

## New floristic records in the Balkans: 47\*

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**Abstract.** New chorological data are presented for 54 species and subspecies from Bulgaria (48), Greece (1, 15-47, 49-54), and Turkey-in-Europe (2-14). The taxa belong to the following families: *Apiaceae* (17, 18, 32, 33), *Aspleniaceae* (15, 48), *Asteraceae* (2, 19, 34, 35, 49, 50), *Berberidaceae* (20), *Brassicaceae* (54), *Campanulaceae* (36), *Caryophyllaceae* (21, 37), *Chenopodiaceae* (38, 51), *Crassulaceae* (39, 40), *Fabaceae* (3-5, 22-24), *Fagaceae* (41), *Geraniaceae* (25), *Hyacinthaceae* (1), *Iridaceae* (30, 31), *Isoetaceae* (16), *Lamiaceae* (26, 42, 43), *Malvaceae* (44, 45), *Plumbaginaceae* (52, 53), *Poaceae* (6-14, 46), *Salicaceae* (47), *Scrophulariaceae* s.l. (27) and *Valerianaceae* (28, 29).

The publication includes contributions by: E. Axiotis, Kit Tan & M. Axiotis (1); M. Aybeke (2-14), B. Biel & Kit Tan (15-31); V. Ioannidis, D. Doulkeridou & A. Strid (32-47); K. Lakovski (48); K. Polymenakos, Kit Tan & V. Pantavos (49-53); G. Zarkos & Kit Tan (54).

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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.

## Report 1

### Evangelos Axiotis<sup>1</sup>, Kit Tan<sup>2</sup> & Makis Axiotis<sup>3</sup>

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### Hyacinthaceae

#### 1. *Muscari commutatum* Guss. (Figs. 1 & 2)

**Gr** Nomos Lesvou, Eparchia Mitilinis: E of village Moria, olive grove, on limestone, 50 m, 39°07'53.03"N, 26°31'14.53"E, 29.03.2022, *Axiotis* AXL101(herb. Axiotis); S of village Pirgi, olive grove, on limestone, sea level, 39°05'33.15"N, 26°31'4.29"E, 30.03.2022, *Axiotis* AXL102 (herb. Axiotis); N of village Loutra, olive grove, on limestone, sea level, 39°03'20.73"N, 26°30'48.18"E, *Axiotis* obs.

— Eparchia Plomariou: E of village Plomari, in opening of *Pinus halepensis* subsp. *brutia* woodland, on slate, 400 m, 39°04'22.08"N, 26°17'32.79"E, *Axiotis* obs.; N of village Vrisa, in opening of *Pinus halepensis* subsp. *brutia* woodland, on serpentine, 200 m, 39°03'1.55"N, 26°14'16.94"E, *Axiotis* obs.



**Fig. 1.** *Muscari commutatum*, white-flowered form (photo E. Axiotis).

These are white-flowered forms of *Muscari commutatum*, a species easily recognized by its fertile flowers blackish-violet throughout or violet at base and blackish towards apex, with angular shoulders and blackish-violet teeth. The perianth in these forms is ivory white suffused pale green or pale pink but dark blue pigment is absent. The plants were recently noted on the island of Lesvos by E. and M. Axiotis. In one locality *ca.* 50 individuals were found growing together with 200 individuals of the typical form. This locality (no. 1 in Fig. 2) is a limestone quarry. The other four sites indicated on the map had only a few (2-3) white-flowered plants, without any of the typical form present. The habitat and ecology of *M. commutatum* on Lesvos is here provided – open *Pinus halepensis* subsp. *brutia* woodland, *Cistus-Lavandula stoechas* phrygana, olive groves, stony terraced and fallow fields, roadsides, on limestone, serpentine, slate or schist, from sea level to 400 m. Flowering late March to April.

The white-flowered form is known commercially as *Muscari commutatum* 'album' and available from several specialist suppliers of seed and bulb plants. It is sold vegetatively cloned from a white-flowered form first collected from the Peloponnese by A. Strid in 1987: Nomos Achaïas, Eparchia Egialias: E of village Achlada, abandoned fields and olive groves in opening of *Pinus halepensis* forest, 400 m (cult. GB).



**Fig. 2.** Distribution of *Muscari commutatum*, white-flowered form on Lesvos.

In the original gathering from the Peloponnese the plants were found gregarious in a small area without any individuals of the typical form present. They have never been recognized at the taxonomic rank of subspecies or variety as, except for the flower colour, there seem to be no taxonomic characters separating from typical *M. commutatum*. As far as we know the name exists only in seed and bulb catalogues and is not recognized formally as a cultivar name. Probably some recessive gene is responsible as noted in albino forms. The distribution of such plants in Greece is scattered with individuals occurring here and there, independent of each other without any geographical pattern.

