

New floristic records in the Balkans: 39*

Compiled by **Vladimir Vladimirov¹, Mehmet Aybeke² & Kit Tan³**

¹ Department of Plant and Fungal Diversity and Resources, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, e-mail: vladimir_dv@abv.bg

² Department of Biology, Faculty of Science, University of Trakya, 22030 Edirne, Turkey, e-mail: mehmetaybeke@yahoo.com

³ Institute of Biology, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark, e-mail: kitt@bio.ku.dk

Abstract: New chorological data are presented for 117 species and subspecies from Albania (97-99), Bulgaria (79-87, 108), Greece (10-78, 88-96, 100-107, 109-117), and Turkey-in-Europe (1-9). The taxa belong to the following families: *Acanthaceae* (37), *Alliaceae* (22, 57-61), *Amaryllidaceae* (31, 62, 63, 116), *Apiaceae* (88), *Asphodelaceae* (117), *Asteraceae* (10-13, 79-81, 89, 96, 100, 107, 110), *Betulaceae* (2), *Boraginaceae* (97), *Cactaceae* (25), *Campanulaceae* (90), *Caryophyllaceae* (91, 111), *Celastraceae* (92), *Colchicaceae* (64-68), *Crassulaceae* (26), *Cyperaceae* (106), *Equisetaceae* (1), *Fabaceae* (14, 27, 82, 101, 102, 112-114), *Gentianaceae* (15), *Geraniaceae* (98), *Hyacinthaceae* (32, 69-72), *Iridaceae* (33, 34, 73-76), *Lamiaceae* (28, 29, 93), *Liliaceae* (77, 78, 87, 108), *Linaceae* (16, 38-41), *Malvaceae* (3-7), *Ophioglossaceae* (109), *Orchidaceae* (35), *Poaceae* (23, 24), *Polygalaceae* (94), *Polygonaceae* (83, 84), *Primulaceae* (8), *Ranunculaceae* (17, 99), *Rosaceae* (18), *Rubiaceae* (19, 104), *Salicaceae* (9, 85), *Saxifragaceae* (95), *Scrophulariaceae* s.l. (30, 42-47, 105), *Solanaceae* (48), *Tamaricaceae* (103), *Typhaceae* (36), *Ulmaceae* (86), *Valerianaceae* (20), *Veronicaceae* (49-52), and *Violaceae* (21, 53-56, 115).

New species for science are: *Galium corinthiacum* (104) and *Scorzonera lafranchisiana* (107).

A new status is proposed: *Centaurea promota* (100).

Scorzonera doriae Degen & Bald. is lectotypified (report 107).

The publication includes contributions by: M. Aybeke (1-9); M. Chasapis, D.A. Samaras, K. Theodoropoulos, E. Eleftheriadou & Kit Tan (10-24); K. Giannopoulos, Kit Tan & G. Vold (25-36); V. Ioannidis, D. Doulkeridou, K. Koutis & A. Strid (37-78); T. Karakiev (79-87); G. Kofinas & Kit Tan (88-95); T. Samaras, G. Hatzakos, Kit Tan & G. Vold (96); L. Shuka, B. Hallaçi & Kit Tan (97-99); A. Strid (100-103); A. Strid & Kit Tan (104); K. Sutorý (105-106); Kit Tan & G. Vold (107); A. Tashev (108); G. Zarkos, V. Christodoulou, Kit Tan & G. Vold (109-117).

This is an ongoing report in the series dealing with the new chorological data on vascular plants in the Balkans. For details on the presentation of information, see *Phytologia Balcanica*, vol. 12(1), pp. 107-108 and vol. 12(2), p. 279.

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

Reports 1–9

Mehmet Aybeke

Department of Biology, Faculty of Science, University of Trakya, Balkan Campus, 22030 Edirne, Turkey,
e-mail: mehmetaybeke@yahoo.com

Equisetaceae

1. *Equisetum arvense* L.

Tu(E) A1(E) Kırklareli: Demirköy, lake Mert, in a longos forest, 0 m, 41°51'45.6"N, 27°58'27.3"E, 03.09.1989, coll. & det. C. Yarcı (EDTU 4256).

A new species for A1(E) Kırklareli in European Turkey. According to Cullen (1965), this taxon was encountered only in A2(E) Istanbul.

Betulaceae

2. *Betula pendula* Roth.

Tu(E) A1(E) Kırklareli: Demirköy, Hamdibey village, 292 m, 41°51'50"N, 27°45'55"E, 29.06.1989, coll. & det. C. Yarcı (EDTU 4694).

A new species for European Turkey. According to Browicz (1982), this taxon was encountered in Anatolian region in A7 Trabzon, A8 Erzurum. With this new record, the taxon is described for the first time from European Turkey.

Malvaceae

3. *Alcea lavateriflora* (DC.) Boiss.

Tu(E) A1(E) Kırklareli: Demirköy, between Demirköy and Pınarhisar, at the 10th km, 508 m, 41°45'43.2"N, 27°41'10.2"E, 27.07.1990, coll. C. Yarcı, det. C. Yarcı & M. Aybeke (EDTU 5319).

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

4. *Alcea pallida* Waldst. & Kit.

Tu(E) A1(E) Kırklareli: Demirköy, Kadınkule, 41°45'39.2"N, 27°50'07.4"E, 03.08.1990, coll. C. Yarcı, det. C. Yarcı & M. Aybeke (EDTU 5317).

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

5. *Althaea officinalis* L.

Tu(E) A1(E) Kırklareli: Demirköy, İğneada, at the shore of lake Mert, 41°51'52.8"N, 27°58'26.0"E, 15.09.1990, coll. & det. C. Yarcı (EDTU 5400).

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

6. *Malva neglecta* Wallr.

Tu(E) A1(E) Kırklareli: Demirköy, Balabanköy, 508 m, 41°50'08"N, 27°40'34"E, 02.08.1990, coll. & det. C. Yarcı (EDTU 5316).

A new species for A1(E) Kırklareli in European Turkey. According to Cullen (1967), this taxon was encountered in A1E Tekirdağ.

7. *Malva sylvestris* L.

Tu(E) A1(E) Kırklareli: Demirköy, between Demirköy and Pınarhisar, at the second km, 252 m, 41°48'33.8"N, 27°44'34.8"E, 20.05.1990, coll. & det. C. Yarcı (EDTU 5323).

A new species for A1(E) Kırklareli in European Turkey. According to Cullen (1967), this taxon was encountered in A1(E) Tekirdağ and A2(E) Istanbul.

Primulaceae

8. *Primula vulgaris* subsp. *sibthorpii* (Hoffmanns.) W.W. Sm. & Forrest

Tu(E) A1(E) Kırklareli: Demirköy, between Demirköy and İğneada, at the 1st km, 282 m, 41°49'28.2"N, 27°46'29.9"E, 03.03.1990, coll. & det. C. Yarcı (EDTU 5314).

A new species for A1(E) Kırklareli in European Turkey. According to Lamond (1978), this taxon was encountered in A1(E) Tekirdağ and A2(E) İstanbul.

Salicaceae

9. *Populus nigra* L. subsp. *nigra*

Tu(E) A1(E) Kırklareli: Demirköy, between Beğendik village and İğneada, at the 2nd km, 23 m, 41°56'58.5"N, 28°00'13.4"E, 03.09.1990, coll. & det. C. Yarcı (EDTU 4690).

A new species for European Turkey. According to Browicz & Yaltırık (1982), this taxon was encountered in Anatolian region at A3 Bolu, A4 Zonguldak. With this new record, the taxon is described for the first time from European Turkey.

Reports 10–24

Minas Chasapis¹, Dimitrios A. Samaras^{2*}, Konstantinos Theodoropoulos², Eleni Eleftheriadou² & Kit Tan³

¹ Forest Office of Aridaia, Xenitidi & Ermou Str. 5, 58400 Aridaia, Greece

² Aristotle University of Thessaloniki, School of Forestry and Natural Environment, Laboratory of Forest Botany – Geobotany, P.O. Box 270, University Campus, 54124, Thessaloniki, Greece

³ Institute of Biology, University of Copenhagen, Universitetsparken 15, 2100 Copenhagen Ø, Denmark

* e-mail: mail@dimitrios-samaras.net (author for correspondence)

Approximately 900 species have so far been reported for Mt Tzena in North Central Greece (Nomos Pellis, Eparchia Almopias), the result of data gathered by ca. twenty-five collectors. In this paper 15 new records are provided for the mountain based on collections made between 2009 and 2014 by M. Chasapis (abbreviated as *Chas.* in the citations) during his Ph.D work at the Laboratory of Forest Botany – Geobotany (Aristotle University of Thessaloniki). Nine of the records were found to be new for the floristic region North Central (NC) as circumscribed in *Flora Hellenica* (Strid & Tan 1997).

Asteraceae

10. *Carduus personata* subsp. *albidus* (Adamović) Kazmi

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, tall-herb vegetation at margins of fen above treeline, 1860 m, 41°09'31.82"N, 22°13'15.60"E, 23.08.2011, *Chas.* 1645 (TAUF); tall-herb vegetation above treeline, 1770 m, 41°09'06.34"N, 22°14'48.95"E, 13.09.2011, *Chas.* 1694 (TAUF).

The taxon is rare on Mt Tzena which has a small population of less than 50 individuals. They were observed in tall-herb vegetation above the treeline, in damp places overlying limestone and schist. It is reported from the Rodopi Mts in NE Greece and has also been noted by Bergmeier in July 2017 from Mt Varnous in North Central Greece (unpubl. data).

11. *Centaurea napulifera* subsp. *tuberosa* (Vis.) Stoj. & Acht.

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, mixed oak and beech stands, 1170 m, 41°08'03.20"N, 22°14'55.35"E, 12.05.2010, *Chas.* 585 (TAUF); thermophilous deciduous stand with *Juniperus oxycedrus*, 970 m, 41°06'58.20"N, 22°12'59.59"E, 19.05.2010, *Chas.* 632 (TAUF); subalpine grassland, 1790 m, 41°08'52.30"N, 22°13'17.95"E, 25.06.2012, *Chas.* 2089 (TAUF); grassy opening in beech stand, 1100 m, 41°09'10.14"N, 22°16'30.10"E, 26.05.2014, *Chas.* 2423 (TAUF).

A Balkan endemic, previously recorded from North Central (Goulimis 1960: 15, as *C. tuberosa* Vis.) and NE Greece. It appears to be common on Mt Tzena, scattered in several sites and habitats, mainly in grassland, between

700 and 2100 m. *Centaurea napulifera* Rochel subsp. *napulifera* and *C. n.* subsp. *velenovskiyi* (Adamović) Wagenitz & Gamal-Eldin both occur on Mt Tzena.

12. *Echinops bannaticus* Schrad.

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, thermophilous deciduous stand, 860 m, 41°07'14.05"N, 22°14'21.50"E, 24.09.2011, *Chas.* 1711 (TAUF); *Quercus petraea* stand, 1040 m, 41°07'56.5"N, 22°15'02.82"E, 27.07.2012, *Chas.* 2206 (TAUF).

A Balkan endemic, recorded from NE and N Pindos. It has also been reported from Mt Chasia in North Central, based on a collection by Formánek (Vandas 1909: 312). *Echinops bannaticus* has a scattered occurrence in oak forests in the SE part of Mt Tzena, mainly on rhyolite, gneiss and mica schist substrates. Its population on Mt Tzena is estimated to consist of less than 200 individuals.

13. *Hieracium umbrosum* Jord.

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, *Quercus frainetto* stand, 820 m, 41°07'48.81"N, 22°15'51.06"E, 06.07.2012, *Chas.* 2159 (TAUF); 41°08'14.89"N, 22°16'43.98"E, 01.06.2013, *Chas.* 2256 (TAUF); subalpine rocky slope (marble), 1750 m, 41°10'N, 22°16'E, 15.09.2009, *Chas.* 347 (TAUF, det. Gottschlich).

The species is rare on Mt Tzena. It occurs within oak forests over gneiss and rhyolite, on the SE part of the mountain. *Hieracium umbrosum* has been reported from N Pindos, NE and North Central Greece (from Mt Varnous, as subsp. *abietinum* (Boiss. & Heldr.) Greuter).

Fabaceae

14. *Trigonella caerulea* subsp. *procumbens* (Besser) Thell.

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, forest road in *Quercus frainetto* stand, 780 m, 41°08'31.37"N, 22°17'01.57"E, 06.07.2012, *Chas.* 2151 (TAUF).

New for North Central, reported from NE Greece and the N Aegean island of Thasos. The taxon is very rare on Mt Tzena. Only one locality was found with a very small population of less than 10 individuals on gneiss.

Gentianaceae

15. *Gentianopsis ciliata* (L.) Ma

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, road above treeline, 1760 m, 41°08'37.91"N, 22°12'49.17"E, 27.09.2009, *Chas.* 376 (TAUF);

subalpine grassland on stony ground, 1820 m, 41°09'21.27"N, 22°14'07.37"E, 13.09.2011, *Chas.* 1698 (TAUF).

New for North Central, reported from NE Greece (Rodopi, Menikio), N Pindos (Gramos) and Sterea Ellas (Vardousia, Iti). The plant is rare on Mt Tzena and has been observed from only a few sites above treeline, between 1750 and 1900 m, in stony grassland overlying various substrates.

Linaceae

16. *Linum capitatum* Schultes subsp. *capitatum*

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, shrubland above treeline, 1890 m, 41°09'15.89"N, 22°10' 27.42"E, 12.06.2010, *Chas.* 742 (TAUF); 2030 m, 41°08'40.91"N, 22°13'57.72"E, 14.07.2014, *Chas.* 2455 (TAUF).

New for North Central. A Balkan endemic, previously known only from NE Greece. On Mt Tzena it occurs scattered in shrubland at and above treeline, mainly on limestone. It can be easily confused with *Linum flavum* subsp. *albanicum* (Janch.) Hartvig which also occurs in alpine meadows with rocky limestone outcrops on Mt Tzena.

Ranunculaceae

17. *Ranunculus illyricus* L.

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, grassland within thermophilous deciduous stand – *Juniperus oxycedrus* shrubland, 1110 m, 41°07'11.90"N, 22°13'42.96"E, 13.06.2012, *Chas.* 2016 (TAUF).

New for North Central, occurring in NE Greece and the N Aegean islands of Thasos and Samothraki. The species is rare on Mt Tzena which has a small population of less than 100 individuals. Forming part of the floristic composition of mountain grasslands together with species of *Stipa* and *Festuca*, between 1000 and 1300 m, on limestone, avoiding very dry soils.

Rosaceae

18. *Rosa spinosissima* L.

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, road above treeline, 1770 m, 41°08'45.89"N, 22°13'01.82"E, 21.06.2012, *Chas.* 2058 (TAUF); shrubland above treeline, 1780 m, 41°08'21.81"N, 22°13' 59.52"E, 18.06.2013, *Chas.* 2310 (TAUF); rocky opening in beech stand at treeline, 1690 m, 41°08'54.64"N, 22°14'05.08"E, 20.07.2013, *Chas.* 2395 (TAUF).

New for North Central, scattered in NE Greece, N and S Pindos. *Rosa spinosissima* has a scattered occurrence on Mt Tzena, where it grows in shrubland at and above treeline, between 1650 and 1850 m, mainly on limestone.

Rubiaceae

19. *Asperula aristata* subsp. *condensata* (Boiss.) Ehrend. & Krendl

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, subalpine sparse grassland on stony ground, 1830 m, 41°09'13.71"N, 22°13'39.68"E, 30.06.2012, *Chas.* 2104 (TAUF); 1940 m, 41°09'41.32"N, 22°14'46.30"E, 15.07.2013, *Chas.* 2369 (TAUF); 1980 m, 41°09'49.18"N, 22°14'51.67"E, 15.07.2013, *Chas.* 2373 (TAUF); 2060 m, 41°09'19.20"N, 22°12'35.18"E, 25.07.2013, *Chas.* 2397 (TAUF).

A Balkan endemic which has also been reported from Mt Vermio in North Central Greece. The taxon is common on Mt Tzena, but scattered in occurrence. It grows at higher altitudes of Mt Tzena, above 1800 m, in sparse grassland on schistose substrates. Plants intermediate in form between *Asperula aristata* subsp. *condensata* and *A. aristata* subsp. *nestia* (Rech. f.) Ehrend. & Krendl were found in various places. The latter also occurs on Mt Tzena.

Valerianaceae

20. *Valeriana montana* L.

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, beech stand at treeline, 1640 m, 41°09'22.96"N, 22°14'33.06"E, 15.07.2012, *Chas.* 2195 (TAUF).

