

New floristic records in the Balkans: 32*

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Abstract: New chorological data are presented for 114 species and subspecies from Albania (56), Bulgaria (42, 43, 45-49, 57-70, 75-87), Greece (9-41, 44, 50-56, 71-74, 88-114), and Turkey-in-Europe (1-8). The taxa belong to the following families: *Acanthaceae* (89), *Aceraceae* (71), *Alismataceae* (48), *Amaranthaceae* (79), *Apiaceae* (42, 90), *Apocynaceae* (34), *Araceae* (111), *Araliaceae* (91), *Aristolochiaceae* (35), *Asclepiadaceae* (62), *Aspleniaceae* (9), *Asteraceae* (10-12, 36, 43, 46, 50, 51, 57, 58, 80-82, 88, 92, 93), *Betulaceae* (13), *Boraginaceae* (14, 15, 94, 95), *Brassicaceae* (96), *Cactaceae* (16), *Caryophyllaceae* (3, 17, 52), *Chenopodiaceae* (47), *Commelinaceae* (26), *Convolvulaceae* (18), *Crassulaceae* (19, 37, 67), *Cupressaceae* (41, 45, 78), *Cyperaceae* (61), *Dipsacaceae* (68), *Ephedraceae* (33), *Euphorbiaceae* (20, 72, 83, 97), *Fabaceae* (6, 56, 84, 98), *Fumariaceae* (99), *Gentianaceae* (7), *Geraniaceae* (21, 69, 100, 101), *Hyacinthaceae* (27), *Iridaceae* (44, 112), *Lamiaceae* (53, 102), *Linaceae* (59, 63, 103), *Lythraceae* (1), *Malvaceae* (104), *Orchidaceae* (2, 28, 65, 75-77, 113), *Orobanchaceae* (54, 105), *Plantaginaceae* (22, 106), *Plumbaginaceae* (73, 74), *Poaceae* (29-32, 49, 66), *Polygonaceae* (85, 86), *Ranunculaceae* (60), *Rosaceae* (4, 5, 8, 64, 107-110), *Rubiaceae* (70), *Ruscaceae* (114), *Solanaceae* (23, 24, 38, 39), *Thymelaeaceae* (55), *Veronicaceae* (25), *Violaceae* (40), and *Vitaceae* (87).

A new species for science is: *Oxytropis tomoriensis* Kit Tan & al. (56).

New species for the countries are: Greece – *Cenchrus spinifex* (29), *Eragrostis neomexicana* (30), *Solanum chenopodioides* (23).

The publication includes contributions by: M. Aybeke (1-2), M. Aybeke & F. Dane (3-5), M. Aybeke, C. Kurt & A. Semerci (6), M. Aybeke & C. Yarci (7-8), B. Biel & Kit Tan (9-32), K. Giannopoulos, Kit Tan & G. Vold (33-40), M. Gletsos (41), T. Karakiev (42, 43), D. Mermlygkas & Th. Skouras (44), A. Petrova & D. Venkova (45-49), K. Polymenakos & Kit Tan (50-55), L. Shuka, Kit Tan & G. Vold (56), S. Stoyanov & Zh. Barzov (57-61), S. Stoyanov & V. Goranova (62-66), A. Tashev, D. Dimitrov & M. Delcheva (67-70), M. Thornberg & Kit Tan (71-74), R. Tzonev, R. Baleva & I. Purvanov (75-77), V. Vladimirov, M. Delcheva, A. Tashev & S. Bancheva (78-87), G. Wagenitz, Kit Tan & E. Bergmeier (88), G. Zarkos, V. Christodoulou, Kit Tan & G. Vold (89-114).

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 1–2

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Lythraceae

1. *Ammannia auriculata* Willd. var. *arenaria* (Kunth) Koehne

Tu(E) A1(E) Edirne: Centre, Trakya Agricultural
Research Institute, in rice fields, 26 m,
41°40'33"N, 26°33'31"E, 18.08.2005, coll. *M.*
Aybeke, *H. Sürek*, det. *M. Aybeke* (EDTU 9474).

A new record for European Turkey. According to Chamberlain (1972), this taxon is known from Anatolia, A9 Çoruh, and distributed in Georgia, Armenia, N Iran, Afghanistan, Kashmir, China, tropical and subtropical regions of Africa and America, and is introduced in S Europe. Regarding European Turkey, finds of this taxon in the Thrace region were not surprising, because it is accepted as "alien weed" by the rice farmers and has even been spread out to new uninfected rice fields by the imported rice seed bags from other countries. Furthermore, Chamberlain (1972) indicated that occurrence of this taxon requires confirmation. With this report, this taxon has been confirmed for the first time.

Orchidaceae

2. *Cephalanthera longifolia* (L.) Fritsch

Tu(E) A1(E) Edirne: Keşan, between
Karlıköy – Mecidiye, 5 km to Mercan pond,
93 m, 40°44'49"N, 26°36'14"E, 07.05.1996, coll.
N. Güler, *M. Aybeke*, det. *M. Aybeke* (EDTU
7308); Enez, at the entrance of Çandır vil-
lage, under *Quercus* trees, 252 m, 40°43'50"N,
26°15'49"E, 22.04.2001, coll. & det. *M. Aybeke*
(EDTU 8217);
— A1(E) Kırklareli: Kastro, on a forest trail, 20 m,
41°34'09"N, 28°07'59"E, 18.05.2001, coll. & det.
M. Aybeke (EDTU 8237); Demirköy, at 6th km
to Demirköy, in Vali Mezarlığı location, in soil
at the roadside, in a forest, 252 m, 41°49'30"N,
27°45'35"E, coll. & det. *M. Aybeke* (EDTU
8239).

A new record for Edirne and Kırklareli in European Turkey. According to Renz & Taubenheim (1984), this taxon was reported only A2(E) from Istanbul.

Reports 3–5

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Caryophyllaceae

3. *Petrorhagia velutina* (Guss.) Ball & Heywood

Tu(E) A1(E) Edirne: Süloglu, between
Domurcalı – Taşlımüsellim, 2 km, 252 m,
41°48'51"N, 26°49'17"E, 01.06.1987, coll. *G.*
Olgun, *F. Dane*, det. *F. Dane* (EDTU 904);
Centre, Musabeyli village, in a dry pasture,
152 m, 41°41'50"N, 26°39'41"E, 28.04.1989,
coll. *F. Dane*, *N. Aktaş*, det. *F. Dane* & *N. Polat*
(EDTU 3544);
— A1(E) Kırklareli: Demirköy, between İğneada –
Demirköy, 3 km, 12 m, 41°52'28"N, 27°59'02"E,
17.06.1987, coll. *G. Olgun*, *A. Aydın* & *C. Yarcı*,
det. *F. Dane* (EDTU 1405).

A new record for Edirne and Kırklareli in European Turkey. According to Coode & Cullen (1967), this taxon was known only from A1(E) Tekirdağ and A2(E) Istanbul.

Rosaceae

4. *Filipendula vulgaris* Moench

Tu(E) A1(E) Edirne: Keşan, between
Keşan – Çeltikköy, 24 m, 40°41'04"N, 26°33'36"E,
11.06.1987, coll. *F. Dane*, *G. Dalgıç* & *N.*
Başak, det. *C. Yarcı* & *F. Dane* (EDTU 1100);
Uzunköprü, between Uzunköprü – Bayramlı,
68 m, 41°18'24"N, 26°49'34"E, 11.06.1987, coll. *G.*
Dalgıç, *F. Dane* & *H. Arda*, det. *F. Dane* & *C. Yarcı*
(EDTU 1454).

A new record for Edirne in European Turkey. According to Peşmen & Chamberlain (1972), this taxon was known only from A2(E) Istanbul.

5. *Sanguisorba minor* subsp. *muricata* (Spach) Briq.

Tu(E) A1(1) Edirne: Centre, Karakasım village,
in rice fields, 65 m, 41°31'02"N, 26°38'38"E,
07.06.1989, coll. *F. Dane* & *N. Polat*, det. *M.*
Aybeke (EDTU 3285).

A new record for Edirne in European Turkey. According to Cullen (1972), this taxon was known only from A1(E) Kırklareli and A2(E) Istanbul.

Report 6

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Fabaceae

6. *Trifolium glanduliferum* Boiss. var. *nervulosum*

(Boiss. & Heldr.) Zohary

Tu(E) A1(E) Edirne: Süloğlu, Geckinli village, in forage (04 E 05), 183 m, 41°43'00"N, 26°51'00"E, 02.06.2004, coll. M. Aybeke, C. Kurt & A. Semerci, det. M. Aybeke (TTAE 1074).

A new record for European Turkey. According to Zohary (1970), this taxon was known from A1(A) Çanakkale Erenköy, Western and Southern Anatolia. It was not surprising to find it in the Çanakkale locality, because the locality is relatively close to Edirne and with this report the taxon was confirmed for the first time and precisely reported by our fieldworkers in European Turkey.

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Reports 7–8

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Gentianaceae

7. *Centaurium erythraea* Rafn subsp. *erythraea*

Tu(E) A1(E) Kırklareli: Demirköy, between Demirköy – Pınarhisar, 1 km, 252 m, 41°49'30"N, 27°45'35"E, 02.07.1989, coll. & det. C. Yarci (EDTU 4180).

A new record for Kırklareli in European Turkey. According to Jakobsen (1978), this taxon was known only from A1(E) Çanakkale and A2(E) Istanbul.

Rosaceae

8. *Sorbus aucuparia* L.

Tu(E) A1(E) Kırklareli: Demirköy, between Demirköy – Pınarhisar, 1 km, 252 m, 41°49'30"N, 27°45'35"E, 02.07.1989, coll. & det. C. Yarci (EDTU 4177).

A new record for European Turkey. According to

Gabrielian (1972), this taxon was known from N. & N.E. Anatolia, A1(A) Çanakkale, A4 Kastamonu, A5 Amasya, A6 Giresun, A7 Trabzon, A Çoruh, A9 Kars, B5 Kayseri, B9 Ağrı, and distributed across Europe, C & E Russia, Crimea, Caucasia, NW Africa and Lebanon. It is indicated as a Euro-Siberian Element.

Reports 9–32

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This is the second report of new plant-records for the island of Thasos (Nomos Kavallas, Eparchia Thasou) based mainly on short visits in November 2016 and March 2017. The records listed are all new to the island and six species were found to be new for the floristic region N Aegean islands (NAe) as circumscribed in *Flora Hellenica* (Strid & Tan 1997). Occurrence on the other N Aegean islands is also provided. *Cenchrus spinifex*, *Eragrostis neomexicana* and *Solanum chenopodioides* are taxa new for Greece.

Aspleniaceae

9. *Asplenium trichomanes* subsp. *quadrivalens* D.E. Mey.