## Reports 2–14

### Mehmet Aybeke

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This is a report of 13 new records belonging to different families from European Turkey.

### Asteraceae

#### 2. *Centaurea cyanus* L.

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy-Pınarhisar, 1<sup>st</sup> km, 260 m, 41°49'02.4"N, 27°44'57.4"E, 02.07.1989, coll. & det. C. Yarcı (EDTU 4200).

A new species for A1(E) Kırklareli in European Turkey. According to Wagenitz (1975), this taxon was encountered in A1(E) Edirne and A2(E) Istanbul.

### Fabaceae

#### 3. *Trifolium nigrescens* Viv. subsp. *petrisavii* (Clem.) Holmboe

**Tu(E)** A1(E) Kırklareli: Demirköy, İğneada, around lake Mert, 15 m, 41°51'52.1"N, 27°58'25.0"E, 03.09.1988, coll. C. Yarcı, det. M. Aybeke (EDTU 2482).

A new species for A1(E) Kırklareli in European Turkey. According to Zohary (1970), this taxon was known in A1(E) Edirne and A2(E) Istanbul.

#### 4. *Trifolium repens* L. var. *repens*

**Tu(E)** A1(E) Kırklareli: Demirköy, 252 m, 41°49'30"N, 27°45'35"E, 02.07.1988, coll. & det. C. Yarcı (EDTU 2261); environments of Kocatarla village, in an open field, 313 m, 41°56'43"N, 27°02'42"E, 09.05.1996, coll. & det. C. Yarcı, appr. M. Aybeke, (EDTU 7158).

A new species for A1(E) Kırklareli in European Turkey. According to Zohary (1970), this taxon was known only in A2(E) Istanbul.

#### 5. *Vicia villosa* Roth subsp. *eriocarpa* (Hausskn.) P. W. B

**Tu(E)** A1(E) Kırklareli: Demirköy, between Demirköy-Pınarhisar, 1<sup>st</sup> km, 260 m, 41°49'02.4"N, 27°44'57.4"E, 02.07.1989, coll. & det. C. Yarcı (EDTU 4206).

A new species for A1(E) Kırklareli in European Turkey. According to Plitmann (1970), this taxon occurred in A1(E) Edirne and A2(E) Istanbul.

### Poaceae

#### 6. *Alopecurus geniculatus* L.

**Tu(E)** A1(E) Kırklareli: around Çağlayan village, in a forest clearing, on moist soil, 508 m, 42°01'59"N, 27°20'46"E, 19.06.1996, coll. & det. C. Yarcı (EDTU 7055).

A new species for A1(E) Kırklareli in European Turkey. According to Doğan (1985), this taxon was familiar only in A1(E) Çanakkale.

#### 7. *Cynosurus echinatus* L.

**Tu(E)** A1(E) Kırklareli: between Dereköy-Kırklareli, 5<sup>th</sup> km, 503 m, Hediye Bayırı location, in a mixed forest, 41°54'26.0"N 27°22'07.5"E, 12.07.1997, coll. & det. C. Yarcı (EDTU 7235).

A new species for A1(E) Kırklareli in European Turkey. According to Mill (1985), this taxon was known in A1(E) Tekirdağ and A2(E) Istanbul.

#### 8. *Dactylis glomerata* subsp. *hispanica* (Roth.) Nyman

**Tu(E)** A1(E) Kırklareli: environments of Ahmetler village, in a mixed forest, 764 m, 42°01'56"N, 27°13'26"E, 27.06.1997, coll. & det. C. Yarcı (EDTU

7094); between Kocayazı – Kula villages, 5<sup>th</sup> km, in a mixed forest, 630 m, 41°58'59.4"N, 27°15'04.1"E, 09.07.1996, coll. & det. C. Yarcı (EDTU 7157).

A new species for A1(E) Kırklareli in European Turkey. According to Davis (1985), this taxon was reported from A1(E) Tekirdağ and A2(E) Istanbul.

#### 9. *Festuca heterophylla* Lam.

**Tu(E)** A1(E) Kırklareli: between Kocayazı – Kula villages, 5<sup>th</sup> km, in a *Quercus* forest, 630 m, 41°58'59.4"N, 27°15'04.1"E, 09.07.1997, coll. & det. C. Yarcı (EDTU 7153).

A new species for A1(E) Kırklareli in European Turkey. According to Markgraf-Dannenberg (1985), this taxon was known only in A2(E) Istanbul.

#### 10. *Melica ciliata* subsp. *transsilvanica* (Schur) Husnot

**Tu(E)** A1(E) Kırklareli, between Tatlıpınar-Topçular villages, 2<sup>nd</sup> km, on dry land, 502 m, 42°03'01.4"N, 27°07'20.7"E, 03.07.1996, coll. & det. C. Yarcı (EDTU 7060).

