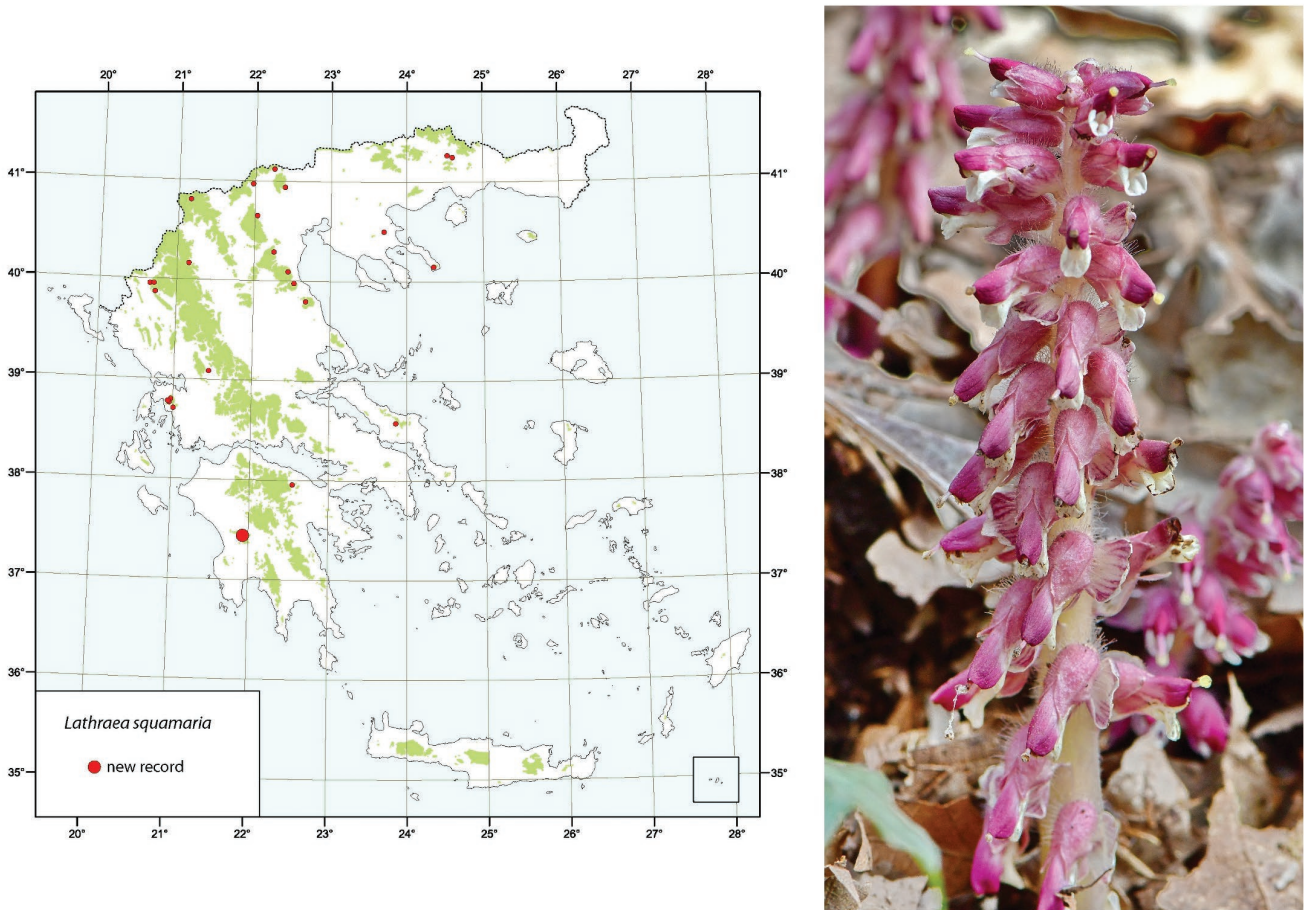


Fig. 9. *Lathraea squamaria* and its distribution in Greece (photo K. Giannopoulos).



Fig. 10. *Datura innoxia* (photo P. Glogov).

immediate vicinity of the sand dunes, NH52, 42°39'16.625"N, 27°42'52.358"E, 01.07.2022, coll. P. Glogov (SOM 177702).

This exotic plant is considered invasive in many countries such as Galapagos islands, New Caledonia, mainland China and Taiwan, and in Ethiopia, Kenya, Namibia and South Africa and is widely naturalized in the tropics, temperate Europe and North America (CABI 2022). In Bulgaria, the species has been established in the Danubian Plain, Sofia Region, Znepole Region, Valley of River Struma (*Southern*), Thracian Lowland (Petrova & Valdimirov 2018). This is the first report for the Black Sea Coast floristic region. In this particular locality, only 3 individuals of this species were established in flowering phase. Accompanying species were other invasive aliens such as *Amaranthus retroflexus*, *Phytolacca americana*, *Parthenocissus quinquefolia*, *Erigeron canadensis*, and native anthropophytes like *Chenopodium album* and *Cichorium intybus*.

With its aggressive growth and fast distribution *D. innoxia* represents an immediate threat to the existing



Fig. 11. *Swertia punctata* (photo K. Lakovski).

habitat type B1.4B11 Southwestern Pontic fixed dunes (EUNIS 2022).

## Report 75

**Krasimir Lakovski**

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**Gentianaceae**

**75. *Swertia punctata* Baumg.**

**Bu** Balkan Range (*Western*): Chiprovtsi town, in a fragment of fen vegetation ca. 1.4 km E of peak Vrazha Glava (1936 m), 1651–1679 m, FP40, 43°20'45.3"N, 22°48'10.6"E, 28.08.2021, K. Lakovski obs. (Fig. 11).

