

## New floristic records in the Balkans: 44\*

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**Abstract:** New chorological data are presented for 92 species and subspecies from Bulgaria (26–28, 30–40, 75–76, 88), Greece (10–24, 29, 41–74, 77–87, 89–91), and Turkey-in-Europe (1–9, 25). The taxa belong to the following families: *Aceraceae* (89), *Alismataceae* (71), *Apiaceae* (43, 60, 78), *Asteraceae* (1–3, 10–13, 23, 26, 27, 44, 61–64, 79), *Boraginaceae* (14, 80), *Brassicaceae* (45, 81, 90), *Campanulaceae* (65, 66), *Caryophyllaceae* (4, 28), *Chenopodiaceae* (15, 29), *Convolvulaceae* (67), *Crassulaceae* (46), *Cupressaceae* (42), *Dipsacaceae* (82), *Elaeagnaceae* (16), *Euphorbiaceae* (5, 17), *Fabaceae* (6–8, 30, 47–54, 83), *Gentianaceae* (68), *Hyacinthaceae* (24, 91), *Hypericaceae* (55), *Iridaceae* (41, 88), *Juncaceae* (72, 73), *Lamiaceae* (18, 31, 56), *Lentibulariaceae* (69), *Liliaceae* s.l. (37), *Lythraceae* (57, 70), *Myrtaceae* (86), *Onagraceae* (19, 84), *Orchidaceae* (75, 76), *Oxalidaceae* (20), *Poaceae* (22, 38–40, 59, 74), *Polygonaceae* (32), *Ranunculaceae* (9), *Rosaceae* (33, 34, 87), *Rubiaceae* (35), *Rutaceae* (58), *Scrophulariaceae* s.l. (36, 77), *Verbenaceae* (21), and *Violaceae* (85).

New taxa for science are: *Anthemis rigida* subsp. *amorgina* (23); *Cephalaria flava* subsp. *askiensis* (82).

New taxa for the countries are: for Bulgaria – *Persicaria lapathifolia* subsp. *pallida* (32), *Potentilla hirta* (33); for Greece – *Chenopodium capitatum* (29); for Turkey – *Dorycnium pentaphyllum* subsp. *pentaphyllum* (6), and for Turkey-in-Europe – *Seseli tortuosum* (25).

The publication includes contributions by: M. Aybeke (1–9); B. Biel & Kit Tan (10–22), B. Biel & Kit Tan (23); P.G. Dimitrakopoulos, M. Bakas & A. Strid (24); D.S. Dimitrov (25–40); K. Giannopoulos & Kit Tan (41); V. Ioannidis, D. Doulkeridou & A. Strid (42–59); K. Polymenakos & Kit Tan (60–74); A. Popatanasov (75–76); A. Strid, Kit Tan & G. Kofinas (77); Kit Tan & G. Kofinas (78–85); Kit Tan, G. Kofinas & J. Zieliński (86–87); A. Tanev, G. Kunev & M. Mincheva (88); G. Zarkos, V. Christodoulou & Kit Tan (89–91).

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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 1–9

### Mehmet Aybeke

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This report comprises nine new records relating to different families from European Turkey.

#### Asteraceae

##### 1. *Carthamus lanatus* L.

**Tu(E)** A1(E) Kırklareli: Demirköy, Limanköy, 0 m, 41°53'07"N, 28°02'56"E, 17.06.1990, coll. & det. C. Yarcı (EDTU 5446).

New for A1(E) Kırklareli in European Turkey. According to Kupicha (1975), this taxon was encountered only in A1(E) Tekirdağ and A2(E) Istanbul.

##### 2. *Cichorium pumilum* Jacq.

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy-Pınarhisar, 1<sup>st</sup> km, 252 m, 41°49'30"N, 27°45'35"E, 02.07.1989, coll. & det. C. Yarcı (EDTU 4188).

New for A1(E) Kırklareli in European Turkey. According to Matthews (1975), this taxon was found only in A1(E) Çanakkale and A2(E) Istanbul.

##### 3. *Filago eriophala* Guss.

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy-Pınarhisar, 1<sup>st</sup> km, 252 m, 41°49'30"N, 27°45'35"E, 02.07.1989, coll. & det. C. Yarcı (EDTU 4212); Demirköy, Karanlık-Karadere village, 3<sup>rd</sup> km, 508 m, 41°54'19"N, 27°34'55"E, 03.09.1989, coll. & det. C. Yarcı (EDTU 4213).

New for A1(E) Kırklareli in European Turkey. According to Holub (1975), this taxon occurred only in A1(E) Edirne.

#### Caryophyllaceae

##### 4. *Lychnis coronaria* (L.) Desr.

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy-Pınarhisar, 1<sup>st</sup> km, 252 m, 41°49'30"N, 27°45'35"E, 02.07.1989, coll. & det. C. Yarcı (EDTU 4195).

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

#### Euphorbiaceae

##### 5. *Euphorbia sequieriana* Necker subsp. *niciciana* (Barbos ex Novak.) Reich. fil.

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy-İğneada, 6<sup>st</sup> km, 252 m, 41°49'30"N, 27°45'35"E, 03.09.1989, coll. & det. C. Yarcı (EDTU 4214).

New for A1(E) Kırklareli in European Turkey. According to Radcliffe-Smith (1982), this taxon occurred in A1(E) Tekirdağ and A2(E) Istanbul.

#### Fabaceae

##### 6. *Dorycnium pentaphyllum* Scop. subsp. *pentaphyllum*

**Tu(E)** A1(E) Edirne: Budakdoğanca, in grasslands, 98 m, 41°46'09.1"N, 26°22'10.2"E, 13.06.2017, coll. & det. M. Aybeke (EDTU 16810).

— A1(E) Tekirdağ: Hayrabolu, between Hayrabolu – Tekirdağ, 4<sup>th</sup> km, in cemetery, 17 m, 41°12'47"N, 27°06'25"E, 22.06.1987, coll. G. Dalgıç & A. Asan, det. M. Aybeke (EDTU 1518).

New for Turkey. According to Ball (1968) and Demiriz (1970), this taxon was recorded in SW Europe, extending to S Italy.

##### 7. *Medicago orbicularis* (L.) Bart.

**Tu(E)** A1(E) Kırklareli: Demirköy, between İğneada-Limanköy, 1<sup>st</sup> km, 0 m, 41°52'28"N, 27°59'02"E, 02.06.1990, coll. & det. C. Yarcı, conf. M. Aybeke (EDTU 5452).

New for A1(E) Kırklareli in European Turkey. According to Heyn (1970), this taxon was encountered only in A1(E) Çanakkale.

##### 8. *Trifolium subterraneum* L.

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy-İğneada, 1<sup>st</sup> km, 252 m, 41°49'30"N, 27°45'35"E, 06.05.1990, coll. C. Yarcı, det. M. Aybeke (EDTU 5449).

New for A1(E) Kırklareli in European Turkey. According to Zohary (1970), this taxon was seen in A1(E) Edirne and A2(E) Istanbul.

#### Ranunculaceae

##### 9. *Consolida regalis* subsp. *paniculata* (Host) Soó var. *paniculata*

**Tu(E)** A1(E) Kırklareli: Demirköy, Armutveren village, 303 m, 41°54'02"N, 27°32'46"E, 08.08.1990, coll. & det. C. Yarcı (EDTU 5296).

New for A1(E) Kırklareli in European Turkey. According to Davis (1965), this taxon was reported only from A2(E) Istanbul.

## Reports 10–22

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

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This is the fifth report of new plant-records for the island of Thasos (Nomos Kavallas, Eparchia Thasou) based on a visit in October 2020. The 13 records listed are new to the island unless otherwise stated, and 8 species were found to be new for the floristic region N Aegean islands (NAe) as circumscribed in *Flora Hellenica* (Strid & Tan 1997). Occurrence on the other N Aegean islands is also provided.

#### Asteraceae

##### 10. *Ambrosia maritima* L. (Fig. 1)

**Gr** Thasos: S of Potos, coastal area near mouth of Dipotamos river, 2 m, 40°38'44"N, 24°31'29"E, 19.10.2020, *Biel* 20.022.

New for N Aegean islands and first report for Greece north of latitude 40°N. Occurring in coastal habitats in western Greece, C and S Aegean islands.

##### 11. *Artemisia scoparia* Waldst. & Kit.

**Gr** Thasos: Limenas, ruderal places by ditch near gates of Zeus and Hera, 25 m, 40°46'29"N, 24°42'34"E, 23.10.2020, *Biel* 20.034.



Fig. 1. *Ambrosia maritima* (photo B. Biel).

New for N Aegean islands, recorded on opposite mainland at Keramoti (eparchia Nestou).

##### 12. *Helianthus laetiflorus* Pers.

**Gr** Thasos: Limenas, ruderal places in park behind new harbour, 2 m, 40°46'46"N, 24°42'33"E, 14.10.2020, *Biel* 20.002.

New for N Aegean islands. Reported mainly from northern Greece. A stabilized hybrid locally naturalized in several places around Limenas.

##### 13. *Inula conyzae* (Griess.) DC. (Fig. 2)

**Gr** Thasos: S-SE of Limenas, dirt road on rocky slope with *Pinus* woodland, 220 m, 40°44'37"N, 24°43'14"E, 26.10.2020, *Biel* 20.040.

New for N Aegean islands.