New for North Central, occurring in NE Greece. The species is very rare on Mt Tzena. Only one population was found on calcareous substrate, with less than 10 individuals.

Violaceae

21. *Viola grisebachiana* Vis.

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, subalpine grassland, 1860 m, 41°09'11.63"N, 22°13'43.69"E, 12.07.2011, *Chas.* 1547b (TAUF).

New for North Central, a Balkan endemic very rare in NE Greece. It is likewise very rare on Mt Tzena with only one plant noted on marble limestone (fragment now deposited in herbarium as voucher).

Alliaceae

22. *Allium melanantherum* Pančić

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, sparse subalpine grassland on stony ground,

1890 m, 41°08'45.54"N, 22°13'42.16"E,
18.08.2011, *Chas.* 1624 (TAUF).

New for North Central, recorded from NE Greece. A Balkan endemic rare on Mt Tzena where it exists on marble substrate as a very small population with less than 10 individuals.

Poaceae

23. *Festuca rubra* L.

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, streambank above treeline, 1830 m, 41°09'21.18"N, 22°10'33.71"E, 22.07.2011, *Chas.* 1574 (TAUF, det. H. Scholz).

A widely distributed taxon reported also from Mts Voras, Varnous and Pieria in North Central Greece. It is scattered on Mt Tzena, occurring in calcium-rich fen vegetation, above treeline.

24. *Festuca thracica* (Acht.) Markgr.-Dann.

Gr Nomos Pellis, Eparchia Almopias: Mt Tzena, grassland, 640 m, 41°06'33.14"N, 22°13'14.85"E, 25.05.2011, *Chas.* 1260 (TAUF); thermophilous deciduous stand with *Juniperus oxycedrus*, 820 m, 41°06'42.46"N, 22°12'27.44"E, 28.05.2011, *Chas.* 1293 (TAUF); grassland, 640 m, 41°06'31.50"N, 22°13'13.61"E, 28.05.2011, *Chas.* 1294 (TAUF); phrygana with *Juniperus oxycedrus*, 770 m, 41°06'43.84"N, 22°12'53.98"E, 19.05.2012, *Chas.* 1868 (TAUF); 710 m, 41°06'46.04"N, 22°13'26.89"E, 24.05.2012, *Chas.* 1916 (TAUF).

New for North Central, reported from NE Greece. A Balkan endemic occurring also in Bulgaria. The species is very common at lower altitudes of Mt Tzena (below 1100 m) and is often found in and at margins of shrubland and thermophilous deciduous stands with *Juniperus oxycedrus*. Intermediate forms between *Festuca thracica* and two other species of *Festuca* (*F. macedonica* Vetter and *F. hirtovaginata* (Acht.) Markgr.-Dann.) were also noted. These all belong to a complex which includes taxa with rigid, often pruinose leaves and with a continuous layer of sclerenchyma at the back, and the whole group is in need of taxonomic revision.

Reports 25–36

Konstantinos Giannopoulos¹,
Kit Tan² & Gert Vold³

¹ Dabaki 15, Pyrgos, Ilias 271 00, Greece

² Institute of Biology, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark, e-mail: kitt@bio.ku.dk (author for correspondence)

³ State Natural History Museum, Øster Farimagsgade 2C, DK-1353 Copenhagen K, Denmark

Cactaceae

25. *Austrocylindropuntia subulata* (Mühlentpf.)

Backeb.

Gr Nomos Lakonias, Eparchia Githiou: Mani Peninsula: Paliros, 3.5 km N of Akra Tainaron, 36°25'N, 22°29'E, 05.04.2019, *Kit Tan* & *G. Vold* obs.

Native to S America, now established at roadsides and open fields on the islands of Inousse, Rodos and Symi (all E Aegean) as well as Amorgos (Kyklades). New for nomos and eparchia, second report for the Peloponnese, the first being from the Lake Kaifas area (Nomos Ilias, Eparchia Olimbias).

Crassulaceae

26. *Sedum magellense* subsp. *olympicum* (Boiss.)

Greuter & Burdet

Gr Nomos & Eparchia Ilias: SW slopes of Mt Erimanthos, 2060 m, 37°57'N, 21°48'E, 08.06.2019, *Giannopoulos* obs.

New for nomos and eparchia, reported for Mt Erimanthos from Achaïas side.

Fabaceae

27. *Medicago sativa* L.

Gr Nomos Ilias, Eparchia Olimbias: Mt Lapithas, 670 m, 37°33'N, 21°40'E, 18.07.2019, *Giannopoulos* obs.

New for eparchia. Existing as yellow or purple-coloured forms. The hybrid between subsp. *sativa* and subsp. *falcata* (L.) Arcang. with greenish-yellow, purplish to almost black inflorescences was frequent outside Andritsena.

Lamiaceae

28. *Mentha longifolia* (L.) Huds.

Gr Nomos & Eparchia Ilias: Mt Lambia, rocky meadows at Astras Plateau, 1400 m, 37°53'N, 21°48'E, 24.07.2019, *Giannopoulos* obs.

New for Mt Lambia, nomos and eparchia Ilias.

29. *Salvia argentea* L.

Gr Nomos & Eparchia Ilias: SW slopes of Mt Erimanthos, 1730 m, 37°56'N, 21°47'E, 08.06.2019, *Giannopoulos* obs.

New for nomos and eparchia, reported for Mt

Erimanthos by Maroulis & Artelari (2001) from the northern side of the mountain which lies in Nomos Achaïas, Eparchia Patron. A species fairly widespread in Greece but absent from most of the west and the far northeast.

Scrophulariaceae

30. *Digitalis ferruginea* L.

Gr Nomos & Eparchia Ilias: Mt Lambia, rocky meadows at Astras Plateau, 1390 m, 37°53'N, 21°48'E, 24.07.2019, *Giannopoulos* obs.

New for Mt Lambia, nomos and eparchia Ilias.

Amaryllidaceae

31. *Narcissus poeticus* L. (Fig. 1)

Gr Nomos & Eparchia Ilias: SW slopes of Mt Erimanthos, 1760–1940 m, 37°57'N, 21°48'E, 08.06.2019, *Giannopoulos* (sub *Kit Tan & al.* 33091).

New for nomos and eparchia. Reported from Erimanthos (Maroulis & Artelari 2001) at the summits of Olenos and Barba (Nomos Achaïas, Eparchia Patron) and from the western slopes of summit Pyrgaki (border of Achaïas and Ilias prefectures). In 8–10 small populations, each with several individuals.

Hyacinthaceae

32. *Muscari neglectum* Guss. ex Ten.

Gr Nomos & Eparchia Ilias: SW slopes of Mt Erimanthos, 2100 m, 37°57'N, 21°48'E, 08.06.2019, *Giannopoulos* obs.; 1800 m, 37°56'N, 21°48'E, 02.06.2018, *Giannopoulos* obs.



Fig. 1. *Narcissus poeticus* (photo K. Giannopoulos).

Apparently new for Mt Erimanthos, widespread in Greece. Distinct by its blackish-blue fertile flowers with whitish teeth.

Iridaceae

33. *Crocus nivalis* Bory & Chaub. (Fig. 2)

Gr Nomos & Eparchia Ilias: SW slopes of Mt Erimanthos, 2000–2100 m, 37°57'N, 21°48'E, 08.06.2019, *Giannopoulos* obs.

Apparently new for Mt Erimanthos, reported from mountains of N and C Peloponnese. Forming beautiful lilac to bluish-purple carpets at edge of melting snow. The flower colour varies from pinkish-mauve to deep violet-blue.

34. *Iris hellenica* Mermygkas, Kit Tan & Yannits. (Fig. 3)

Gr Nomos & Eparchia Ilias: Mt Lambia, Astras Plateau, 1400 m, 37°54'N, 21°47'E, 22.05.2019, *Giannopoulos* obs.; SW slopes of Mt Erimanthos, 1740–1830 m, 37°57'N, 21°48'E, 08.06.2019, *Giannopoulos* (sub *Kit Tan & al.* 33092).

New for Mt Lambia and Mt Erimanthos, also for nomos and eparchia Ilias. So far known from mountains of N Peloponnese (Chelmos, Killini, Saitas and Farmakas) and Sterea Ellas (Mt Iti). Found in 3–4 small populations, each with 3–10 plants. The plants remain low in stature with short leaves even in cultivation, usually 30–40 cm tall, unlike the similar *Iris germanica* L. which attains a height of 80–100 cm when grown side by side under the same conditions. The populations on Mt Erimanthos were far from human habitation.



Fig. 2. *Crocus nivalis* and *Scilla bifolia* (photo K. Giannopoulos).

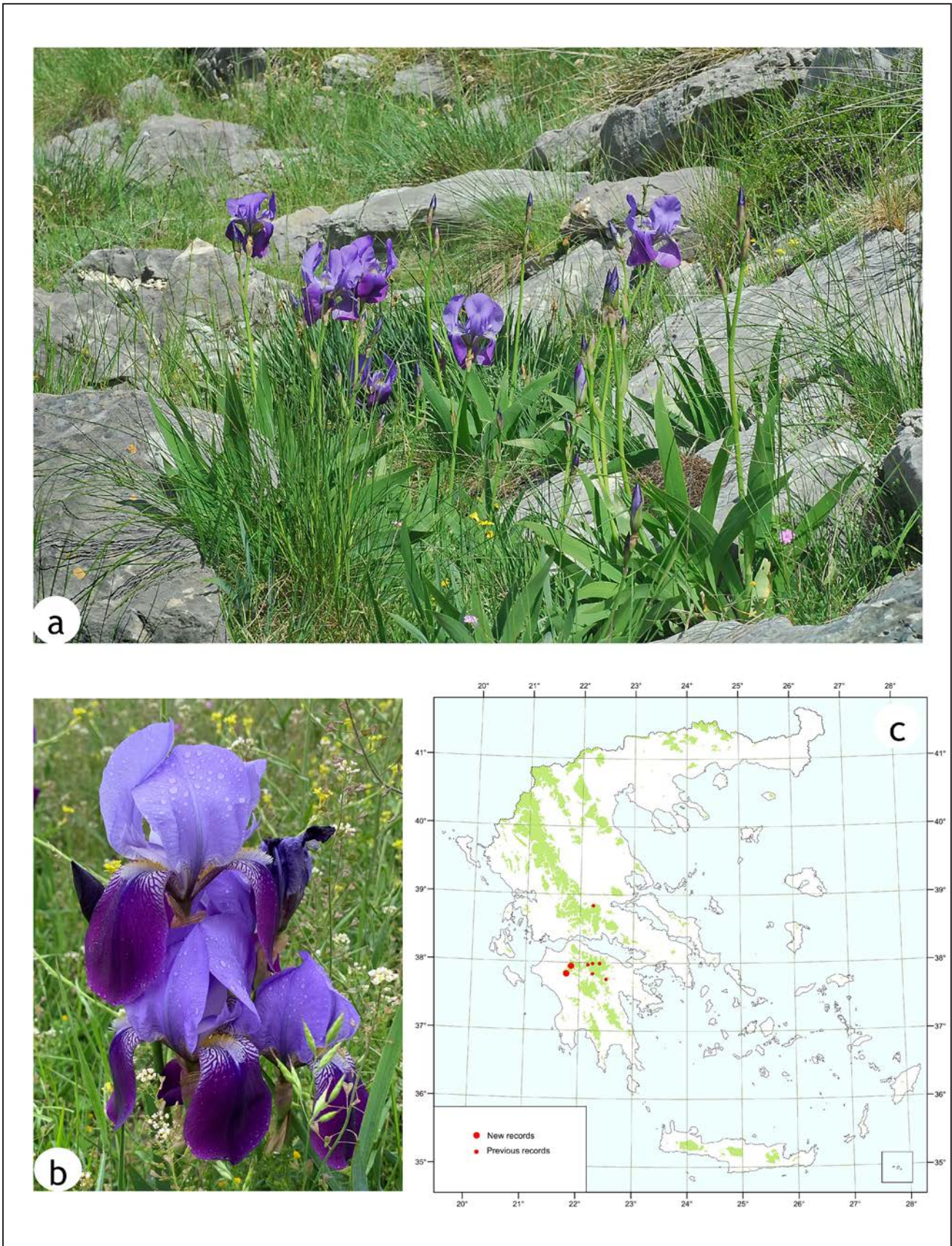


Fig. 3. *Iris hellenica* (photo K. Giannopoulos) and its distribution in Greece.

*Orchidaceae*35. *Ophrys delphinensis* C. & E. Danesch (Fig. 4)

Gr Nomos & Eparchia Ilias: Lake Pinios, 100 m,
37°53'N, 21°27'E, 23.04.2019, *Giannopoulos* obs.

New for nomos and eparchia, noticeably absent from W and C Peloponnese (see Fig. 4). At Lake Pinios, as at Lake Stymfalia, *Ophrys reinholdii* H. Fleischm. and *O. delphinensis* display an astonishing array of intermediate forms.

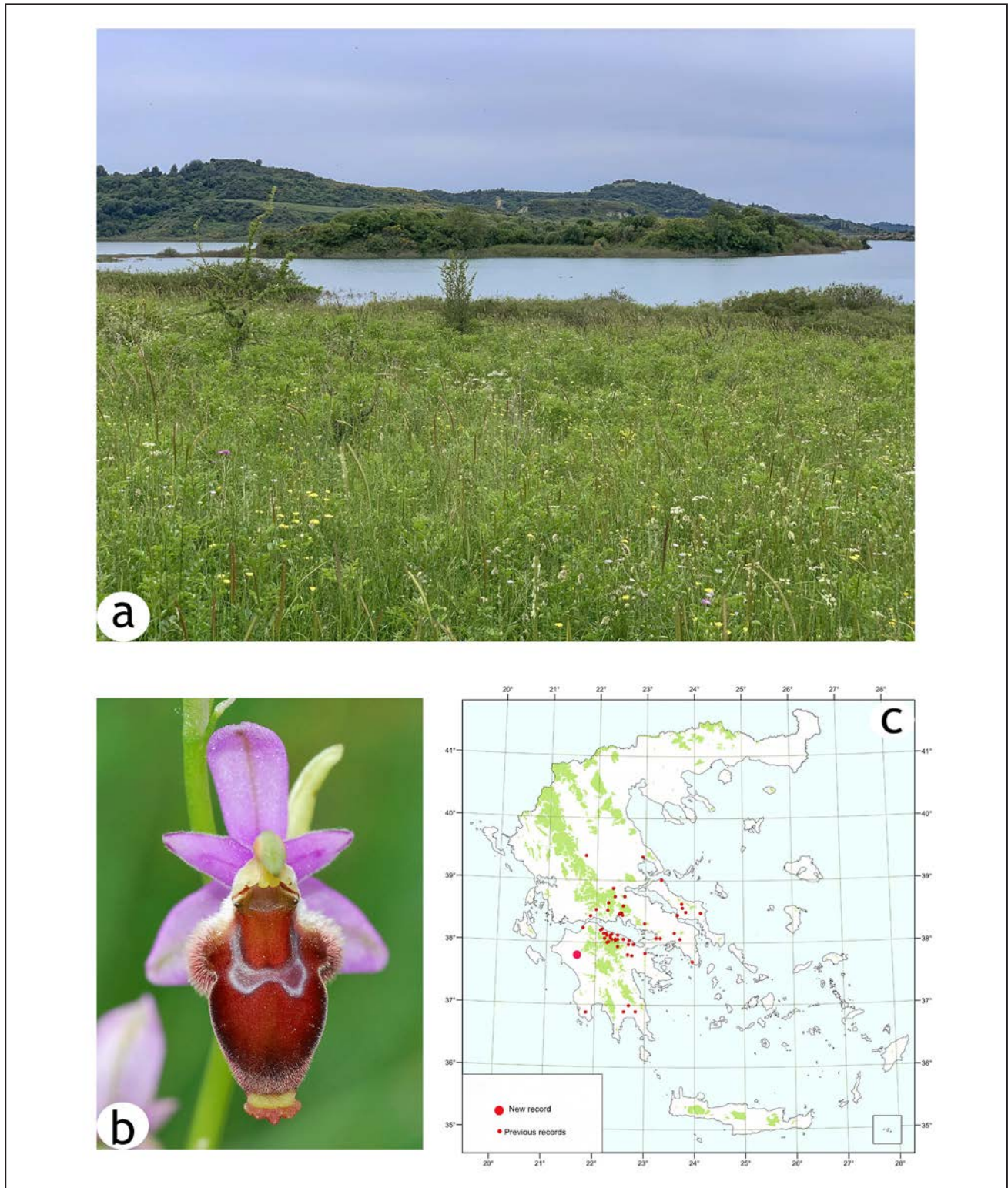


Fig. 4. *Ophrys delphinensis* (photo K. Giannopoulos) and its distribution in Greece.