A new species for A1(E) Kırklareli in European Turkey. According to Davis (1985), this taxon was familiar only from A2(E) Istanbul.

#### 11. *Poa annua* L.

**Tu(E)** A1(E) Kırklareli: environments of Çağlayık village, in a forest clearing, on sandy soil, 508 m, 42°01'59"N, 27°20'46"E, 19.06.1996, coll. & det. C. Yarcı (EDTU 7112).

A new species for A1(E) Kırklareli in European Turkey. According to Edmonson (1985), this taxon was familiar from A1(E) Tekirdağ and A2(E) Istanbul.

#### 12. *Poa bulbosa* L.

**Tu(E)** A1(E) Kırklareli: environments of Karaabalar village, in a forest clearing, on rocky slope, 365 m, 42°04'09"N, 27°17'20"E, 24.09.1996, coll. & det. C. Yarcı (EDTU 7044).

A new species for A1(E) Kırklareli in European Turkey. According to Markgraf-Dannenberg (1985), this taxon was reported from A1(E) Edirne and A2(E) Istanbul.

#### 13. *Poa infirma* Kunth

**Tu(E)** A1(E) Kırklareli: environments of Ahmetler village, in open field, 764 m, 42°01'56"N, 27°13'26"E, 27.06.1997, coll. & det. C. Yarcı (EDTU 7095).

A new species for A1(E) Kırklareli in European Turkey. According to Edmonson (1985), this taxon was known from A1(E) Canakkale and A2(E) Istanbul.

#### 14. *Poa trivialis* L.

**Tu(E)** A1(E) Kırklareli: between Kocayazı – Kula villages, 5<sup>th</sup> km, in a mixed forest, 630 m, 41°58'59.4"N, 27°15'04.1"E, 09.07.1996, coll. & det. C. Yarcı (EDTU 7156).

A new species for A1(E) Kırklareli in European Turkey. According to Edmonson (1985), this taxon was known from A1(E) Tekirdağ and A2(E) Istanbul.

## Reports 15–31

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

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This is the sixth report of new plant-records for the island of Milos (phytogeographical region Kiklades, Nomos Kikladon, Eparchia Milou) based on visits in November 2021 and February/March/April 2022. The 17 records listed are new for the island unless otherwise stated. Four 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 87. Occurrence on the other Kikladean islands is briefly summarized.

### Aspleniaceae

#### 15. *Asplenium ruta-muraria* L.

**Gr** Nomos Kikladon, Eparchia Milou: N-NW of Profitis Ilias, crevices in steep N-exposed cliffs, 280 m, 36°41'N, 24°22'E, 31.03.2022, Biel 22.072.

In Kiklades, only once reported as a field note from the island of Kea.

**Isoetaceae****16. *Isoetes phrygia*** (Boiss.) Hausskn. (Fig. 3)

**Gr** Nomos Kikladon, Eparchia Milou: NW of Emborios “Limnari”, pond in open *Juniperus* woodland, 75 m, 36°44’N, 24°21’E, 05.04.2022, *Biel* 22.132.

Confirming a record from a swampy area at low altitude, 2 km E-NE of Psatadika (*Runemark* 51782, LD), originally identified as *I. velata* A. Braun.

**Apiaceae****17. *Coriandrum sativum*** L.

**Gr** Nomos Kikladon, Eparchia Milou: N of Profitis Ilias, olive terraces with phrygana below Ag. Pandeimonas, 160 m, 36°41’N, 24°22’E, 10.04.2022, *Biel* 22.177.

New for the Kiklades.

**18. *Torilis africana*** Spreng. [syn.: *T. arvensis* subsp. *purpurea* (Ten.) Hayek]

**Gr** Nomos Kikladon, Eparchia Milou: N of Profitis Ilias, olive terraces with phrygana below Ag. Pandeimonas, 160 m, 36°41’N, 24°22’E, 10.04.2022, *Biel* 22.178.

Confirming report by *Runemark* (no. 51918, LD). Occurring on several other islands in the Kiklades.



**Fig. 3.** *Isoetes phrygia* (photo B. Biel).

**Asteraceae****19. *Leontodon saxatilis*** Lam. (Figs. 4 & 5)

**Gr** Nomos Kikladon, Eparchia Milou: Plakes, road margins, walls, waste places between houses, 150 m, 36°44’48”N, 24°25’48”E, 23.11.2021, *Biel* 21.245; *loc. ibid.*, 07.02.2022 *Biel* 22.491; NE of Plakes, terraced phrygana slope above valley, 105 m, 36°44’55”N, 24°25’58”E, 23.11.2021, *Biel* 21.246; SE of Adamas, road margin at Kanava, 15 m, 36°42’N, 24°28’E, 28.03.2022, *Biel* 22.048.