This is a new population with more than 200 flowering individuals and many juvenile plants. Some of the accompanying species were: *Athyrium filix-femina*, *Allium schoenoprasum*, *Dactylorhiza saccifera*, *Parnassia palustris*, *Gentiana asclepiadea* and *Geum ri-*

vale. The area is used as a pasture for cattle in summer, but with low intensity and without a direct threat to the population of *S. punctata*. The plot is more than 3000 m<sup>2</sup>. The plants grow along a narrow stream in Pizditse locality. The area is around the spring of Kozarnitsa river above the Chiprovtsi waterfall.

*Swertia punctata* has been evaluated as Critically Endangered (Vladimirov 2009, 2015). So far the species has been reported from the area near peaks Midzhur and Kopren, and by river Prodanovska above Chiprovtsi town (Pančić 1883; SOM 145661, coll. B. Kitanov 1949 cited in Tan & Vladimirov 2001). In the last years *S. punctata* has been recorded only in the area of peak Midzhur, from two separate sites: one at the foothills at 1300 m a.s.l., and another one in the subalpine belt at 2000 m a.s.l. (Tan & Vladimirov 2001; Vladimirov 2014). In 2020 an observation of a third small subpopulation N-NW of peak Midzhur was made (Szokala & Kratoš 2021). The new locality above Chiprovtsi is about 11 km away from the three verified localities beneath peak Midzhur. It should be noted that there is no river named Prodanovska above Chiprovtsi waterfall as described by Kitanov on the label of the herbarium specimen collected in 1949 and kept in SOM. It is possible that the left tributary of Kozarnitsa river was meant which run through the Prodenitsa area NW of Chiprovtsi waterfall. The presently reported locality is much higher than Prodenitsa locality but still on the same slope of the mountain.

## Report 76

Dionysios Mermygkas<sup>1</sup>, Vaya Kati<sup>2</sup> & Kit Tan<sup>3</sup>

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### Brassicaceae

76. *Cardamine occulta* Hornem. [Asian *C. flexuosa* With.] (Figs. 12, 13)



Fig. 12. *Cardamine occulta* growing abundantly within the nursery (photo D. Mermygkas).



Fig. 13. Pot with an ornamental plant (wax begonia in the *Semperflorens-Cultorum* group) and flowering *Cardamine occulta* (photo V. Kati).

**Gr** Nomos & Eparchia Attikis: within greenhouse of a plant nursery, 185 m, 38°04'N, 23°45'E, 01.06.2022, *Mermygkas & Kati* 2907 (ATH).

*Cardamine occulta* is an annual or overwintering biennial species originating from East Asia where it is associated with irrigated man-made habitats such as rice paddies and orchards (Marhold & al. 2016; Šlenker & al. 2018). It had traditionally been circumscribed within *C. flexuosa* With. However, a recent phylogenetic study by Lihová & al. (2006) showed that populations of “*C. flexuosa*” from Europe and Asia represent two distinct lineages with different ploidy levels. *Cardamine occulta* is an octoploid ( $2n = 64$ ) originating from the hybridization of two tetraploids *C. scutata* Thunb. and *C. kokaiensis* Yahara & al., which grow sympatrically in East Asia. *C. flexuosa* is an allotetraploid ( $2n = 32$ ) whose progenitors are deduced to be diploid *C. amara* L. and diploid *C. hirsuta* L. (Mandáková & al. 2014, 2019; Šlenker & al. 2018). The earliest known references of *C. occulta* in Europe are from Belgium in 1968 and from Italy in 1977 (Marhold & al. 2016; Verloove 2018).

To date, the first and only confirmed record of *C. occulta* in Greece is from the “edge of flower bed with a cultivated tree” outside a Hotel in the city of Iraklion, Crete (sub nom. *C. hamiltonii* G. Don, Ardenghi & al. 2015). However, *C. flexuosa* has already been reported from mainland Greece (East Central, near Volos). This record most likely refers to *C. occulta* (Tan 2002: 184).

*C. occulta* came to our attention when a horticulturist from a plant nursery in North Attica brought to the Benaki Phytopathological Institute four pots containing ornamental plants for identification of the weed species infesting them. The weed constituted a problem for the nursery as its quick and rapid spread required constant weeding of pots and containers, a detrimental task increasing the cost of production.

Kit Tan (KT) suggested a possible identification as *C. occulta* which had been recently documented from Greece under the name *C. hamiltonii* G. Don. The nursery was then visited by the first two authors (DM and VK) for a sampling of specimens. Using perti-

nent literature (Cooke & Heathcote 2017; Šlenker & al. 2018; Hruševár & al. 2021) it was confirmed that the plant is indeed *C. occulta*.

It was noted that *C. occulta* grew abundantly within the greenhouse, with plants occupying a large number of pots containing several horticultural species, as well as on the ground and in the gaps of the geotextile covering most of the floor. Outside the nursery, *C. occulta* was found in places adjoining the greenhouses where pots and containers had been placed and received regular watering.

The shady banks of a nearby flowing stream were examined as they had somewhat similar conditions of humidity and soil moisture seemingly required by *C. occulta*, but the plant was not found. This is the second confirmed record from Greece. Judging from the luxuriant growth within the nursery and the transportation of potted plants between nurseries, it must surely be a common weed at plant centres and nurseries elsewhere in the country. Purchased plants could also make their way to gardens, flower beds and other irrigated habitats. A survey is now carried out to locate other areas in Greece. It is hoped that some biological means could be found to control the rapid spread within plant centres although we do not consider it an invasive weed at the moment, with potential danger to the native flora.

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## Report 77

### Rayna Natcheva

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### *Lentibulariaceae*

#### 77. *Pinguicula balcanica* Casper (Fig. 14)

**Bu** Mt Sredna Gora (*Western*): the springs of Chumina river at the N slopes of peak St. Iliya, E of town Koprivshtitsa, at the edge of *Sphagnum*-dominated mire, 1385.566 m, KH82, 42.64942°N,



Fig. 14. *Pinguicula balcanica* (photo R. Natcheva).