Typhaceae**36. *Typha minima* Funck (Fig. 5)**

Gr Nomos & Eparchia Ilias: near the village of Karatoulas, wet places, shallow roadside ditch, 90 m, 37°45'N, 21°32'E, 30.06.2019, *Kit Tan, G. Vold & Giannopoulos* 33086; near the village of Kamena, 130 m, 37°39'N, 21°44'E, 05.05.2018, *Giannopoulos* obs.

Extending the distribution of this species previously known only from the banks of the Kladeos and Lefkianias 'rivers' (see Fig. 5).

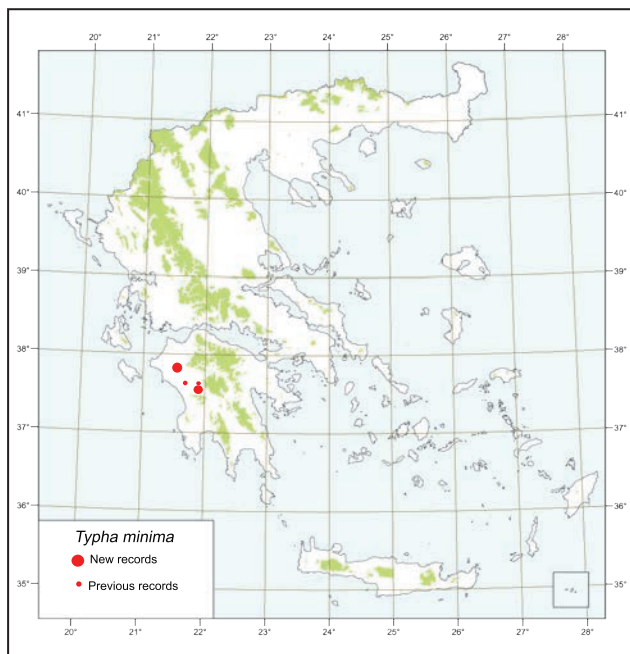


Fig. 5. Distribution map of *Typha minima* in Greece.

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Vasilis Ioannidis¹, Despina Doulkeridou¹, Kostas Koutis² & Arne Strid³

¹ AEGILOPS – Network for Biodiversity and Ecology in Greece, Karagianopoulou 20, 611 00 Kilkis, Greece, e-mail: basiliskilkis@yahoo.gr (author for correspondence)

² AEGILOPS – Network for Biodiversity and Ecology in Greece, Ano Lechonia, 373 00, Volos, Greece

³ Bakkevej 6, DK-5853 Ørbæk, Denmark

This report lists 42 species new for nomos Kilkis in North Central Greece. It results from studies by the first three authors over a period of 12 years. Identifications have been confirmed by the last author, based on photographs.

The classical collectors (Sintenis & Bornmüller in 1891, Formánek in 1899, Dimonie in 1909) contributed only a few records for this area. During the First World War (1917–18) soldiers of the British Army stationed at the Thessaloniki front made substantial botanical collections (see Wearn 2015). One of them was Turrill who later became curator of the herbarium at Kew and was one of the most prominent Balkan botanists of the 20th century. He reported *ca.* 335 species from Krusa Balkan, Lake Doirani and other localities in the area (Turrill 1918, 1919, 1922).

In 1927 and 1936 Rechinger collected *ca.* 170 species in nomos Kilkis (see Rechinger 1929, 1939), but otherwise there has been little or no botanical exploration until the nineteen seventies. Drossos & Athanasiadis (1989) and Athanasiadis & Drossos (1990) published a comprehensive account of the flora and vegetation of Mt Paiko on the borders between nomos Kilkis and nomos Pellis, listing *ca.* 840 species from the area.

By far the most important collector in recent years is Willing who was in nomos Kilkis in 1989, 1990, 1992, 2004, 2006 and 2017, gathering a total of *ca.* 920 species of which approximately one third were new for the area. His records have been registered for the *Flora Hellenica Database* from lists published on the internet (<http://www.willing-botanik.de/>) and specimens are deposited in Berlin (B). Collections have also been made by Arabatzis & Papadimitriou, Greuter, Haristos, Raus, Stamatiadou, Strid and others. The *Flora Hellenica Database* held 1 444 species from nomos Kilkis by 1 January 2019.

Acanthaceae**37. *Acanthus spinosus* L.**

Gr Nomos Kilkis, Eparchia Peonias: 0.9 km NE of the village of Korona, small population by roadside, in xeric mediterranean phrygana and grassland, 432 m, 41°10'12.1"N, 22°40'15.5"E, 28.06.2009, *Ioannidis* obs.

Also found near the villages of Chorigi, Evropos and Goumenissa. The species is widespread in Greece, but absent in much of the North East.

Linaceae**38. *Linum hirsutum* L.**

Gr Nomos Kilkis, Eparchia Peonias: 1.2 km E-NE of Karpi Kilkis, xeric mediterranean grassland and phrygana, 548 m, 41°4'17.82"N, 22°22'18.7"E, 06.06.2008, *Ioannidis* obs.

39. *Linum nodiflorum* L.

Gr Nomos & Eparchia Kilkis: 1 km N-NW of Ilioloutso Kilkis, in freshwater habitats, 69 m, 41°4'19.42"N, 22°43'33.5"E, 12.05.2013, *Ioannidis* obs.

40. *Linum strictum* L. subsp. *strictum*

Gr Nomos & Eparchia Kilkis: 1.8 km SE of Pikrolimni Kilkis, in freshwater habitats, 81 m, 40°50'43.4"N, 22°49'22.5"E, 17.05.2014, *Ioannidis* obs.

41. *Linum thracicum* Degen

Gr Nomos Kilkis, Eparchia Peonias: 4.1 km N-NW of Pigi Kilkis, in xeric mediterranean grassland and phrygana, 361 m, 41°2'17.46"N, 22°27'52.5"E, 21.06.2014, 25.10.2016, *Ioannidis* obs.

A species of somewhat uncertain status, reported from scattered localities in northern Greece.

Scrophulariaceae**42. *Scrophularia aestivalis* Griseb.**

Gr Nomos & Eparchia Kilkis: 8.5 km NW of Mouries Kilkis, Kerkini mountain, high mountain vegetation, 1424 m, 41°19'36.4"N, 22°46'34.5"E, *Ioannidis* obs.

Scattered and fairly rare in northern Greece, southwards to Mt Ossa.

43. *Scrophularia canina* L. subsp. *canina*

Gr Nomos & Eparchia Kilkis: 5.6 km N-NW of S.S. Mourion Kilkis, Kerkini mountain, woodland and scrub, 561 m, 41°18'37.0"N, 22°49'26.5"E, 14.06.2015, *Ioannidis* obs.

The two subspecies meet in northern Greece with subsp. *bicolor* being the more common.

44. *Verbascum glabratum* Friv.

Gr Nomos Kilkis, Eparchia Peonias: 1.8 km NW of Griva Kilkis, Paiko mountain, woodland and scrub, 678 m, 40°57'50.5"N, 22°23'32.8"E, 29.05.2017, *Ioannidis* obs.

45. *Verbascum orientale* (L.) All.

Gr Nomos & Eparchia Kilkis: 1.8 km SE of Pikrolimni Kilkis, cliffs, rocks and boulders in a ravine, 73 m, 40°50'40.8"N, 22°49'22.9"E, 02.06.2017, *Ioannidis* obs.

46. *Verbascum pseudonobile* Stoj. & Stef.

Gr Nomos & Eparchia Kilkis: 4 km SE of Nea Santa Kilkis, cliffs, rocks and boulders in a ravine, 363 m, 40°49'41.9"N, 22°58'1.2"E, 02.06.2012, *Ioannidis* obs.

The westernmost record for a rare species scattered in the north east.

47. *Verbascum xanthophoeniceum* Griseb.

Gr Nomos & Eparchia Kilkis: 2.2 km from Anavrito Kilkis, Kroussia mountain, agricultural and ruderal habitats, 563 m, 41°3'32.86"N, 23°4'32.23"E, 11.05.2012, *Ioannidis* obs.

Fairly rare and scattered in N & NE Greece.

Solanaceae**48. *Solanum nigrum* L.**

Gr Nomos & Eparchia Kilkis: Neo Agioneri Kilkis, agricultural and ruderal habitats, 145 m, 40°48'18.7"N, 22°42'41.8"E, 22.09.2008, *Ioannidis* obs.

Veronicaceae**49. *Kickxia commutata* subsp. *graeca* (Bory & Chaub.) R. Fern.**

Gr Nomos Kilkis, Eparchia Peonias: 1.1 km NW of Karpi Kilkis, xeric mediterranean grassland and phrygana, 526 m, 40°59'30.4"N, 22°24'38.5"E, 13.07.2014, *Ioannidis* obs.

50. *Kickxia elatine* subsp. *crinita* (Mabille) Greuter

Gr Nomos Kilkis, Eparchia Peonias: 2.3 km S-SW of Pontoirakleia Kilkis, agricultural and ruderal habitats, 92 m, 41°5'17.07"N, 22°36'16.3"E, 19.07.2012, *Ioannidis* obs.

51. *Linaria dalmatica* (L.) Mill.

Gr Nomos Kilkis, Eparchia Peonias: 2.4 km NW of Griva Kilkis, high mountain vegetation, 937 m, 40°57'34.9"N, 22°22'53.5"E, 22.08.2010, *Ioannidis* obs.

52. *Veronica triloba* (Opiz) Opiz

Gr Nomos & Eparchia Kilkis: 1.3 km E of Eptalofos Kilkis, xeric mediterranean grassland and phrygana, 420 m, 41°0'34.66"N, 23°1'42.20"E, 13.03.2011, *Ioannidis* obs.

Violaceae**53. *Viola jordanii* Hanry**

Gr Nomos & Eparchia Kilkis: 4 km N of Megali Sterna Kilkis, xeric mediterranean grassland and phrygana, 365 m, 41°7'38.87"N, 22°43'9.30"E, 27.04.2013, *Ioannidis* obs.

Fairly rare and scattered in NC Greece.

54. *Viola odorata* L.

Gr Nomos & Eparchia Kilkis: 1.5 km N-NW of Pentalofo Kilkis, Paiko mountain, cliffs, rocks

and boulders in a ravine, 597 m, 40°56'11.0"N, 22°23'39.6"E, 27.04.2013, *Ioannidis* obs.

55. *Viola parvula* Tineo

Gr Nomos & Eparchia Kilkis: 8.5 km N-NW of S.S. Mourion Kilkis, Kerkini mountain, high mountain vegetation, 1384 m, 41°20'6.27"N, 22°49'3.17"E, 03.04.2016, *Ioannidis* obs.

56. *Viola stojanowii* W. Becker (Fig. 6)

Gr Nomos & Eparchia Kilkis: 8.5 km N-NW of S.S. Mourion Kilkis, Kerkini mountain, high mountain vegetation, 1384 m, 41°20'6.27"N, 22°49'3.17"E, 03.04.2016, *Ioannidis* obs.

A local endemic probably restricted to Mt Kerkini (Beles) in the Greek/Bulgarian border area.



Fig. 6. *Viola stojanowii* (photo V. Ioannidis).

Alliaceae

57. *Allium carinatum* subsp. *pulchellum* (G. Don) Bonnier & Layens

Gr Nomos Kilkis, Eparchia Peonias: 4 km SW of Kastaneri Kilkis, temperate and submediterranean grassland, 1122 m, 40°58'1.41"N, 22°20'29.9" E, 25.07.2011, *Ioannidis* obs.

58. *Allium cyrilli* Ten.

Gr Nomos & Eparchia Kilkis: north side of Agios Georgios Kilkis hill, agricultural and ruderal habitats, 211 m, 41°1'11.38"N, 22°50'36.6"E, 03.05.2012, *Ioannidis* obs.

59. *Allium cupanii* Ten. subsp. *cupanii*

Gr Nomos Kilkis, Eparchia Peonias: 3 km SW of

Kastaneri Kilkis, cliffs, rocks and boulders in a ravine, 311 m, 41°0'10.49"N, 22°52'21.6"E, 29.07.2014, *Ioannidis* obs.

60. *Allium flavum* Ten. subsp. *flavum*

Gr Nomos Kilkis, Eparchia Peonias: 1 km W of Kastaneri Kilkis, cliffs, rocks and boulders in a ravine, 1182 m, 40°57'44.7"N, 22°21'4.57"E, 25.07.2011, *Ioannidis* obs.

61. *Allium pallens* L.

Gr Nomos & Eparchia Kilkis: 1 km S of Eleftherochori Kilkis, temperate and submediterranean grassland, 77 m, 41°3'51.10"N, 22°45'47.3"E, 23.07.2014, *Ioannidis* obs.

Amaryllidaceae

62. *Galanthus elwesii* Hook. f.

Gr Nomos & Eparchia Kilkis: 1 km NW of Melanthio Kilkis, temperate and submediterranean grassland, 417 m, 40°57'35.8"N, 23°2'52.67"E, 07.03.2009, *Ioannidis* obs.

Also found near Griva and Megala Livadia (eparchia Peonias) and by Eptalofos (eparchia Kilkis). The species is scattered in NE mainland Greece southwards to Mt Olimbos as well as on some of the larger East Aegean islands.

63. *Sternbergia lutea* (L.) Spreng. subsp. *lutea*

Gr Nomos Kilkis, Eparchia Peonias: 2.5 km NW of Vafiochori Kilkis, cliffs, rocks and boulders in a ravine, 29 m, 41°1'4.848"N, 22°38'12.8"E, 20.09.2009, *Ioannidis* obs.

Also found north of Megali Sterna in eparchia Kilkis. The species is widespread in Greece but rare in the far north.

Colchicaceae

64. *Colchicum bivonae* Guss.

Gr Nomos & Eparchia Kilkis: 1.8 km NW of Ano Apostoloi Kilkis, 211 m, large population in herbaceous habitat, 40°55'9.56"N, 22°47'56.4"E, 11.09.2012, *Ioannidis* obs.

Also found in other localities of Kilkis, in grassland and forest margins.

65. *Colchicum chimonanthum* K.M. Perss. (Fig. 7)

Gr Nomos & Eparchia Kilkis: 0.5 km from Colchida Kilkis, xeric mediterranean grassland and phrygana, 163 m, 40°56'26.2"N, 22°53'14.8"E, 11.11.2012, *Ioannidis* obs.

Recorded also in the vicinities of Chorigi, P. Ginai-kokastro and Kastanies. A Greek endemic restricted to the northeast.



Fig. 7. *Colchicum chimonanthum* (photo V. Ioannidis).

66. *Colchicum doerfleri* Halácsy

Gr Nomos Kilkis, Eparchia Peonias: 1.8 km NW of Pentalofo Kilkis, large population in stony and rocky ground near the monastery of Saint Nikodimos, 597 m, 40°56'10.5"N, 22°23'39.5"E, 02.02.2014, *Ioannidis* obs.

Also found at Chamilo Kilkis near the border to North Macedonia. A Balkan endemic scattered in North Central Greece.

67. *Colchicum haynaldii* Heuff.

Gr Nomos Kilkis, Eparchia Peonias: 2 km from Goumenissa Kilkis, 417 m, 40°56'40.2"N, 22°25'38.3"E, 15.10.2016, *Ioannidis* obs.

68. *Colchicum soboliferum* (Fisch. & C.A. Mey.) Stef.

Gr Nomos & Eparchia Kilkis: 2.5 km SE of Pikrolimni Kilkis, wet freshwater meadow, 46 m, 40°50'29.8"N, 22°49'10.8"E, 08.02.2014, *Ioannidis* obs.

Also observed near Anthofito. Rare and scattered in Greece, known only from a few localities on the north central mainland, NE Attica and the island of Lesvos.

Hyacinthaceae

69. *Muscari armeniacum* Baker

Gr Nomos & Eparchia Kilkis: 1.7 km NW of Elliniko Kilkis, temperate and submediterranean grassland, 740 m, 41°0'34.72"N, 23°5'20.40"E, 13.04.2015, *Ioannidis* obs.

70. *Ornithogalum oligophyllum* E.D. Clarke

Gr Nomos Kilkis, Eparchia Peonias: 4.6 km from Megala Livadia Kilkis, woodland and scrub, 1327 m, 40°59'1.80"N, 22°20'30.8"E, 15.04.2017, *Ioannidis* obs.

Fairly widespread in mountains of W & C Greece, southwards to Peloponnisos, but absent in the north east.

71. *Ornithogalum wiedemannii* Boiss.