New for the Kiklades, found in three localities in the north and central parts of the island. According to Euro+Med PlantBase this name is synonymous with *L. taraxacoides* (Vill.) Mérat and we had published the record under the latter name with the comment “The identity of the plants from Milos thus awaits further investigation” (*Biel & Tan* 2021: 376). In February and March 2022 plants with ripe fruits were collected which were readily recognized by the presence of dimorphic inner and outer achenes. The identification



**Fig. 4.** *Leontodon saxatilis* (photo B. Biel).

was also confirmed by the absence of tuberous roots. *Leontodon tuberosus* L. is widely distributed on Milos; it also has dimorphic achenes but tuberous roots. Here the outer achenes are mostly straight, unbeaked or with a very short beak, and with a brush-like pappus of hairs less than 1 mm in length.

As seen from the map (Fig. 5), in Greece *L. saxatilis* has only been reported from the Ionian islands. Milos! A sight to brighten the eyes and gladden the hearts of hungry birds flying in from afar on a south-eastern route from C Europe to Cyprus and onwards to Africa or SW Asia. The island is an important stopover point for passage migrants every autumn and spring, with more than a 100 bird species recorded.

So our birds stopped to rest and refuel, preening and shaking their feathers before continuing on their journey, with *Leontodon* seeds left behind. This scenario may explain the distribution gap for the rest of Greece. The species was reported as new for Bulgaria as recently as 2005 (Dimitrova & al. 2005), with subsequent sightings up to 2021 (Kunev 2021).

### **Berberidaceae**

#### **20. *Leontice leontopetalum* L. subsp. *leontopetalum* (Fig. 6)**

**Gr** Nomos Kikladon, Eparchia Milou: E-SE of Adamas, uncultivated field below road saddle, 75 m, 36°43'N, 24°28'E, 27.03.2022, Biel 22.037.

First record from W Kiklades. In Greece, *Leontice* occurs mainly in the east including the Aegean islands. It has been reported from the islands of Amorgos, Andros, Astipalea, Folegandros, Naxos, Paros, Siros and Tinos; some of these are old reports and have not



**Fig. 5.** Distribution map of *Leontodon saxatilis* in Greece.



**Fig. 6.** Large population of *Leontice leontopetalum* in uncultivated field (photo B. Biel).

been recently confirmed. S. Meyer (Göttingen) kindly informed us of the existence of *Leontice* on Milos as noted by him in April 2017. Biel had also noted populations S of Pachena, near Agrilies, N and W of Zefiria.

**Caryophyllaceae****21. *Illecebrum verticillatum* L.** (Fig. 7)

**Gr** Nomos Kikladon, Eparchia Milou: SE of Emborios, in pool flooded in spring time, 90 m, 36°41'N, 24°25'E, 08.04.2022, *Biel* 22.160.

This is a form with prostrate, rooting stems up to 50 cm in length and fully aquatic, floating in water. The typical terrestrial form, with up to 10 cm long stems, occurs on seasonally damp ground in meadows and other wet areas nearby. Rare and scattered in Greece; in the Kiklades occurring on Naxos, Paros and Serifos. Previously noted in 2020 and 2021.

**Fabaceae****22. *Hippocrepis unisiliquosa* L.**

**Gr** Nomos Kikladon, Eparchia Milou: W of Ag. Marina, phrygana at edge of dirt track, 130 m, 36°41'N, 24°23'E, 02.04.2022, *Biel* 22.100.

Mainly in S Kiklades (Amorgos, Anafi, Folegandros and Sikinos).

**23. *Medicago ciliaris* (L.) All.**

**Gr** Nomos Kikladon, Eparchia Milou: W of Kato



**Fig. 7.** *Illecebrum verticillatum* (photo B. Biel).

Komia, edge of field above river valley, 70 m, 36°43'N, 24°31'E, 06.04.2022, *Biel* 22.144; E of Zefiria, S of Katsoulis, pasture with olive trees, 200 m, 36°41'N, 24°31'E, 07.04.2022, *Biel* 22.151.

Central Kiklades (Paros and Naxos), mainly in coastal or cultivated fields at low altitudes.

**24. *Trifolium suffocatum* L.**

**Gr** Nomos Kikladon, Eparchia Milou: NW of Emborios “Limnari”, on pasture near pond in open *Juniperus* woodland, 75 m, 36°44'N, 24°21'E, 05.04.2022, *Biel* 22.131.

Widespread in Kiklades except in the SW.