#### Boraginaceae

##### 14. *Heliotropium supinum* L.

**Gr** Thasos: S of Potos, coastal area near mouth of Dipotamos river, 2 m, 40°38'44"N, 24°31'29"E, 19.10.2020, *Biel* 20.023.

Reported from Samothraki. Scattered but widespread in Greece.

#### Chenopodiaceae

##### 15. *Sarcocornia perennis* (Mill.) A.J. Scott [syn. *Salicornia perennis* Mill.] (Fig. 3)

**Gr** Thasos: NE of Skala Prinou, brackish swamp and inlet behind beach, 1 m, 40°45'50"N, 24°35'29"E, 20.10.2020, *Biel* obs. (photo).

New for N Aegean islands.



Fig. 2. *Inula conyzae* (photo B. Biel).



Fig. 3. *Sarcocornia perennis* (photo B. Biel).



Fig. 4. *Euphorbia prostrata* (photo B. Biel).

#### *Elaeagnaceae*

##### 16. *Elaeagnus angustifolia* L.

**Gr** Thasos: E of harbour at Skala Prinou, beach and brackish swamp, 2 m, 40°45'34"N, 24°35'02"E, 20.10.2020, *Biel* obs. (photo).

Recorded from Samothraki and Limnos.

#### *Euphorbiaceae*

##### 17. *Euphorbia prostrata* Aiton (Fig. 4)

**Gr** Thasos: W of Limenaria, ruderal places at beach,

2 m, 40°37'32"N, 24°33'47"E, 17.10.2020, *Biel* 20.018.

Reported from Samothraki, Limnos and Ag. Evstratios. Established introduction previously noted on Thasos in November 2016.

#### *Lamiaceae*

##### 18. *Mentha suaveolens* Ehrh.

**Gr** Thasos: Limenas, ruderal places at park behind new harbour, 2 m, 40°46'46"N, 24°42'33"E, 14.10.2020, *Biel* 20.005.

New for N Aegean islands.

#### *Onagraceae*

##### 19. *Oenothera lindheimeri*

(Engelm. & A. Gray) W.L. Wagner & Hoch (Fig. 5)

**Gr** Thasos: W of Limenaria, ruderal places by roadside ditch, 20 m, 40°37'36"N, 24°33'59"E, 17.10.2020, *Biel* obs. (photo).

New for N Aegean islands. Native to N America. First reported in Greece in 2016, apparently more widespread than as indicated in map.



Fig. 5. Distribution of *Oenothera lindheimeri* in Greece.

**Oxalidaceae**

20. *Oxalis debilis* Kunth [syn. *Oxalis corymbosa* DC.]

Gr Thasos: Limenas, road margin and ruderal places at park behind new harbour, 2 m, 40°46'46"N, 24°42'33"E, 14.10.2020, *Biel* obs. (photo).

Recorded from Samothraki. Native to S America, naturalized in coastal areas and edge of inland lakes in Greece.

**Verbenaceae**

21. *Phyla nodiflora* (L.) Greene

Gr Thasos: SE of Limenas, embankment between dirt road and road to Makriammos, 60 m, 40°46'18"N, 24°43'19"E, 23.10.2020, *Biel* 20.033.

Reported from Limnos.

**Poaceae**

22. *Eragrostis minor* subsp. *angusta* H. Scholz & Raus (Fig. 6)

Gr Thasos: S of Potos, coastal area near mouth of Dipotamos river, 2 m, 40°38'44"N, 24°31'29"E, 19.10.2020, *Biel* 20.025 (det. F. Verloove).

*Eragrostis minor* subsp. *minor* is common on Thasos and has been reported from the other N Aegean islands but this is the first record of *E. m.* subsp. *angusta* in the N Aegean. It is a taxon postulated by its authors to have arisen very rapidly from *E. minor*.

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



Fig. 6. *Eragrostis minor* subsp. *angusta* (photo B. Biel).

**Report 23**

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This is the eleventh report of new plant-records for the island of Amorgos (phytogeographical region Kiklades, Nomos Kikladon, Eparchia Thiras) and comprises the description of a new taxon which had been erroneously assigned in *The Flora of Amorgos* (Biel & Tan 2019, 2021). The total number of taxa we have found new for the Kiklades (Kik) as circumscribed in *Flora Hellenica* (Strid & Tan 1997), is now more than 70.

**Asteraceae**

Following the recent detailed study by Goula & Constantinidis (2021) *Anthemis rigida* Boissier ex Heldreich is divided into five subspecies in Greece. The typical subspecies is eligulate (disc florets yellow, ligulate florets absent) and is abundant and widespread in the Central and South Aegean area (Crete, Kiklades and the East Aegean islands). The ligulate forms are locally restricted. *Anthemis rigida* subsp. *liguliflora* (Halácsy) Greuter occurs at Monemvasia in the Malea Peninsula, southern Peloponnese (*vide* R. Jahn) and on the island of Kithira. Here the ligules are white and the disc florets creamy-white. *Anthemis rigida* subsp. *antri-neptuni* Goula & Constantinidis was recently described from Karpathos; it has white ligules and disc florets which are white or tinged pink, and is stated to be the only subspecies with reddish-brown anthers and styles, the other subspecies being yellow. *Anthemis runemarkii* Biel & Kit Tan is restricted to Milos and the neighbouring islands of Kimolos, Prasonisi and Poliegos. It has pink or white ligules and yellow disc florets. *Anthemis rigida* subsp. *ammanthiformis* (Greuter & Rech. f.) Greuter occurs on Andikithira and NW Crete. It has white ligules and yellow disc florets.

We found a combination of morphological features in a plant restricted to moderate altitudes on Amorgos, which did not fit into the categories of the key provided by Goula & Constantinidis (2021). It has white ligules, yellow disc florets and yellow or reddish-brown anthers and styles, and is easily recognized. The outer involucral bracts have very narrow scarious margins *ca.* 0.1 mm wide and in the key provided, it would key out as *A. rigida* subsp. *ammanthiformis* of coastal habitats which it is definitely not. One may consider it a white-liguled form of *A. rigida* subsp. *runemarkii* but the leaves, involucral bracts and achenes are quite different, as also the habitat. The outer involucral bracts in *A. r.* subsp. *runemarkii* have a comparatively broad scarious margin of 0.3–0.4 mm and corona 0.5–0.9 mm. The corona in the Amorgos plant is only 0.1 mm long. *Anthemis r.* subsp. *runemarkii* occurs on rocky coastal slopes and in phrygana from sea-level to 80 m on volcanic substrate, whereas the Amorgos plant is found at 260–780 m on conglomerate and marble. We decided to treat the latter as a sixth subspecies in the *A. rigida* complex since it could not be catered for in the account by Goula and Constantinidis (2021).

**23. *Anthemis rigida* subsp. *amorgina* Biel & Kit Tan, subsp. nov.** (Figs. 7–8).

**Gr** Nomos Kikladon, Eparchia Thiras: island of Amorgos, west slope of Mt Hagios Elias, garigue, 550–750 m, 36°51'N, 25°54'E, 22.05.1963, *Snogerup* 20231 (holotype LD).

— Island of Amorgos, Profitis Elias, near summit, garigue, 600–670 m, 36°51'N, 25°55'E, 16.04.1957, *Runemark* 1381 (LD); the pass 4 km NE of the monastery Panagia Chozoviotissa, limestone, 400 m, 36°52'N, 25°56'E, 19.04.1995, *Runemark* 50422 (LD); E of Lagadha, rocky mountain slopes of Krikelos above Stavros, 740 m, 36°54'N, 26°02'E, 16.03.2016, *Biel* 2016.031 (herb. Biel).

Small, mat-forming annual with prostrate to erect-ascending, simple or branched, rather rigid stems 1–8 cm long. Stem and leaves white sericeous-villous, almost lanate on peduncles and involucral bracts, later glabrescent. Leaves long-petiolate, 2-pinnatisect, very fleshy, pale to dark green; ultimate segments broadly ovate, 1.4–1.8 × 0.7–1.0 mm, mucronate. Peduncles 0.6–1.5 cm long. Capitula terminal, 5–7 mm in diam.; disc florets deep yellow throughout, or tube suffused reddish-brown; ligules 7–10,



**Fig. 7.** *Anthemis rigida* subsp. *amorgina* with white ligules, yellow disc florets and yellow or reddish-brown anthers and styles (photo B. Biel).

oblong-ovate, *ca.* 5.5–6 × 1.5 mm, obtusely 3-toothed at apex, snow-white. Styles yellow; anthers yellow or reddish-brown before dehiscence; pollen yellow. Involucral bracts 2–3-seriate, ovate, acute; outer bracts *ca.* 2.5 mm with very narrow scarious margins *ca.* 0.1 mm wide; inner bracts *ca.* 4 mm with narrow scarious margins 0.2–0.3 mm wide. Receptacular scales glabrous, oblanceolate, acute. Achenes obtusely squarish in transverse-section, subpyramidal, *ca.* 1.0 × 0.3 mm, faintly 10-ribbed, brown; corona short, 0.1 mm.

Flowering March to May at altitudes of 260–780 m, on rocky limestone slopes from central to northeast Amorgos (see Fig. 8 based on specimens and field notes). Endemic to Greece and possibly to the island.

The reddish-brown colour of anthers before dehiscence and the short 0.1 mm corona are characters also found in *A. rigida* subsp. *antri-neptuni* from low altitude on Karpathos.