Gr Nomos & Eparchia Kilkis: 2 km SE of Pikrolimni Kilkis, xeric mediterranean grassland and phrygana, 45 m, 40°50'30.9"N, 22°49'9.01"E, 16.03.2014, *Ioannidis* obs.

A rare species of somewhat uncertain status, described from N Anatolia and reported so far from two localities in north east Greece.

72. *Prospero autumnale* (L.) Speta

Gr Nomos Kilkis, Eparchia Peonias: 1 km N of Chamilo Kilkis, xeric mediterranean grassland and phrygana, 179 m, 41°6'50.87"N, 22°28'39.5"E, 21.10.2011, *Ioannidis* obs.

Common in nomos Kilkis, but so far, overlooked.

Iridaceae

73. *Crocus olivieri* J. Gay

Gr Nomos & Eparchia Kilkis: 4.1 km N of Megali Sterna Kilkis, xeric mediterranean grassland and phrygana, 366 m, 41°7'44.46"N, 22°43'10.5"E, 21.10.2011, *Ioannidis* obs.

74. *Crocus nivalis* Bory & Chaub.

Gr Nomos Kilkis, Eparchia Peonias: 3.2 km SE of Megala Livadia Kilkis, 1116 m, 40°59'15.1"N, 22°19'25.8"E, 22.03.2008, *Ioannidis* obs.

75. *Gladiolus imbricatus* L.

Gr Nomos & Eparchia Kilkis: 3 km SW of Pontokerasia Kilkis, woodland and scrub, 504 m, 41°4'47.73"N, 23°5'44.64"E, 28.05.2016, *Ioannidis* obs.

76. *Romulea linaresii* subsp. *graeca* Bég.

Gr Nomos & Eparchia Kilkis: 2.5 km SW of Kastanies Kilkis, xeric mediterranean grassland and phrygana, 132 m, 41°1'0.447"N, 22°44'15.3"E, 17.03.2018, *Ioannidis* obs.

Scattered throughout Greece, but rare in the far north.

Liliaceae

77. *Gagea bohemica* (Zauschn.) Schult. & Schult. f.

Gr Nomos & Eparchia Kilkis: 1.8 km N of Divouno Kilkis, xeric mediterranean grassland and

phrygana, 630 m, 41°8'17.36"N, 22°56'45.4"E, 18.03.2012, *Ioannidis* obs. (photo identified by J.-M. Tison).

78. *Gagea villosa* (M. Bieb.) Sweet (Fig. 8)

Gr Nomos & Eparchia Kilkis: SE slopes of Agios Giorgis Kilkis hill, xeric mediterranean grassland and phrygana, 321 m, 41°0'0.146"N, 22°52'38.2"E, 14.03.2012, *Ioannidis* obs. (photo identified by J.-M. Tison).

Fairly rare in Greece, and only a single report from the north east.



Fig. 8. *Gagea villosa* (photo V. Ioannidis).

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Todor Karakiev

4, Viktor Yugo St., 1124 Sofia, Bulgaria, e-mail: karakiev@abv.bg

Asteraceae

79. *Helianthus tuberosus* (L.) Borkh.

Bu Forebalkan (*Western*): In herbaceous calcareous areas, between a road and arable lands, northeastward from Vlasatitsa village, Vratza district, 201 m, 43°18'10.80"N, 23°28'45,39"E, 06.07.2017, *T. Karakiev* obs.; westwards from Mitrovtsi village, southwards from the road to Gorna Laka village, between the road and the river, 43°26'34"N, 22°55'56"E, 09.09.2018, *T. Karakiev* obs.

A second report of the species for this floristic sub-region. It was first reported from another locality in Forebalkan (*Western*) by Vladimirov & al. (2017). Also known from the following floristic regions: Black Sea

Coast, Northeast Bulgaria, Danubian Plain, Forebalkan (*Eastern*), Sofia region, Valley of River Struma, Valley of River Mesta, Rhodopi Mts (*Central, Eastern*), Tracian Lowland, and Tundzha Hilly Country (Assyov & Petrova 2012; Petrova & al. 2013; Vladimirov & al. 2016, 2017).

80. *Cosmos bipinnatus* Cav.

Bu Pirin Mts (*Northern*): at the ski trail near Peshterite area, in strongly anthropogenically modified plant communities, formerly habitats of many rare and endangered species, *ca.* 1100 m, 41°48'32"N, 23°27'37"E, 09.09.2017, *T. Karakiev* obs.

A casual species in the Bulgarian flora, which has not been reported for Bulgaria so far (*cf.* Assyov & Petrova 2012).

81. *Calendula officinalis* L.

Bu Pirin Mts (*Northern*): at the ski trail near Peshterite area, in strongly anthropogenically modified plant communities, formerly habitats of many rare and endangered species, *ca.* 1100 m, 41°48'32"N, 23°27'37"E, 09.09.2017, *T. Karakiev* obs.

A casual species in the Bulgarian flora, which has not been reported for Bulgaria so far (*cf.* Assyov & Petrova 2012).

Fabaceae

82. *Lupinus polyphyllus* Lindl.

Bu Rila Mts: Borovets Resort, near Lion Hotel, at approximately 1270 m, 42°16'28"N, 23°36'00"E, 23.04.2018, *T. Karakiev* obs.

This species has been known from the Balkan Range (*Western*) and Vitosha region (Assyov & Petrova 2012; Vladimirov 2012).

Polygonaceae

83. *Fallopia baldschuanica* (Regel) Holub [syn. *F. aubertii* (L. Henry) Holub]

Bu Forebalkan (*Western*): eastwards from Dolni Lom village, at the road to Prevala village, 43°29'55"N, 22°46'59"E, 08.09.2018, *T. Karakiev* obs.
— Balkan Range (*Western*): near Vlado Trichkov village, 42°52'18"N, 23°22'30"E, 10.07.2018, *T. Karakiev* obs.; near Svoje town, 42°58'01"N, 23°20'51"E, 10.07.2018, *T. Karakiev* obs.; southwards from Zelin village area, near the motorway, before the first tunnel in direction to Sofia, 42°51'37"N, 23°47'39"E, 10.09.2018, *T. Karakiev* obs.

- Sofia region: between Stolnik and Gorna Malina villages, southwards from the toad, 583 m, 42°41'59.64"N, 23°38'59.17"E, 18.09.2017, *T. Karakiev* obs.; Sofia, Kliment Ohridski Blvd., near the Forestry Institute of the Bulgarian Academy of Sciences, 42°37'56"N, 23°21'18"E, 17.09.2018, *T. Karakiev* obs.
- Vitosha region: westwards from Pancharevo Dam, 613 m, 42°36'07.42"N, 23°24'11.40"E, 12.07.2017; Dragalevtzi district of Sofia, 42°37'42"N, 23°18'31"E, 17.09.2018, *T. Karakiev* obs.
- Rhodopi Mts (*Western*): southwards from Varvarski Bani village, near river Chepinska, 401 m, 42°07'42.30"N, 24°07'23.70"E, 16.07.2017, *T. Karakiev* obs.
- Rhodopi Mts (*Central*): southwards from Gornoslav village, Asenovgrad district, in a deciduous forest near the road to Oreshets village, 611 m, 41°54'22.82"N, 24°57'18.96"E, 07.09.2017, *T. Karakiev* obs.
- Thracian Lowland: southwards from the Plovdiv ring road, between Plovdiv and Branipole village, 168 m, 42°05'40.93"N, 24°45'28.12"E, 27.08.2017, *T. Karakiev* obs.; westwards from Katunitsa village, 42°06'05"N, 24°52'00"E, 27.08.2017, *T. Karakiev* obs.; southwards from Belashtitsa village, 42°03'19"N, 24°44'21"E, 27.08.2017, *T. Karakiev* obs.

This species has been known so far from the floristic regions of the Black Sea Coast (*Northern*) (Assyov & Petrova 2012) and the Danubian Plain (Vladimirov & al. 2017).

84. *Fallopia bochemica* (Chrtek & Chrtkova) J.P. Baylei

- Bu** Pirin Mts (*Northern*): at the road from Yane Sandanski chalet to Kamenitza chalet in the Popina Laka area, in a mixed *Fagus sylvatica* – *Picea abies* forest on a SW facing slope, 1322 m, 41°40'27.82"N, 23°23'55.75"E, 15.07.2018, *T. Karakiev* obs.

This species has been known so far from the floristic regions of Black Sea Coast (*Northern*), Danubian Plain, Forebalkan (*Western*), Balkan Range (*Western, Central*), Sofia region, Znepole region, Vitosha region, and Rhodopi Mts (*Central*) floristic regions (Assyov & Petrova 2012; Petrova & al. 2013, Vladimirov & al. 2017).

Salicaceae

85. *Salix eleagnus* Scop.

- Bu** Mt Sredna Gora (*Eastern*): southwards from Srednogorovo village, 42°29'31"N, 25°19'53"E, 08.07.2017, *T. Karakiev* obs.

This species has been known from the floristic regions of Black Sea Coast, Forebalkan, Balkan Range, Valley of River Struma, Rhodopi Mts, Thracian Lowland, Tundzha Hilly Country, Mt Strandzha (Assyov & Petrova 2012).

Ulmaceae

86. *Celtis australis* L.

- Bu** Forebalkan (*Eastern*): southwards from Lukovit town, in the gorge of river Panega, 43°11'09"N, 24°09'08"E, 05.09.2018, *T. Karakiev* obs.

This species has been known from the floristic regions of Black Sea Coast, Northeast Bulgaria, Valley of River Struma, Thracian Lowland, Tundzha Hilly Country, Mt Strandzha, Rhodopi Mts (*Central, Eastern*) (Assyov & Petrova 2012).

Liliaceae

87. *Lilium candidum* L.

- Bu** Thracian Lowland: northwards of Turkmen village, 42°16'57"N, 25°07'15"E, 16.08.2017, *T. Karakiev* obs.

The population was between the road and an agricultural field. Most likely bulbs of the species were thrown away with garden waste from the village nearby. A casual species in the Bulgarian flora, so far unreported from the wild in the country (*cf.* Assyov & Petrova 2012).

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Giannis Kofinas¹ & Kit Tan²

¹ Ilioupoleos Avenue 74, Imittos 172 36, Attikis, Greece

² Institute of Biology, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark, e-mail: kitt@bio.ku.dk (author for correspondence)

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

88. *Ligusticum lucidum* Mill. (Fig. 9)

- Gr** Nomos Ioanninon/Trikalon: Eparchia Dodonis/

Kalambakis: Chaliki to Kalarrites, Baros Lakmos, 1783 m, 39°37'N, 21°10'E, 15.06.2019, *Kofinas & Kalentzis* s.n. (ATH).

Rarely collected, confirming an earlier record from approximately the same area on Mt Peristeri (*Aldén* 4131, LD). Reported from S Pindos (Mts Katafidi and Tsoumerka) and Sterea Ellas (Mt Timfristos). A record from North Central (Mt Vermion, Quézel & Contandriopoulos 1968: 29) is out of range and requires confirmation.



Fig. 9. *Ligusticum lucidum* (photo G. Kofinas).

Asteraceae

89. *Helichrysum stoechas* subsp. *barrelieri*

(Ten.) Nyman × *H. taenari* Rothm. (Figs. 10–12)

Gr Nomos Lakonias, Eparchia Githiou/Itilou:

Mani Peninsula, 1 km from Vathia to Kenouria Chora, limestone rock, 250 m, 36°27'N, 22°29'E, 18.05.2019, *Kofinas & Samanidis* s.n. (ATH).

Helichrysum taenari with snow-white capitula has been recorded in Nomos Lakonias, from Eparchia Githiou/Itilou and Eparchia Epidavrou Limiras (Cape Malea). It hybridizes easily with the more widespread *H. stoechas* subsp. *barrelieri* which has lemon-yellow capitula. The hybrid plants retain the cauline leaf characters of *H. stoechas* and the phyllaries are suffused yellow. Some plants bear a stronger resemblance to *H. taenari* in retaining the broader basal leaves. Similar plants have been observed by Rätzel and Ristow in 2011, as well as by Katsiotis (photos sent to KT), probably in the same locality.

Helichrysum stoechas subsp. *barrelieri* also hybridizes easily with *H. amorginum* endemic to the Kiklades; hybrid plants have been noted on the S and SE-exposed cliffs at the Monastery of Chozoviotissa on Amorgos.



Fig. 10. Habitat of *Helichrysum stoechas* subsp. *barrelieri* × *H. taenari* (photo G. Kofinas).



Fig. 11. Flowering stems of *Helichrysum* hybrid with parental species on either side (photo G. Kofinas).

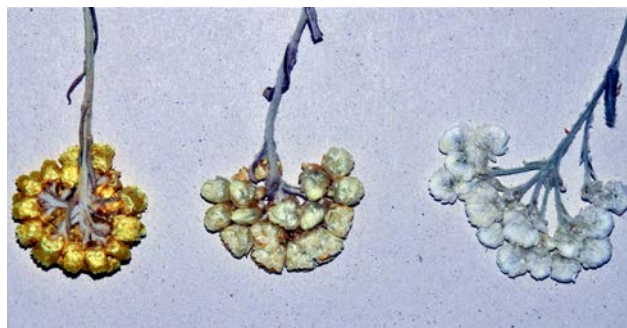


Fig. 12. Inflorescences of *Helichrysum* hybrid with parental species on either side (photo G. Kofinas).

Campanulaceae

90. *Campanula sciathia* Phitos (Fig. 13)

Gr Nomos Evvias, Eparchia Istieas: between Vasilika and Ellinika, limestone cliffs, 65–100 m, 39°00'N, 23°21'E, 12.05.2019, *Kofinas* obs. (photos).

New for the island of Evvia. A rarely collected W Aegean endemic, the *locus classicus* is the Monastery of Evangelistra on the island of Skiathos (Nomos Magnisias, Eparchia Skopelou) from where it was first collected and described (holotype *Phitos* 35, M).



Fig. 13. *Campanula sciathia* (photo G. Kofinas).

Caryophyllaceae

91. *Gypsophila pallasii* Ikonn.

Gr Nomos & Eparchia Dramas: bridge of Arkoudorema near Paranesti, stony limestone slopes, 181 m, 41°18'N, 24°30'E, 18.08.2019, flowering, *Kofinas* s.n. (ATH).

Rarely collected, first noted on 14 August 2014. Reported from rocky slopes and limestone outcrops on Mt Orvilos in NE Greece, and at the Erythropotamos river in the far northeast near the Turkish border.

Celastraceae

92. *Euonymus verrucosus* Scop. (Fig. 14)

Gr Nomos Grevenon/Kozanis, Eparchia Grevenon/Voiou: Mt Vourinos, roadside by Messiano Nero, 40°11'N, 21°40'E, 02.06.2019, *Kofinas* & *Kalentzis* obs.

Confirming the only record from Mt Vourinos (*Sfikas* 1996: 65).



Fig. 14. *Euonymus verrucosus* (photo G. Kofinas).

Lamiaceae

93. *Stachys macrotricha* Rech. f. & Goulimy (Fig. 15)

Gr Nomos & Eparchia Grevenon: Mt Chasia, dry grassland and rocky places, 800 m, 40°03'N, 21°29'E, 17.06.2019, *Kofinas* & *Kalentzis* s.n. (ATH); 39°57'N, 21°32'E, 02.06.2019, *Kofinas* obs.; 40°00'N, 21°29'E & 586 m, 39°56'N, 21°34'E, 17.06.2019, *Kofinas* & *Kalentzis* obs.

Rarely collected, apparently only known from the type gathering which was collected by Constantine Goulimis on 8 July 1953 (ATH, W) by the road between Grevenon and Kalambaka in central Greece. *Stachys macrotricha* is endemic to Greece and is distinct by its remote and densely sericeous verticillasters and corolla with reddish-brown and yellow markings on the lower lip. It is clearly different from *S. plumosa* Griseb. (a Balkan endemic) with which it has been synonymized; the latter has a white to cream-coloured corolla with small purplish dots and streaks.



Fig. 15. *Stachys macrotricha* verticillasters (photo G. Kofinas).

Polygalaceae

94. *Polygala sfikasiana* Kit Tan

Gr Nomos Lakonias, Eparchia Epidavrou Limiras: Mt Koulochera (Zarakas), limestone rock outcrops, 870–1000 m, 36°49'N, 22°58'E, 14.05.2011 & 28.05.2011, *Kofinas* obs.; *loc. ibid.*, 02.04.2017, *Kofinas* obs.; Mt Chionovouni, 953 m, 36°55'N, 22°58'E, 29.05.2011, *Kofinas* obs. — Nomos Arkadias, Eparchia Kinourias: Mt Parnon, Moni Elonis, 750 m, 36°09'N, 22°46'E, 11.07.2017, *Zarkos* obs.