24.391445°E, 16.08.2022, R. Natcheva obs. (photo). This is the first report of *P. balcanica* for this floristic region. So far it was known from the Balkan Range (*Western, Central*), Vitosha region, West Frontier Mts, Rila Mts, Pirin Mts, and Rhodopi Mts (*Western, Central*) (Markova 1995; Assyov & Petrova 2012). The site is especially interesting with numerous small to moderate in size mires of fairly good state. The species was represented by several tens of individuals. It grew on bare wet peaty soil at the base of *Bruckenthalia spiculifolia* hummocks or among *Sphagnum subsecundum*. The same site supported a large population of *Drosera rotundifolia* (included in the Bulgarian Red List as VU, Vitkova 2009) and of the moss *Leucobryum glaucum* (Hedw.) Ångst. (included in Annex 5 of the Council Directive 92/43/EEC and in the Biodiversity Act of Bulgaria).

## Report 78

### Rayna Natcheva & Daniella Ivanova

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#### Cactaceae

#### 78. *Opuntia humifusa* (Raf.) Raf. (Fig. 15)



Fig. 15. *Opuntia humifusa* (photo R. Natcheva).

**Bu** Thracian Lowland: on the western dike of river Vacha between villages Yoakim Gruevo and Kurtovo Konare, Plovdiv province, on sand deposits, 180–200 m, KG96, 10.05.2022, R. Natcheva & D. Ivanova obs. (photo).

The population of *O. humifusa* is located mainly in sunny places on both sides of the dike and spreads along ca. 1,7 km (starting at 42.10427299°N, 24.53148674°E, ending at 42.09601488°N, 24.5156923°E). We counted more than 80 patches of various size – from just established fragments of cladodes to patches larger than 2–3 m in diameter. Most plants were richly fertile, bearing last-years fruits and starting to develop new flower buds. It was not possible to distinguish if there were patches originating from seeds but it seems likely that vegetative propagation prevails.

*Opuntia humifusa* was introduced in Bulgaria ca. 90 years ago and now is considered invasive species, distributed in the following floristic regions: Black Sea Coast, Forebalkan (*Eastern*), Valley of River Struma, Pirin Mts (*Southern*), Mt Sredna Gora (*Western*), Rhodopi Mts (*Central*), Thracian Lowland, and Tundzha Hilly Country (Petrova & al. 2012; Raycheva & Stoyanov 2018). Our record is a new site in Thracian Lowland region. The most likely origin of this population is the park of Krichim palace and hunting estate that is situated in close proximity. The species seems to be well naturalized in the region.

## Report 79

### Arne Strid

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### Phrymaceae

79. *Mimulus moschatus* Douglas ex Lindl. [syn.: *Erythranthe moschata* (Douglas ex Lindl.) G.L. Nesom] (Fig. 16)

**Gr** Nomos Chalkidikis, Eparchia Athou: Athos peninsula, by the harbour of Dafni, damp, shady place in a ravine, 0–10 m, 40°13'N, 24°13'E, 28.07.2022, Strid obs. (photo).

New for Greece, rare but appearing well established. Native to North America (Canada, N & W United States), locally naturalized in S, W & C Europe, S America and S Africa. *M. guttatus* DC., another North American species, is cultivated as an ornamental and widely naturalized in Europe. In Greece the latter had been collected in the eastern foothills of Mt Olimbos by the present author in 1974, apparently the only record. *Mimulus moschatus* differs in being a smaller, procumbent plant, patently glandular-pubescent in the upper part, with subequal calyx teeth and almost regular, rather pale yellow corolla.

**Acknowledgements.** Thanks are due to Per Hartvig who was the first to find the plant on our excursion to Agion Oros.

## Reports 80–83

### Karel Sutorý

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### Dryopteridaceae

80. *Polystichum aculeatum* (L.) Roth

**Gr** Nomos Chalkidikis, Eparchia Athou: on the forest road 1.6 km NNE of the monastery Agiou Pavlou (St Paul), 810 m, 40°10'24"N, 24°18'01"E, 13.06.2014, Sutorý (BRNM 763514); mountain ridge ca. 4 km NNW of Great Lavra, chasm with



Fig. 16. *Mimulus moschatus* (photo A. Strid).

rivulet, 780 m, 40°10'25"N, 24°19'59"E, 15.06.2019, Sutorý (BRNM 816423).

*Polystichum aculeatum* was first mentioned from the Athos peninsula by Grisebach (1846: 480, sub nom. *Aspidium lobatum*) who cited two vague localities “sparsim in castaneis ... 1200'–1300'” and “in monte Athonae and agro Bysantino sec. Sibth[orp]”. Rauh (1949: 562 & 563) also reported the species (as *Aspidium lobatum*) from Athos. They did not distinguish it from the rather similar, and on Athos more common, species, *Polystichum setiferum* (Forsk.) Woy-nar which is why their identifications cannot be seriously considered. Točl & Rohlena (1902:1) reported *P. aculeatum* (sub nom. *Aspidium aculeatum*) and their identification was based on material sent to the Prague museum (PR) by S. Breuer (monastical name Sava Chilandarec). However, Breuer's specimen actually represents *P. setiferum*. The original and correct identification of *P. setiferum* in Prague was, however, crossed-out by an unknown hand and replaced by the



name *P. aculeatum*. Točl & Rohlena's report was erroneously accepted by Christiansen (1986) and Babalonas & al. (1998) as the only reports of *P. aculeatum* for the Athos peninsula. *P. aculeatum* indeed occurs on Athos peninsula but is rare.

### Apiaceae

#### 81. *Sison amomum* L.

**Gr** Nomos Chalkidikis, Eparchia Athou: eastern coast of the peninsula Athos, below road on the banks of the stream in Morfonu Bay, 3 m, 40°12'29"N, 24°20'17"E, 27.06.2022, *Sutorý* (BRNM 832362, det. Marek).