Gr Thasos: E of Limenas (Thasos), terraced slope with olive trees and shrubs, 30 m, 40°46'42"N, 24°42'53"E, 01.03.2017, Biel 17.003.

There are few records on the island which have been correctly determined to subspecific level. One is a gathering made more than a century ago (22.05.1891, *Sintenis & Bornmüller* 477, LD). Following the descriptions and diagnostic characters reported in O. Stöhr (2010) our plants key out as *A. trichomanes* subsp. *quadrivalens* instead of *A. t.* subsp. *trichomanes* or *A. t.* subsp. *inexpectans* Lovis, both of which have also been reported from Thasos. *Asplenium trichomanes* subsp. *quadrivalens* is the most commonly encountered subspecies on Thasos and is also recorded from Samothraki.

Asteraceae

10. *Taraxacum aleppicum* Dahlst.

Gr Thasos: E-NE of Panagia, slope by dirt road with phrygana and *Pinus*, on marble, 140 m, 40°44'06"N, 24°44'15"E, 11.11.2016, Biel 16.021.

Recorded from Samothraki.

11. *Taraxacum minimum* (Guss.) N. Terracc.

Gr Thasos: Limenas (Thasos), excavation area behind old harbour, 5 m, 40°46'48"N, 24°42'42"E, 09.11.2016, *Biel* obs.

Recorded from Samothraki, Limnos and Ag. Evstratios. Also noted near Kalivia, Kastro, Limenaria and Theologos.

12. *Taraxacum scolopendrinum* Dahlst.

Gr Thasos: N-NE of Kastro, slope by dirt road with *Platanus* and *Pinus*, 430 m, 40°41'33"N, 24°39'37"E, 17.11.2016, *Biel* 16.046.

Recorded from Samothraki and Ag. Evstratios.

Betulaceae**13. *Corylus avellana*** L.

Gr Thasos: W of Limenas (Thasos), in olive plantation behind narrow beach, 2 m, 40°46'35"N, 24°41'47"E, 09.11.2016, *Biel* 16.041; W of Potamia, pasture with trees and shrubs above village, 100 m, 40°43'03"N, 24°43'27"E, 04.03.2017, *Biel* 17.016.

Recorded from Samothraki.

Boraginaceae**14. *Asperugo procumbens*** L.

Gr Thasos: Limenaria, ruderal slope at main road, 10 m, 40°37'39"N, 24°34'27"E, 12.03.2017, *Biel* 17.071.

Recorded from Samothraki.

15. *Echium arenarium* Guss.

Gr Thasos: Limenaria, rocky hill on little peninsula at harbour, 5 m, 41°31'26"N, 24°32'40"E, 07.03.2017, *Biel* 17.033; S of Potos, beach at mouth of Dipotamos stream, 2 m, 41°30'18"N, 24°34'33"E, 08.03.2017, *Biel* 17.047.

Recorded from Ag. Evstratios. Also noted west of Limenaria.

Cactaceae**16. *Opuntia humifusa*** Raf. [= *O. vulgaris* Mill.] (Fig. 1)

Gr Thasos: Limenaria, waste ground and depressions in dried-out stream bed N of village, 15 m, 40°37'42"N, 24°34'20"E, 12.11.2016, *Biel* obs. (photo).

New for N Aegean islands. Native to N America. Extent of naturalization in Greece unknown (reported from mainland, C and S Aegean) but on Thasos, it was observed fruiting and spreading, occupying several hundred square metres. Also noted east and west of Limenaria.

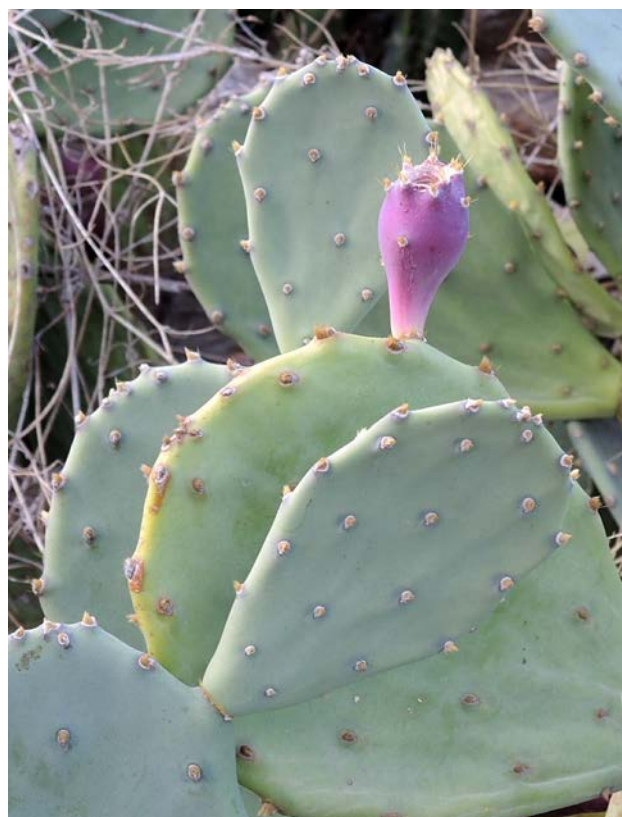


Fig. 1. *Opuntia humifusa* (photo B. Biel).

Caryophyllaceae**17. *Herniara glabra*** L.

Gr Thasos: Limenas (Thasos), grooves in-between paved stone flags of path in park at promenade, 3 m, 40°46'47"N, 24°42'34"E, 14.03.2017, *Biel* 17.082.

New for N Aegean islands.

Convolvulaceae**18. *Dichondra micrantha*** Urban

Gr Thasos: Limenas (Thasos), well-watered park at harbour promenade, 3 m, 40°46'47"N, 24°42'34"E, 11.11.2016, *Biel* 16.018.

Recorded from Samothraki and Limnos. Native to E Asia; in Greece, frequently forming thick carpets in tended lawns and other public spaces. Also noted near Skala Marion and Theologos.

Crassulaceae**19. *Sempervivum leucanthum*** Pančić (Fig. 2)

Gr Thasos: SW of Potamia, in crevices of hard schistose rock below summit of Ipsario, 1200 m, 40°42'09"N, 24°42'19"E, 04.03.2017, *Biel* 17.019.

New for the N Aegean islands and southernmost occurrence in the Balkan Peninsula. In Greece, previously



Fig. 2. *Sempervivum leucanthum* (photo B. Biel).

only known from Mts Orvilos and Menikion. The *locus classicus* is Mt Rila in Bulgaria. A record of *Sempervivum ruthenicum* Schnittsp. & C.B. Lehm from the same locality on Mt Ipsario (Stojanov & Kitanov 1945: 316) may refer to *S. leucanthum*.

Euphorbiaceae

20. *Euphorbia chamaesyce* subsp. *massiliensis* (DC.) Thell.

Gr Thasos: Limenaria, road margins and park at new harbour, 5 m, 40°37'33"N, 24°34'36"E, 12.11.2016, *Biel* 16.027.

Recorded from Samothraki and Ag. Evstratios. Distinguished from *E. ch.* subsp. *chamaesyce* (*Biel* 12.002, 12.024, 12.035, 12.047 all collected on Ag. Evstratios) by its serrate leaf margins. *Euphorbia chamaesyce* has been reported from Thasos (Stojanov & Kitanov 1946: 116) and Limnos (Baliouis 2014: 279) both without indication of subspecies.

Geraniaceae

21. *Erodium malacoides* (L.) L' Hér.

Gr Thasos: Limenaria, ruderal slopes near harbour, 5 m, 40°37'33"N, 24°34'36"E, 10.03.2017, *Biel* 17.067.

Recorded from Samothraki.

Plantaginaceae

22. *Plantago major* subsp. *intermedia* (Gilib.) Lange

Gr Thasos: E of Skala Panagias, ruderal places at beach, 2 m, 40°43'39"N, 24°45'31"E, 20.11.2016, *Biel* 16.050.

Recorded from Samothraki. *Plantago major* s.l. has been reported from Limnos (Baliouis 2014: 280) and *P. m.* subsp. *major* from Thasos (several collections).

Solanaceae

23. *Solanum chenopodioides* Lam. (Fig. 3)

Gr Thasos: SE of Potamia, waste ground at road junction, 70 m, 40°42'51"N, 24°44'07"E, 09.11.2016, *Biel* 16.054.

New for Greece. A member of the Morelloid clade; the species is characterized by fruits with a dull surface, borne on strongly deflexed pedicels. It is starting to invade in various parts of Europe and has been recorded *ca.* 1950, in several localities in Germany (as *S. sublobatum*) but there have been no recent reports. We thank Sandra Knapp (Natural History Museum, London) for confirming our identification.

24. *Solanum nigrum* subsp. *schultesii* (Opiz) Wessely

Gr Thasos: Limenas (Thasos), ruderal places at park behind harbour promenade, 3 m, 40°46'47"N, 24°42'34"E, 09.11.2016, *Biel* 16.004.

Recorded from Samothraki, Limnos and Ag. Evstratios.

Veronicaceae

25. *Cymbalaria muralis* G. Gaertn., B. Mey. & Scherb. subsp. *muralis*

Gr Thasos: Panagia, on old walls, road margins in village, 140 m, 40°43'50"N, 24°43'40"E,



Fig. 3. *Solanum chenopodioides* (photo B. Biel).

10.11.2016, *Biel* 16.015; Theologos, on old walls in village, 230 m, 40°39'37"N, 24°41'46"E, 10.03.2017, *Biel* 17.064.

Recorded from Samothraki and Limnos. Also noted at Limenas (Thasos).

Commelinaceae

26. *Tradescantia fluminensis* Vell.

Gr Thasos: Panagia, wet ditches, ruderal places, 140 m, 40°43'50"N, 24°43'40"E, 10.11.2016, *Biel* 16.016; Limenaria, well-watered park at coastal promenade, 5 m, 40°37'33"N, 24°34'36"E, 12.11.2016, *Biel* 16.029.

Recorded from Samothraki. S American adventive, locally established.

Hyacinthaceae

27. *Ornithogalum refractum* Kit. ex Schldl. (Fig. 4)

Gr Thasos: Limenas (Thasos), slope with phrygana and *Pinus*, 40 m, 40°46'32"N, 24°42'49"E, 13.03.2017, *Biel* 17.080.

Confirming an old record by Stojanov & Kitanov (1945: 272). Recorded also from Samothraki. The pedicels are characteristically deflexed after anthesis.

Orchidaceae

28. *Himantoglossum jankae* Somlyay, Kreutz & Óvári [= *H. caprinum* auct., non (M.Bieb.) Spreng.]

Gr Thasos: E-NE of Sotiros, terraced slope by dirt road with *Cistus*-phrygana and fruit trees, 350 m, 40°43'05"N, 24°34'48"E, 07.04.1994, *Biel* obs.