This species originally described from the NW slopes of Mt Gaidourovouni, is now reported from Mts Koulochera and Chionovouni which are part of a group of low mountains at the tail end of the Parnonas range, as well as from Mt Parnon itself.

Saxifragaceae**95. *Saxifraga aizoides* L.**

Gr Nomos & Eparchia Kastorias: Mt Gramos, rocky limestone outcrops on grassy slope with small rivulet, abundant, 2251 m, 40°20'N, 20°47'E, 18.08.2018, *Kofinas* obs.; *loc. ibid.*, 22.08.2019, *Kofinas* s.n. (ATH).

New for Mt Gramos, nomos and eparchia Kastorias and floristic region N Pindos. In Greece known only from Mt Tzena (in North Central) on the N Macedonian border. However, the occurrence of this arctic-alpine species on Mt Gramos is not surprising as it has been reported from Albania just across the border (Barina 2017: 427, map).

Report 96**Theodoros Samaras¹, Giorgos Hatzakos², Kit Tan³ & Gert Vold⁴**

¹ Environmental Conservation and Management, Faculty of Pure and Applied Sciences, Open University of Cyprus, Giannou Kranidioti 33, 2252, Latsia, Nicosia, Cyprus, e-mail: samar.theo@gmail.com

² Trion Chariton 20, Sparta, GR 23100, Greece

³ Institute of Biology, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark, e-mail: kitt@bio.ku.dk (author for correspondence)

⁴ State Natural History Museum, Øster Farimagsgade 2C, DK-1353 Copenhagen K, Denmark

Asteraceae**96. *Centaurea athoa* subsp. *chelmea* Kit Tan, Zarkos, V. Christodoulou & G. Vold (Figs. 16 & 17)**

Gr Nomos Lakonias, Eparchia Lakedemonos: Mt Taigetos, 1220 m, 36°57'N, 22°23'E, 17.06.2019, *Th. Samaras* & *G. Dimakakos* obs.; *loc. ibid.*, 19.06.2019, *Th. Samaras*, *G. Dimakakos* & *G. Hatzakos* s.n. (det. Kit Tan, July 2019, herb. Kit); Mt Taigetos, on way to Katafygion, rocky limestone slope in open *Pinus nigra* – *Abies cephalonica* woodland, 1305 m, 36°57'N, 22°23'E, 05.07.2019, *Kit Tan* & *al.* 33095 (ATH, C, UPA, herb. Kit); Mt Taigetos, on way from Maganiari to EOS refuge, limestone, open place between *Pinus nigra* – *Abies cephalonica* forest, 1300 m, 36°57'N, 22°23'E, 05.07.2014, *Ch. Kyriakopoulos* & *Kofinas* 2052 (UPA); EOT refuge, 1200 m, 36°57'N, 22°21'E, *Phitos* 2529 (UPA, *fide* Routsis & Georgiadis 1994: 366); Mt Taigetos, 1400–1500 m, 36°57'N, 22°21'E, *Polatschek* s.n. (W); below the Katafygion, 1200–1250 m, 36°57'N, 22°21'E, *Iatroú* 490 & 2151 (UPA, *fide* Routsis & Georgiadis 1994: 366).

New for Mt Taigetos, the *locus classicus* is on Mt Dourdouvouna (Ntourntouvana) in Nomos Achaïas/Korinthias, Eparchia Kalavriton/Korinthias. Erroneously reported from Taigetos as *C. athoa* subsp. *parnonia* (Halácsy) E. Gamal-Eldin & Wagenitz. $2n = 20$ has been



Fig. 16. *Centaurea athoa* subsp. *chelmea* from Mt Taigetos (photo Th. Samaras).

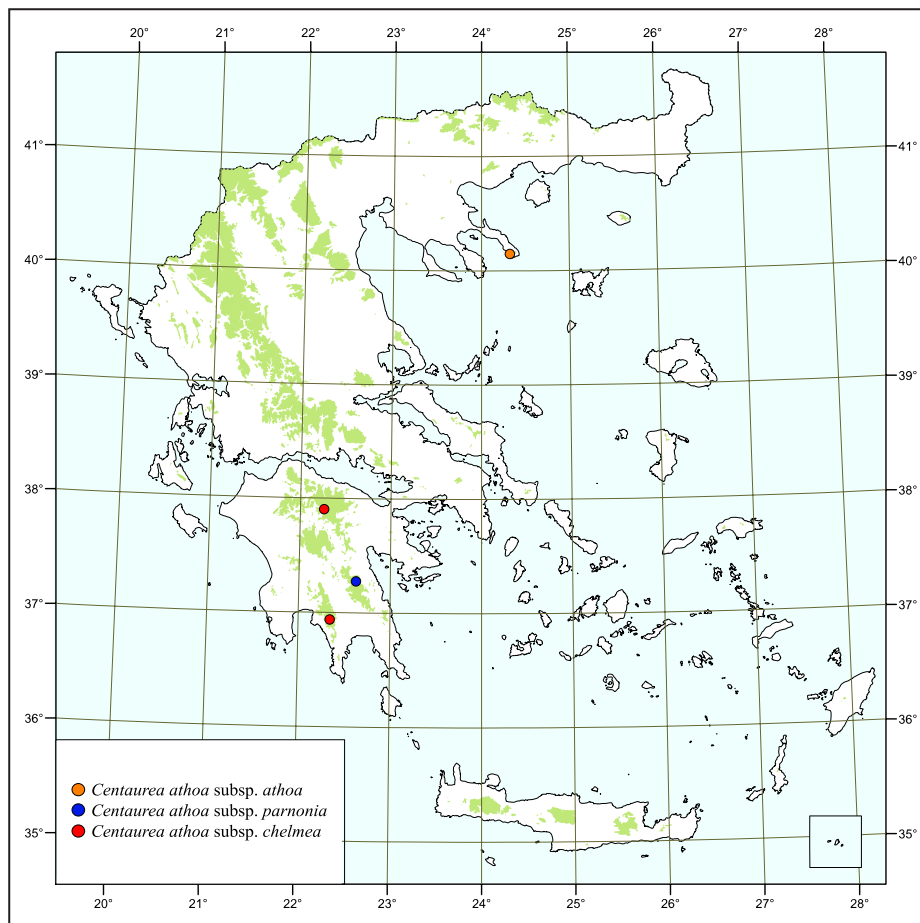


Fig. 17. Distribution map of *Centaurea athoa* in Greece.

counted from populations on Taigetos (Kyriakopoulos & al. 2016: 224, sub nom. *C. athoa* subsp. *parnonia*).

Centaurea athoa belongs to sect. *Acrocentron* (Cass.) DC. It is divided into three subspecies. The typical subspecies occurs on Mt Athos in NE Greece, and in W & S Anatolia (Gamal-Eldin & Wagenitz 1991), while *C. athoa* subsp. *parnonia* (\equiv *Centaurea parnonia* Halácsy) is restricted to SE Peloponnisos (Mt Parnon). Apparently, *C. athoa* subsp. *chelmea* is endemic to the Peloponnese (Mts Taigetos in the south and Dourdouvouna in north central).

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Reports 97–99

Lulëzim Shuka¹, Besnik Hallaçi² & Kit Tan³

¹ Department of Biology, Faculty of Natural Sciences, Tirana University, Albania

² Regional Agency of Protected Area, Kukës, Albania

³ Institute of Biology, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark, e-mail: kitt@bio.ku.dk (author for correspondence)

We present three species that had been reported from Albania *ca.* 100 years ago by various authors but were excluded in the work by Barina & al. (2018) as the latter had not seen any voucher specimens documenting their occurrences. These taxa have been included in floristic works on Albania (Demiri 1983; Papparisto & al. 1988; Qosja & al. 1992, 1996).

Boraginaceae

97. *Pulmonaria rubra* Schott (Figs. 18 & 21)

AI Kukësi district: North Eastern Albanian Alps, above Tërshen village, along the road from Kolesjan to the alpine pastures of Shtiqni in Gjallica Mt, in *Fagus sylvatica* forest, 1580 m, 41°57'N, 20°27'E, 28.05.2017, Shuka s.n (herb. Shuka); *ca.* 1.5 km SE of Shishtaveci village, near border crossing to Kosovo, in *Betula pendula* woodland, 1460 m, 41°58'N, 20°37'E, 03.04.2016, Hallaçi obs.; Koritniku Mt, at edge of subalpine

pastures and *Fagus-Pinus* forest, 1620 m, 42°017'N, 20°27'E, 05.06.2018, *Shuka* obs.

The species was included in volume 3 of *Flora of Albania* (Qosja 1996) based on the reports of Hayek from Pashtriku Mt (Hayek 1924, 1928). There was no indication of the exact locality, whether it was within or outside the present-day borders of Albania. The species was not mentioned for Pashtriku Mt or for other localities in Albania by later botanists. Our record is the first confirmed report from Albania.



Fig. 18. *Pulmonaria rubra* (photo L. Shuka).

Geraniaceae

98. *Geranium phaeum* L. (Figs. 19 & 21)

AI Malësia e Madhe district: North Albanian Alps, Budaç village, ca. 1 km from the Budaç river towards Vermoshi village, on both sides of the tributary in openings of *Fagus sylvatica* woodland, 1180 m, 42°33'N, 19°44'E, 04.06.2006; *loc. ibid.*, 25.06.2018, *Shuka* s.n (TIR); North Albanian Alps, Seferçe, ca. 50 m above Livadhi i Harushës, in semi-open *Fagus* forest, 1300 m, 42°37'N, 20°43'E, 26.06.2018, *Shuka* obs.

Our localities of *G. phaeum* confirm the previous reports of Beck & Szyzzyłowicz (1889) and Hayek

(1927) from the Albanian Alps. However, no precise geographical locations were provided by them so whether the species occurs within Albanian territory or not, was uncertain. The species was noted by M. Xhulaj on 21.07.1976 in Skrobotushë, Vermosh; this locality is at the Albanian-Montenegro border (Xhulaj, pers. comm., 2018).



Fig. 19. *Geranium phaeum* (photo L. Shuka).

Ranunculaceae

99. *Ranunculus fontanus* C. Presl (Figs. 20 & 21)

AI Kukësi district: Shishtavec area, along the water course of the Bafa meadows, on the road to Turaj village, 1300 m, 41°58'N, 20°34'E, 19.05.2019, *Shuka* s.n (TIR); Shishtavec area, Kroi i Bardhë (White spring), along the old road from Kolesjani to Turaj village, in seasonal pools and wet places, 1780 m, 41°56'N, 20°30'E, 01.06.2018, *Hallaçi* obs.

The species was reported from Albania by Hayek (1924, 1927) with Gjallica Mt, ca. 1700 m, cited as locality. However, it has never been re-collected in

Albania since that first report. We have found *R. fontanus* recently in two different localities, both of them east of Gjallica Mt. Although Kroj i Bardhë is only 7.5 km from Gjallica Mt, it does not occur in the same kind of habitat as noted by Hayek (1924). The leaves of plants from Kroj i Bardhë are much broader as compared to leaves of plants from Bafa meadows. The populations in Albania are small with less than 30 and 150 plants in each locality respectively.



Fig. 20. *Ranunculus fontanus* (photo B. Hallaçi).

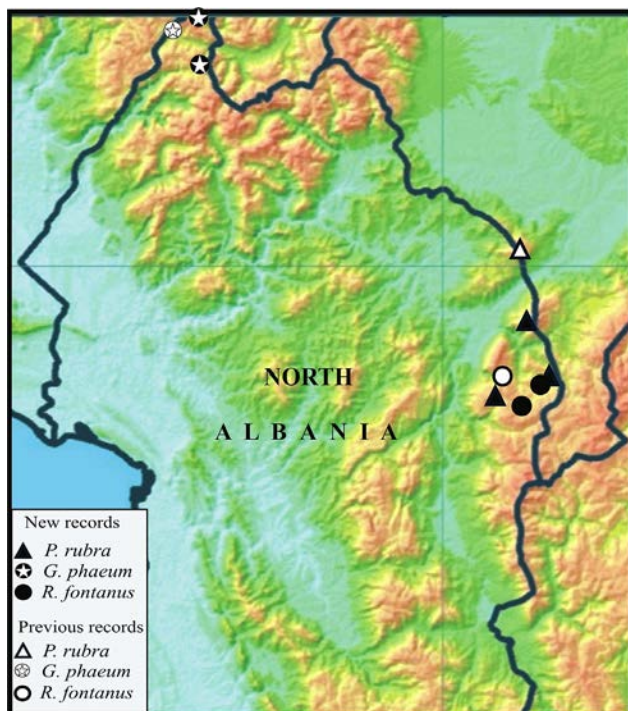


Fig. 21. Distribution of *Pulmonaria rubra*, *Geranium phaeum* and *Ranunculus fontanus* in North Albania.

Reports 100–103

Arne Strid

Bakkevej 6, DK-5853 Ørbæk, Denmark,
e-mail: arne.strid@youmail.dk

Asteraceae

100. *Centaurea promota* (E. Gamal-Eldin & Wagenitz) Strid, **comb. & stat. nov.** (Figs. 22–24)
Syn: *Centaurea nervosa* subsp. *promota* E. Gamal-Eldin & Wagenitz in Strid & Kit Tan (eds), Mountain Flora of Greece 2: 513 (1991).

Gr Nomos Ioanninon, Eparchia Metsovou: meadows above Metsovo, 1300 m, 39°47'N, 21°09'E, 27.06.2018, Strid obs.

Centaurea nervosa Willd. is a showy species occurring in the mountains of C & SE Europe. Gamal-Eldin & Wagenitz described *C. nervosa* subsp. *promota* from the Pindos and Sterea Ellas in Greece. This differs from *C. nervosa* significantly in several morphological characters and has a disjunct distribution; it thus deserves species rank.



Fig. 22. *Centaurea promota* from Mt Iti (photo A. Strid).



Fig. 23. *Centaurea nervosa* from Mt Voras [Kajmakçalan] (photo A. Strid).

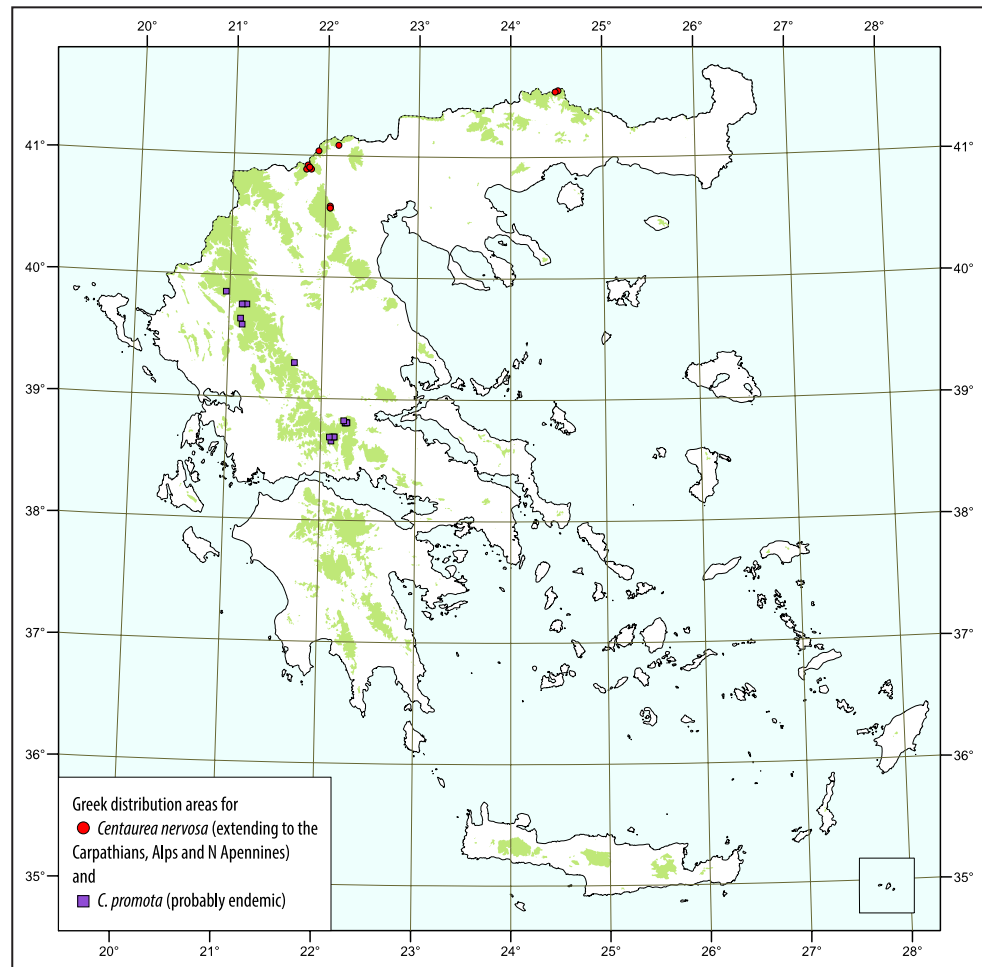


Fig. 24. Distribution map of *Centaurea promota* and *C. nervosa* in Greece.