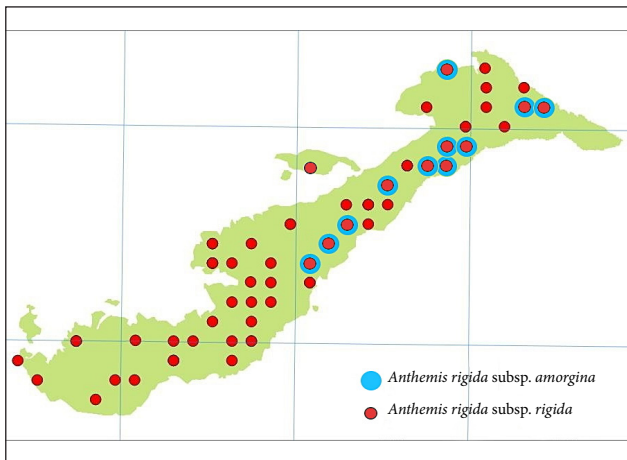


Fig. 8. Distribution map of *Anthemis rigida* subsp. *rigida* and subsp. *amorgina* on Amorgos.

## Report 24

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### Hyacinthaceae

24. *Ornithogalum refractum* Kit. ex Schldl. (Fig. 9)

Gr Nomos Lesvou, Eparchia Plomariou, island of Lesvos: 4 km NE of Vrissa, 110 m, 39°06'N, 26°23'E, open olive groves with grazing livestock, *Dimitrakopoulos & Bakas* obs. (in flower, photographed 13.02.2021 and in fruit, 27.03.2021).

New for Lesvos and phytogeographical region E Aegean islands. *Ornithogalum refractum* is scattered in SE Europe and Anatolia, with a wide altitudinal range. Its distinguishing features are the very short scape, long linear leaves with conspicuous white median stripe, thickened, ± deflexed fruiting pedicels, and capsule with paired ridges separated by furrows.

A similar plant was described in *Florae Graecae Prodromus* 1: 230 (1809) and illustrated in *Flora Graeca* 4: Plate 333 (1823) under the name *Ornithogalum nanum* Sm. An explanation as to why the names *O. nanum* and *O. sibthorpii* Greuter have not been used is provided in Strid (2016: 338).



Fig. 9. *Ornithogalum refractum* in flower and fruit (photo P. Dimitrakopoulos).

## Reports 25–40

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### Apiaceae

25. *Seseli tortuosum* L.

Tu(E) A1(E) Kirklareli: In vinetis prope urbem Kirklareli (Lozengrad), solo sabuloso, 04.08.1899, coll. *At. Mateef*, det. *N. Stojanoff* (SO 54938).

So far, this species has been recorded from Turkey-in-Asia (cf. Hand 2011).

### Asteraceae

26. *Cirsium pannonicus* (L. f.) Link

Bu Mt Sredna Gora (Western): Mt Lozenska, in damp meadows W of peak Polovrak, GN02, 1000 m, 28.08.2020, coll. & det. *D. Dimitrov* (SOM 177384).

27. *Symphotrichum squamatum* (Spreng.) G.L. Neson

Bu Mt Sredna Gora (Western): Mt Vakarelska, at

artificial lake Bakar Dere near Verinsko village, Ihtiman district, GN20, 08.11.2020, coll. & det. *D. Dimitrov* (SOM 177378).

#### *Caryophyllaceae*

**28. *Minuartia setacea*** (Thuill.) Hay.

**Bu** Sofia region: in steppe meadow eastwards from Seslavtsi suburb of Sofia, on limestone, GN04, 08.2020, coll. & det. *D. Dimitrov* (SOM 177388).

#### *Chenopodiaceae*

**29. *Chenopodium capitatum*** (L.) Ambrosi [syn. *Blitum capitatum* L.]

**Gr** Nomos Thesprotias, Eparchia Thiamidos: sandy beach at Igoumenitsa, 1 m, 04.08.2013, coll. & det. *D. Dimitrov* (SOM 171836).

Casual adventive. Possibly the first record for the flora of Greece (cf. Uotila 2011).

#### *Fabaceae*

**30. *Trifolium scabrum*** L. subsp. *scabrum*

**Bu** Sofia region: in steppe meadow eastwards from Seslavtsi suburb, on limestone, GN04, 08.2020, coll. & det. *D. Dimitrov* (SOM 177382).

#### *Lamiaceae*

**31. *Stachys obliqua*** Waldst. & Kit.

**Bu** Sofia region: in steppe meadow E of Seslavtsi suburb, on limestone, GN04, 07.2020, coll. & det. *D. Dimitrov* (SOM 177381).

#### *Polygonaceae*

**32. *Persicaria lapathifolia*** subsp. *pallida* (With.) Knutsson

**Bu** Forebalkan: circa vicum Roman, FN66, 12.05.1889, coll. *St. Gheorgieff*, det. *B. Kitanov* (sub *Polygonum tomentosum* Schn.) (SO 17891).  
A new subspecies-record for the Bulgarian flora (cf. Uotila 2017+).

#### *Rosaceae*

**33. *Potentilla hirta*** L.

**Bu** Mt Strandzha: in dry oak bushes between Malko Tarnovo town and Gramatikovo village, NG44, 10.07.1920, coll. *B. Stefanov* (sub *P. laeta* Rchb.), rev. *R. Kamelin* (1978) (SOM 39277).

A new species for the flora of Bulgaria (cf. Kurtto 2009).

**34. *Potentilla supina*** L.

**Bu** Mt Sredna Gora (*Western*): Mt Vakarelska: at artificial lake Bakar Dere, in sandy places

above Verinsko village, Ihtiman district, GN20, 08.11.2020, coll. & det. *D. Dimitrov* (SOM 177387).

#### *Rubiaceae*

**35. *Asperula rumelica*** Boiss.

**Bu** Sofia region: in steppe meadow eastwards of Seslavtsi suburb, on limestone, GN04, 07.2020, leg. & det. *D. Dimitrov* (SOM 177376).

#### *Scrophulariaceae*

**36. *Euphrasia liburnica*** Wettst.

**Bu** Sofia region: in steppe meadow E of Seslavtsi suburb, on limestone, GN04, 08.2020, coll. & det. *D. Dimitrov* (SOM 177383).

#### *Liliaceae*

**37. *Gagea pusilla*** (Schmidt.) Schmidt. f.

**Bu** Sofia region: in steppe meadow E of Seslavtsi suburb, on limestone, GN04, 23.02.2021, coll. & det. *D. Dimitrov* (SOM 177390).

#### *Poaceae*

**38. *Aegilops neglecta*** Req. ex Bertol

**Bu** Sofia region: in steppe meadow E of Seslavtsi suburb, on limestone, GN04, coll. & det. *D. Dimitrov* (SOM 177391).

**39. *Elymus elongatus*** (Host.) Greut. subsp. *elongatus*

**Bu** Sofia region: in steppe meadow E of Seslavtsi suburb, on limestone, GN04, 20.07.2020, coll. & det. *D. Dimitrov* (SOM 177375).

**40. *Festuca thracica*** (Acht.) Markgr.-Dannb.

**Bu** Sofia region: in steppe meadow E of Seslavtsi suburb, on limestone, GN04, 20.07.2020, coll. & det. *D. Dimitrov* (SOM 177374).

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## Report 41

### Konstantinos Giannopoulos<sup>1</sup> & Kit Tan<sup>2</sup>

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#### *Iridaceae*

**41. *Gladiolus tristis*** subsp. *spiralis* (Pers.) Maire & Weiller (Fig. 10)

**Gr** Nomos & Eparchia Ilias: wet ground at edge of Pinios lake, 72 m, 37°53'N, 21°26'E, flowering, 11.03.2021, *Giannopoulos* obs. (photo; flowering stem pressed as voucher).





Fig. 10. *Gladiolus tristis* subsp. *spiralis* (photo K. Giannopoulos).

Native to S Africa (Marsh Gladiolus), naturalized in Greece. Introduced to Australia and California, also cultivated as garden ornamental in S Europe. It was first collected in Greece by Phitos and Kamari on 18 March 1989 near the village of Krestena in Ilias ( $2n=30$ , based on *Phitos & Kamari* 20325, UPA, det. Peter Goldblatt), and this is the second documentation thirty-two years later at the artificial lake of Pinios so it is now well-established. The flowers are very fragrant at night, the scent persuasive and pervasive. 'Gladiolus' but not 'tristis' would be an appropriate name for a floral perfume.

## Reports 42–59

Vasilis Ioannidis<sup>1</sup>, Despina Doulkeridou<sup>1</sup> & Arne Strid<sup>2</sup>

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This is the fourth report of species new for the prefecture of Kilkis in NE Greece. Previous contributions appeared in *Phytologia Balcanica* 25(2): 211–215 (2019), 26(2): 195–197 (2020) and 26(2): 197–200 (2020). Field work has been carried out by the first two authors. Identifications have been confirmed by the third author, based on photographs of whole plants and diagnostic details. Unless otherwise indi-

cated, all specimens and photographs are currently in the private collection of the first author.

### Cupressaceae

42. *Juniperus communis* subsp. *nana* (Willd.) Syme

Gr Nomos & Eparchia Kilkis: Mt Kerkini, high mountain vegetation, 1712 m, 41°20'16.26"N, 22°51'10.39"E, 03.04.2016, *Ioannidis* obs.

### Apiaceae

43. *Laser trilobum* (L.) Borkh.

Gr Nomos & Eparchia Kilkis: Mt Kerkini, high mountain vegetation, 1029 m, 41°19'21.3"N, 22°48'16.8"E, 08.06.2020, *Ioannidis* obs.