**Geraniaceae****25. *Geranium tuberosum* L.** (Fig. 8)

**Gr** Nomos Kikladon, Eparchia Milou: N of Zefiria, edge of wet field with low wall by dirt road, 20 m, 36°43'N, 24°29'E, 27.03.2022, *Biel* 22.039; W-NW of Zefiria, ditch at edge of wet field, 10 m, 36°42'N, 24°29' E, 09.04.2022, *Biel* 22.169; W-NW of Zefiria, two large fallow fields by main road, 15 m, 36°42'N, 24°28'E, *Biel* obs. (photos).

New for the Kiklades. Large populations of more than 500 plants in three localities, in fallow and uncultivated fields together with *Leontice leontopetalum* and *Adonis microcarpa*. Surprisingly, the species had never been previously noted on the island although present in sizable quantity (see Fig. 8, a large field with *ca.* 200 *Leontice* plants and *ca.* 500 *Geranium* plants). It differs from *G. macrostylum* by its eglandular-hairy



**Fig. 8.** Large population of *Geranium tuberosum* in uncultivated field (photo B. Biel).

pedicels, absence of cauline leaves, smaller sepals and petals. The small reddish-brown tubers were buried to a depth of 20 cm which required some digging.

#### **Lamiaceae**

##### **26. *Mentha aquatica* L.**

**Gr** Nomos Kikladon, Eparchia Milou: S border of Pollonia, stream bed with concrete walls, 8 m, 36°45'N, 24°31'E, 01.04.2022, *Biel* 22.094.

Reported from the islands of Naxos, Denousa and Tinos.

#### **Scrophulariaceae**

##### **27. *Veronica praecox* All.**

**Gr** Nomos Kikladon, Eparchia Milou: N of Profitis Ilias, stony phrygana at cliffs near Ag. Georgios, 160 m, 36°41'N, 24°23'E, 05.04.2022, *Biel* 22.138; N of Paliochori, sandy pasture near Panagia Eleousa, 140 m, 36°41'N, 24°31'E, 07.04.2022, *Biel* 22.149.

New for the Kiklades.

#### **Valerianaceae**

##### **28. *Valerianella discoidea* (L.) Loisel.**

**Gr** Nomos Kikladon, Eparchia Milou: NW of Chivadolimni, open seasonally wet, stony phrygana near Ag. Konstantinos, 20 m, 36°41'N, 24°26'E, 31.03.2022, *Biel* 22.077; SE of Pollonia, steep rocky phrygana slope of Vouidia, 60 m, 36°45'N, 24°31'E, 01.04.2022, *Biel* 22.093; W of Pollonia, phrygana on Gounada hill, 20 m, 36°45'N, 24°31'E, 01.04.2022, *Biel* 22.095; SE of Emborios, pasture with phrygana at dirt track, 20 m, 36°41'N, 24°24'E, 02.04.2022, *Biel* 22.105; NW of Emborios "Limnari", on pasture near pond in open *Juniperus* woodland, 75 m, 36°44'N, 24°21'E, 05.04.2022, *Biel* 22.129; N of Paliochori, pasture with phrygana on steep ridge, 60 m, 36°40'N, 24°31'E, 07.04.2022, *Biel* 22.148.

Widespread and almost throughout Kiklades. Noted in several other places on Milos.

##### **29. *Valerianella microcarpa* Loisel.**

**Gr** Nomos Kikladon, Eparchia Milou: NW of Emborios "Limnari", on pasture near pond in open *Juniperus* woodland, 75 m, 36°44'N, 24°21'E, 05.04.2022, *Biel* 22.130; N of Profitis Ilias, open

pasture slopes with *Juniperus*, 170 m, 36°41'N, 24°22'E, 10.04.2022, *Biel* 22.179; N-NE of Profitis Ilias, phrygana slope between dirt tracks, 180 m, 36°41'N, 24°23'E, 10.04.2022, *Biel* 22.181.

On several islands in the Kiklades (Amorgos, Anafi, Andros, Naxos, Paros and Serifos). Identification confirmed by material re-collected with ripe fruits.

#### **Iridaceae**

##### **30. *Romulea columnae* Sebast. & Mauri**

**Gr** Nomos Kikladon, Eparchia Milou: W of Adamas, grassy places by dirt road on Nichia plain, 120 m, 36°43'N, 24°26'E, 26.03.2022, *Biel* 22.515; N of Ag. Marina, pasture next to Rivari lagoon, 1 m, 36°42'N, 24°24'E, 02.04.2022, *Biel* 22.028.

N and C Kiklades (Amorgos, Andros, Dilos, Mikonos, Naxos, Sikinos), also on the neighbouring island of Kimolos. Several localities and large populations of ca. 200 plants in full flower were found. Occurring in south and central mainland Greece, Kriti, Kiklades, North and East Aegean islands.