Recorded from Samothraki and Ag. Evstratios.

Poaceae

29. *Cenchrus spinifex* Cav.

Gr Thasos: Skala Rachoniou, at roadside, 6 m, 40°46'34"N, 24°36'15"E, 11.11.2016, *Biel* 16.022; W-NW of Rachoni, edge of dirt road, 30 m, 40°45'51"N, 24°37'07"E, 14.11.2016, *Biel* obs.

New for Greece. On dampish ground at roadsides, late-flowering, with 15–30 individuals in full fruiting state. The large 'burs' (fascicles) are white villous-pubescent and with a single, ca. 6 mm long, sessile spikelet within. The plants were previously identified as *C. tribuloides* L. (*Biel & Tan* 2016: 432); this species is even larger in all its floral parts (spines and spikelets) and the 'burs' are even more densely villous-pubescent, but the species is not known to be weedy. We are grateful to Filip Verloove (Botanic Garden of Meise, Belgium) for providing the current name.



Fig. 4. *Ornithogalum refractum*, with deflexed pedicels post-anthesis (photo B. Biel).

30. *Eragrostis neomexicana* Vasey ex L.H. Dewey

Gr Thasos: W of Makriammos, under *Pinus*, along lorry track to the marble quarries, 60 m, 40°46'12"N, 24°42'20"E, 10.11.2016, *Biel* 16.010.

New for Greece. We thank Filip Verloove for confirming our identification.

31. *Setaria adhaerens* (Forssk.) Chiov.

Gr Thasos: NE of Limenas (Thasos), near chapel, coastal phrygana with *Vitex*, on schist, 10 m, 40°47'05"N, 24°42'57"E, 09.11.2016, *Biel* 16.007.

Recorded from Limnos.

32. *Setaria verticillata* (L.) P. Beauv.

Gr Thasos: SE of Limenas (Thasos), road margins and uncultivated ground, 15 m, 40°46'30"N, 24°42'43"E, 20.11.2016 *Biel* 16.051.

Recorded from Samothraki, Limnos and Ag. Evstratios.

Reports 33–40

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Continuing a series of new plant records based on further floristic investigations in the prefecture of Iliia in western Peloponnese. The records listed are new for Eparchia Ilias or Olimbias, or for both eparchies in Nomos Ilias.

Ephedraceae

33. *Ephedra distachya* L. (Figs. 5 & 6)

Gr Nomos & Eparchia Ilias: Bouka, estuary of Pinios river, 5 m, 37°40'N, 21°18'E, 15.07.2006, Giannopoulos obs.

Second record from Peloponnese, first recorded from sandy coast and wet places at Bouka, south of Messini (Nomos Messinias, Eparchia Messinis) near the estuary of the Pamissos river (Greuter 2012: 25), not to be confused with Bouka at the mouth of the Pinios river. The species is most common in northeastern Greece.



Fig. 5. *Ephedra distachya* (photo K. Giannopoulos).

Apocynaceae

34. *Vinca herbacea* Waldst. & Kit.

Gr Nomos Ilias, Eparchia Olimbias: Mt Minthi, 980 m, 37°28'N, 21°47'E, 01.04.2017, Giannopoulos obs.

New for eparchia, widespread in Peloponnese except in the northwest.

Aristolochiaceae

35. *Aristolochia rotunda* subsp. *insularis* (E. Nardi & Arrigoni) Gamisans

Gr Nomos & Eparchia Ilias: thermal baths at Kyllini near the old Roman theatre, beneath *Eucalyptus*, 23 m, 37°51'N, 21°07'E, 08.04.2017, Giannopoulos s.n. (herb. Giannopoulos).

From nomos Ilias, this subspecies has been reported with certainty only from Olympia, at the foot of the low hill Kronion where it was collected and identified by E. & G. Nardi in April 1990 (material in FI).

Asteraceae

36. *Inula verbascifolia* subsp. *parnassica* (Boiss. & Heldr.) Tutin

Gr Nomos & Eparchia Ilias: lower slopes of Mt Lambia, limestone rock crevices, 1210–1280 m, 37°54'N, 21°49'E, 03.07.2016, Kit Tan, G. Vold & Giannopoulos 32238 (herb. Giannopoulos).

New for Mt Lambia. Occurring in Sterea Ellas and the north-central mountains of Peloponnese (Erimanthos, Panachaikon, Klokos and Killini).

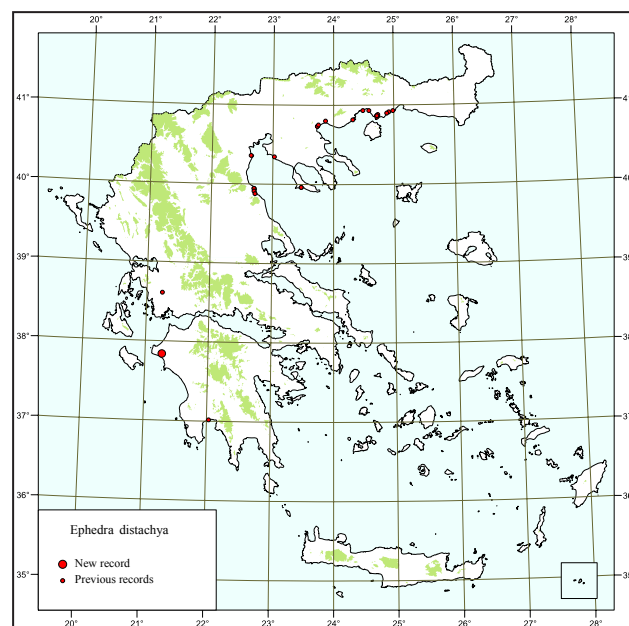


Fig. 6. Distribution of *Ephedra distachya* in Greece.

Crassulaceae**37. *Umbilicus horizontalis* (Guss.) DC.**

Gr Nomos & Eparchia Ilias: in crevices of walls at Chlemouts castle near Kyllini, 203 m, 37°53'N, 21°08'E, 08.04.2017, *Giannopoulos* s.n. (herb. *Giannopoulos*).

New for eparchia Ilias, recorded for eparchia Olimbias. Widespread in southern Greece and islands, mainly in coastal areas.

Solanaceae**38. *Hyoscyamus albus* L. (Fig. 7)**

Gr Nomos & Eparchia Ilias: in crevices of walls at Chlemouts castle near Kyllini, 203 m, 37°53'N, 21°08'E, 08.04.2017, *Giannopoulos* s.n. (herb. *Giannopoulos*).

New for nomos and eparchia. In west Peloponnese, documented from Methoni castle at the tip of the Messenian Peninsula (Nomos Messinias, Eparchia Piliias). All parts of the plant contain tropane alkaloids which are sedative and hallucinogenic.



Fig. 7. *Hyoscyamus albus* (photo K. Giannopoulos).

39. *Solanum elaeagnifolium* Cav.

Gr Nomos & Eparchia Ilias: at roadsides from Pyrgos to Spiantza, ca. 2 m, 37°38'N, 21°25'E, 20.08.2016, *Giannopoulos* s.n. (herb. *Giannopoulos*).

New for nomos and eparchia, first report from W Peloponnese. Introduced from S America, spreading along roads in Greece.

Violaceae**40. *Viola arvensis* Murray (Fig. 8)**

Gr Nomos Ilias, Eparchia Olimbias: Mt Minthi, 980 m, 37°28'N, 21°47'E, 01.04.2017, *Giannopoulos* s.n. (herb. *Giannopoulos*); near



Fig. 8. *Viola arvensis* (photo K. Giannopoulos).

Sylimna village, 760 m, 37°29'N, 21°47'E, 04.04.2016, *Kit Tan & al.* obs. (photo).

Second record for the Peloponnese, confirming its occurrence on Kiparissias Ori (Nomos Messinias, Eparchia Trifilias, *Stamatiadou* 12075, ATH) which was queried as being out of range in distribution. *Viola arvensis* is widespread in northern mainland Greece and may have been introduced further south by grazing flocks.

Report 41**Miltos Gletsos**

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Cupressaceae**41. *Juniperus drupacea* Labill. (Fig. 9)**

Gr Nomos Lakonias, Eparchia Lakedemonos: Mt Taigetos, rocky ridge E of the village of



Fig. 9. *Juniperus drupacea* (photo M. Gletsos).

Kastorio, 920 m, 37°09'N, 22°17'E, 18.12.2016, *M. Gletsos* obs.; *loc. ibid.*, 820 m, 37°09'N, 22°17'E, 27.12.2016, *M. Gletsos* obs. (photo, confirmed Kit Tan, December 2016).

In Greece *Juniperus drupacea* is known only from Mt Parnon in the southern Peloponnese where it forms large stands. A second locality outside the Parnon range is the rocky limestone gorge at Anavriti in the foothills of Mt Taigetos where 50–70 flowering and fruiting individuals were found in 1997 (Tan & al. 1999). The present site is *ca.* 17 km north of the known locality on Taigetos. The two stands are located on open sunny ridges separated by a valley 500 m distant. A total of 50–100 plants were noted including a few mature trees at the lower elevation, in *Quercus coccifera* and sparse *Abies cephalonica* woodland.

Reports 42–43

Todor Karakiev

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Apiaceae

42. *Heracleum angustisectum* (Stoj. & Acht.) Peev (Fig. 10)

Bu Rhodopi Mts (*Central*): Mt. Chernatica, on northern slopes of peak St. Iliya, southwards of Lilkovo village, in *Picea abies* – *Pinus sylvestris* forest, on proterozoic marbles, 1562 m, 41°53'42.01"N, 24°35'21.36"E, 28.07.2016, *T. Karakiev* (photo).



Fig. 10. *Heracleum angustisectum* (photo T. Karakiev).

This species has been known from the floristic regions of Pirin Mts, Vitosha region and Mt Slavyanka at altitudes between 2000 and 2500 m a.s.l. (Peev 1982), although the present find was almost 500 meters lower. The species was evaluated as Vulnerable (Peev & Tsoneva 2009); it also is a Bulgarian endemic.

Asteraceae

43. *Centaurea triumfettii* subsp. *pirinensis* (Degen, Urum. & H. Wagner) Dostal (Fig. 11)

Bu Rhodopi Mts (*Central*): Mt. Chernatica, in a *Pinus nigra* subsp. *pallasiana* – *Picea abies* forest, on proterozoic marbles, on the leveled ridge parts, 1495 m, 41°89'66.81"N, 24°61'40.91"E, 28.07.2016. coll. *T. Karakiev* (SO 107717).

This subspecies has been known only from the floral region of Pirin Mts. It is a Bulgarian endemic.