### Asteraceae

44. *Hieracium brevifolium* Tausch

Gr Nomos Kilkis, Eparchia Paeonias: Mt Paiko, temperate and sub-Mediterranean grasslands, 521 m, 40°57'28"N, 22°23'54"E, 07.08.2019, *Ioannidis* obs.

### Brassicaceae

45. *Hesperis laciniata* All. subsp. *laciniata*

Gr Nomos Kilkis, Eparchia Paeonias: Karpi, woodland and scrub, 687 m, 41°0'0.34"N, 22°23'45.38"E, 21.04.2012, *Ioannidis* obs.

### Crassulaceae

46. *Sempervivum heuffelii* Schott

Gr Nomos Kilkis, Eparchia Paeonias: Mt Paiko, high mountain vegetation, 1533 m, 40°57'8.76"N, 22°20'15"E, 31.08.2015, *Ioannidis* obs.

### Fabaceae

47. *Amorpha fruticosa* L.

Gr Nomos Kilkis, Eparchia Paeonias: Axios river, freshwater habitats, 20 m, 40°54'41.98"N, 22°36'14.51"E, 30.08.2014, *Ioannidis* obs.

Native to southeastern N America, naturalized in Bulgaria and spreading in NE Greece.

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

Gr Nomos & Eparchia Kilkis: Efkarpiia, xeric Mediterranean phrygana and grasslands, 278 m, 41°03'0.98"N, 22°53'16.08"E, 10.05.2012, *Ioannidis* obs.

49. *Lupinus gredensis* Gand.

Gr Nomos & Eparchia Kilkis: Mouries, temperate and sub-Mediterranean grasslands, 424 m, 41°18'4.93" N, 22°49'15.56" E, 21.05.2014, *Ioannidis* obs.

**50. *Ononis pusilla* L.**

**Gr** Nomos & Eparchia Kilkis: Mt Kamila, cliffs, rocks, boulders, ravines, 477 m, 40°49'50.41"N, 22°57'42.75"E, 02.06.2012, *Ioannidis* obs.

**51. *Ononis reclinata* L.**

**Gr** Nomos & Eparchia Kilkis: Mt Kamila, cliffs, rocks, boulders, ravines, 360 m, 40°49'51.46"N, 22°58'1.95"E, 02.06.2012, *Ioannidis* obs.

**52. *Trifolium pallidum* Waldst. & Kit.**

**Gr** Nomos & Eparchia Kilkis: Elliniko village, xeric Mediterranean phrygana and grasslands, 759 m, 41°01'0.44"N, 23°05'56.79"E, 16.06.2013, *Ioannidis* obs.

**53. *Trigonella gladiata* M. Bieb.**

**Gr** Nomos & Eparchia Kilkis: Iliolousto, xeric Mediterranean phrygana and grasslands, 77 m, 41°04'19.37"N, 22°43'31.77"E, 12.05.2013, *Ioannidis* obs.

**54. *Vicia laeta* Ces.**

**Gr** Nomos & Eparchia Kilkis: Tripotamos, woodland and scrub, 440 m, 41°10'43.79"N, 22°55'32.38"E, 20.04.2013, *Ioannidis* obs.

**Hypericaceae****55. *Hypericum rumeliacum* Boiss. subsp. rumeliacum**

**Gr** Nomos & Eparchia Kilkis: Ai Giorgis hill of Kilkis, cliffs, rocks, boulders, ravines, 312 m, 41°0'10.79"N, 22°52'15.89"E, 08.05.2019, *Ioannidis* obs.

**Lamiaceae****56. *Galeopsis ladanum* L.**

**Gr** Nomos Kilkis, Eparchia Paeonias: Megala livadia, Mt Paiko, high mountain vegetation, 1305 m, 40°59'43"N, 22°15'14"E, 05.08.2020, *Ioannidis* obs.

**Lythraceae****57. *Lythrum hyssopifolia* L.**

**Gr** Nomos & Eparchia Kilkis: Vakoufi, agricultural and ruderal habitats, 36 m, 40°53'57.9"N, 22°41'08"E, 12.06.2020, *Ioannidis* obs.

**Rutaceae****58. *Haplophyllum suaveolens* (DC.) G. Don**

**Gr** Nomos & Eparchia Kilkis: Iliolousto, xeric Mediterranean phrygana and grasslands, 70 m, 41°04'19.26"N, 22°43'33.53"E, 12.05.2013, *Ioannidis* obs.

This species is fairly rare in NC and NE Greece with the nearest localities in the area of Mt Pangeon. It differs from the more widespread *H. coronatum* by its simple leaves and absence of lobed appendages on the capsule.

**Poaceae****59. *Hordeum marinum* Huds.**

**Gr** Nomos Kilkis, Eparchia Paeonias: Axios river, freshwater habitats, 39 m, 40°54'5.76"N, 22°41'4.63"E, 15.02.2019, *Ioannidis* obs.

**Reports 60–74****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).

**Apiaceae****60. *Bupleurum apiculatum* Friv.**

**Gr** Nomos and Eparchia Trikalon: Mt Koziakas, 0.9 km SW of village Pertouli, on limestone rock along road to Neraidochori, 1165 m, 39°32'N, 21°27'E, 01.08.2020, *Polymenakos & Kofinas* 1061 (ATH).

There are very few records of this taxon from phytogeographical region S Pindos, and they date back more than a century – one from Mt Voutsikaki in Nomos and Eparchia Karditsis (*Sintenis* 1896: 1118pp, specimen in LD) and a collection by Formánek from the area around Trikala (Vandas 1909: 244), the latter being the first and only report from Nomos Trikalon.

**Asteraceae****61. *Centaurea jacea* subsp. *angustifolia* (DC.)**

Gremler (Fig. 11)

**Gr** Nomos Viotias, Eparchia Levadias: Mt Parnassos, 'Varko Despoti', 5.1 km N of Kalivia Arachovas, seasonally flooded meadow, limestone, 1480 m, 38°33'N, 22°32'E, 25.08.2020, *Polymenakos* 1081 (ATH).

New for nomos, eparchia and phytogeographical region Sterea Ellas; apparently the southernmost limit for species. A gathering of *C. jacea* from Mt Timfristos (*Dimitrellos* 352, UPA, n.v.) has not been determined to subspecies rank.



Fig. 11. *Centaurea jacea* subsp. *angustifolia* (photo K. Polymenakos).

**62. *Filago contracta*** (Boiss.) Chrtek & Holub

**Gr** Nomos Evvias, Eparchia Karistias: 3.4 km NE of Marmari, gravelly ground at small chapel of Ag. Fotini, limestone, 315 m, 38°02'N, 24°21'E, 05.07.2020, *Polymenakos & Kofinas* 1047 (ATH).  
New for Evvia.

**63. *Pulicaria vulgaris*** Gaertn.

**Gr** Nomos Evvias, Eparchia Karistias: 1.8 km W-SW of Karystos, near village of Zarbouteika, seasonally flooded flats near sea, 1 m, 38°00'N, 24°23'E, 05.07.2020, *Polymenakos & Kofinas* 1042 (ATH).  
New for Evvia.

**64. *Stachelina uniflosculosa*** Sm.

**Gr** Nomos Evvias, Eparchia Chalkidos: Mt Xirovouni, 3 km S-SE of Stropones, rocky places in ravine, limestone, 820 m, 38°35'N, 23°54'E, 22.08.2020, *Polymenakos & Pantavos* 1080 (ATH).  
Confirming record from Mt Dirfis by Leonis based on *Dörfler* 3543 (LD) which represented the only collection so far known from Evvia.

**Campanulaceae**

**65. *Campanula sparsa*** Friv.

**Gr** Nomos Evvias, Eparchia Karistias: outside village of Agatho on lower slopes of Mt Ochi, shady roadsides and old walls, limestone, 360 m, 38°07'N, 24°29'E, 04.07.2020, *Polymenakos & Kofinas* 1034 (ATH).  
New for Evvia and phytogeographical region W Aegean. The locality is a considerable extension of its known distribution range.



Fig. 12. *Campanula spatulata* subsp. *spatulata* (photo K. Polymenakos).

**66. *Campanula spatulata*** Sm. subsp. *spatulata* (Fig. 12)

**Gr** Nomos Evvias, Eparchia Karistias: Mt Ochi, 0.9 km SW of Profitis Ilias, limestone rock crevices in small ravine, 1130 m, 38°03'N, 24°27'E, 04.07.2020, *Polymenakos & Kofinas* 1041 (ATH).  
New for eparchia. On Evvia, it has been reported twice from Mt Dirfis in central Evvia (eparchia Chalkidos).

**Convolvulaceae**

**67. *Calystegia soldanella*** (L.) Roem. & Schult.

**Gr** Nomos Evvias, Eparchia Karistias: bay of Kallianos, sandy shore, sea level, 38°08'N, 24°28'E, 04.07.2020, *Polymenakos & Kofinas* 1036 (ATH).

New for eparchia, recorded from eparchies Istieas and Chalkidos in northern Evvia. Growing together with *Crepis foetida* subsp. *commutata* and *Heliotropium europaeum*. Fairly widespread in Greek coastal areas.

**Gentianaceae**

**68. *Schenkia spicata*** (L.) G. Mans.

**Gr** Nomos Evvias, Eparchia Karistias: 1.8 km W-SW of Karystos, near village of Zarbouteika, seasonally flooded flats near sea, 1 m, 38°00'N, 24°23'E, 05.07.2020, *Polymenakos & Kofinas* 1046 (ATH).