##### **31. *Romulea linaresii* subsp. *graeca* Bég.**

**Gr** Nomos Kikladon, Eparchia Milou: E-NE of Provatas, Fyriplaka crater, in phrygana with *Pistacia* and at edge of dirt track near a farm, 110 m, 36°40'N, 24°28'E, 12.02.2022, *Biel* obs. (photo); *loc. ibid.*, 29.03.2022, *Biel* 22.051.

In fruit. Confirming an old record by C. Leonis, 'Cycladum insula Melos', as cited in Halácsy (1904).

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

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## **Reports 32–47**

### **Vassilis Ioannidis<sup>1</sup>, Despina Doulkeridou<sup>1</sup> & Arne Strid<sup>2</sup>**

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The following records are new for nomos Kilkis in northcentral/northeast Greece.



**Apiaceae****32. *Ferula communis* L. subsp. *communis***

**Gr** Nomos Kilkis, eparchia Paeonias: dried lake Artzan, agricultural and ruderal habitats, 66 m, 41°05'18.37"N, 22°42'3.33"E, 22.07.2021, *Ioannidis* obs.

**33. *Seseli arenarium* M. Bieb.**

**Gr** Nomos Kilkis, eparchia Kilkis: near the village of P. Gynaikokastro, agricultural and ruderal habitats, 176 m, 40°58'23.35"N, 22°44'37.55"E, 03.11.2012, *Ioannidis* obs.

**Asteraceae****34. *Jacobaea erratica* (Bertol.) Fourr.**

**Gr** Nomos Kilkis, eparchia Paeonias: near the town of Goumenissa, freshwater habitats, 238 m, 40°56'58.22"N, 22°26'44.85"E, 18.09.2012, *Ioannidis* obs.

**35. *Centaurea alba* L.**

**Gr** Nomos Kilkis, eparchia Kilkis: Mpelles mt, high mountain vegetation, 1500 m, 41°20'02.97"N, 22°49'34.86"E, 18.07.2021, *Ioannidis* obs.

Not identified to subspecies.

**Campanulaceae****36. *Campanula bononiensis* L.**

**Gr** Nomos Kilkis, eparchia Paeonias: near the village of Koupa, woodland and scrub, 369 m, 41°3'58.33"N, 22°22'56.89"E, 22.07.2021, *Ioannidis* obs.

**Caryophyllaceae****37. *Atocion armeria* (L.) Raf. [syn.: *Silene armeria* L.]**

**Gr** Nomos Kilkis, eparchia Kilkis: Mpelles mt, high mountain vegetation, 1177 m, 41°19'24.37"N, 22°48'27.59"E, 18.07.2021, *Ioannidis* obs.

**Chenopodiaceae****38. *Salicornia perennans* Willd. subsp. *perennans***

**Gr** Nomos Kilkis, eparchia Kilkis: salt lake Pikrolimni, coastal habitats, 45 m, 40°50'41.85"N, 22°48'14.07"E, 02.06.2017, *Ioannidis* obs.

New for floristic region North East.

**Crassulaceae****39. *Sedum amplexicaule* subsp. *tenuifolium* (Sm.) Greuter**

**Gr** Nomos Kilkis, eparchia Kilkis: Eptalofos village, Krussia mt, temperate and submediterranean grasslands, 247 m, 40°59'27.5"N, 22°57'46.94"E, 16.05.2013, *Ioannidis* obs.

**40. *Sedum annuum* L.**

**Gr** Nomos Kilkis, eparchia Kilkis: Mpelles mt, woodland and scrub, 561 m, 41°18'37.05"N, 22°49'26.6"E, 14.06.2015, *Ioannidis* obs.

**Fagaceae****41. *Quercus ilex* L.**

**Gr** Nomos Kilkis, eparchia Paeonias: Karpi village, woodland and scrub, 666 m, 40°59'49.85"N, 22°23'55.74"E, 11.09.2016, *Ioannidis* obs.

**Lamiaceae****42. *Betonica officinalis* L. subsp. *officinalis***

**Gr** Nomos Kilkis, eparchia Kilkis: Mpelles mt, woodland and scrub, 1517 m, 41°20'6.45"N, 22°49'29.29"E, 18.07.2021, *Ioannidis* obs.

**43. *Origanum vulgare* subsp. *viridulum* (Martrin-Donos) Nyman**

**Gr** Nomos Kilkis, eparchia Kilkis: Mpelles mt, woodland and scrub, 749 m, 41°18'45.03"N, 22°48'39.19"E, 18.07.2021, *Ioannidis* obs.

**Malvaceae****44. *Hibiscus trionum* L.**

**Gr** Nomos Kilkis, eparchia Paeonias: Limnotopos village, agricultural and ruderal habitats, 23 m, 40°57'41.81" N, 22°39'7.49" E, 13.09.2021, *A. Grigoriadou* obs.