Report 44

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Iridaceae

44. *Iris hellenica* Mermvngkas, Kit Tan & Yannitsaros (Figs. 12 & 13)

Gr Nomos & Eparchia Fthiotidos: Mt Iti, Psilainos, north of Amaliolaka, opening in *Abies cephalonica*



Fig. 11. *Centaurea triumfettii* subsp. *pirinensis* (photo: T. Karakiev).

forest, 1470 m, 38°51'N, 22°15'E, 23.05.2015, Skouras obs. (photo; confirmed Kit Tan, June 2015); *loc. ibid.*, 14.05.2016, *Mermygkas* 2620 (ATH).

New for Sterea Ellas, previously known from N Peloponnese (Mts Chelmos, Killini and Saitas).

On 25 May 2015 Th. Skouras sent an email to D. Mermygkas with a photo of a cluster of Irises that he had photographed on Mt Iti two days earlier, asking if they could belong to *Iris hellenica*. The Irises in the photograph indeed appeared to have many similarities with *I. hellenica* a taxon described in 2010 (Mermygkas & al. 2010). On 14 May 2016 DM and TS visited the area where the Irises were found. The plants were growing in a slightly sloped opening in *Abies cephalonica* forest, a habitat similar to that of the main population of *I. hellenica* on Saitas. The Irises had the same morphological features as *I. hellenica*, with the same stature, the majority of them being 35–55 cm in height with only a few individuals reaching or exceeding 65 cm. They had the same bluish tint characteristic of *I. hellenica*. There were also three smaller groups of paler sky-blue



Fig. 12. *Iris hellenica* (photo Th. Skouras).



Fig. 13. *Iris hellenica* habitat (photo D. Mermygkas).

Irises. This pale-coloured form also occurs on Saitas. The population consisted of several groups growing in an area of *ca.* 600 m². Approximately 2000 flowering stems were counted but the overall number of individuals must surely be at least twice as much since the plants do not flower simultaneously. Seed capsules were also collected by TS later in the year which confirmed identification.

A second population was found *ca.* 500 m north of the first population, amongst rocks facing N-NE above the village of Ypati at an altitude of *ca.* 1440 m. The second population comprised *ca.* 800 individuals, most of them of dwarf stature not exceeding 40 cm, scattered in soil patches between limestone rocks.

The two populations are growing in a rather inaccessible area without any connecting paths to the main routes of the mountain, they are far from human habitation.

Iti is a mountain with remarkably strong phytogeographical connections to the mountains of N Peloponnese, especially Killini and Chelmos. This connection is demonstrated by plants shared in common such as *Asperula boissieri*, *A. lutea* subsp. *lutea*, *A. oetea*, *Chaerophyllum heldreichii*, *Laserpitium pseudomeum*, *Petrorhagia phthiotica* and *Thymus hartvigii* subsp. *hartvigii* and results from the fact that Sterea Ellas and Peloponnese have remained connected until the late Pliocene (Karetsos 2002). The discovery on Iti of *I. hellenica*, a taxon considered till now endemic to the mountains Chelmos, Killini and Saitas, reinforces the phytogeographical affinities of the two areas.

Reports 45–49

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Biological invasion of alien species is presently a very important issue (Lambdon & al. 2008, etc.). Petrova & al. (2012a, b) have summarized the data for Bulgaria. Some new data on aliens are presented here.

Cupressaceae

45. *Platycladus orientalis* (L.) Franco [syn. *Thuja orientalis* L.]

Bu Balkan Range (*Western*): on rocks above the road near Tserovo village, FN96, 04.08.2016, A. Petrova

& D. Venkova obs.; in the vicinity of Bov Railway Station, on limestone rocks above the road in the river Iskar valley, 43.02907°N, 23.35020°E, 04.08.2016, A. Petrova & D. Venkova obs.

This species is widely used as ornamental in Bulgaria. There have been reports for naturalized populations from Northeast Bulgaria and the Forebalkan (Western) floristic regions (Vladimirov 2012, sub *Thuja orientalis* L. and Petrova & al. 2013a). According to DAISIE and the European Invasive Alien Species Gateway (<http://www.europe-aliens.org>), the species has been recorded as alien in some European countries; in France and Italy it is considered established. The populations on the rocks near Bov Railway Station and Tserovo consist of groups of 5–15 individuals of different size (age), up to 1.5 m high, including some singular fruiting ones. The Bov population grows next to old *Biota* trees planted at a parking site along the road.

One more locality was registered in the Western Forebalkan floristic subregion. Two young individuals (20–50 cm high) were observed by the authors on limestone rocks along river Leva Reka above Vratsa town, on 04.08.2016. This locality lies within the Vrachanski Balkan Nature Park, not far from the Vratsata Natural Rock Phenomenon. Considering also the established population above Cherepishki Monastery, which neighbours on the Natural Park, our recommendations are for detailed examination of habitat 8210 Calcareous rocky slopes with chasmo-phytic vegetation on the territory of the Park, followed by timely eradication of the *Biota* individuals. Such action will prevent or postpone the dispersal of this alien species in the protected area. This is important for the favourable conservation status of the habitat 8210, which is of European significance and is home of many rare and endemic species.

Asteraceae

46. *Eclipta prostrata* (L.) L.

Bu Black Sea Coast (Northern): Varna town, in the Erica Garden Center in the Primorski Park area, NH78, 43.214395°N, 27.953531°E, 09.09.2016, coll. A. Petrova (SOM 172920); in the Erica Garden Center in the Varna-West Industrial Zone, 43.225041°N, 27.862189°E, 23.09.2016, coll. A. Petrova (SOM 172921).

A new record for this floristic subregion. These are the first reports for the country from garden centres. Only

one plant was observed in the Primorski Park area; a population of about 30 individuals at different stage of development were observed in the humid parts of the Garden Centre in the Varna-West Industrial Zone. Some other garden centres in the town (Mimoza, Nezabravka, Divain) were also visited, but the plant was not found there.

Chenopodiaceae

47. *Dysphania multifida* (L.) Mosyakin & Clements

Bu Sofia region: Sofia city, in a green spot in front of a block of flats on Dimiter Petkov Str., 42.704375°N, 23.301308°E, 28.08.2016, coll. A. Petrova & D. Venkova (SOM 172919).

This was a group of plants at an area of approximately 2 m².

Alismataceae

48. *Sagittaria latifolia* Willd.

Bu Forebalkan (Western): along river Iskar, NE of Zverino village, 43.08828°N, 23.59716°E, 04.08.2016, A. Petrova & D. Venkova obs. & GN07, 43.09347°N, 23.58098°E, 04.08.2012, A. Petrova & R. Vassilev obs.

— Balkan Range (Western): along river Iskar, between Bov and Lakatnik railway stations, FN97, 43.06637°N, 23.36912°E, 04.08.2016, coll. A. Petrova & D. Venkova (SOM 172830).

The species was registered for the first time in Bulgaria in 1930 from the Iskar river valley in the region of Sofia, as escaped from Vranja Residential Park (Jordanov 1963). Vladimirov (2009) reported it along river Iskar near Knezha. We observed the species in many riverside places from Svoge to Lyutibrod.

Poaceae

49. *Paspalum paspalodes* (Michx.) Scribn.

Bu Balkan Range (Western): along river Iskar, between Bov and Lakatnik railway stations, FN97, 43.06637°N, 23.36912°E, 04.08.2016, coll. A. Petrova & D. Venkova (SOM 172827).

This is a new location for this alien species (Assyov & Petrova 2012; Petrova & al. 2012b). However, Tsoneva & al. (2012) have not given the areas of distribution and considered the species as having wide distribution but rare occurrence. Our observations along the river courses of Danube, Iskar and Maritsa rivers have shown that the species is common there, with frequent occurrence and late in summer covers significant areas.

Reports 50–55

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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

50. *Centaurea princeps* Boiss. & Heldr. (Fig. 14)

Gr Nomos Fthiotidos, Eparchia Lokridos: Mt Kallidromo, SW of summit Gioza, opening in *Abies* woodland, 1290 m, 38°44'N, 23°32'E, 27.07.2008, *Polymenakos* obs. (photo, confirmed Kit Tan, February 2017).

New for eparchia and Mt Kallidromo. A rare species from mainland Greece (S Pindos and Sterea Ellas). The type was collected from Mt Timfristos by Heldreich in August 1857. Only five plants were noted on Kallidromo, with one still bearing a few flowers.



Fig. 14. *Centaurea princeps* (photo K. Polymenakos).

51. *Phagnalon saxatile* (L.) Cass. (Fig. 15)

Gr Nomos Attikis, Eparchia Idras: island of Hydra (Idra), ca. 800 m NE of Profitis Ilias monastery, roadside, 170–180 m, 37°20'N, 23°28'E, 05.03.2016, *Polymenakos* 61 (ATHU; photo, confirmed Kit Tan, February 2017).

New for island, a predominantly W and C Mediterranean species occurring on the Aegean and Ionian islands and the eastern coast of Peloponnese.



Fig. 15. *Phagnalon saxatile* (photo K. Polymenakos).

Caryophyllaceae

52. *Sagina apetala* Ard.

Gr Nomos Attikis, Eparchia Idras: island of Hydra (Idra), frequent on stone walls and at road sides in main town, 10–70 m, 37°20'N, 23°28'E, 05.03.2016, *Polymenakos* 59 (ATHU; photo, confirmed Kit Tan, February 2017).

New for island, widespread in Greece.

Lamiaceae

53. *Calamintha nepeta* subsp. *glandulosa* (Req.) P.W. Ball

Gr Nomos Attikis, Eparchia Megaridos: island of Salamina, roadsides and disturbed ground along main road from Psili Ammos to port of Faneromenis, 10 m, 37°59'N, 23°25'E, 22.01.2017, *Polymenakos* 129 (ATHU).

New for eparchia and island of Salamis, widespread on mainland.

Orobanchaceae**54. *Phelipanche schultzioides*** M.J.Y. Foley (Fig. 16)

Gr Nomos Lakonias, Eparchia Lakedemonos: Mt Taigetos, near track to summit of Profitis Ilias, parasitic on *Urtica dioica*, 2050 m, 36°57'N, 22°21'E, 01.08.2010, *Polymenakos* obs. (photo, confirmed Kit Tan, February 2017).

New for Taigetos, southernmost locality and at highest altitude recorded for the species. The three other localities in the Peloponnese (near Zarouchla, Andritsena, Mt Artemisio) are all between 780 to 1350 m.



Fig. 16. *Phelipanche schultzioides* (photo K. Polymenakos).

Thymelaeaceae**55. *Thymelaea passerina***

(L.) Coss. & Germ.
(Fig. 17)

Gr Nomos & Eparchia Attikis: Pendeli, abandoned field W of Ag. Stefanos, near railway, 340 m, 38°08'N, 23°51'E, 08.06.2016, *Polymenakos* 96 (ATHU).