New for eparchia, reported from coastal areas in eparchia Chalkidos (Rechinger 1961: 399).

**Lentibulariaceae**

**69. *Utricularia australis*** R. Br. (Fig. 13)

**Gr** Nomos Evvias, Eparchia Karistias: NW edge of Lake Distos, 15 m, 38°21'N, 24°07'E, 05.07.2020, *Polymenakos & Kofinas* obs. (photos).  
New for Evvia and phytogeographical region W Aegean; scattered occurrences in Greece.



Fig. 13. *Utricularia australis* (photo K. Polymenakos).

#### Lythraceae

##### 70. *Lythrum borysthenicum* (Schrank) Litv.

**Gr** Nomos Evvias, Eparchia Karistias: 1.8 km W-SW of Karystos, near village of Zarbouteika, seasonally flooded flats near sea, 1 m, 38°00'N, 24°23'E, 05.07.2020, *Polymenakos & Kofinas* 1048 (ATH).

New for Evvia. The plants were completely dried-out and caked in mud but adequately resuscitated in warm water to enable identification.

#### Alismataceae

##### 71. *Damasonium bourgaei* Coss. (Fig. 14)

**Gr** Nomos Evvias, Eparchia Karistias: muddy patches at NE shore of Lake Distos, 15–20 m, 38°21'N, 24°08'E, 03.07.2020, *Polymenakos & Kofinas* 1032 (ATH).

New for eparchia, recorded from eparchia Chalkidos in central Evvia (Rechinger 1944: 706).

#### Juncaceae

##### 72. *Juncus minutulus* V. Krecz. & Gontsch.

**Gr** Nomos Evvias, Eparchia Karistias: Cape Kafireas,

below the small church of Agios Grigorios, damp places on schistose coastal slope, 10 m, 38°09'N, 24°35'E, 04.07.2020, *Polymenakos & Kofinas* 1039 (ATH); 3.4 km E-NE of Marmari, in seasonally flooded cultivated field, clay, 200 m, 38°03'N, 24°21'E, 05.07.2020, *Polymenakos & Kofinas* 1044 (ATH).

New for Evvia. In W Aegean, reported from island of Skiros.

##### 73. *Juncus pygmaeus* Rich.

**Gr** Nomos Evvias, Eparchia Karistias: 3.4 km E-NE of Marmari, seasonally flooded cultivated field, clay, 200 m, 38°03'N, 24°21'E, 05.07.2020, *Polymenakos & Kofinas* 1043 (ATH).

New for Evvia and phytogeographical region W Aegean. A now familiar species first encountered in similar ecological conditions on the plateau of Dervenochoria, Viotas, in central Greece (*Polymenakos & Tan* 2020).

#### Poaceae

##### 74. *Elytrigia intermedia* (Host) Nevski

**Gr** Nomos Achaïas, Eparchia Kalavriton: roadside in village Kernitsa, limestone, 715 m, 38°07'N, 22°12'E, 05.07.2019, *Polymenakos* 881 (ATH).

New for nomos and eparchia.

**Acknowledgements.** K. Polymenakos thanks Giannis Kofinas and Vassilis Pantavos for kindly accompanying him on his botanical excursions.



Fig. 14. *Damasonium bourgaei* (photo K. Polymenakos).

## Reports 75–76

**Andrey Popatanasov**

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### Orchidaceae

#### 75. *Epipactis palustris* (L.) Crantz (Fig. 15)

**Bu** Znepole region: Mt Golo Bardo, in a mixed forest, on southwestern slope, inclination approx. 5–10°, 840 m, 42°31'N, 23°02'E, 20.06.2020, with flowers and fruits, coll. A. Popatanasov (SO 107214).

Already known from this floristic region. The population is located at the bottom of a small deep canyon along the banks of a seasonal water spring, ca. 3 km north-northeast from Egretsia village. The plants grow among the grassy openings of mixed shrubs and



Fig. 15. *Epipactis palustris* (photo A. Popatanasov).

forest, including such species as *Crataegus monogyna*, *Pinus nigra*, etc. As all other mountains in the Znepole region, Mt. Golo Burdo had suffered significant anthropogenic deforestation in the past centuries, which had affected negatively the local hydrology and soils (Zakov 2005). Therefore, location of such meso-/hygrophytic species like *E. palustris* presently in a dry mountain is very surprising and probably is due to remnants of larger and wetter habitats from the past, which had presumably survived there owing to the harsher geomorphology. Thus, the population is very local and limited only to the sufficiently moist areas for this species. Over 40 shoots were counted on an area of some hundred square meters. The plants were relatively small in size (<30 cm), with a low number of flowers (<5), and with only four generative shoots, which possibly means that the population is in a suppressed state.

Other species from the same family found nearby were *Cephalanthera alba* and *Gymnadenia conopsea*.

Owing to the increasing and continuous loss of habitats, this species has found its place in the *Red Book* and *Red List* of vascular plant in Bulgaria and has been assigned the status of 'Endangered' and it is also protected by the Biodiversity Act (Petrova 2009, 2012a). The location is not in a protected area, but it is approximately 1 km off the Ostrica Managed Nature Reserve and thus it seems quite reasonable to have it included in the Reserve's buffer zone, considering the rarity of such habitats, especially in that mountain.

Apparently, the species is new for this mountain since it has not been reported in Apostolova-Stoyanova & Stoyanov (2009).

#### 76. *Orchis militaris* L. (Fig. 16)

**Bu** Rhodopi Mts (*Central*): at the edges of a mixed coniferous forest, on a west-facing steep slope, inclination approx. 30°, 1320 m, ca. 2.5 km northeastwards from Chamla village, with flowers and fruits, 21.06.2015. obs. A. Popatanasov.

Already known from this floristic region. On the steep slopes of Tenesdere, approx. 2.5 km northeastwards from Chamla village, among the grassy openings or on the edges of shrub formations and mixed, mostly coniferous forest were found 15 shoots of *O. militaris*, most of them generative. As with the recently found locations in the Rhodopi Mts (Popatanasov 2015), this location sticks to the trend of being in the cool moist gorges.



Fig. 16. *Orchis militaris* (photo A. Popatanasov).

Other species from the same family found in this area were *Gymnadenia conopsea* and *Epipactis helleborine*.

In the 20<sup>th</sup> century, the species was reported from seven floristic regions, but in the last few decades, only about ten locations have been confirmed locally (Assyov & Petrova 2012; Petrova 2012b; Popatanasov 2015). The species has been assigned the status of 'Endangered' and it is included in the *Red Book* and *Red List* of plants in Bulgaria and is

protected by the Biodiversity Act (Petrova 2009, 2012b). The population is located in an unprotected area and exposed to grazing by the local herds and probably affected by other anthropogenic activities, which makes its status relatively vulnerable and endangered. Therefore, its conservation would benefit from including it at least in the database of the Forestry Agency, which, hopefully, may restrict the issuance of woodcutting permits in close proximity.

The species has not been reported in a recent floristic study from this area (Stoyanov & al. 2016) and thus is considered a new addition to its chorology.

## Report 77

Arne Strid<sup>1</sup>, Kit Tan<sup>2</sup> & Giannis Kofinas<sup>3</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).

### Scrophulariaceae

77. *Linaria genistifolia* (L.) Mill. (Figs. 17-18)

Gr Nomos Arkadias, Eparchia Kinourias: in monte



Fig. 17. *Linaria genistifolia*, in flower and fruit with part of inflorescence enlarged (photos A. Strid); basal part of stem (photo G. Kofinas).

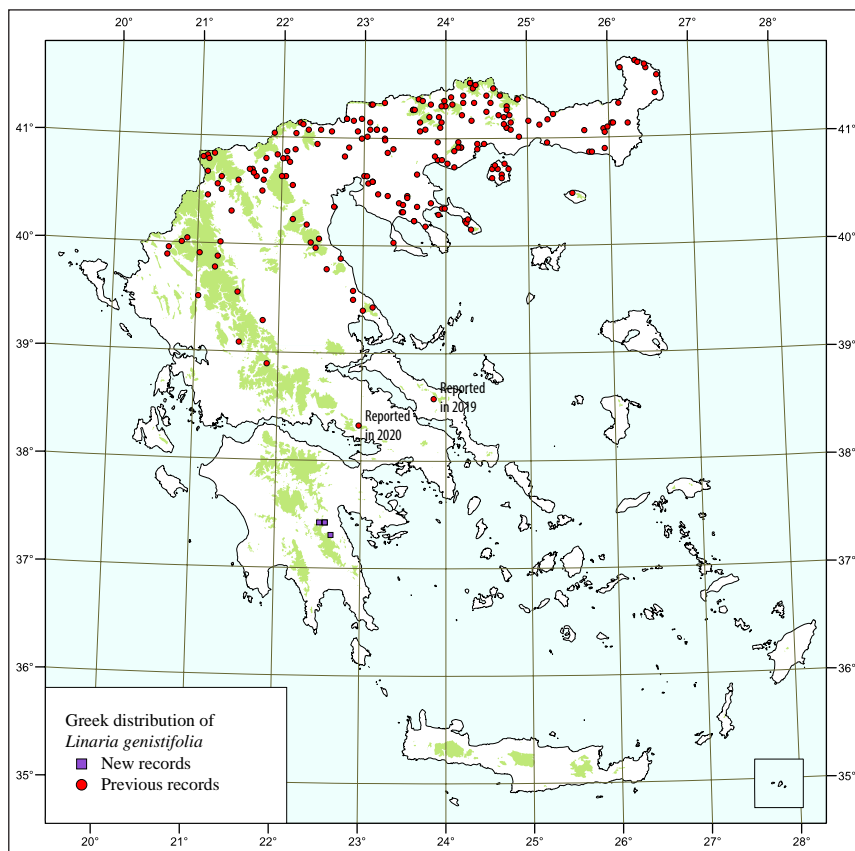


Fig. 18. Distribution of *Linaria genistifolia* in Greece.

on Mt Elikonas in Sterea Ellas (see Polymenakos & Tan 2020: 202), this was previously the southernmost occurrence in Greece. It was first recorded on Evvia (Mt Dirfis) in 2019 (see Polymenakos & Tan 2019: 318).