Fabaceae

101. *Astragalus sinaicus* Boiss.

Gr Nomos Attikis, Eparchia Kithiron: island of Kithira, near Moni Mirtida W of Kalokerines, recently burnt garigue on rocky limestone slopes and flats, 50 m, 36°11'N, 22°56'E, 29.03.2019, Strid 59951 (UPA, herb. Strid).

New for the island of Kithira. Scattered in the Aegean area and eastern Greek mainland, rare in Peloponnisos.

102. *Lupinus pilosus* L.

Gr Nomos Attikis, Eparchia Kithiron: island of Kithira, just E of Frilingianika, phrygana on sandy flat, 340 m, 36°15'N, 23°00'E, 27.03.2019, Strid 59921 (UPA, herb. Strid).

New for the island of Kithira. Scattered in the Aegean area, rare in Peloponnisos and on the Ionian islands.

Tamaricaceae

103. *Tamarix smyrnensis* Bunge

Gr Nomos Attikis, Eparchia Kithiron: island of Kithira, near Avlemonas, sandy beach and coastal

phrygana, 0–10 m, 36°14'N, 23°05'E, 27.03.2019, Strid 59929 (UPA, herb. Strid).

New for the island of Kithira but known from Peloponnisos and W Kriti; scattered throughout Greece but not recorded from the Kiklades nor from the Ionian islands.

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Arne Strid¹ & Kit Tan²

¹ Bakkevej 6, DK-5853 Ørbæk, Denmark

² Institute of Biology, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark, e-mail: kitt@bio.ku.dk (author for correspondence)

Rubiaceae

104. *Galium corinthiacum* Strid & Kit Tan, sp. nov. (Figs. 25 & 26)

Gr Nomos & Eparchia Korinthias: forming small cushions in crevices of low limestone cliffs by monastery of Osios Patapios, 2 km N of Loutraki

on road to Perahora, corolla cream tinged brownish-purple, ca. 500 m, 38°00'N, 22°59'E, 15.04.2019, Kit Tan & G. Vold 33084 (holotype C; isotype ATH, herb. Kit); loc. *ibid.*, 30.03.2019, Strid 59957 (paratypes UPA, herb. Strid); loc. *ibid.*, 28.06.2019, Kit Tan & G. Vold 33085 (brittle inflorescences with ripe mericarps collected).

Herbaceous perennial with slender woody stock less than 6 mm in diameter, forming small loose cushions on rock face. Stems ± obtusely 4-angled, striate, (10)15–20 cm long, scabrid-puberulent in lower part, not retrorsely aculeolate nor with patent papillae. Leaves and leaf-like stipules in whorls of 4–6, simple, entire, hyaline-apiculate; longest cauline leaves 5–6 mm, margins revolute, both surfaces concolorous, pale green when dry, with single distinct main vein from the base; upper leaves glabrous, lower scabrid-puberulent. Inflorescence short and broad, only slightly elevated above the leaves, lax. Ultimate branches of inflorescence without bracts or bracteoles, partial inflorescences corymbiform. Pedicels becoming divaricate after anthesis, much longer than ovary or fruit, those of central flower of cyme 2–3 mm long. Flowers

actinomorphic, 4-merous, all hermaphrodite. Sepals inconspicuous, teeth-like or absent. Corolla ± rotate (tube much shorter than lobes), 2–2.5 mm in diameter, 4-lobed; lobes broadly ovate-triangular, apiculate, 1–1.25 mm long, cream tinged brownish- or reddish-purple. Stamens 4; anthers ca. 0.3 mm long, reddish-maroon. Ovary ovoid, bilocular, with conspicuous black disc; style exerted, bifid. Mericarps dry, ovoid, ca. 1 × 0.5 mm, pale brown, glabrous, smooth, becoming shallowly subverrucose at maturity. Flowering end of March and April.

On the same cliff slope and in the near vicinity were several bushes of *Daphne jasminea* with fragrant creamy-white flowers, as well as *Dorycnium hirsutum*, *Aethionema saxatile* subsp. *corinthiaca*, *Thesium bergeri*, *Stachys swainsonii* subsp. *melangavica* and *Melilotus graecus*.

This species was first collected by A. Strid on 30.03.2019 and identified as a possible new taxon. Kit Tan & G. Vold revisited the locality on 15.04.2019 and 28.06.2019 to gather additional material. *Galium corinthiacum* belongs to the *G. incurvum* group as defined in Tutin & al. (1976: 25–26). Related taxa are probably *G. asparagifolium* Boiss. & Heldr. and *G. melanatherum* Boiss. *Galium corinthiacum* differs conspicuously from both by its low, cushion-forming habit with slender, intricately branched stems and very short leaves. The inflorescences are short, broad and only slightly elevated above the leaves, whereas the other two taxa have elongated inflorescences raised well above the leaves. The corolla is rotate as compared to the ± cupular form in *G. asparagifolium* and *G. melanatherum*. The ripe mericarps are very small and shallowly subverrucose. *Galium corinthiacum* flowers earlier than the other two species.

Galium corinthiacum adds to a considerable number of local and regional endemics found on and around Mt Gerania. They include *Alkanna graeca* Boiss. & Spruner, *Allium cithaeronis* Bogdanović & al., *Aristolochia microstoma* Boiss. & Spruner, *Asperula pulvinaris* (Boiss.) Boiss., *Astragalus hellenicus* Boiss., *Bolanthus graecus* (Schreb.) Barkoudah, *Campanula topaliana* Beauverd, *Cerastium candidissimum* Correns, *Consolida tuntasiana* (Halácsy) Soó, *Ebenus sibthorpii* DC., *Erysimum atticum* Heldr. & Sartori, *Geocaryum parnassicum* (Boiss. & Heldr.) Engstrand, *Iris attica* Boiss. & Heldr., *Linum leucanthum* Boiss. & Spruner, *Silene corinthiaca* Boiss. & Heldr., and *Verbascum boissieri* (Boiss.) Kuntze – to mention only some taxa.



Fig. 25. *Galium corinthiacum* at locus classicus (photo A. Strid).



Fig. 26. Holotype of *Galium corinthiacum* (Kit Tan & G. Vold 33084, reproduced with permission from the Natural History Museum of Denmark).

Reports 105–106

Karel Sutorý

Moravian Museum, Department of Botany, Brno,
Czech Republic, e-mail: ksutory@mzm.cz

Scrophulariaceae

105. *Verbascum* × *derekolense* Rech. f. [*Verbascum banaticum* Schrad. × *V. niveum* subsp. *pannosiforme* (Stoj.) Murb.] (Fig. 27)

Gr Nomos Chalkidikis, Eparchia Athou: along road ca. 700 m NW of the monastery Ag. Pavlou (St Paul), 340 m, 40°09'57"N, 24°17'11"E, 22.06.2017, Sutorý BRNM 816406; in vicinity of Ag. Pavlou, small quarry on the road above monastery, 170 m, 40°09'41"N, 24°17'24"E, 19.06.2016, Sutorý BRNM 782958.

Second report for Greece, the first being from ‘Macedonia graeca’ (Huber-Morath & Rechinger 1960). Both parental species are found in South East Europe. *Verbascum banaticum* occurs on mainland Greece, the N and W Aegean islands. *Verbascum niveum* subsp. *pannosiforme* has been recorded for N Pindos (Epirus) by Huber-Morath & Rechinger (1960). It is erroneously listed in synonymy of the very similar *V. macrurum* Ten. by Dimopoulos & al. (2013) and all reports of *V. macrurum* from

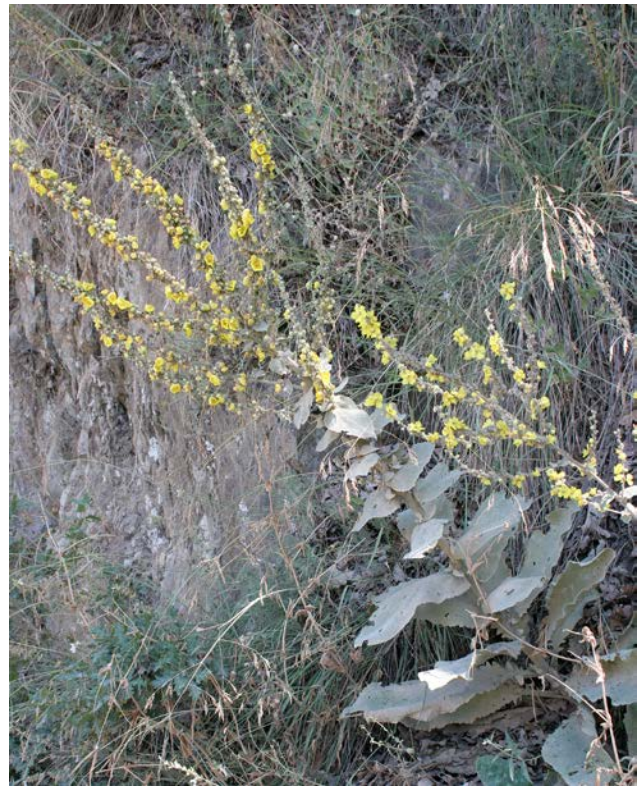


Fig. 27. *Verbascum* × *derekolense* Rech.f. (photo K. Sutorý).

northeastern Greece probably refer to this taxon. *Verbascum macrurum* occurs in southern Greece and Crete (Murbeck 1933; Strid 2016). *Verbascum niveum* subsp. *pannosiforme* occurs in adjacent southwest Bulgaria (Assyov & Petrova 2012) and is recorded from Athos as *V. macrurum* by Ganiatsas (1963).

This *Verbascum* hybrid was described from Bulgaria and Huber-Morath & Rechinger (1960) also cited a locality from the Greek – North Macedonia border, “Macedonia graeca, lacus Doiran”.

Cyperaceae

106. *Carex sylvatica* L. (Fig. 28)

Gr Nomos Chalkidikis, Eparchia Athou: Athos Peninsula, western slopes of the northern ridge of Mt Athos, ca. 2 km NE of the monastery Ag. Pavlou, 1360 m, 40°10'07"N, 24°18'39"E, 16.06.2015, Sutorý BRNM 771196; mountain ridge ca. 4 km N-NW of Great Lavra, along forest road, 750 m, 40°10'32"N, 24°20'01"E, 15.06.2019, Sutorý BRNM 816451.

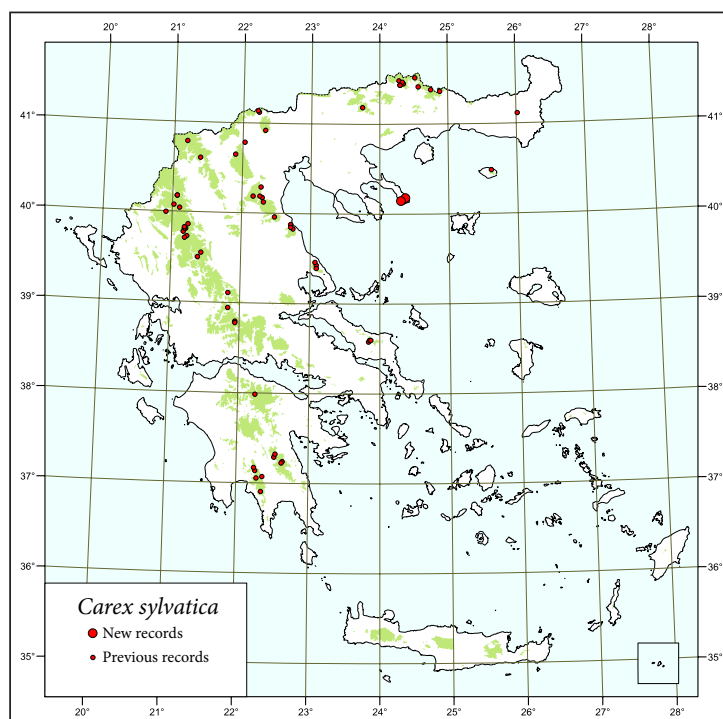


Fig. 28. Distribution map of *Carex sylvatica* in Greece.

New for nomos and eparchia. According to Strid (2016) the species does not occur in the Chalkidiki peninsula.

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Kit Tan¹ & Gert Vold²

¹Institute of Biology, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark, e-mail: kitt@bio.ku.dk (author for correspondence)

²State Natural History Museum, Øster Farimagsgade 2C, DK-1353 Copenhagen K, Denmark

The Aoös river originates in the Epirus region, NW Greece near the village of Vovoussa. It flows through the Vikos-Aoös National Park and is joined by the Voidomatis river in the plain of Konitsa on its way to SW Albania where it is called Vjosë. The Voidomatis originates near the village of Vikos and has a total length of 15 km. The name *Voido-matis* (meaning eye of the ox) refers to the fact that oxen have clear blue eyes, an allusion to the crystal-clear, greenish-turquoise waters carving out the bottom of the Vikos Gorge since time immemorial. It is reportedly the cleanest river in Europe. Between the Aoös and Voidomatis rivers is an island built up on the gravelly river bed by sandy alluvial soil. It is difficult to cross over to the island in winter or early spring as the Voidomatis is turbulent and icy-cold. However in late summer, the river flows more quietly and it is possible to wade over from the Aoös side. Once on the island, the silence is only broken by the gentle rustling of the endemic Hermann's tortoise (*Testudo hermanni* subsp. *boettgeri*) as it placidly moves through the vegetation.

It was a great surprise to discover *Scorzonera* on the island, let alone an unusual new species. The species epithet honours our friend, Tristan Lafranchis, who had visited the island previously and informed us that the species there seems different from *S. doriae* as he knew it. We thank him for sharing this information and went to see for ourselves.

The description of *Scorzonera doriae* Degen & Bald. was based on two syntypes each representing a separate species (Degen 1896: 417). One was from the summit of Smolikas in N Pindos (Nomos Ioanni-

non, Eparchia Konitsis) based on a gathering by Antonio Baldacci (1867–1950) on 18.07.1896. The other was “in saxosis alvei Sarandaporos ad Vromonero, district Ljaskovik (Leskovik)”, collected also by Baldacci but on 03.07.1896. The two species are mounted on the same sheet under the same collecting number (*Baldacci* 128) (see Fig. 29). We have selected the Smolikas specimens (top right and in lower half of the sheet) as representing *S. doriae* as Baldacci clearly indicated Smolikas specimens without any ambiguity as to their geographical origin and date of collection in a separate gathering mounted on the same sheet. From this we can infer the smaller plants are from Mt Smolikas and not from the Sarandaporos river, and this is borne out by present-day collections from Smolikas (see Fig. 30).

Scorzonera doriae Degen & Bald. in Oesterr. Bot. Z. 46 (12): 417.

Lectotype (designated here): [Greece, Nomos Ioanninon, Eparchia Konitsis] “in summo monte Smolika distr. Konitza Albaniae, 18 Jul. 1896”, *Baldacci* 1896: 128 (BM, specimens top right and on lower half of sheet).

This leaves the larger specimen in the upper left of the sheet (Fig. 29) without a name. This plant originates near Vromonero in the valley of the Sarandaporos river close to the Greek/Albanian border; Vromonero, referring to sulphurous water. The present day locality is Llixhat at 400 m altitude on the Albanian side of the river, a place with pools of sulphured waters for bathing and curing specific illnesses. The Sarandaporos plant is identical to the plants we found on the island between the Aoös and Voidomatis rivers but not to the plants from Smolikas. We have named this plant *S. lafranchisiana* and typified it with our collection from the river island which we visited twice in order to collect fully developed achenes.

Asteraceae

107. *Scorzonera lafranchisiana* Kit Tan & G. Vold, **sp. nov.** (Figs. 31 & 32)

Gr Nomos Ioanninon, Eparchia Konitsis: on island between the Aoös and Voidomatis rivers, formed on the gravelly river bed by sandy alluvial soil, 350 m, 40°02'N, 20°37'E, 27 June 2011, *Kit Tan & G. Vold* 31000 (holotype C; isotypes ATH, UPA, TIR); *loc. ibid.*, 31 July 2013, *Kit Tan & G. Vold* 31655 (herb. Kit, herb. Strid); *loc. ibid.*, 400 m, 25.07.2007, *Lafranchis* obs.