— Nomos Fthiotidos/Viotias, Eparchia Levadias/Lokridos: Mt Parnassos, plateau 'Livadi' N of Arachova, damp meadow along road to Eptalofos, 1220 m, 38°33'N, 22°31'E, 28.08.2016, *Polymenakos* 124 (ATHU).



Fig. 17. *Thymelaea passerina* (photo K. Polymenakos).

New for Pendeli. Heldreich collected the species more than a century ago near Tatoi which is further to the south (see Halácsy 1904: 82); apparently the plant has not been re-collected in the area. In the abandoned field near Ag. Stefanos, it was found together with *Ononis mitissima*. For Parnassos, the plants were also collected by Heldreich (Halácsy 1904: 82). We have no reports that it has been collected again in the area but being an inconspicuous species, could well have been overlooked.

Report 56**Lulëzim Shuka¹, Kit Tan² & Gert Vold³**

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Fabaceae**56. *Oxytropis tomoriensis*** Kit Tan, Shuka & G. Vold, **sp. nov.** (Fig. 18)

Al Berati district: National Park of Tomori at the southern peak of Mt Tomor, gravelly slopes with limestone rock pavements on both sides of ridge, 2270–2370 m, 40°38'N, 20°09'E, 30.06.2012, *Shuka* 4578 (holotype TIR; isotypes C, herb. Kit, herb. Shuka); *loc. ibid.*, 22.08.2014, *Kit Tan* & *G. Vold* 31800 (ATH, BEOU, C, LD).

Acaulescent cushion-forming perennial, with short branched woody stock. *Stipules* scarious, connate at base, free apices ovate-lanceolate, acuminate, 10–17 × 3–4 mm, 1-veined, ciliate, sparsely white adpressed-hairy without, adnate to petiole for half-length or more. Leaves imparipinnate, 3–8(–10) cm long including 1–3 cm petiole, silvery-grey adpressed-sericeous; leaflets (7–)9–13(–15) pairs, oblong-ovate or lanceolate, 4–9(–11) × 2–4 mm. Peduncles longer than, rarely equalling, leaves at anthesis, 5–13(–15) cm long, erect, with long white patent and subadpressed hairs mixed with shorter black hairs. Racemes dense, globose to subglobose with 5–10(–12) flowers, later subglobose or elongating. Bracts linear-lanceolate, long-acuminate, shorter than calyx tube, 4–7 × 1–1.5 mm, covered with white and black adpressed hairs. Calyx tubular-campanulate, 8–11.5 × 3–4 mm including unequal, 2–2.5 mm long teeth, with long (1–2.5 mm), white patent and subadpressed hairs and shorter (0.2–1 mm), adpressed black hairs in almost equal

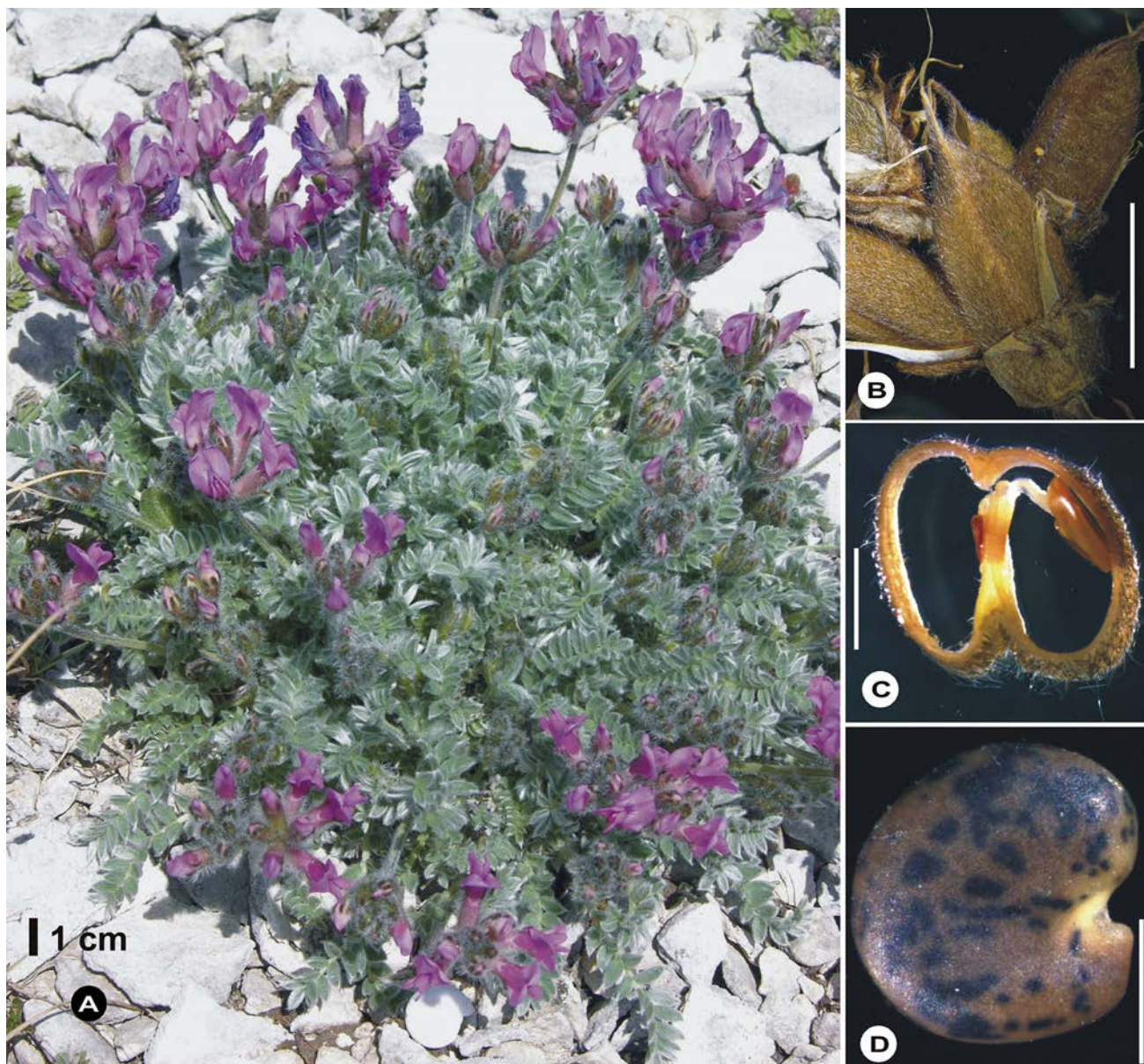


Fig. 18. *Oxytropis tomoriensis*: A, habit; B, ripe legumes; C, transverse section of legume showing well-developed ventral septum; D, seed. Bar scale 1 cm.

proportion. Corolla violet-purple; standard narrowly elliptical to broadly ovate, rarely obovate, emarginate, with white-marking at centre, 17–20 × 8–12 mm; wings 15–16 mm long, 4.5–5.5 mm wide, keel 13–15 mm long including apical beak, 3–4 mm wide. Stamens 11–13 mm long, white, glabrous; anthers ovoid, 0.5 mm. Ovary adpressed-pubescent to silvery-sericeous; style 5–7 mm long, glabrous towards apex. Legume subsessile, 15–20 × 5–7 mm, oblong-ovoid with long curved apical beak, densely covered with black (more than 1/3 of total hairs) and white hairs, almost bilocular with well-developed ventral septum and narrow dorsal septum. Seeds compressed, orbicular-reniform, 2–2.5 × 2 mm, smooth,

olivaceous to light brown, spotted or mottled darker, yellowish at hilum.

Distribution, habitat and ecology. Endemic to the summit of the southern peak of Mt Tomor, on gravelly limestone slopes and ridges of three cirques glaciated during the Pleistocene and dissected by steep ravines, within an area of less than 4 km². Interesting plants found in the vicinity include the rarely collected Albanian endemic *Astragalus autranii* (see Tan & al. 2015) and range-restricted taxa such as *Asperula doerfleri*, *Campanula hawkinsiana*, *Thlaspi bellidifolium* and *Valeriana crinii* subsp. *epirotica*. *Oxytropis tomoriensis* has a long flowering period, lasting from mid-June to

August with fruits ripening by late August to October. Approximately 140 plants with an age of more than 10 years were noted in three small populations, the largest numbers being on the cold and moist northeastern slopes, with fewer plants on the dry ridge. Large quantities of seed are produced but very few young plants were noted as established; this gives rise to the possibility that the populations are decreasing although no detailed monitoring was carried out. No grazing by domesticated animals is permitted in the protected National Park and the plants are off the beaten track of the annual pilgrimage of members of the Bektâshi Order to the tomb of Abbas Ali in August.

Taxonomic affinities: *Oxytropis tomoriensis* from south central Albania is closely related to *O. korabensis* (Kümmerle & Jáv.) A.W. Hill from Mt Korab at the border of NE Albania and F.Y.R. Makedonija. Several collections of the latter have been examined from the *locus classicus*. A collection by Paparisto & Qosja from serpentine areas of Kurora e Lurës (Lurë Mountains) on 3 August 1959 (specimen in TIR) was identified as *O. prenja* (Beck) Beck by W. Gutermann in May 1977. The locality of this collection may be erroneous as a careful search in the serpentine areas of Kurora e Lurës did not reveal any plants; *O. korabensis* occurs mainly on schist and silicate, very rarely on limestone. The stipules in *O. tomoriensis* are 1-veined in the free apices, adnate to the petioles for half their length or more and sparsely white adpressed-hairy. In contrast, the stipules in *O. korabensis* are branched-veined in the free apices, adnate for less than half their length and densely white adpressed-hairy. The proportion of black hairs on the legume of *O. tomoriensis* is conspicuous whereas in *O. korabensis*, the indumentum is mostly white with fewer underlying black hairs.

Eponymy: named after Mt Tomor, a limestone mountain east of the town of Berat in south central Albania. The National Park (Parku Kombëtar i Malit të Tomorrit) covers an area of ca. 25000 hectares.

Reports 57–61

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Asteraceae

57. *Centaurea pichleri* Boiss. (Fig. 19)

Bu Rhodopi Mts (*Central*): Haskovo district, Mechkovets Ridge, along the road between Bryastovo village and Aida chalet, on the periphery of a thermophilous mixed forest, 760 m, 41.90755°N, 25.30857°E, with flowers, 02.05.2016, coll. S. Stoyanov & Zh. Barzov (SOM 173192, 173193); Haskovo district, E of Aida chalet, 25.06.1977, coll. P. Rohov (SOM 138147, sub *C. triumfettii* All.); Plovdiv district, in grassy places along the road from Dobrostan chalet [= Martsiganitsa] to Chervenata Stena locality, 23.06.1980, coll. D. Delipavlov (SOA 38771, sub *C. triumfettii* All.).

A new species for this floristic region (*cf.* Assyov & Petrova 2012).