The plants are 50–80 cm tall and conspicuous at the roadside being in full flower and with ripe capsules. The warm weather has induced a second flowering in October and the main flowering period is likely to be June to July. Smaller populations were also observed in two stands further along the road to Astros, also at the edge of woodland on the way from Vamvakou to Kastanitsa.

Malevo Laconiae, prope Platanos, 1000 m, 37°19'N, 22°39'E, 04.06.1857, *Orphanides* 711 (WU); along Artos to Tripolis road, 592 m, 37°26'N, 22°31'E, 27.07.2019, *Kofinas* obs. (photos); near the village of Ag. Sofia, W-NW of Astros, roadside, 500 m, 37°26'N, 22°35'E, 06.10.2020, *Strid* 60599 (B, UPA, herb. Strid); along Tripoli to Astros road, before turnoff to village of Ag. Sofia, 500 m, 37°26'N, 22°35'E, 31.10.2020, flowering and with ripe capsules, *Kit Tan* & *G. Vold* 33155 (ATH, C, herb. Kit).

New for Peloponnese. The specimens collected by *Orphanides* had been determined as *L. dalmatica* (L.) Mill. by Th. Raus in 1988; they were also cited as representing this species by *Halácsy* (1902: 409). *L. dalmatica* is not known from the Peloponnese and we consider the plants to be a broad-leaved and large-flowered form of *L. genistifolia*, a variable species in SE Europe and NW Anatolia. The general habit and shape of the inflorescence match *L. genistifolia* rather than *L. dalmatica*, and the capsules are also similar to those of *L. genistifolia* (short and subglobose) rather than *L. dalmatica* (elongated, oblong-cylindrical). The locality of *L. genistifolia* nearest to the Peloponnese plants is

## Reports 78–85

### Kit Tan<sup>1</sup> & Giannis Kofinas<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).

### Apiaceae

#### 78. *Seseli rhodopeum* Velen. (Fig. 19)

**Gr** Nomos & Eparchia Dramas: northern end of Nestos dam, 1350 m, schistose embankment, 41°22'N, 24°28'E, 14.08.2014, *Kofinas* obs. (photos); *loc. ibid.*, 18.08.2019, *Kofinas* obs. (photos).

Recently reported as new for Greece (Strid 2020). Noted by *Kofinas* in 2014 but assumed to represent the similar and more widespread *S. rigidum* Waldst. & Kit. which also occurs in the area.



Fig. 19. *Seseli rhodopeum* inflorescences (photo G. Kofinas).

#### Asteraceae

##### 79. *Centaurea tymphaea* Hausskn. (Fig. 20)

**Gr** Nomos Kozanis, Eparchia Voiou: Mt Siniatsikon, stony calcareous ground, 1093 m, 40°16'N, 21°32'E, 11.08.2017, *Kofinas* obs. (photos).

New for Mt Siniatsikon. Plants were also found at lower altitudes outside Siatista (06.08.2019 & 11.08.2017) and Galatini (11.08.2017). White and pinkish-purple flowered forms occur in the same population, and plants with white florets have been identified as *C. lactiflora*

Halácsy which according to Georgiadis (1980: 55) is a synonym of *C. tymphaea*. The type of *C. tymphaea* was described from S Pindos (Haussknecht 1895: 44).

#### Boraginaceae

##### 80. *Anchusa thessala* Boiss. & Spruner

**Gr** Nomos Kozanis, Eparchia Voiou: Mt Siniatsikon, on route to summit, in early fruit, 1576 m, 40°23'N, 21°34'E, 10.08.2020, *Kofinas* obs. (photo). New for Mt Siniatsikon, westernmost distribution in Greece. In floristic region North Central, it has been reported from Mt Paikon. A few plants (*ca.* 6-7) were noted besides the newly excavated road leading to the site for installation of windmills.

#### Brassicaceae

##### 81. *Iberis umbellata* L. (Fig. 21)

**Gr** Nomos Ioanninon, Eparchia Konitsis: on way from Konitsa to Pades, flowering, 1010 m, 40°03'N, 20°47'E, 05.08.2020, *Kofinas* s.n. (herb. Kit); Konitsa to Monastery of Stomiou, fruiting, 503-515 m, 40°01'N, 20°46'E, 23.08.2019, *Kofinas* obs. (photos).

This species, often cultivated as an ornamental in Europe, had not been considered native or fully naturalized in Greece (Strid & Tan 2003: 268). Several collections by Pierre Authier (herb. Authier) and E. Garnweidner (herb. Garnw.) from the Aaos valley south of Mt Smolikas, at altitudes from 500 to 1200 m, and far from human habitation, indicate native status. It is an annual with conspicuous large siliculæ 7-10 mm in diam.



Fig. 20. *Centaurea tymphaea*, pinkish-purple and white-flowered forms in the same population (photos G. Kofinas).





Fig. 21. *Iberis umbellata* in flower (photo P. Authier) and fruit (photo G. Kofinas).



Fig. 22. a, Leaves and capitula of *Cephalaria flava* subsp. *askiensis* from Mt Siniatsikon and b, *C. flava* subsp. *setulifera* from Mt Parnitha (photos G. Kofinas).

*Dipsacaceae*

**82. *Cephalaria flava* subsp. *askiensis* Kit Tan & Kofinas, subsp. nov. (Figs. 22–23)**

**Gr** Nomos Kozanis, Eparchia Voiou: Mt Siniatsikon, stony limestone meadow on route to summit, flowering, 1446 m, 40°22'N, 21°33'E, 10.08.2020, Kofinas s.n. (holotype C; isotype ATH); *loc. ibid.*, flowering, 1636–1660 m, 40°23'N, 21°34'E, 01.06.2019, Kofinas obs. (photos); *loc. ibid.*, flowering, 07.08.2019, Kofinas obs. (photos).

Perennial herb, ± woody at base. Stems several, 50–65 cm tall, erect-ascending, retrorsely setose in lower part. Leaves of non-flowering shoots 5–15 cm long, undivided and entire, or lyrate-pinnatisect with prominent white to stramineous midrib beneath. Cauline leaves 3–16 × 1–6 cm, undivided or lyrate-pinnatisect with large elliptic or ovate-lanceolate, coarsely serrate-dentate terminal lobe broader than the lateral pairs, adpressed-setulose on both surfaces, more densely hairy beneath, ciliate-setulose at margins. Peduncle setose-setulose below inflorescence. Capitula ovoid-globose, 2–3 cm across. Involucral bracts coriaceous, 3–4-seriate; outermost bracts broadly ovate, *c.* 3–3.5 × 3 mm, obtuse, purplish-brown, velutinous-pubescent, ciliate; middle and inner bracts with an adpressed-setulose, purplish-brown median band, recurved-acuminate, ciliate and scarious at margins. Corolla 4-lobed, 12–15 mm long, creamy to pale yellow, adpressed-sericeous without; lobes 3–4 mm long. Involucel 6–8 mm in fruit, with 4 teeth *c.*

1 mm long and 4 shorter intermediate teeth. Stamens 4; filaments long-exserted; anthers 2.5–3 mm long, greenish-yellow at anthesis.

Differing from *C. flava* (Sm.) Szabó subsp. *flava*, a Balkan endemic occurring in mainland Greece (N and S Pindos, North Central, North East), by its rather coriaceous, setose-setulose leaves which are mostly undivided or with a very large, entire or coarsely serrate-dentate terminal lobe and (1)2–3 pairs smaller, entire, lateral and basal lobes (Fig. 22a), also by the velutinous-pubescent indumentum on the outermost involucre bracts. *Cephalaria f.* subsp. *setulifera* (Boiss. & Heldr.) Kokkini is a plant smaller in all its parts, setose on the lower part of the stems, petioles, leaf margins and midrib beneath (Fig. 22b). It was collected from Mt Dhirfis (Evia) as early as 7 August 1868 by Heldreich and besides the occurrence on Evvia, has also been found in the Peloponnese on Mts Dourdouvana, Killini and Parnonas, and on the low mountains at the tail-end of Parnonas, viz., Koulochera, Gaidourovouni, Chionovouni and Madara. In Sterea Ellas, it occurs on the mountains Pendeli, Parnitha, Pateras, Kitheronas, Gerania, and at altitudes of 1250 m on Mt Parnassos; we have not confirmed if plants from further north, reported to

represent this taxon, are correctly identified. Plants from a branch of Xerolakki Rema on the NW part of Mt Olimbos have very narrow leaf lobes and are somewhat intermediate between *C. tenuiloba* Strid and *C. f.* subsp. *setulifera*.