Fig. 29. *Scorzonera doriae*: Natural History Museum, London <https://doi.org/10.5519/qd.8font0k1>– syntypes from Mt Smolikas (Greece) and Sarandoporos river (Albania).



Fig. 30. *Scorzonera doriae* from locus classicus, Mt Smolikas (Hartvig & al. 5368, ATH).

Perennial herb, 20–35(40) cm tall. Rootstock vertical, cylindrical, 5–10 cm long, 1.5–3 cm in diam. at apex swollen with fibrous remains of basal leaves. Stems several to numerous, ascending, sparingly branched and leafy in the lower third to half, shallowly striate, not fistular, subglabrous to sparsely arachnoid-tomentose especially at base. Leaves entire, suberect, linear, (6)8–20 cm long, 2–4 mm broad, flat, shallowly caniculate

near stem, not undulate at margin, subglabrous to sparsely arachnoid-tomentose, attenuate and acute at apex, with prominent sheaths and veins. Capitula solitary with involucre 10–12 mm long at anthesis. Involucral bracts (phyllaries) 3–4-seriate, unequal, pale green edged hyaline pink, slightly shorter than exerted pappus at anthesis; outer bracts triangular-lanceolate, 2–2.5 mm long, 1–1.5 mm broad, sparsely

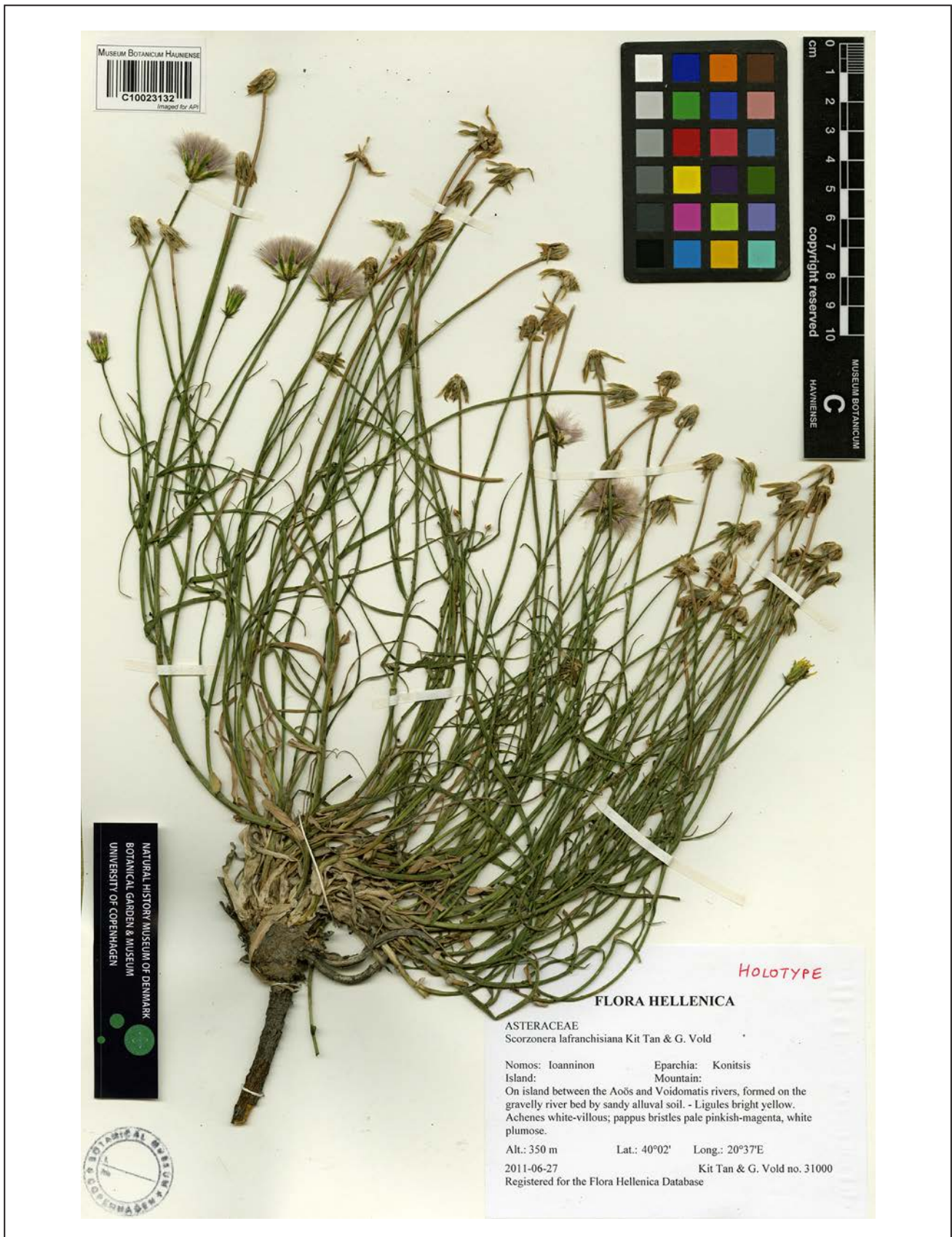


Fig. 31. Holotype of *Scorzonera lafranchisiana* from Aoös and Voidomatis rivers (Kit Tan & G. Vold 31000, reproduced with permission from the Natural History Museum of Denmark).



Fig. 32. *Scorzonera lafranchisiana* in flower and in fruit (photo T. Lafranchis).

white-villous or ciliolate at base; median bracts lanceolate-ovate, ca. 4 mm long; inner bracts elliptic-lanceolate, 10–12 × 2 mm, glabrous. Receptacle ± flat, scales absent. Ligules bright yellow on both surfaces, exerted 2–3 mm from involucre. Achenes narrowly obovoid-cylindrical, 4.5–5 × 1.5–2 mm, unbeaked, without annulus, densely white-villous. Pappus at maturity 12–15 mm long, 2.5–3 times length of achene, of several rows of pale pinkish-magenta bristles, white-plumose throughout. Flowering June to July.

Scorzonera lafranchisiana differs from *S. doriae* by its taller stature, large rootstock, numerous stems with cauline leaves in lower third to half, white-villous achenes and pappus length. It is included in Sect. *Lasiospora* Less., defined by the sectional characters of entire leaves, densely villous achenes with smooth ribs, without tubular base. *Scorzonera doriae* is a low-stature plant with one to 3–4 unbranched stems 4–12(15) cm tall. The apical part of its rootstock is not greatly enlarged nor fibrous. The leaves are basal, prostrate-ascending or recurved, grass-like, 2–8 cm

long, 1–3 mm broad and obtusely tipped. The achenes are densely fulvous- or rufous-sericeous and the pappus 5–6 mm long, dark pinkish-magenta and fulvous-plumose. The ligules are conspicuously striped red. It flowers from June to August and occurs at montane to alpine regions, from (1750) 1800 to 2450 m, on rocky slopes, scree and stony pastures overlying serpentine. In *Mountain flora of Greece*, Lack & Kilian (1991: 536–537) described *S. doriae* based on the plants from N Pindos in NW Greece and the species seems restricted to serpentine substrate and high altitudes. It is known from Mts Mavrovouni (Milea), Pirostia (Avgo), Vasilitza and the type locality, Smolikas. The species was dedicated to the Italian Senator and naturalist Giacomo Doria (1840–1913) who collected extensively in Persia, Turkey, Sarawak, Tunisia, etc, and is commemorated by the names of many new reptiles, amphibians and insects.

Of course *S. lafranchisiana* could not be restricted solely to this small island with a changing profile. Plants must have been washed down in heavy rain from eroded gullies in localities at the upper reaches and banks of the rivers. Living fragments of rootstock or fruiting involucre must have floated all the way to become established on the island, thriving on the alluvial sand. *Colchicum autumnale* (in fruit) and *Lythrum salicaria* edged the Aoös river banks. We went to the slopes along and above the Aoös river to find possible localities. We found many plants on the gravelly flysch of eroded rocky slopes along the road from Molista to Samarina above the Aoös river (at altitudes of 700–850 m on 15 July 2019, Kit Tan & G. Vold 33104). A study of herbarium material of plants labelled as *S. doriae* revealed they refer to *S. lafranchisiana* and populations also exist near Eptahori, some kilometres away to the northeast. The chromosome number of *S. lafranchisiana* ($2n = 12$) has also been reported, in error for *S. doriae* (Constantinidis & al. 2002: 117).

The distribution of *S. lafranchisiana* is S Albania and NW Greece, unlike *S. doriae* which is probably a Greek endemic. There are reports of the former from Sterea Ellas (as *S. doriae*) but we have not yet been able to confirm them.

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Report 108

Alexander Tashev

Department of Dendrology, Faculty of Forestry,
University of Forestry, 10 Kl. Ochridski Blvd.,
Sofia 1797, Bulgaria, e-mail: atashev@mail.bg

Liliaceae

108. *Lilium jankae* A. Kern. (Figs. 33-34)

Bu Rhodopi Mts (*Central*): above the motorway between Progled village and Pamporovo locality – at about 150 m on a beeline from the motorway; the species was found 15 m away from a 130-year-old *Picea abies* forest, in Mitkovi Livadi locality, in habitat 16E2 Mountain hay meadows (EUNIS: E2.31 Alpic mountain hay meadows; PAL. CLASS.: 38.31 Alpic mountain hay meadows; HD 92/43: 6520 Mountain hay meadows), protected by the Bulgarian Biodiversity Act and Habitats Directive; it grew in a polydominant herbaceous community, in the upper part of a slope with northwestern exposition and inclination of 15°, at 1521 m, 41°39'17.9"N, 24°42'10.3"E, 09.07.2017, with fruits, A. Tashev (SOM & photos).

In the locality, some 100 generative individuals have been identified, on an area of 0.1 ha. The remaining individuals stood out singly, or in small groups of 2–3 plants among the other herbs. The projection

cover of the grass community was 100 %. It was dominated by *Succisa pratensis* and *Trifolium alpestre*. Other accompanying species were: *Agrostis capillaris*, *Brachypodium pinnatum*, *Briza media*, *Cynosurus cristatus*, *Dactylis glomerata*, *Deschampsia flexuosa*, *Festuca nigrescens*, *F. rubra*, *Holcus mollis*, *Luzula luzuloides*, *Chamaespartium sagittale*, *Trifolium aureum*, *T. montanum*, *Achillea millefolium*, *Anthriscus sylvestris*, *Astrantia major*, *Campanula glomerata*, *C. patula* subsp. *epigea*, *C. rapunculoides*, *Carex* sp., *Centaurea* sp., *Cirsium appendiculatum*, *Clinopodium vulgare*, *Crepis viscidula*, *Cruciata glabra*, *Galium verum*, *Gymnadenia conopsea*, *Hypericum maculatum*, *Leucanthemum vulgare*, *Pastinaca hirsuta*, *Rhinanthus rumelicus*, *Rumex acetosa*, *Silene vulgaris*, *Stachys alpina*, *Stellaria graminea*, *Veronica chamaedrys*, *Vicia cracca*, *Viola tricolor*, etc. The locality lies in a private property lot with cadastral No. 80371.170.1.

In 2017, the species was erroneously determined as *Lilium rhodopaeum* (Tashev 2017: 313), owing to the morphological closeness of the two species and because of the fact that herbarium material was collected with fruits. Nevertheless, in the same area (close to Progled village), there is a well-known locality of *Lilium rhodopaeum* (Ivanova 2015).

Lilium jankae is a new species for the flora of the Rhodopi Mts. This Balkan-Carpathian species is clas-



Fig. 33. *Lilium jankae* – habit and habitat (photo A. Tashev).



Fig. 34. *Lilium jankae* – flower (photo A. Tashev).

sified as Near Threatened and is under the protection of the Bulgarian Biodiversity Act (2002, 2007) and Bern Convention (1979). So far it has been reported for the Balkan Range (*Western, Central*), Znepole region, Western Frontier Mts, Sofia region, Vitosha Region and Rila Mts. (Popova 2011; Assyov & Petrova 2012: 257).

Reports 109–117

George Zarkos¹, Vasilis Christodoulou²,
Kit Tan³ & Gert Vold⁴

¹ Kolokotroni 37A, Kiato, 202 00, Korinthias, Greece

² Apellou sidestreet, Kiato, 202 00, Korinthias, Greece

³ Institute of Biology, University of Copenhagen,
Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark,
e-mail: kitt@bio.ku.dk (author for correspondence)

⁴ State Natural History Museum, Øster Farimagsgade 2C,
DK-1353 Copenhagen K, Denmark

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

Ophioglossaceae

109. *Botrychium lunaria* (L.) Sw. (Fig. 35)

Gr Nomos & Eparchia Korinthias: Mt Killini, near the summit of Simio, grassy places and calcareous rock, 2179 m, 37°56'N, 22°24'E, 06.07.2019, Zarkos, Christodoulou & Kouni obs.

Confirming report made more than a century ago, based on a collection by Maire and Petitmengin on 8 August 1906 (Maire & Petitmengin 1908: 238). In the Peloponnese, it is otherwise known only from Mt Chelmos (collected on 12 August 1906, also by Maire and Petitmengin). Approximately ten individuals were noted, scattered in the alpine zone.



Fig. 35. *Botrychium lunaria* (photo G. Zarkos).

Asteraceae

110. *Hieracium naegelianum* Pančić (Fig. 36)

Gr Nomos & Eparchia Korinthias: Mt Killini, near the summit of Profitis Ilias, stony slopes, 2200 m, 37°55'N, 22°23'E, 07.08.2019, Zarkos obs.

New for Mt Killini, nomos and eparchia Korinthias. In the Peloponnese reported only at high altitude from Mts Chelmos and Taigetos.



Fig. 36. *Hieracium naegelianum* (photo G. Zarkos).

Caryophyllaceae

111. *Moenchia graeca* Boiss. & Heldr.

Gr Nomos & Eparchia Korinthias: N of Feneos village and SW of Tarsos village, 1605 m, 37°58'N, 22°19'E, 19.05.2019, Zarkos & Christodoulou obs.

New for nomos and eparchia Korinthias on the Peloponnesian side. It has been recorded from Mt Gerania in Korinthias which however, is in phytogeographical region Sterea Ellas.

Fabaceae

112. *Astragalus lacteus* Heldr. & Sartori ex Boiss.
(Fig. 37)



Fig. 37. *Astragalus lacteus* (photo G. Zarkos).

Gr Nomos & Eparchia Korinthias: Saradapicho village, road margins, 1310 m, 38°01'N, 22°22'E, 10.05.2019, Zarkos obs.

New for nomos and eparchia. In the Peloponnese, recorded from mountains of central and south central Peloponnese (Parnon, Menalon and Oligirtos).