58. *Symphyotrichum squamatum* (Spreng.) G.L. Nesom [= *Aster squamatus* (Spreng.) Hieron.]

Bu Rhodopi Mts (*Eastern*): Haskovo district, S of Malko Gradishte village, along the road to Madzharovo town, 310 m, 41.75134°N, 25.98274°E, 30.09.2016, coll. Zh. Barzov (SOM 173194).



Fig. 19. *Centaurea pichleri* (photo S. Stoyanov).

This relatively rare alien species was reported for the first time for the Bulgarian flora by Dimitrov & Assyov (2003) from the Black Sea Coast (*Northern*) and the Valley of River Struma (*Southern*) floristic regions. Subsequently, *S. squamatum* was found in the Thracian Lowland (Vladimirov 2011), Black Sea Coast (*Southern*) (Petrova & al. 2015) and in the Valley of River Mesta (Tashev & al. 2016).

Linaceae

59. *Linum thracicum* (Griseb.) Degen (Fig. 20)

Bu Black Sea Coast (*Northern*): NW of Pasha Dere locality, along a dirt road in mixed Oak-Lime forest, 100 m, 43.12269°N, 27.90083°E, with flowers, 24.05.2015, coll. Zh. Barzov (SOM 173195).

A new record for this floristic region. According to Petrova (1979), this species was known from the Forebalkan, Balkan Range (*Central & Eastern*), Mt Belasitsa, Mt Sredna Gora, Rhodopi Mts, Thracian Lowland, and Tundzha Hilly Country floristic regions.



Fig. 20. *Linum thracicum* (photo Zh. Barzov).

Ranunculaceae

60. *Anemone apennina* L. (Fig. 21)

Bu Black Sea Coast (*Northern*): E of Obrochishte village, Dobrich district, in the oak forests along the main road to Balchik town, 230 m, 43.39259°N, 28.07314°E, with flowers, 13.03.2015, coll. Zh. Barzov (SOM 173196).

— Black Sea Coast (*Southern*): Kalinata Protected Site (3 km NW of Slanchev Bryag Resort) in the Nesebar State Hunting Range, 05.04.1990, coll. Ch. Gushev (SO 95736).

A new species for these floristic regions. So far reported (sub *A. blanda*) from the Forebalkan, Balkan Range (*Eastern*), West Frontier Mts, Valley of River Struma, Mt Sredna Gora, Rhodopi Mts (*Central & Eastern*), Thracian Lowland, and Tundzha Hilly Country floristic regions (Popova 2003; Raycheva & Stoyanov 2015).

Cyperaceae

61. *Cyperus odoratus* L.

Bu Northeast Bulgaria: N of Marten town, Ruse district, on muddy banks of Danube River, 15 m, 43.92803°N, 26.07615°E, 23.09.2010, coll. S. Stoyanov (SOM 170472).

This alien species was reported for the first time for the Bulgarian flora by Tzonev & al. (2003) from the Danubian Plain under the name *C. strigosus*. Subsequently, it was found in the Black Sea Coast (*Southern*) floristic region (Stoyanov 2010). Recent studies by Verloove (2014) indicate all reports of *C. strigosus* in Bulgaria are erroneous and should be referred to *C. odoratus*.



Fig. 21. *Anemone apennina* (photo Zh. Barzov).

Reports 62–66

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Asclepiadaceae

62. *Vincetoxicum speciosum* Boiss. & Spruner

Bu West Frontier Mts: Mt Vlahina, W of Sushitsa village, Simitli district, along the road between the fork to Kadiyska Frontier Point and the Hunting Chalet, 1130 m, FM63, with flowers, 17.06.2010, coll. S. Stoyanov & V. Goranova (SOM 170468, 170469).

So far this species has been known from the Valley of River Struma, Mt Belasitsa, Rila Mts, and Rhodopi Mts (*Central & Eastern*) floristic regions (Cheshmedzhiev 2003).

Linaceae

63. *Linum nodiflorum* L. (Fig. 22)

Bu West Frontier Mts: Mt Vlahina, N of Logodazh village, Blagoevgrad district, on calcareous stony slopes of the Kozya Glava locality, 800 m, 41.99696°N, 22.93314°E, with flowers, 28.05.2011, coll. S. Stoyanov & V. Goranova (SOM 170482).

Until recently, this species has been known from the Black Sea Coast, Forebalkan, Balkan Range (*Eastern*), Valley of River Struma, Valley of River Mesta, Rila Mts, Rhodopi Mts (*Eastern*), Thracian Lowland, and Tundzha Hilly Country floristic regions (Cheshmedzhiev 2003).



Fig. 22. *Linum nodiflorum* (photo S. Stoyanov).

Rosaceae

64. *Rosa turcica* Rouy

Bu Mt Belasitsa: Along the dirt road between Varshiloto locality and peak Kongura, in communities of *Juniperus sibirica*, 1700 m, 41.33410°N, 23.17486°E, with flowers, 19.06.2013, coll. S. Stoyanov (SOM 173197, 173198).

A new record for this floristic region. According to Popova (2003), *R. turcica* was found at the Black Sea Coast, Balkan Range (*Central*), Vitosha Region, Mt Slavyanka, Pirin Mts, and Rhodopi Mts (*Central & Eastern*) floristic regions.

Orchidaceae

65. *Corallorhiza trifida* Châtel.

Bu West Frontier Mts: Mt Vlahina, SW of Sushitsa village, Simitli district, in a beech forest near Breznishka Frontier Point, 1550 m, 41.75278°N, 23.03334°E, with flowers, 03.07.2010, coll. S. Stoyanov & V. Goranova (SOM 170473).

A new record for this floristic region. According to Delipavlov (2003), *C. trifida* was found in the Balkan Range, Znepole Region, Vitosha Region, Mt Slavyanka, Pirin, Rila and Rhodopi Mts (*Western & Central*) floristic regions.

Poaceae

66. *Calamagrostis pseudophragmites* (Haller f.) Koeler

Bu Znepole Region: in the gorge between Filipovtsi and Velinovo villages, Tran district, in wet grassy places, 07.07.2011, coll. S. Stoyanov (SOM 170483); in wet meadows in the vicinities of Tran, 14.06.1960, coll. S. Kožuharov & B. Kuzmanov (SOM 103650, 105976).

A new record for this floristic region. According to Delipavlov (2003), the species was found in the Balkan Range (*Western & Central*), Vitosha Region, Mt Slavyanka, Pirin and Rila Mts, Mt Sredna Gora, and Rhodopi Mts floristic regions.

Reports 67–70

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Crassulaceae

67. *Sempervivum erythraeum* Velen.

Bu Valley of River Mesta: in Momina Kula locality, Momina Klisura Pass, on rhyolite rocks, above the motorway between Mesta and Gospodintsi villages, on the right-hand bank of river Mesta, on a ravine-steep slope with eastern exposition and inclination of 75°, 602 m, 41°43'29.8"N, 23°41'29.8"E, 15.07.2013, coll. D. Dimitrov & A. Tashev (SOM 170642).

In a rocky community, along with: *Ostrya carpinifolia*, *Fraxinus ornus*, *Teucrium chamaedrys*, *Clematis vitalba*, and *Prunus mahaleb*. The following herbaceous species have been indentified: *Asperula longiflora*, *Acinos suaveolens*, *Alyssum saxatile*, *Centaurea rutifolia*, *Coronilla varia*, *Dianthus pinifolius*, *Festuca* sp., *Galium* sp., *Hypericum perforatum*, *Lactuca viminea*, *Lamium maculatum*, *Linaria genistifolia*, *Medicago minima*, *Melica ciliata*, *Poa nemoralis*, *Scabiosa trinifolia*, *Sedum acre*, *S. album*, *Seseli tortuosum*, *Silene italica*, *Trifolium arvense*, *Thymus* sp., *Vicia* sp., etc.

This is a new locality for Bulgaria of this Balkan endemic, so far reported within the range of 1000 m to 2700 m a.s.l. from the Balkan Range, Vitosha Region, Rila and Pirin Mts, Mt Belasitsa, Rhodopi Mts (*Western, Eastern*) (Cheshmedzhiev 2011: 166; Assyov & Petrova 2012: 378).

Dipsacaceae

68. *Cephalaria flava* (Sm.) Szabo

Bu Valley of River Mesta: along the motorway between Mesta and Gospodintsi villages, on the right-hand bank of river Mesta, close to Momina Kula locality; on a very steep slope with eastern exposition and inclination of 60°, on gneiss, 572 m, 41°41'13.9"N, 23°43'17.2"E, 15.07.2013, coll. A. Tashev & D. Dimitrov (SOM 170646); in the Momina Kula locality, near a forest of *Carpinus orientalis*, *Quercus pubescens*, *Juniperus deltooides*, *Fraxinus ornus*, etc., on a steep slope with eastern exposition and inclination of 40°, on silicate rock, 704 m, 41°42'58.7"N, 23°41'43.7"E, 18.07.2013, coll. A. Tashev & D. Dimitrov (SOA 060429).

In the first mentioned locality, it grows in a rocky community, along with: *Ostrya carpinifolia*, *Fraxinus*

ornus, *Coronilla emerus* subsp. *emeroides*, *Quercus pubescens*, *Clematis vitalba*, *Prunus avium*. От тревистите видове са установени *Asplenium adianthum-nigrum*, *A. trichomanes*, *Acinos suaveolens*, *Achillea compacta*, *Aubrieta saxatilis*, *Allium* sp., *Carduus nutans*, *Centaurea rutifolia*, *Dianthus pinifolius*, *Galium* sp., *Humulus lupulus*, *Linaria genistifolia*, *Melica ciliata*, *Sedum acre*, *S. hispanicum*, *Seseli tortuosum*, *Silene italica*, etc.

This is the first record of this species for this floristic region. So far this Balkan endemi has been reported within the 1000–2900 m range from the Balkan Range, Znepole Region, Vitosha Region, West Frontier Mts, Valley of River Struma, Mt Slavyanka, Rila and Pirin Mts, Mt Sredna Gora, Rhodopi Mts, and Thracian Lowland (Cheshmedzhiev 2011: 291; Assyov & Petrova 2012: 133).

Geraniaceae

69. *Geranium macrorrhizum* L.

Bu Valley of River Mesta: on rocks on the right-hand bank of river Kostina, which is a right-hand tributary of river Mesta, near a bridge on the motorway between Mesta and Gospodintsi villages, close to Momina Kula locality, under sheer rocks, along with *Asplenium trichomanes*, *Umbilicus rupestris*, *Sedum album*, *S. sartorianum*, etc., on a slope with northern exposition and inclination of 40°, 604 m, 41°42'47.6"N, 23°41'49.5"E, 04.09.2013, coll. D. Dimitrov (SOM 169680) & 06.09.2015, coll. A. Tashev (SOM 171744; SO 107683).