When first collected flowering on Mt Siniatsikon in June 2019, it was apparent the plants represented something new in the *C. flava* group as the leaves were mostly undivided and the outermost involucre bracts densely velutinous-pubescent and not long white-villous. The flowering period is fairly long, lasting from beginning of June to mid-August as observed over two years from 2019 and 2020. Hence no material in fruit was collected in 2019 as we had expected it to be fruiting during a second visit in August the same year but found the plants still in flower. Based on geographical distribution (see Fig. 23) we decided to treat it as a new subspecies of *C. flava* occurring on the mountain range Askio, the highest peak of which is Siniatsikon (2111 m). Mt Siniatsikon is not well explored and botanical discoveries can still be expected from its limestone and serpentine substrates. Examples of some interesting plants noted on its slopes are *Acanthus greuterianus*, *Allium rhodopeum* subsp. *rhodopeum*, *Anchusa thessala*, *Anthemis*

*wiedemanniana*, *Centaurea ossaea*, *Centaurea tymphaea* (syn. *C. lactiflora*), *Erodium hartvigianum* (and its hybrid with *E. absinthoides*), *Geranium thessalum*, *Saxifraga scardica*, *Sempervivum ruthenicum* (syn. *S. ciliosum*), *Valeriana tuberosa*, *Viola eximia* and *Viola vourinensis* with blue, purple and yellow colour forms. Wind mills have recently been installed on the upper slopes of the mountain, a development which would affect the flora, fauna and their habitats to some extent. *Cephalaria flava* subsp. *askiensis* grows in meadows traversed by the road being widened for access to the wind mills.

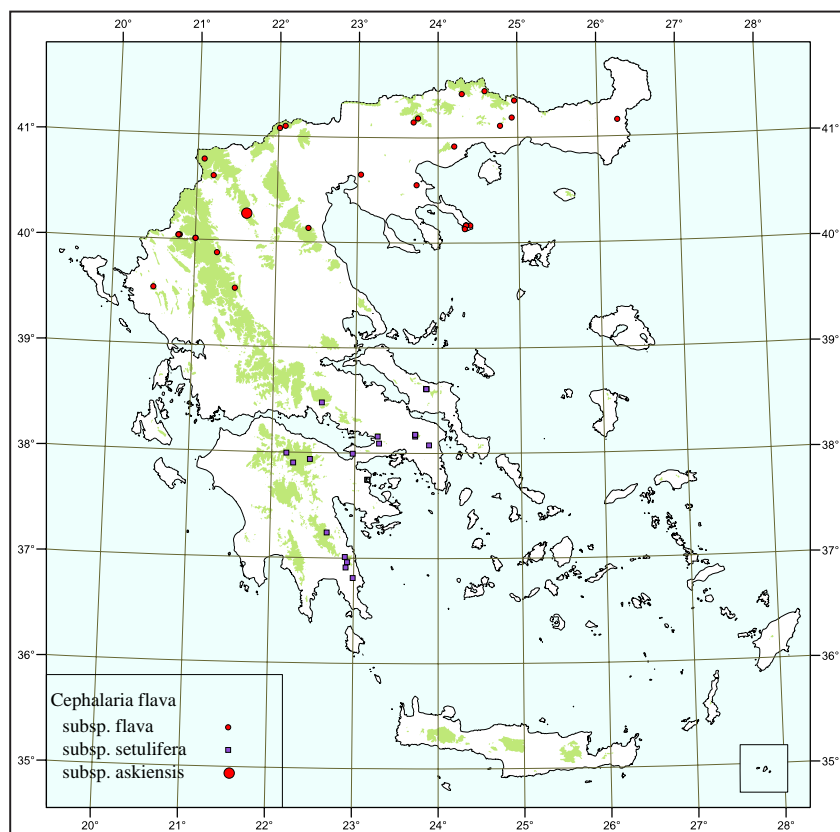


Fig. 23. Distribution of *Cephalaria flava* in Greece.

**Fabaceae****83. *Dorycnium rectum* (L.) Ser.**

**Gr** Nomos Lakonias, Eparchia Epidavrou Limiras: Larnakas gorge near Molai, damp clearing near small stream, 257–305 m, 36°48'N, 22°50'E, 13.06.2020, *Kofinas* obs. (photos).

New for eparchia, first reported from Lakonias (eparchia Lakedemonos) by Pichler (Halácsy 1900: 415).

**Onagraceae****84. *Oenothera lindheimeri* (Engelm. & A. Gray) W.L. Wagner & Hoch (Fig. 24)**

**Gr** Nomos Serron, Eparchia Fillidos: N of Amfipoli on way to Mt Pangeon, at roadside far from habitation, 45 m, 40°51'N, 23°51'E, 15.08.2020, *Kofinas* obs. (photos).

Naturalized, native to N America. Reported from Attikis (Raabe & Raus 2016) and more recently, from the islands of Rodos (Galanos 2020) and Thasos (Biel & Tan 2021). Probably well-established in other parts of Greece but there are no published records.

**Violaceae****85. *Viola eximia* Formánék**

**Gr** Nomos Kozanis, Eparchia Eordeas/Voiou: Mt Siniatsikon, stony calcareous ground in summit area, 2075 m, 40°24'N, 21°32'E, 01.06.2019, *Kofinas* obs. (photos).

New for Mt Siniatsikon, nomos and eparchia. Other plants at the summit include *Sempervivum ruthenicum*, *Saxifraga scardica* and *Centaurea ossaea*.

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**Report 86–87****Kit Tan<sup>1</sup>, Giannis Kofinas<sup>2</sup> & Jerzy Zieliński<sup>3</sup>**

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**Myrtaceae****86. *Myrtus communis* var. *tarentina* L. [syn. *M. tarentina* (L.) Mill.; *M. communis* subsp. *tarentina* (L.) Nyman] (Figs. 25 & 26)**

**Gr** Nomos Lakonias, Eparchia Epidavrou Limiras: edge of Larnakas gorge near Molai, 224 m, 36°48'N, 22°50'E, 04.12.2014, fruiting, *Kofinas* obs. (photos); *loc. ibid.*, 15.06.2014, flowering, *Kofinas* obs. (photos); near Gini, northeast of Kiparissi, 120 m, 36°57'N, 22°59'E, *Gavrilis* obs.; cape at Ag. Giorgios, between Port Kiparissi and Ormos Koumazi, 15 m, 36°58'N, 23°04'E, *Gavrilis* obs.; near village of Nomia, damp places in a small ravine, garigue over schist, 100 m, 36°39'N, 23°00'E, 17.11.2004, *Strid* 55414 (G, LD); *loc. ibid.*, 03.05.1982, *Runemark* & *Svensson* obs. (flowering, same locality as previous record).

A compact, evergreen shrub 1–1.5 m tall with pale pink flower buds, white flowers and white or greenish-yellow fruits, described from Taranto province in southern Italy. The dendrologist (J.Z.) noted that the distribution of such plants in Greece and Turkey is scattered with the plants occurring here and there, independent of each other. Thus the rank of variety (or even form) seems to be much



**Fig. 24.** *Oenothera lindheimeri*, habit and flower (photo G. Kofinas).



Fig. 25. *Myrtus communis* var. *tarentina* from Lakonias, in flower and fruit (photo G. Kofinas).

more appropriate than the rank of subspecies as adopted in Flora of Greece Web 2021 (<http://portal.cybertaxonomy.org/flora-greece/intro>). Probably some recessive gene is responsible for the color of the fruit and it shows up in the homozygous stage. Similar plants were noted at Monemvasia and Neapolis in Epidavrou Limiras, south Peloponnese. In Kiparissi where plants are particularly common in district Vrysi, the fruits are eaten by village children but not made into a jam or liquor as elsewhere in the Mediterranean; the flavor of the berries in cooking is considered more subtle than from fruits of *Juniperus communis*. Cuttings were brought to Molai 40 years ago and they still flourish at the home of the second author (G.K.).

*Myrtus communis* L. is widespread in coastal Greece, the Ionian and Aegean islands; the typical plant has dark purplish-black, often pruinose fruits. It has long been cultivated as a garden ornamental, also for its essential oil used in medicine and perfumery since Roman times. Numerous varieties have been described in the Mediterranean area, from southern

Europe to SW Asia. In the Peloponnese (Lakonias), S Pindos (Preveza) and Sterea Ellas (Nafpaktos), black-fruited plants occur which have stiff, erect or patent, very short lateral shoots but these forms do not merit taxonomic rank.

#### Rosaceae

87. *Sorbus hybrida* agg. [syn. *Sorbus borbasii* Jáv., *Hedlundia borbasii* (Jáv.) Sennikov & Kurtto]

Gr Nomos & Eparchia Dramas: Falakro, below mountain refuge, opposite the snow hole 'Chionotripta', 1865 m, 41°17'N, 24°04'E, 18.08.2020, Kofinas obs. (photos).

Reported from Mt Falakro as *S. roopiana* Bordz., 'new for Greece' (Akeroyd & Preston 1981), the latter, however, is a species distributed in the Crimea, Caucasus and Anatolia. Treated as *Sorbus* × *pinnatifida* subsp. *borbasii* (Jáv.) K.I. Chr. by Christensen, the name is



Fig. 26. *Myrtus communis* var. *tarentina* from Lakonias, fruiting branches (photo G. Kofinas).

unpublished owing to his untimely death. At high altitude on Mt Falakro as observed by Kofinas, the tree is a small bush.