New for floristic region North East. According to the *Flora Hellenica Database*, reported from Northern Pindos and East Central.

### Cyperaceae

#### 82. *Carex halleriana* Asso

**Gr** Nomos Chalkidikis, Eparchia Athou: Mons Athos (2033 m), calcareis in cacumine et in clivis petrosis inter summum et ecclesiam Panagia, ca. 2000 m, 40°09'29"N, 24°19'38"E, 23.05.2011, *Sutorý* (BRNM 735352); *loc. ibid.*, 13.06.2012, *Sutorý* (BRNM 742499, UPOS 16199, det. Martín-Bravo).

New for eparchia. According to Strid (2016) this species is distributed throughout Greece, but only a few localities have been registered for the northwestern part of the Chalkidiki peninsula (Strid 2016: 374).

### Typhaceae

#### 83. *Typha angustifolia* L.

**Gr** Nomos Chalkidikis, Eparchia Athou: eastern coast of the peninsula, on the small local road above the main road in Morfonu Bay, 100 m, 40°12'17"N, 24°20'17"E, 27.06.2022, *Sutorý* (BRNM 832364).

New for eparchia. Scattered in Greece.

**Acknowledgements.** Financial support to the Moravian Museum is provided by the Ministry of Culture of the Czech Republic as part of its long-term development program for research institutions (ref. MK000094862).

## Reports 84–92

### Kit Tan<sup>1</sup> & Giannis Kofinas<sup>2</sup>

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### Asteraceae

#### 84. *Centaurea kofinasii* Kit Tan, **sp. nov.** (Fig. 17 ). [*Centaurea* sect. *Acrolophus* (Cass.) DC.]

**Gr** Nomos & Eparchia Kozanis: Stena Porta, N of the village of Polirrahon on road to Servia, vertical limestone rocks by roadside, 512 m, 40°09'N, 21°57'E, 25.06.2022, *Kofinas* s.n. (holotype ATH, isotype C); *loc. ibid.*, 509–512 m, 06.08.2019, 20.08.2020, 16.07.2021, 20.08.2021 & 09.07.2022, *Kofinas* obs. (several photos).

Non-spiny perennial herb, slightly woody at base. Stem erect-ascending, moderately branched, 30–40 cm tall. Sterile leaf rosettes greyish-green. Lower cauline leaves 1–2-pinnatisect, 5–10 cm long, mid-green, whitish-tomentose and arachnoid-lanate on both surfaces; terminal segment scarcely longer than the laterals; segments linear, ca. 1 mm wide, mucronulate-apiculate. Capitula solitary. Involucre ovoid, 13–15 × 5–8 mm at anthesis excluding spines. Middle involucre bracts with distinct brown or brownish-black, pectinate-fimbriate appendage decurrent on the bract; apical spine erect, 1–1.25 mm, slightly shorter than the 1–1.5 mm lateral fimbriae. Fimbriae 6–7-paired, white, without hyaline auricles at base. Outer florets pinkish-purple. Achenes ± compressed, body ca. 3 mm long, smooth, blackish-green. Pappus persistent; setae smooth, glabrous, white, 2–2.5 mm, mostly shorter than, rarely equalling, body of achene. Flowering and fruiting June to July.

Unusual in its combination of very narrowly linear, white-tomentose and arachnoid-lanate leaf segments, small ovoid capitula, morphology of involucre bracts and achenes. The slender leaf segments are reminiscent of the endemic *C. kalambakensis* Freyn & Sint. described from Theopetra, southeast of Kalambaka (Nomos Trikalon, Eparchia Kalambakas) which has however, paler brown appendages with ca. 3 mm api-



Fig. 17. *Centaurea kofinasii* (photo G. Kofinas).