This is a new locality for Bulgaria of this Euro-Mediterranean species, so far reported from the Forebalkan, Balkan Range, Sofia Region, Znepole Region, Vitosha Region, West Frontier Mts, Valley of River Struma, Mt Belasitsa, Mt Slavyanka, Rila and Pirin Mts, Mt Sredna Gora, and Rhodopi Mts (Delipavlov 2011: 252; Assyov & Petrova 2012: 210).

Rubiaceae

70. *Galium lucidum* All.

Bu Valley of River Mesta: in Momina Kula locality, Momina Klisura Pass, on rhyolite rocks, above the motorway between Mesta and Gospodintsi villages, on the right-hand bank of river Mesta, on a steep slope with southern exposition and inclination of 40°, 704 m, 41°42'58.8"N, 23°41'43.4"E, 18.07.2013, coll. D. Dimitrov & A. Tashev (SOM 170644).

In a rocky community, along with: *Acer hyrcanum*, *Cornus mas*, *Euonymus verrucosus*, *Genista rumelica*, *Rhamnus saxatilis*, *Rosa micrantha*, *Spiraea media*. От тревистите видове са установени *Achillea clypeolata*, *A. pseudopectinata*, *Acinos suaveolens*, *Alliaria petiolata*, *Allium flavum*, *A. sphaerocephalon*, *Alyssum tortuosum*, *Asperula cynanchica*, *Asplenium trichomanes*, *Astragalus glycyphyllos*, *Asyneuma limonifolium*, *Ballota nigra*, *Briza media*, *Bromus squarrosus*, *Campanula trachelium*, *Carduus nutans*, *Dactylis glomerata*, *Dianthus pinifolius*, *Echium vulgare*, *Eryngium campestre*, *Festuca valesiaca*, *Hypericum perforatum*, *H. umbellatum*, *Jurinea consanguinea*, *Koeleria simonkai*, *Lychnis coronaria*, *Malva sylvestris*, *Melica ciliata*, *Mercurialis annua*, *Micromeria dalmatica*, *Minuartia hybrida*, *Muscari comosum*, *Phleum phleoides*, *Poa nemoralis*, *P. timoleontis*, *Potentilla argentea*, *P. pedata*, *Primula veris*, *Salvia argentea*, *Scabiosa triniifolia*, *Scleranthus annuus*, *Sedum album*, *S. sartorianum*, *Sempervivum erythraeum*, *Stipa capillata*, *Trifolium arvense*, *T. aureum*, *Verbascum nigrum*, *Veronica orchidea*, *Vincetoxicum hirundinaria*, etc.

This is new locality of this sub-Mediterranean species, so far reported from the Forebalkan, Balkan Range, Sofia Region, Znepole Region, Vitosha Region, West Frontier Mts, Valley of River Struma, Mt Belasitsa, Mt Slavyanka, Rila and Pirin Mts, Rhodopi Mts (*Western, Central*), Thracian Lowland, and Mt Strandzha (Cheshmedzhiev 2011: 304; Assyov & Petrova 2012: 204).

Reports 71–74

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A short visit to the S Peloponnese in November 2016 to look for autumn-flowering bulbs revealed three other taxa not previously reported from Lakonia. *Goniolimon tataricum* is confirmed for the island of Thasos.

Aceraceae

71. *Acer pseudoplatanus* L.

Gr Nomos Lakonias, Eparchia Lakedemonos: Langada gorge, forest road leading north from highest point of the Sparta – Kalamata road, 37°04'N, 22°15'E, 03.11.2016, *M. Thornberg* obs.

New for Taigetos area, nomos and eparchia. A number of well-established trees were noted a few hundred metres on along the road, possibly planted or they may have spread from planted trees. Recorded from nomi Achaias and Arkadias where they have also probably been planted as this C European species is not known to be native in the Peloponnese.

Euphorbiaceae

72. *Euphorbia heterophylla* L.

Gr Nomos Lakonias, Eparchia Epidavrou Limiras: along road W of Vlaxiotis, ruderal places at roadside near olive plantation, ca. 100 m, 36°52'N, 22°43'E, 01.11.2016, *M. Thornberg* s.n. (herb. Thornberg).

New for mainland Greece, probably a casual escape. Reported from the island of Samos where it is stated to be locally naturalized (Strid 2016: 266). Native to N and C America, introduced in E and W Mediterranean.

Plumbaginaceae

73. *Goniolimon tataricum* (L.) Boiss.

Gr Nomos Kavalas, Eparchia Thasou: East of Skala Prinou, 0–5 m, 40°45'N, 24°36'E, 02.07.1991, *M. Thornberg* s.n. (herb. Thornberg).

Confirming a report (Dinter 2011: 31) which was queried in Strid (2016: 430) as possibly referring to *G. incanum* (L.) Hepper; however, the calyx tube is clearly pubescent and not glabrous, the latter state being a distinguishing character for *G. incanum*.

74. *Limonium brevipetiolatum* R. Artelari & Erben

Gr Nomos Lakonia, Eparchia Itilou: Mani Peninsula, Akrotiri Tigani, 0–3 m, 36°32'N, 22°22'E, 03.11.2016, *M. Thornberg* s.n. (herb. Thornberg).

New for the Mani Peninsula, nomos and eparchia. Recorded from the Ionian islands and western coast of Peloponnese, extending the distribution of the species further to the east.

Reports 75–77

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Orchidaceae**75. *Himantoglossum jankae* Somlyay & al.**

Bu Danubian Plain: Pleven town, Kailaka Protected Area, in shrub communities dominated by *Syringa vulgaris*, *Carpinus orientalis*, *Paliurus spina-christi*, LJ00, 43.384647°N, 24.643250°E and 43.381295°N, 24.633043°E, 03.06.2012, with flowers, R. Tzonev obs.; in the karst gorge of Chernelka Natural Monument, between Todorovo and Gortalovo villages, Plevan district, in shrub communities dominated by *Syringa vulgaris*, *Carpinus orientalis* and *Paliurus spina-christi*, LJ00, 43.312421°N, 24.566864°E and 43.337164°N, 24.551296°E, with flowers, 29.05.2014, R. Tzonev obs.; in the locality of the Tertiary (Tortonian) Fossils Natural Highlight near Yasen village, Pleven district, on a steep chalky slope in an open Oriental Hornbeam forest, KJ-90, 43.409729°N, 24.525899°E, with flowers, 18.06.1994, R. Tzonev obs.

The species is enlisted in Annex II and Annex III of the Bulgarian Biodiversity Act and was assessed as Vulnerable in the *Red Data Book of the Republic of Bulgaria* (Petrova 2015). All localities fall into the Studenets NATURA 2000 site (BG0000240) and it is important to know them for proper management of this site. The species was not discovered in this site during the national mapping campaign for NATURA 2000 in Bulgaria (see Information system for protected zones of the ecological network NATURA 2000: <http://natura2000.moew.government.bg/>).

76. *Ophrys apifera* Huds.

Bu Danubian Plain: Pleven town, Skobelev Park Historical Monument, in shrub and dry grassland communities and on the periphery of open coniferous plantations, LJ00, 43.397394°N, 24.602916°E, 16.05.2016, with flowers, R. Baleva & I. Purvanov (photo, Fig. 23).



Fig. 23. *Ophrys apifera* in Skobelev Park Locality (photo R. Baleva).

— Forebalkan (*Western*): in meadows N of Beli Izvor dam, Beli Izvor village, Vratsa district, FN99, 43.288183°N, 23.450321°E, 01.06.2012, coll. R. Tzonev (SO 107599)

The species is new to the Danubian Plain floristic region. It is already known from the Western Forebalkan – the region of Sumer village, Montana district (Vladimirov 2006), and was assessed as Endangered (Petrova 2015). It is protected and enlisted in Annex III of the Biodiversity Act. It is important to know all localities and populations in the country, as well as their number. More than 25 individuals were observed in the Skobelev Park locality and only 10 individuals in the population in the vicinities of Beli Izvor, Vratsa district.

77. *Spiranthes spiralis* (L.) Chevall.

Bu Danubian Plain: Pleven town, Kailaka Protected Area, in shrubs in small open spots in a Black Pine plantation, LJ00, 43.356232°N, 24.643250°E, 28.09.2014, with flowers, R. Tzonev (photo, Fig. 24)

The species is new to the Danubian Plain floristic region (see Assyov & Petrova 2012). Its discovery enriched the conservation significance of the Kailaka Protected Area, because it is a protected species, enlisted in Annex III of the Bulgarian Biodiversity Act, assessed as Vulnerable in the *Red List of Bulgarian Vascular Plants* (Petrova 2009). The population is very small (about 15 individuals) and restricted to an area lesser than 100 m².



Fig. 24. *Spiranthes spiralis* in Kayluka Protected Area (photo R. Tzonev).

Reports 78–87

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Cupressaceae

78. *Platycladus orientalis* (L.) Franco [syn. *Thuja orientalis* L.]

Bu Mt Sredna Gora (*Western*): on rocks above a road near Pancharovo dam, ca. 620 m, 42.59629°N, 23.41842°E, 01.09.2016, V. Vladimirov obs.

A new record of this alien species for this floristic region. The species is used as ornamental in Bulgaria. So far naturalised populations have been reported from Northeast Bulgaria (Vladimirov 2012, sub *Thuja orientalis*) and the Forebalkan (*Western*) (Petrova & al. 2013a).

Amaranthaceae

79. *Amaranthus blitum* subsp. *emarginatus* (Uline & W.L. Bray) Carretero

Bu Valley of River Struma (*Southern*): on the left-hand bank of river Struma, under the bridge from Kulata to Drangovo villages, ca. 80 m, 41.41188°N, 23.32431°E, 14.10.2016, coll. V. Vladimirov, M. Delcheva & A. Tashev (SOM).

A new record of this alien species for this floristic region. Several dozens of specimens were recorded on gravel substrate on the river bank. So far the species has been reported from the Northeast Bulgaria and Danubian Plain (Petrova & Vladimirov 2012).

Asteraceae

80. *Helianthus tuberosus* L.

Bu Forebalkan (*Western*): Pleshivets village, Vidin district, ca. 330 m, 43.594779°N, 22.833462°E, 06.10.2016, coll. V. Vladimirov & M. Delcheva (SOM).

A new record of this alien species for this floristic sub-region. A few groups were observed on a total area of ca. 30 m² along the small river in the village. So far the species has been reported from the Black Sea Coast, Northeast Bulgaria, Danubian Plain, Forebalkan (*Eastern*), Sofia Region, Valley of River Struma, Valley

of River Mesta, Rhodopi Mts (*Central, Eastern*), Thracian Lowland, and Tundzha Hilly Country (Petrova 2013; Petrova & al. 2013b; Vladimirov & al. 2016).