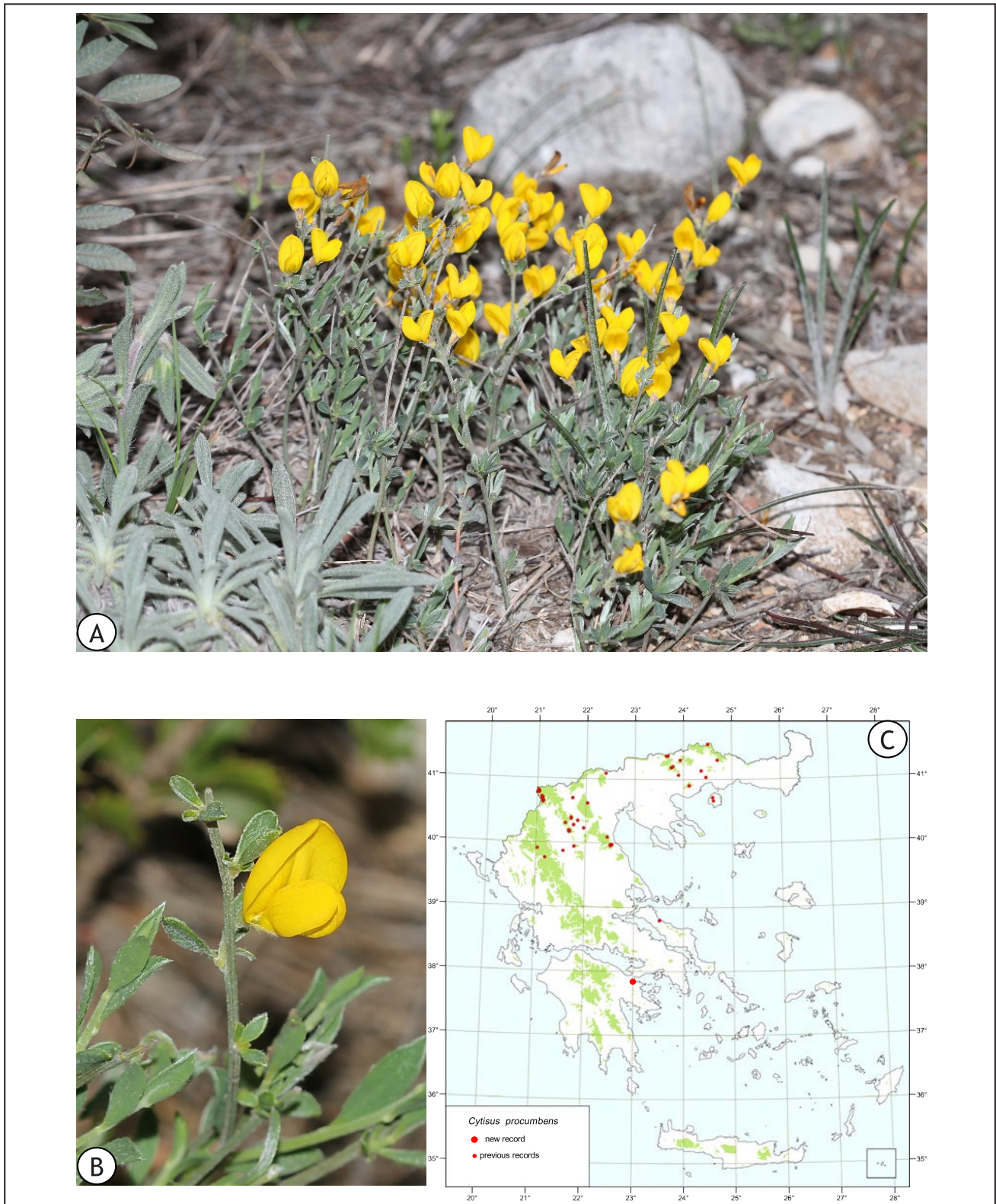


Fig. 38. *Cytisus procumbens* (photo G. Zarkos) and its distribution in Greece.

113. *Cytisus procumbens* (Willd.) Spreng.
(Figs. 38 & 39)

Gr Nomos & Eparchia Korinthias: NW-facing slopes on Mt Onia, south of Xilokeriza, *ca.*

480 m, 37°51'N, 22°56'E, 01.03.2019, Zarkos obs.; *loc. ibid.*, 13.04.2019, Kit Tan & G. Vold 33078 (ATH, C, KOR, confirmed by J. Zieliński, Poznan).



Fig. 39. *Cytisus procumbens*, new for the Peloponnese (reproduced with permission from the Natural History Museum of Denmark).

New for the Peloponnese, southernmost occurrence in Greece and very disjunct in its known distribution. There were 80–100 plants found in between the stony limestone outcrops and grazed *Quercus coccifera* shrubs in remnants of macchie and open *Pinus halepensis* woodland burnt four to five years ago. Other plants in the phrygana are *Globularia alypum*, *Anthyllis hermanniae*, *Pistacia lentiscus*, *Calicotome villosa*, *Thymbra capitata*, *Alkanna tinctoria*, *Cistus salviifolius*, *C. parviflorus*, *Fumana thymifolia*, *Teucrium polium*, *Sideritis clandestina*, *Cyclamen graecum*, *Helichrysum stoechas* subsp. *barrelieri*, *Scorzonera mollis*, *Dorycnium hirsutum* and *Erica manipulifera*. *Ebenus sibthorpii* and *Onosma erecta* subsp. *erecta* were also noted, the latter a sea of lemon yellow, so numerous were the plants on the mountain slope.

Cytisus procumbens has been noted near the coast on the island of Evvia (see Fig. 38c). It is mainly a mountain species and its presence at low altitude near the sea is also unusual.

114. *Trifolium phleoides* Willd. (Fig. 40)

Gr Nomos & Eparchia Korinthias: Mt Killini, Flabouritsa gorge, openings in woodland, 1290 m, 37°56'N, 22°26'E, 02.06.2019, Christodoulou, Zarkos & Kouni obs.

New for Mt Killini, nomos and eparchia Korinthias; second record for the Peloponnese. The first record was by Maroulis from Nomos Achaïas, Eparchia Kalavriton (Maroulis 1579, UPA).

Violaceae

115. *Viola aetolica* Boiss. & Heldr.

Gr Nomos & Eparchia Korinthias: N of Feneos village and SW of Tarsos village, 1605 m, 37°58'N, 22°19'E, 19.05.2019, Zarkos & Christodoulou obs.



Fig. 40. *Trifolium phleoides* (photo G. Zarkos).

New for nomos and eparchia. In the Peloponnese reported only from Mts Panachaiko and Chelmos.

Amaryllidaceae

116. *Narcissus poeticus* L.

Gr Nomos & Eparchia Korinthias: Ano Tarsos, 1200 m, 38°05'N, 22°22'E, 11.05.2019, Zarkos obs. The first record of this taxon from the Peloponnese seems to be from Korinthias, probably from the same locality (Sfikas 2000: 22). It was later reported from Mt Erimanthos by Maroulis & Artelari (2001: 326) but at high altitudes.

Asphodelaceae

117. *Asphodeline lutea* (L.) Rchb.

Gr Nomos Argolidos, Eparchia Argous: NE face of Mt Skiathes near Mt Oligirtos, 1300 m, 37°47'N, 22°24'E, 24.04.2019, Zarkos obs.

New for nomos and eparchia. Of scattered occurrence in the Peloponnese.

References

- Assyov, B. & Petrova, A. (eds). 2012. Conspectus of the Bulgarian Vascular Flora. Distribution Maps and Floristic Elements. Ed. 4. Bulgarian Biodiversity Foundation, Sofia.
- Athanasiadis, N. & Drossos, E.G. 1990. Flora and vegetation of Mount Païko. – Sci. Ann. Dept. Forest. Nat. Environm. Aristot. Univ. Thessalonika, LC/1(1): 35-149 (in Greek with English summary).
- Barina, Z. (ed.). 2017. Distribution Atlas of Vascular Plants in Albania. Hungarian Natural History Museum, Budapest.
- Barina, Z., Somogyi, G., Pifkó, D. & Rakaj, M. 2018. Checklist of vascular plants of Albania. – Phytotaxa, 378(1): 1-339.
- Beck, G.R. & Szyszylowicz, I. 1889. Plantas a Dr. Ign. Szyszylowicz in itinere per Cernagoram et in Albania adiacenti anno 1886 lectas. – Rozprawy i Sprawozdania z Posiedzeń Wydziału Matematyczno-Przyrodniczego Akademii Umiejętności, 19: 1-166.
- Bern Convention. 1979. Convention on the Conservation of European Wildlife and Natural Habitats. Appendix I. – http://www.bfn.de/0302_berner+M52087573ab0.html (accessed 22.07.2019).
- Biological Diversity Act. 2002. Decree no. 283 accepted by the National Assembly on 02 August 2002. – Durzhaven Vestnik, no. 77/09.08.2002. Pp. 9-42 (in Bulgarian).
- Biological Diversity Act (Act on Amending and Supplementing the Biological Diversity Act). 2007. Decree no. 354 accepted by the 40th National Assembly on 01 November 2007. – Darzhaven Vestnik, no. 94/16.11.2007, pp. 2-44 (in Bulgarian).
- Browicz, K. 1982. *Betula*. – In: Davis, P.H. (ed.), Flora of Turkey and the East Aegean Islands. Vol. 7, p. 690. Univ. Press, Edinburgh.
- Browicz, K. & Yaltrık, F. 1982. *Populus*. – In: Davis, P.H. (ed.), Flora of Turkey and the East Aegean Islands. Vol. 7, pp. 719-720. Univ. Press, Edinburgh.

- Constantinidis, Th., Bareka, P. & Kamari, G.** 2002. Karyotaxonomy of Greek serpentine angiosperms. – Bot. J. Linn. Soc., **139**(1): 109-124.
- Cullen, J.** 1965. *Equisetum*. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. **1**, p. 33. Univ. Press, Edinburgh.
- Cullen, J.** 1967. *Alcea* (p. 417), *Althaea* (419-420), *Malva* (406-407). – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. **2**, p. 406. Univ. Press, Edinburgh.
- Degen, Á. v.** 1896. Bemerkungen über einige orientalische Pflanzenarten. XXII–XXVII. – Oesterr. Bot. Z., **46**(12): 413-418.
- Demiri, M.** 1983. Excursion Flora of Albania [Flora Ekskursioniste e Shqipërisë]. Shtëpia Botuese e Librit Shkollor, Tiranë (in Albanian).
- Dimopoulos, P., Raus, Th., Bergmeier, E., Constantinidis, Th., Iatrou, G., Kokkini, S., Strid, A. & Tzanoudakis, D.** 2013. Vascular Plants of Greece. An Annotated Checklist. – Englera, **31**: 1-372.
- Drossos, E.G. & Athanasiadis, N.** 1989. Contribution to the research of the pastures of Mount Paiko. Flora and vegetation. – Sci. Ann. Dept. Forest. Nat. Environm. Aristot. Univ. Thessalonika, **LB/3**(13): 277-320 (in Greek with English summary).
- Gamal-Eldin, E. & Wagenitz, G.** 1991. *Centaurea*. – In: **Strid, A. & Tan, Kit** (eds), Mountain Flora of Greece. Vol. **2**. Edinburgh Univ. Press, Edinburgh.
- Ganiatsas, K.A.** 1963. I vlastisis ke I chloris tis chersonisou tou Agiou Orous [The vegetation and flora of the peninsula of Holy Mountain]. Pp. 509-678. The Athonic. Community in the Millennium, Aristotle Univ. Thessaloniki (in Greek).
- Goulimis, C.N.** 1960. New Additions to the Greek Flora. Second series, Athens.
- Hayek, A.** 1924. Zweiter Beitrag zur Kenntnis der Flora von Albanien. Denkschr. Akad. Wiss. Wien, Math.-Naturwiss. Klasse, **99**: 101-224.
- Hayek, A.** 1927. Prodrum Flora peninsulae Balcanicae 1. Repertorium specierum novarum regni vegetabilis, Beihefte, **30**(1): 1-1193.
- Hayek, A.** 1928. Prodrum Flora peninsulae Balcanicae 2/1. Repertorium specierum novarum regni vegetabilis, Beihefte, **30**(2): 1-96.
- Huber-Morath, A. & Rechinger, K.H.** 1960. Zur Kenntnis der Gattungen *Verbascum* und *Celsia* in Griechenland. – Mitt. Thür. Bot. Ges., **2**: 42-55.
- Ivanova, D.** 2015. *Lilium rhodopaeum*. – In: **Peev, D. & al.** (eds), Red Data Book of the Republic of Bulgaria. Vol. **1**. Plants and Fungi, p. 887. BAS & MoEW, Sofia (in Bulgarian).
- Kyriakopoulos, Ch., Bareka, P. & Kamari, G.** 2016. Karyological data of some endemic taxa from Mt Taigetos, Greece. – Fl. Medit., **26**: 224-228.
- Lack, H.W. & Kilian, N.** 1991. *Scorzonera*. – In: **Strid, A. & Tan, Kit** (eds), Mountain Flora of Greece. Vol. **2**, pp. 531-537. Edinburgh Univ. Press, Edinburgh.
- Lamond, J.** 1978. *Primula*. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. **6**, pp. 113-115. Univ. Press, Edinburgh.
- Maire, R. & Petitmengin, M.** 1908. Étude des plantes vasculaires récoltées en Grèce (1906). – In: **Maire, R.**, Matériaux pour servir à l'étude de la flore et de la géographie botanique de l'Orient. Fasc. **4**. Berger-Levrault & Co., Nancy.
- Maroulis, G. & Artelari, R.** 2001. New records for the flora of Mount Erimanthos (NW Peloponnisos, Greece). – Fl. Medit., **11**: 311-331.
- Murbeck, Sv.** 1933. Monographie der Gattung *Verbascum*. Lunds Universitets Årsskrift. N.F. Avd. 2. Bd. **29**. Nr. 2.
- Paparisto, K., Demiri, M., Mitrush, I. & Qosja, Xh.** 1988. Flore de l'Albanie (Flora e Shqipërisë) 1. Akademia e Shkencave e RPS të Shqipërisë, Qendra e Kërkimeve Biologjike, Tiranë.
- Petrova, A., Vladimirov, V. & Georgiev, V.** 2013. Invasive Alien Speices of Vascular Plants in Bulgaria. IBER-BAS, Sofia.
- Popova, M.** 2011. *Lilium*. – In: **Delipavlov, D. & Cheschmedzhiev, I.** (eds), Key to the Plants in Bulgaria. Pp. 441-442. Agrarian Univ. Acad. Press, Plovdiv (in Bulgarian).
- Qosja, Xh., Paparisto, K., Demiri, M., Vangjeli, J. & Balza, E.** 1992. Flore de l'Albanie (Flora e Shqipërisë) 2. Akademia e Shkencave e Republikës së Shqipërisë, Qendra e Kërkimeve Biologjike, Tiranë.
- Qosja, Xh., Paparisto, K., Vangjeli, J. & Ruci, B.** 1996. Flore de l'Albanie (Flora e Shqipërisë) 3. Akademia e Shkencave e Republikës së Shqipërisë, Instituti i Kërkimeve Biologjike, Tiranë.
- Quézel, P. & Contandriopoulos, J.** 1968. Contribution à l'étude de la flore de la Macédoine grecque. – Candollea, **23**: 17-38.
- Rechinger, K.H.** 1929. Beitrag zur Kenntnis der Flora der ägäischen Inseln und Ost-Griechenlands. – Ann. Naturhist. Mus. Wien, **43**: 269-340 + 2 plates.
- Rechinger, K.H.** 1939. Zur Flora von Ostmazedonien und Westthrazien. – Bot. Jahrb. Syst., **69**(4): 419-552 + 3 plates.
- Routsis, E. & Georgiadis, Th.** 1994. Systematic review of *Centaurea rupestris* L., section *Acrocentron* (*Asteraceae*) in Greece. – Candollea, **49**(2): 359-368.
- Sfikas, G.** 1996. Bourinos. Publ. by the Mountaineering Club of Siastika.
- Sfikas, G.** 2000. News from the Greek flora. – Fisis (Journal of the Hellenic Society for the Protection of Nature), **90**: 19-22 (in Greek).
- Strid, A. & Tan, K.** 1997. Flora Hellenica. Vol. **1**. Koeltz Scientific Books, Königstein.
- Strid, A.** 2016. Atlas of the Aegean flora. Berlin.
- Tashev, A.** 2017. Report 194. – In: **Vladimirov, V. & al.** (comp.), New floristic records in the Balkans: 33. – Phytol. Balcan., **23**(2): 313-314.
- Turrill, W.B.** 1918. Contributions to the flora of Macedonia: I. – Bull. Misc. Inform. Kew, 1918(8-9): 249-341.
- Turrill, W.B.** 1919. Contributions to the flora of Macedonia: II. – Bull. Misc. Inform. Kew, 1919(3): 105-108.
- Turrill, W.B.** 1922. A contribution to the flora of the Nearer East. – Bull. Misc. Inform. Kew, 1922(9): 291-298.
- Tutin, T.G. & al.** (eds) 1976. Flora Europaea. Vol. **4**: *Plantaginaceae* to *Compositae* (and *Rubiaceae*). Cambridge Univ. Press, Cambridge.

- Vandas, C.** 1909. Reliquiae Formánekianae. Enumeratio critica plantarum vascularum, quam itineribus in Haemo peninsula et Asia Minore (Bithynia) factis collegit Dr Ed. Formánek. Jos. Jelinek, Brno.
- Vladimirov, V.** 2012. Reports 176-188. – In: **Vladimirov, V. & al.** (comp.), New floristic records in the Balkans: 20. – *Phytol. Balcan.*, **18**(3): 363-365.
- Vladimirov, V., Tashev, A. & Delcheva, M.** 2016. Reports 178–189. – In: **Vladimirov, V. & Tan, Kit** (comp.), New floristic records in the Balkans: 31. – *Phytol. Balcan.*, **22**(3): 459-460.
- Vladimirov, V., Delcheva, M., Tashev, A. & Bancheva, S.** 2017. Reports 78–87. – In: **Vladimirov, V. & al.** (comp.), New floristic records in the Balkans: 32. – *Phytol. Balcan.*, **23**(1): 139-140.
- Wearn, J.** 2015: Risking their lives to collect plants on the Salonica Front. – *Journal of the Salonica Campaign Society*, 1915-1918, **31**: 8-14.
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