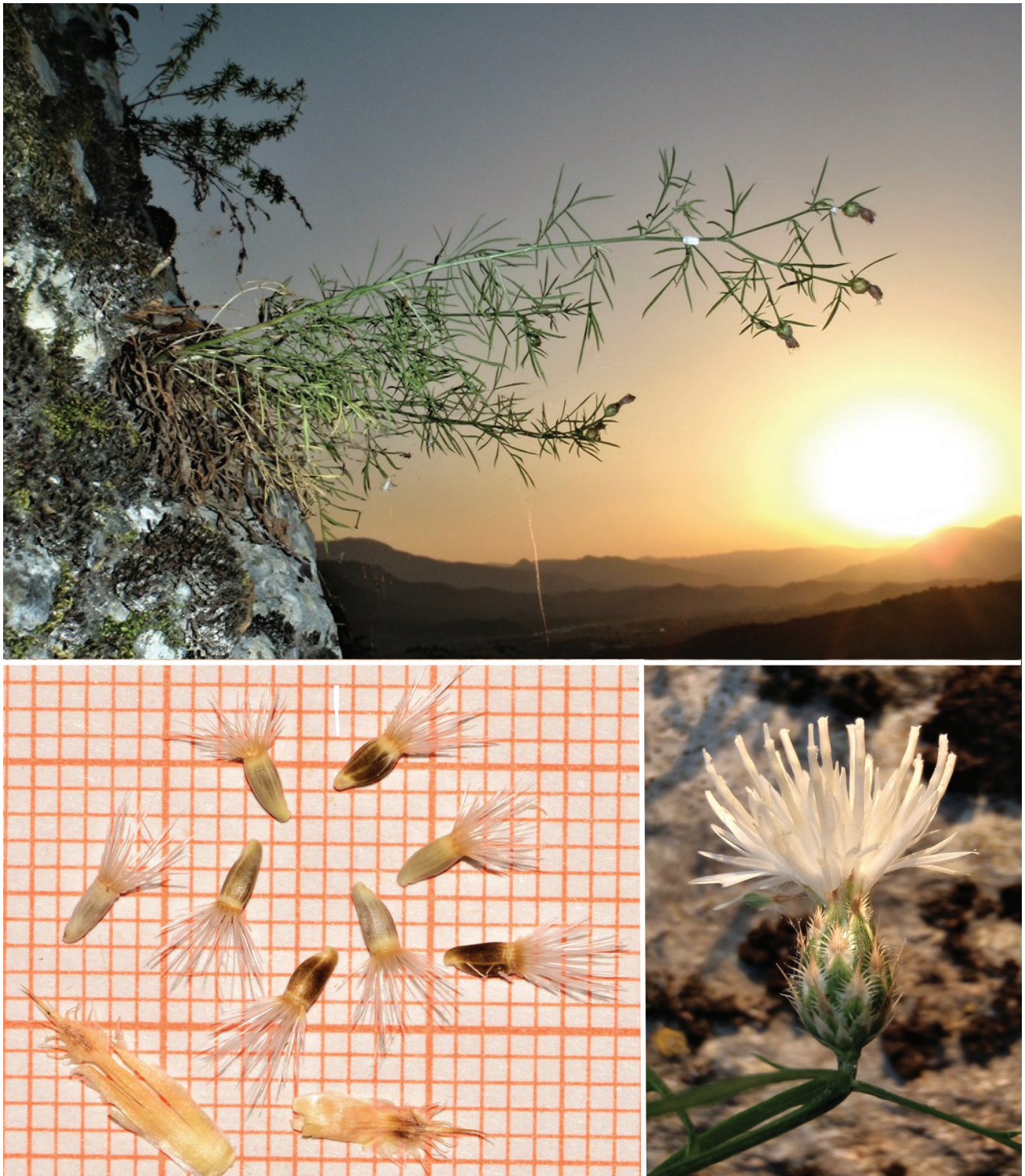


Fig. 18. *Centaurea kalambakensis* (photo G. Kofinas).

cal spine, pappus 3.5–4.5 mm, longer than the *ca.* 2.5 mm body of achene, and pinkish-purple or white florets (Fig. 18). The population size was noted to be rather small, comprising 15–20 individuals, both in juvenile

and mature flowering state, inhabiting calcareous rock crevices at a height of one to three metres up the vertical slope. Some rare and interesting plants found in the vicinity include the Greek endemic *Dianthus stamati-*

dae and the Balkan endemics *Achillea ageratifolia* subsp. *ageratifolia*, *Campanula formanekiana* and *Stachys horvaticii* (syn. *S. iva* auct. fl. graec. non *S. iva* Griseb.).

Named after its collector, Giannis Kofinas, an intrepid and active explorer of nature, mountain climber, expert abseiler and speleologist, who has sent to Kit Tan many plants for identification including some surprising novelties.

#### 85. *Filago germanica* (L.) Huds.

**Gr** Nomos Lakonias, Eparchia Epidavrou Limiras: olive grove in Hammoutsa, ca. 4.5 km south of Molai, 80 m, 36°45'N, 22°51'E, 25.03.2022, Kofinas obs. (photos).

Recorded by Bory & Chaubard (1832: 246) as *Gnaphalium germanicum* in “le vallée de l’Eurotas” and on the island of Elafonisos by A. Jagel, otherwise not reported from inland Lakonias. *Spergula arvensis* was collected by G. Kofinas from the same area in February 2018.

#### Caryophyllaceae

#### 86. *Saponaria bellidifolia* Sm.

**Gr** Nomos Serron, Eparchia Sintikis: Mt Agkistro, stony and rocky slopes on road from Agkistro and on the hill named Konoedes, 673 m, 41°21'N, 23°28'E, 25.05.2022, Nuns of Timios Prodromos Monastery obs. (photos taken by Nun Pachomia).

New for nomos and eparchia. In the northeast, reported from Mts Orvilos (Ali Botus) and Falakro (Boz Dagħ) in nomos Dramas, and from Mt Pangeon (Purnar Dagħ) in nomos Kavallas. This is another example of a high altitude plant coming down to low altitude in this corner of northeastern Greece, near Agkistro, a characteristic shared by several other taxa of phytogeographical interest and reported as new for the area, e.g., *Genista subcapitata*, *Centaurea parilica*, *Convolvulus boissieri* subsp. *suendermannii*, *Lomelosia rhodopensis*, *Melampyrum arvense*, etc. (see Tan & Kofinas 2020).

#### Euphorbiaceae

#### 87. *Euphorbia nutans* Lag. (Fig. 19)

**Gr** Nomos & Eparchia Attikis: Chalikaki park



Fig. 19. *Euphorbia nutans* (photo G. Kofinas).



Fig. 20. *Genista subcapitata* (photo Nun Pachomia from Timios Prodromos Monastery).

in Ilioupolis, Athens, 164 m, 37°56'N, 23°45'E, 09.10.2017, Kofinas obs. (photos).

New for Sterea Ellas and mainland Greece, scattered on Aegean islands. Chalikaki is a low hill formerly quarried for building material, now developed as a sports centre. Native to N and S America, naturalized in Mediterranean area, SW Asia and E Asia. The capsules are glabrous.

#### Fabaceae

#### 88. *Genista subcapitata* Pančić (Fig. 20)

**Gr** Nomos Serron, Eparchia Sintikis: Mt Agkistro, stony and rocky slopes at summit of Konoedes, 1045–1051 m, 41°20'N, 23°28'E, 25.05.2022, Nuns of Timios Prodromos Monastery obs. (photos taken by Nun Pachomia).

New for nomos and eparchia. Found together with *Comandra umbellata* subsp. *elegans*. In the northeast, reported only from Mt Orvilos in nomos Dramas.