**45. *Malva setigera* Schimp. & Spenn.**

**Gr** Nomos Kilkis, eparchia Paeonias: Kastaneri, woodland and scrub, 964 m, 40°58'31.79"N, 22°21'44.3"E, 29.05.2017, *Ioannidis* obs.; Kamila mt, 491 m, 40°49'51"N, 22°57'40"E, 20.05.2018, *Ioannidis* obs.

**Poaceae**

46. *Tripidium ravennae* (L.) H. Scholz subsp. *ravennae* [syn.: *Saccharum ravennae* (L.) Murray]

**Gr** Nomos Kilkis, eparchia Kilkis: near Kolxida village, temperate and submediterranean grasslands, 126 m, 40°56'19.79"N, 22°54'29.78"E, 10.09.2011, *Ioannidis* obs.

**Salicaceae**

47. *Salix triandra* L. subsp. *triandra*

**Gr** Nomos Kilkis, eparchia Paeonias: Axios river, freshwater habitats, 22 m, 40°55'11.96"N, 22°36'34.49"E, 26.04.2019, *Ioannidis* obs.

**Acknowledgement.** We thank Dr Kit Tan (Copenhagen) for kindly checking and correcting the text.

**Report 48****Krasimir Lakovski**

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**Aspleniaceae**

48. *Asplenium lepidum* C. Presl (Fig. 9)

**Bu** Forebalkan (*Western*): Vrachanski Balkan Nature Park, Kobilini Steni locality, on a rock cliff with S-SE exposure, 1396 m, 43°08'N, 23°28'E, 31.10.2021, *K. Lakovski* obs. (photos); *loc. ibid.*, 07.11.2021, *K. Lakovski* obs. (photos).

The new population comprised only about 30 individuals and covered 10–12 m<sup>2</sup> on two side walls of a small niche. All plants grew at height between 1 and 2.5 m on monolithic limestone in small holes and cracks (Fig. 10). The accompanying species were *Asplenium trichomanes* and *A. ruta-muraria*. There were about 10 well-developed adult plants with sori. Most of the other individuals were young plants with few leaves and without sori. The plants were smaller, with narrower pinnules, apparently cut up deeper than the segments of plants from the other known population in Vrachanski Balkan. This could be explained with the higher altitude and more exposed habitat.

Anywhere in its area, *A. lepidum* was uncommon and localized species, with small and severely fragmented populations (Brownsey 1976). The species was evaluated as Critically Endangered at national level (Ivanova 2015). So far, there has been only one present locality in Bulgaria, with some data on it and consecutive observations – in Western Forebalkan, near St. Ivan Pusti Monastery, close to Vratsa town (with two subpopulations on limestone rocks, at a distance only of 140 m from each other, SOA 258 – 03.09. 1935, *B. Stefanov*; SOM 155166 – 03.09.1998, *D. Ivanova*). The new population was 12.5 km away from that known locality, on the opposite slope of the mountain.



Fig. 9. *Asplenium lepidum* (photo K. Lakovski).



Fig. 10. *Asplenium lepidum* in limestone rock cracks (photo K. Lakovski).

The earlier observations of *A. lepidum* in Bulgaria were: SOM 583 – 30.05.1926, N. Stojanov: In saxosis calcareis mt. Vratza – Balkan, ad stationem Lakatnik, Western Stara Planina floristic region;

SOA 257 – 30.05.1926, N. Stojanov: on limestone rocks above Lakatnik, Western Stara Planina (Stojanov & Stefanov 1927);

SOM 157583 – 25.05.1968, V. Velčev: Mt Vratza, Stoyanovo village, on open limestone rocks, Western Forebalkan.

All these three observations were made on the territory of Vrachanski Balkan Nature Park. However, none of these data has been supported with second observation.

There have been two more reports of this species in Bulgaria but the mentioned localities did not correspond to the known climatic conditions and altitude for the species. The researches in the region did not confirm the presence of *A. lepidum*, only of *A. ruta-muraria*. Thus, identification of *A. lepidum* there has been most probably erroneous:

SO 103760 – 25.10.2005, D. Pavlova: Muselievo village, Kamaka locality, in a rocky wreath, Danubian Plain; Tarnovo, on rocks near St. Troica Monastery (Urumov 1904, without specimens in the Bulgarian herbaria).

## Reports 49–53

### Kostas Polymenakos<sup>1</sup>, Kit Tan<sup>2</sup> & Vasilis Pantavos<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).

### Asteraceae

#### 49. *Ambrosia maritima* L.



**Fig. 11.** *Hieracium racemosum* subsp. *crinitiforme* specimen from Mt Iti with capitula and achenes.

**Gr** Nomos & Eparchia Samou: island of Samos, bay of Psili Ammos, 1.5 km NE of Limnionas, sand dunes with *Ipomoea imperati*, *Trigonella spruneri-ana*, 1 m, 37°42'N, 26°38'E, 28.09.2021, *Pantavos* 6 (ATH; conf. Kit Tan, March 2022).