The hybrids between the species of the *Sorbus aria* agg. (subgen. *Aria* Pers.) and *S. aucuparia* L. (subgen. *Sorbus* (L.) Reichenb.) are best treated as belonging to the *Sorbus hybrida* agg. group. *Sorbus borbasii* is one of several dozen similar apomictic “microspecies” of hybrid origin and recognizing it, on the basis of individual specimens, is hardly justified. It has been reported from Mt Orvilos and Rodopi (both in nomos Dramas), Mt Pangeon (nomos Kavallas) and Mt Vron-dous (nomos Serron) in NE Greece. The type was described from SW Romania. It also occurs in W Bulgaria and more recently, documented from Mt Belasitsa on the Greek-Bulgarian border (Stoyanov & Topalova-Rzerzycha 2014).

## Report 88

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### Iridaceae

88. *Crocus tommasinianus* Herb. (Fig. 27)

**Bu** Forebalkan (*Western*): between Breste, Reselets and Kunino villages, in a forest dominated by *Carpinus orientalis* and occasionally encroaching on the pine plantations along the roads connecting the villages, 220 m, 43°15'06.1"N, 24°01'10.0"E, KH59, 02.02.2020 and 09.02.2021, M. Mincheva obs., 43°15'24.5"N, 24°00'50.1"E, 43°15'03.6"N, 24°01'22.9"E, from 43°14'20.2"N, 24°01'31.9"E to 43°13'30.4"N, 24°01'40.2"E, KH59 and KH58, 200–300 m, 11.02.2021, coll. R. Tzonev, G. Kunev and A. Tanev (SO 108066, 108067; SOM 177326).

*Crocus tommasinianus* is already known from the Forebalkan (*Western*) and the neighbouring Danubian Plain (Vladimirov 2015; Kunev 2018). The earlier known populations have been located in the westernmost end of those floristic regions. The newly found population is of great importance, since it

is located in the opposite end of the floristic region and thus sheds more light on the natural distribution of this protected species evaluated as Vulnerable (Vladimirov 2009) and listed in Annex III of the Bulgarian Biodiversity Act.

The species forms dense populations due to its high regenerative abilities: not only the flowers are adapted for both self-pollination and cross pollination, ensuring a successful setting of seeds, but the plants can also multiply vegetatively by corm splitting. Despite its robustness, this is a habitat specialist species, assessed as obligate calciphile (Velchev 1998), affiliated to upland deciduous forests. Its greatest potential threat is habitat loss and for efficient conservation of the species the known locations should be also protected.

**Acknowledgements.** The authors are grateful to Dr. Rossen Tzonev from the Sofia University for his assistance and to the Plants in Bulgaria Group in the online social media for putting the citizens in contact with science.



Fig. 27. *Crocus tommasinianus* (photo G. Kunev).

## Reports 89–91

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 Achaïas and Korinthias in north Peloponnese.

### Aceraceae

#### 89. *Acer pseudoplatanus* L.

Gr Nomos Achaïas, Eparchia Kalavriton: near Zarouchla, edge of forest road in *Abies cephalonica* forest, 1323 m, 37°58'N, 22°16'E, 20.05.2020, Zarkos obs. (photo).

Confirming the record from nomos Achaïas based on a specimen collected west of Kertezi in June 1997 (Maroulis 1056, UPA). *Acer pseudoplatanus* occurs mainly in northern and south central Greece, and in the Peloponnese has been reported as possibly planted or spreading from planted trees.

### Brassicaceae

#### 90. *Alyssum turkestanicum* Regel & Schmalh. (Fig. 28)

Gr Nomos & Eparchia Korinthias: SW of village Psari, roadside, *Quercus coccifera* scrub, 664 m, 37°50'N, 22°30'E, 18.04.2021, Zarkos obs. (photos).

New for mainland Peloponnese. Reported from the island of Egina by Vallianatou (2005: 141), referring to Chaubard & Bory (1838).

### Hyacinthaceae

#### 91. *Ornithogalum pyrenaicum* subsp.

*sphaerocarpum* (A. Kern.) Asch. & Graebn. [syn. *Loncomelos pyrenaicum* subsp. *sphaerocarpum* (A. Kern.) Holub] (Figs. 29, 30)

Gr Nomos & Eparchia Korinthias: S of Xylokaastro, uncultivated and abandoned field, 300 m, 38°03'N, 22°37'E, 17.04.2021, Zarkos & Christodoulou obs. (photos).

New for the Peloponnese, distributed from C and S Europe to SW Asia. The perianth segments are pale greenish-white with the edges hyaline and tending to be inrolled, and the ovary subglobose. The presence of *O. pyrenaicum* L. in the Peloponnese was doubted for a long time, and even the occurrence in Greece itself (see Tutin & al. 1980). The young inflorescences are edible and eaten like wild asparagus.

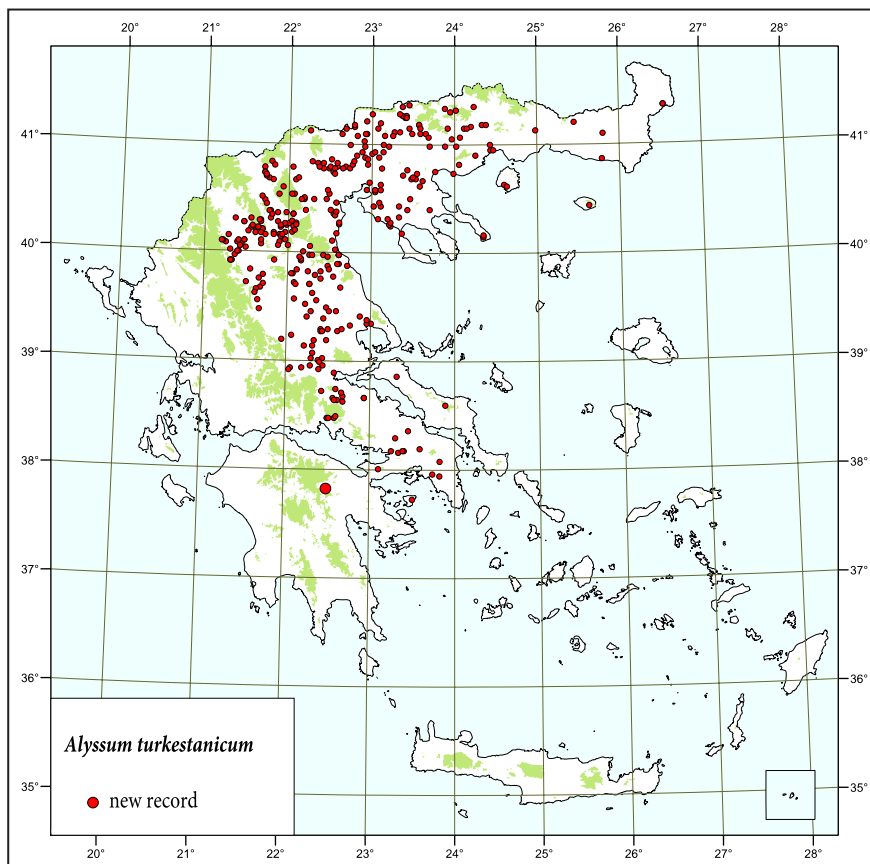


Fig. 28. Distribution of *Alyssum turkestanicum* in Greece.



Fig. 29. *Ornithogalum pyrenaicum* subsp. *sphaerocarpum* (photo G. Zarkos).

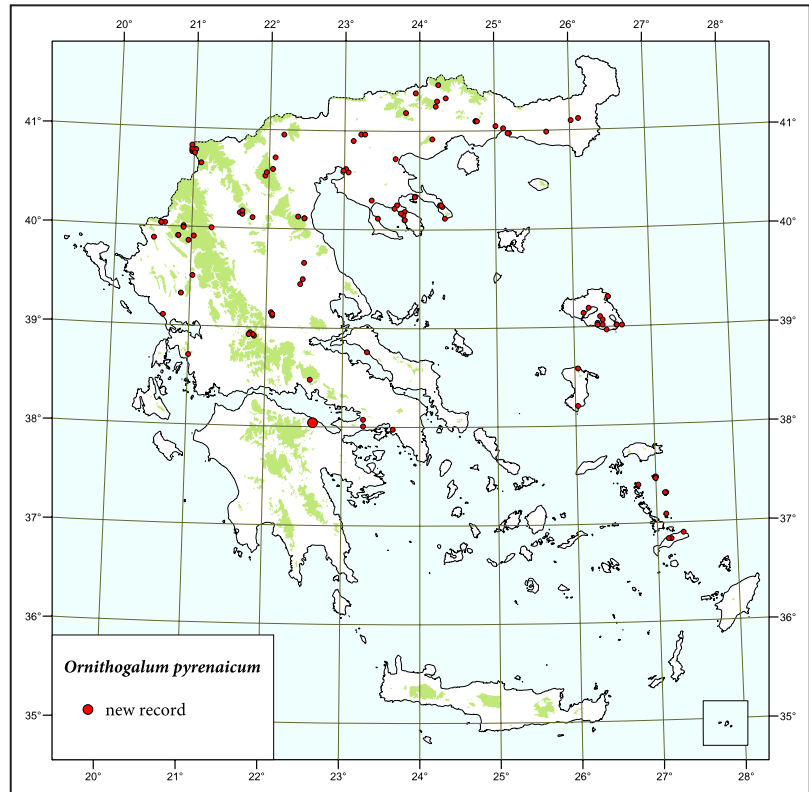


Fig. 30. Distribution of *Ornithogalum pyrenaicum* in Greece.

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