89. *Pisum fulvum* Sm. [syn. *Lathyrus fulvus* (Sm.) Kosterin] (Fig. 21)

Gr Nomos Messinias, Eparchia Kalamon: Selinita, ca. 2 km SE of Neochori on road to Kastanea near Pirgos, stony roadside and waste ground, 6 m, 36°49'N, 22°16'E, 02.04.2022, Kofinas obs. (photos).

Occurring in the outer Mani, SE of Kardamili and in

both the western and eastern Mani. A few plants were noted by olive groves and at the roadside along a small water channel, confirming observations from earlier years. The small population is vulnerable and can easily disappear with changes to habitat. An East Mediterranean taxon occurring in Peloponnese, S and E Aegean islands, Lebanon-Syria, Palestine, Sinai and Turkey, reported as new for Greece in 1970.



Fig. 21. *Pisum fulvum* (photo G. Kofinas).



Fig. 22. *Oxalis dillenii* (photo G. Kofinas).

**Oxalidaceae****90. *Oxalis dillenii*** Jacq.[syn. *O. stricta* L.] (Fig. 22)

**Gr** Nomos & Eparchia Attikis: in crevices of vertical wall of building in Ilioupoli municipality, Athens, 133 m, 37°56'N, 23°44'E, 06.04.2022 & 12.04.2022, *Kofinas* obs. (photos); in a nearby park, 16.04.2022, *Kofinas* obs. (photos).

New for phytogeographical region Sterea Ellas. Native to N America, naturalized in S and C Europe as a weed in urban areas and cultivated ground. Scattered in Greece, reported mainly in the north and E Aegean islands. The species is characterized by the absence of adventitious roots at the nodes, mostly subopposite leaves, non-auriculate stipules and seeds with white spots on the ridges. In *O. corniculata* the stems root at the nodes, the leaves are mostly alternate, stipules are auriculate and the mature seeds uniformly brown. The frequently cited character of deflexed fruiting pedicels is unreliable as it occurs in both taxa. The hardened concrete wall did not permit examination of the rooting system.

**Santalaceae****91. *Comandra umbellata*** subsp. *elegans* (Spreng.) Piehl (Fig. 23)

**Gr** Nomos Serron, Eparchia Sintikis: Mt Agkistro, ca. 4.5 km southeast of Agkistro, summit of Konoedes, 1050 m, 41°20'N, 23°28'E, 25.05.2022, *Nuns of Timios Prodromos Monastery* obs. (photos



**Fig. 23.** *Comandra umbellata* subsp. *elegans* (photo Nun Pachomia from Timios Prodromos Monastery).

taken by Nun Pachomia).

New for nomos and eparchia. In floristic region North East, recorded from nomi Dramas, Evrou, Rodopis and Thessalonikis. The species usually occurs in open mixed deciduous woodland and closed scrub; on Mt Agkistro it was found on an open rocky slope together with *Genista subcapitata* and *Iberis* sp.

**Scrophulariaceae****92. *Cymbalaria longipes*** (Boiss. & Heldr.) A. Cheval.

**Gr** Nomos Rethimnis, Eparchia Milopotamou: village of Axus near Anogia, 515 m, 35°18'N, 24°50'E, 22.05.2022, *Kofinas* obs. (photos).

New for nomos and eparchia. On Kriti, reported only in the western part of island (nomos Chanion) and eastern part of the island (nomos Lasithiou) but not in Rethimnis which is west central.

**Reports 93–94****Ioannis T. Tsialtas<sup>1</sup> & Kit Tan<sup>2</sup>**

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**Acanthaceae****93. *Acanthus mollis*** L.

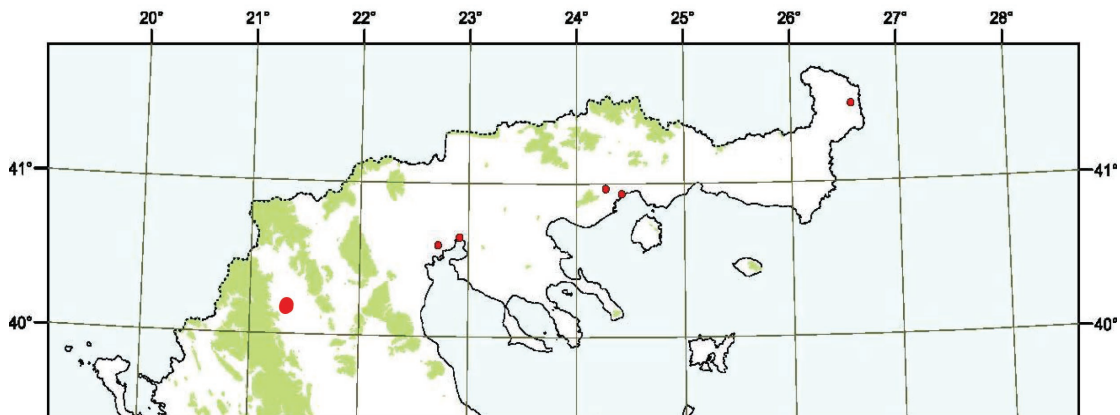
**Gr** Nomos & Eparchia Chalkidikis: Sithonia peninsula, Fava beach, Karydi, ca. 18 m, 40°11'N, 23°49'E, 24.04.2022, *Tsialtas* s.n. (det. Kit Tan, June 2022).

First report from North East. Probably an escape from cultivation as ornamental. Numerous plants in early flowering stage, together with *Hedera* and *Galium* in ruderal habitat. Native to Central Mediterranean, naturalized in W Mediterranean, NW Africa and other areas, invasive in Australia and New Zealand. Introduced and naturalized in Greece in shady places, roadsides, damp ruderal habitats, etc. *Acanthus spinosus* L. is the only other *Acanthus* species in the area.