New for Samos. Reported for Rodos and Tilos in the East Aegean islands.

**50. *Hieracium racemosum*** Willd. subsp. *crinitiforme* (Fig. 11)

**Gr** Nomos & Eparchia Fthiotidos: Mt Iti, along road between Pavliani and Nea Pavliani, damp places at edge of *Abies* woodland, limestone, 950 m, 38°44'N, 22°20'E, 09.09.2018, *Polymenakos* & *Kofinas* 654 (ATH; det. G. Gottschlich, March 2022).

— Nomos Fokidos, Eparchia Doridos: Mt Vardousia, 1 km NW of Athanasios Diakos, along the forest road to Profitis Ilias, roadsides, 38°42'N, 22°10'E, 27.08.2020, *Polymenakos* 1086 (ATH; conf. G. Gottschlich, March 2022).

New for nomi, eparchies and floristic region Sterea Ellas.

### **Chenopodiaceae**

**51. *Oxybasis chenopodioides*** (L.) S. Fuentes & al.

**Gr** Nomos Viotias, Eparchia Thivon: eastern edge of Lake Yliki, 2.6 km SW of village Mouriki, muddy patches at dry margins of lake, with *Glinus lotoides*, limestone, 80 m, 38°25'N, 23°19'E, 20.11.2021, *Polymenakos* & *Pantavos* 1132 (ATH; conf. Kit Tan, March 2022).

— Nomos Evvias, Eparchia Karystias: northeastern edge of Lake Distos, muddy patches at lake margin, limestone, 20 m, 38°21'N, 24°07'E, 28.11.2021, *Polymenakos*, *Pantavos* & *Kofinas* 1133 (ATH; conf. Kit Tan, March 2022).

*Polymenakos* & *Pantavos* 1132 is new for nomos and eparchia and the second report for floristic region Sterea Ellas. *Polymenakos* & al. 1133 is new for Evvia and the West Aegean islands.

### **Plumbaginaceae**

**52. *Limonium hirsuticalyx*** Pignatti

**Gr** Nomos & Eparchia Samou: island of Samos,

bay of Mikale, 3.4 km S of Paleokastro, gravelly sea shore, 37°42'N, 27°02'E, 01.10.2021, *Pantavos* 7 (ATH); *loc. ibid.*, 28.09.2021, *Polymenakos* s.n. (flowering and fruiting spikes).

New for Samos. Common at sea shore and adjacent salt marshes.

**53. *Limonium kirikosicum*** Erben & Brullo

**Gr** Nomos & Eparchia Samou: island of Samos, E of village Kambos Vourlioton, stony sea shore, limestone, 1 m, 37°48'N, 26°50'E, 24.08.2021, *Polymenakos* & *Pantavos* 1129 (ATH).

New for Samos. *Limonium kirikosicum* is not closely related to *L. roridum* (Sm.) Brullo & Guarino but has more similarities to *L. virgatum*. The inner bract is glabrous (vs. hairy in *roridum*), the stems verrucose (vs. tuberculate with crateriform glands) and the leaves green and smooth (vs. glaucous and tuberculate).

**Acknowledgement.** Dr Günter Gottschlich (Tübingen) is thanked for the identification and confirmation of the *Hieracium racemosum* specimens.

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## **Report 54**

**George Zarkos<sup>1</sup> & Kit Tan<sup>2</sup>**

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### **Brassicaceae**

**54. *Coronopus didymus*** (L.) Sm. [syn.: *Lepidium didymum* L.] (Figs. 12 & 13)

**Gr** Nomos & Eparchia Korinthias: port of Corinth, sidewalk between reinforced concrete and pavement slabs, 6 m, 37°56'N, 22°56'E, 31.03.2022, *Zarkos* obs. (photos).

New for nomos and eparchia. Native to S America, naturalized in Europe. More than 30 plants were noted, well-established, with probably larger numbers in the near vicinity. In Greece, *C. didymus* occurs mainly in coastal ruderal and disturbed habitats such as waste ground near harbours, often forming large, luxuriant



but non-invasive populations. It was even found in flower beds of schools in towns. Most plants have pilose-pubescent stems but the completely glabrous form is also encountered. They are easily distinguished from *C. squamatus* (Forssk.) Asch., which has been reported only once in Korinthias, by their didymous siliculae reticulate at maturity and small white petals shorter than the sepals. The earliest record of *C. didymus* as documented in Greece appears to be a collection by Bornmüller from the island of Zakynthos in May 1926.

Fig. 12. *Coronopus didymus* (photo G. Zarkos).



Fig. 13. Distribution of *Coronopus didymus* in Greece.

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