**Cucurbitaceae****94. *Sicyos angulatus* L. (Fig. 24).**

**Gr** Nomos Kozanis, Eparchia Voiou: Loukomi, at margins of rural road together with *Rumex*, *Rubus* and shrubby *Prunus*, 690 m, 40°16'N, 21°21'E, 21.06.2022, *Tsialtas* obs. (photos; det. Kit Tan, June 2022).

New for nomos, eparchia and phytogeographical region North Central. Previously reported only from North East but gradually spreading westwards (new locality indicated as larger dot in Fig. 24). Originating from North America. One of the most harmful weeds, together with climbing species of *Ipomoea*, infesting maize fields.



**Fig. 24.** *Sicyos angulatus* (photo I.T. Tsialtas).

## Report 95

### Vladimir Vladimirov<sup>1</sup> & Dimiter Borshukov<sup>2</sup>

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#### Apiaceae

#### 95. *Heracleum sosnowskyi* Manden. (Fig. 25)

**Bu** Danubian Plain: Koilovtsi village, Pleven Municipality, piece of land with ruderal vegetation, ca. 160 m, 43.48727°N, 24.76408°E, 12.07.2022, V. Vladimirov obs., about a hundred flowering specimens observed, accompanying species were *Ballota nigra*, *Conium maculatum*, *Sambucus ebulus*, *Urtica dioica*; loc. *ibid.*, by river Mechka, 12.07.2022, V. Vladimirov obs., ca. 10 flowering specimens observed together with *Acer negundo*, *Dactylis glomerata*, *Lactuca serriola*, *Sambucus nigra*, *Urtica dioica*; loc. *ibid.*, by asphalted road in the village, 43.48680°N, 24.76373°E, 12.07.2022, V. Vladimirov obs., ca. 25 flowering specimens, accompanying species were *Acer negundo*, *Gleditsia triacanthos*, *Morus alba*, *Prunus cerasifera*, *Artemisia vulgaris*, *Ballota nigra*, *Cichorium intybus*, *Convolvulus arvensis*, *Lactuca serriola*, *Poa pratensis*, *Trifolium pratensis*, *Verbena officinalis*; loc. *ibid.*, grassland near a fountain, ca. 160 m, 43.48642°N, 24.76344°E, 12.07.2022, V. Vladimirov obs., ca. 15 flowering specimens and numerous yet non-flowering young individuals, accompanied by *Acer negundo*, *Ballota*

*nigra*, *Bromus sterilis*, *Cichorium intybus*, *Erigeron annuus*, *Gleditsia triacanthos*, *Malva sylvestris*.

This is the first report of the species for this floristic region and for Northern Bulgaria (north of the Balkan Range). About 180–200 flowering specimens and numerous young individuals of *H. sosnowskyi* were observed in the area. The size of the population suggests it is present there for more than two decades. The species was first noticed in the locality some days earlier by the second author.

So far this invasive alien species in the Bulgarian flora has been reported from the following floristic regions – the Rhodopi Mts (*Western, Central*) (Vladimirov & al. 2019) and Sofia Region (Karakiev 2021).

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Fig. 25. *Heracleum sosnowskyi* in Koilovtsi village: A) whole plants; B) leaves from a closer look (photos V. Vladimirov).



## Report 96

Vladimir Vladimirov<sup>1</sup>, Todor Karakiev<sup>2</sup> & Dessislava Gyurova<sup>3</sup>

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### Apiaceae

#### 96. *Heracleum mantegazzianum* Sommier & Levier

**Bu** Vitosha Region: Mt Vitosha, beneath Balkan-iti hut, along a small stream in a mixed forest of *Fagus sylvatica*, *Picea abies* and *Corylus avellana*, 1380–1390 m, 42.61526°N, 23.23419°E, 13.07.2022, V. Vladimirov & D. Gyurova obs. (Fig. 26).

This is the first report of the species for Vitosha Region. The species was first noticed by the second author, who brought the locality to the attention of the other two authors. Several dozens of non-flowering individuals observed of which only three were larger, with leaves of *ca.* 1 m or slightly more. No flowering specimens were recorded. However, it seemed that at least one plant produced seeds in one of the previous years since numerous seedlings and very young individuals were observed. So far the species has been reported only from Sofia Region; a few individuals mor-



Fig. 26. *Heracleum mantegazzianum* in Mt. Vitosha (photo V. Vladimirov).

phologically resembling *H. mantegazzianum* have been noticed among the thousands of individuals of *H. sosnowskyi* in the locality in Western Rhodopi Mts (Vladimirov & al. 2019), however, their taxonomic identity needs confirmation.

Soon after the discovery of the locality, the species was subjected to eradication measures by representatives of the Vitosha Nature Park Directorate. All seen individuals were removed by a mechanical method of control – eradication. It should be noted that due to the presence of a relatively dense grass cover, spotting the seedlings and the smallest individuals is difficult and some of them may have remained unrooted. For this reason, as well as due to the possible presence of seeds in the soil substrate (seed bank), several years of monitoring and immediate removal of any newly appearing individuals is necessary.

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## Reports 97–106

George Zarkos<sup>1</sup>, Vasilis Christodoulou<sup>2</sup> & Kit Tan<sup>3</sup>

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The following are new plant records based on floristic investigations in the prefectures of Korinthias in north Peloponnese and Evrou in northeastern Greece.

### Apiaceae

#### 97. *Ferulago nodosa* (L.) Boiss. (Fig. 27)

**Gr** Nomos & Eparchia Korinthias: Mt Gerania, Sousaki, 98 m, 37°56'N, 23°04'E, 07.05.2022, Zarkos & Christodoulou obs.

Unusual in having erect, glabrous stems not swollen at the nodes. Typical plants with conspicuously swol-



Fig. 27. *Ferulago nodosa* (photo G. Zarkos).

len nodes have been previously recorded on Gerania, “in regione abietina m. Gerania Megarae”, Tuntas 1234 (WU-Hal), from a higher altitude in the *Abies cephalonica* region. The plants without swollen nodes were noted at Sousaki which lies on the southern side of Mt Gerania and is a long-dormant, extinct volcano but with openings still releasing carbon dioxide and sulphur fumes. The substrate may possibly have an effect on growth form much in the same way as serpentine has affected the morphology of serpentinophytes. Plants growing on serpentine often have dwarf stature, much-branched roots or rhizomes, and glabrous, often fleshy leaves. A collection of *Ferulago* at low altitude just outside Loutraki, southwest of Gerania (Strid 24444, C) has typical noded stems.

#### Apocynaceae

98. *Vincetoxicum fuscatum* (Hornem.) Rchb. f. (Fig. 28)

Gr Nomos Evrou, Eparchia Orestiadou: within forest a few metres from the road from Pentalofofos to the forest refuge of Pentalofofos, 250 m, 41°38'N, 26°08'E, 24.05.2022, Christodoulou obs. (photos).

New for eparchia.

#### Aristolochiaceae

99. *Aristolochia lutea* Desf.

Gr Nomos Evrou, Eparchia Orestiadou: within forest a few metres from the road from Pentalofofos to the forest refuge, 250 m, 41°38'N, 26°08'E, 24.05.2022, Christodoulou obs. (photos).

New for eparchia.



Fig. 28. *Vincetoxicum fuscatum* (photo V. Christodoulou).

**Asteraceae****100. *Catananche lutea* L.** (Fig. 29)

**Gr** Nomos & Eparchia Korinthias: E of Sofiko, edge of cultivated field, 375 m, 37°48'N, 23°05'E, 18.05.2022, *Zarkos* obs. (photos).

New for nomos and eparchia, and for northern Peloponnese. Pedunculate capitula together with sessile capitula at the base of plant are illustrated (see figure).

**Boraginaceae****101. *Lappula squarrosa* (Retz.) Dumort.** (Figs. 30 & 31)

**Gr** Nomos & Eparchia Korinthias: Xilokastro to Zemeni, roadside, 390 m, 38°02'N, 22°37'E, 27.04.2022, coll. *Zarkos* (as *Kit Tan & al.* 33221).

New for the Peloponnese. Recorded from Ionian islands, North and East Central, Northern and Southern Pindos. First noted by Christina Kounis along the

road Xilokastro - Chounis. With a disjunct distribution in Greece (see Fig. 31).

**102. *Onosma aucheriana* DC.**

**Gr** Nomos Evrou, Eparchia Orestiadis: along the road from Pentalofos to the forest refuge of Pentalofos, 250 m, 41°38'N, 26°08'E, 24.05.2022, *Christodoulou* obs. (photos).

New for eparchia.

**Brassicaceae****103. *Aurinia moreana* Tzanoud. & Iatrou** (Fig. 32)

**Gr** Nomos & Eparchia Korinthias: Mt Killini, Farmakila gorge below summit of Profitis Ilias, 1864 m, 37°55'N, 22°22'E, 03.06.2016, *Zarkos* & *Christodoulou* obs. (photos); Zastano area, east of Paraga peak, 1677 m, 37°53'N, 22°25'E, 22.05.2017, *Zarkos* obs.; south of summit of Profitis Ilias, 2034 m, 37°54'N, 22°23'E, 09.05.2022, *Zarkos* obs.



**Fig. 29.** *Catananche lutea* (photo G. Zarkos).



Fig. 30. *Lappula squarrosa* (photo G. Zarkos).



Fig. 31. Distribution of *Lappula squarrosa* in Greece.



Fig. 32. *Aurinia moreana* (photo G. Zarkos).

The type specimen representing *Alyssum saxatile* var. *alpinum* Halácsy and *Aurinia moreana* Tzanoud. & Iatrou (*nom. nov.*) was collected above Goura at 2000 m on 24 June 1893 by Halácsy (WU 0076165). Rare, no other collections except those now listed, have been reported from the mountain for the last 130 years.

#### Caryophyllaceae

104. *Silene viscaria* (L.) Jessen [syn.: *Viscaria vulgaris* Röhl] (Fig. 33)

**Gr** Nomos Evrou, Eparchia Orestiadou: along the road from Pentalofos to the forest refuge of Pentalofos, 250 m, 41°38'N, 26°08'E, 24.05.2022, Christodoulou obs. (photos).

The first confirmed record of this Central European species in Greece. Numerous plants were noted at the roadside and forest margins as well as in forest openings. Previous records of *S. viscaria* from northern Greece were assumed to refer to *S. atropurpurea* (Griseb.) Greuter & Burdet (syn.: *Viscaria atropurpurea* Griseb.) which has sometimes been treated as a southeastern subspecies of the more northerly *Silene viscaria*. It differs however, by its shorter anthophore (1-2 mm), and darker purple petal limb. Material originating from Karpenisi (Evratanias, Sterea Ellas) is illustrated in Fig. 33.

#### Scrophulariaceae

105. *Verbascum phoeniceum* L. (Fig. 34)

**Gr** Nomos Evrou, Eparchia Orestiadou: along the road from Pentalofos to the forest refuge of Pentalofos, 250 m, 41°38'N, 26°08'E, 24.05.2022, Christodoulou obs. (photos).



**Fig. 33.** *Silene viscaria* (photo V. Christodoulou).

New for nomos and eparchia. Reported from North East and North Central. The filament hairs in the plants observed are white; they are described as violet or purplish-maroon in *Flora Europaea* (see Tutin & al. 1972: 209).

#### ***Iridaceae***

#### **106. *Gladiolus illyricus* W.D.J. Koch**

**Gr** Nomos Evrou, Eparchia Orestiadou: along road from Komara to Pentalofos, cultivated fields, 160 m, 41°37'N, 26°12'E, 24.05.2022, *Christodoulou* obs. (photos).

New for eparchia.



**Fig. 34.** *Verbascum phoeniceum* (photo V. Christodoulou).

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