81. *Grindelia squarrosa* (Pursh) Dunal

Bu Danubian Plain: near an abandoned railway track in Lom town, ca. 31 m, 43.832812°N, 23.233752°E, 08.11.2016, V. Vladimirov, S. Bancheva, M. Delcheva & A. Tashev obs.

A new record of this North American species for this floristic region. Only two flowering and fruiting plants were observed. So far the species has been reported from the Black Sea Coast (*Northern*), Northeast Bulgaria and Sofia region (Vladimirov & Petrova 2012).

82. *Senecio inaequidens* DC.

Bu Mt Sredna Gora (*Western*): on the grass median strip between the travel lanes of the highway 'Trakia' from Sofia to Plovdiv cities, ca. 600 m, 42.25195°N, 24.45923°E, 22.11.2016, V. Vladimirov, obs.; loc. *ibid.*, ca. 740 m, 42.45518°N, 23.83856°E, 22.11.2016, V. Vladimirov obs.

First report of this adventive species for this floristic region. A few flowering and fruiting individuals observed in each of the two locations; apparently recent introductions to these sites and beginning of invasion. So far the species has been reported from Sofia Region, Vitosha Region and Thracian Lowland (Vladimirov & al. 2016).

Euphorbiaceae

83. *Euphorbia prostrata* Aiton

Bu Danubian Plain: Svishtov town, between the railroad tracks at the railway station, ca. 7 m, 43.623335°N, 25.338292°E, 09.11.2016, coll. V. Vladimirov & al. (SOM).

A new record of this non-native species for this floristic region. Several hundred specimens were observed. So far the species has been reported from the Black Sea Coast (*Northern*), Northeast Bulgaria, Forebalkan (*Eastern*), Sofia Region, and the Valley of River Struma floristic regions (Vladimirov & al. 2014).

Fabaceae

84. *Gleditsia triacanthos* L.

Bu Valley of River Struma: near the railway station in General Todorov village, ca. 90 m, 41.455452°N, 23.281557°E, 14.10.2016, coll. V. Vladimirov, M. Delcheva & A. Tashev (SOM).

A new record of this non-native species for this floristic region. A few fruiting trees, probably planted, and numerous self-established seedlings and young trees observed. So far the species has been reported from the following floristic regions: Black Sea Coast, Northeast Bulgaria, Danubian Plain, Sofia Region, Thracian Lowland (Petrova & al. 2013b).

Polygonaceae

85. *Fallopia aubertii* (Louis Henry) J. Holub

Bu Danubian Plain: Kozloduj town, forested slope on the bank of Danube River, *ca.* 20 m, 43.79849°N, 23.680131°E, 08.11.2016, V. Vladimirov, M. Delcheva, S. Bancheva & A. Tashev, obs.

First report of this alien species to this floristic region. About 200 m² were densely covered by the species. So far it has been recorded in the Black Sea Coast (*Northern*) floristic region (Assyov & Petrova 2012).

86. *Fallopia ×bohemica* (Chrtek & Chrtková) J.P. Bailey

Bu Black Sea Coast (*Northern*): Varna city, slope above the sea coast, *ca.* 3–5 m, 43.21186°N, 27.95616°E, 21.03.2016, V. Vladimirov, M. Delcheva & S. Bancheva, obs. & 30.04.2016, coll. V. Vladimirov (SOM).

First record of this alien species for this floristic region. A dense group occupying an area of *ca.* 80 × 50 m was observed. So far the species has been reported from the Danubian Plain, Forebalkan (*Western*), Balkan Range (*Western, Central*), Sofia region, Vitosha region, Znepole region, and the Rhodopi Mts (*Central*) (Petrova & al. 2013b).

Vitaceae

87. *Parthenocissus quinquefolia* (L.) Planch.

Bu Mt Sredna Gora (*Western*): SW of Momin Prohod village, on *Salix* spp. trees and by a road, *ca.* 530 m, 42.325542°N, 23.867869°E, 13.10.2016, A. Tashev & M. Delcheva obs.

First record of this adventive species to this floristic region. It covered an area of *ca.* 100 m². So far reported from the Black Sea Coast, Northeast Bulgaria, Forebalkan (*Eastern*), Balkan Range (*Eastern*), Sofia Region (Petrova & al. 2013b).

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Report 88

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Asteraceae

88. *Centaurea adami* Willd.

Gr Nomos & Eparchia Florinis: by the village of Vrondero, 1100 m, fallow fields around the military posts, 40°45'N, 21°01'E, 22.06.1972, Stamatiadou 15877 (ATH); *loc. ibid.*, 20.07.1985, Stamatiadou 22892 (ATH, C); 20.07.2016, Bergmeier 2016-107 (herb. Bergmeier, GOET); 2.5 km W-NW of Pyli, edge of fields, 950 m, 40°47'N, 21°01'E, 16.06.2016, Kit Tan & al. obs.

Centaurea adami which occurs in north central Greece was described in 1803 from material sent by J.F. Adam (= M.F. Adams, 1780–1832/36); this material originated in 'Iberia', i.e., the Caucasus region. It was placed near *C. solstitialis* L. in the beginning and later on treated either as a simple synonym, a variety [*C. solstitialis* var. *adami* (Willd.) Heuff.] or a subspecies [*C. solstitialis* subsp. *adami* (Willd.) Nyman]. *Centaurea solstitialis* is widespread in Greece, common in disturbed ruderal habitats such as roadsides and edge of cereal fields. It becomes invasive in non-native regions with a Mediterranean climate. The differences between *C. solstitialis* and *C. adami* in size of capitula, length of spines, structure of innermost phyllaries are quantitative and vaguely defined (see Gugler 1903). However, there is a notable difference in the achene structure. True *C. solstitialis* exhibits heterocarpy. This is rarely or not even mentioned in Floras, exceptions include the monograph by Prodan (1930) and Clapham & al. (1957). The marginal achenes are dark brown to nearly black and usually without a pappus, the central achenes are shiny, pale yellowish blotched with brown and with a white pappus *ca.* as long as the achene.

Careful study of fruiting capitula in several collections of *C. adami* from the Caucasus and north central Greece reveal that heterocarpy is absent and all the achenes are very similar and with a pappus. In a more recent collection from the Prespa region

(Bergmeier 2016-107), Wagenitz counted *ca.* 95 achenes, each one similar and with a pappus shorter than the achene. Achene structure is thus an important character which serves to well-differentiate the two species and this character has probably been overlooked as it can only be seen when a capitulum is carefully dissected.

Reports 89–114

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The following are new plant records based on floristic investigations in the prefectures of Korinthias and Arkadias in north and central Peloponnese. A diagonal running from the NE to the SW of the peninsula represents a somewhat surprisingly under-explored area. *Linum virgultorum* is reported as new for the Peloponnese.

Acanthaceae

89. *Acanthus spinosus* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.

Apiaceae

90. *Ferulago nodosa* (L.) Boiss.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.

Araliaceae

91. *Hedera helix* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.

Asteraceae

92. *Lactuca muralis* (L.) Gaertn.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.

93. *Senecio vulgaris* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.

Boraginaceae

94. *Echium plantagineum* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.

95. *Nonea echioides* (L.) Roem. & Schult.

Gr Nomos & Eparchia Korinthias: 2 km E of Krioneri, in old vine groves, 590 m, 37°57'N, 22°39'E, 27.03.2017, Zarkos obs.; 3 km NW of Krioneri, in well-tended and tilled vine field, 834 m, 37°59'N, 22°36'E, 07.04.2017, Zarkos obs.

Northern and eastern part of mainland Greece; in Peloponnese, two old collections dating back more than a hundred years have been documented, both restricted to the northeastern corner of the peninsula, viz. near the Isthmus of Corinth (01.04.1885, *Hausknecht*) and near Assos (30.03.1888, *Heldreich*). The present record extends the distribution slightly to the west.

Brassicaceae

96. *Capsella bursa-pastoris* (L.) Medik.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.

New for eparchia.

Euphorbiaceae

97. *Euphorbia platyphyllos* L. subsp. *platyphyllos* (Fig. 25)

Gr Nomos & Eparchia Korinthias: N and NW of Lake Stymfalia, roadside ditch, 610 m, 37°51'N, 22°27'E, 13.06.2011, Zarkos & Christodoulou obs.; *loc. ibid.*, 23.08.2013, Zarkos & Christodoulou obs.



Fig. 25. *Euphorbia platyphyllos* subsp. *platyphyllos* (photo G. Zarkos).

New for nomos and eparchia Korinthias. In Peloponnese, occurring in NW and E regions. Usually in wetland, seasonally wet places, agricultural areas, ditches, coastal waste ground. At Stymfalia, found together with *Cirsium arvense*, *Plumbago europaea*, *Verbascum blattaria*, *Lythrum salicaria*, *Cornus sanguinea* and *Physalis ixocarpa*.

Fabaceae

98. *Onobrychis caput-galli* (L.) Lam.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

Fumariaceae

99. *Fumaria officinalis* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

Geraniaceae

100. *Geranium lucidum* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

101. *Geranium rotundifolium* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

Lamiaceae

102. *Lamium amplexicaule* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

Linaceae

103. *Linum virgultorum* Boiss. & Heldr. ex Planch. (Figs. 26 & 27)

Gr Nomos & Eparchia Korinthias: Kato Almiri, Katakali, Siderona beach, in openings of *Pinus halepensis* woodland and *Juniperus phoenicea* scrub, 38 m, 37°50'N, 23°02'E, 10.05.2014, *Zarkos* & *Christodoulou* obs.; *loc. ibid.*, 07.04.2017, *Zarkos* obs.; Onia mountain, 232 m, 37°52'N, 22°58'E, 10.04.2016, *Zarkos* obs.; *loc. ibid.*, 07.04.2017, *Zarkos* obs.

New for the Peloponnese. Reported from Kriti and the E Aegean islands of Lesvos, Samos and Rodos (see Fig. 27), occurring also in W and SW Anatolia where it grows on rocky serpentine and calcareous slopes. The type was collected by Heldreich from Antalya, "in herbis inter frutices supra Tsimboukkhan Pamphyliae sitae" [13.05]1845, *Heldreich* [1088] (holo. K; iso. BM, E). A record from Sterea Ellas, Nomos & Eparchia Attikis, was published by Turrill (1932: 450), based on a gathering by L. Pinatzi whose herbarium formerly in Athens, is now in PAL-Gr (Palermo - Greuter). Pinatzi collected a small, few-flowered annual from Mt Corydalus, a hill west of Athens; however, there are no other records from Attiki. The plants from Kato Almiri and Mt Onia are likewise small, slender, erect and few-flowered with scabrid leaf margins.

Malvaceae

104. *Malva sylvestris* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.



Fig. 26. *Linum virgultorum*
(photo G. Zarkos).

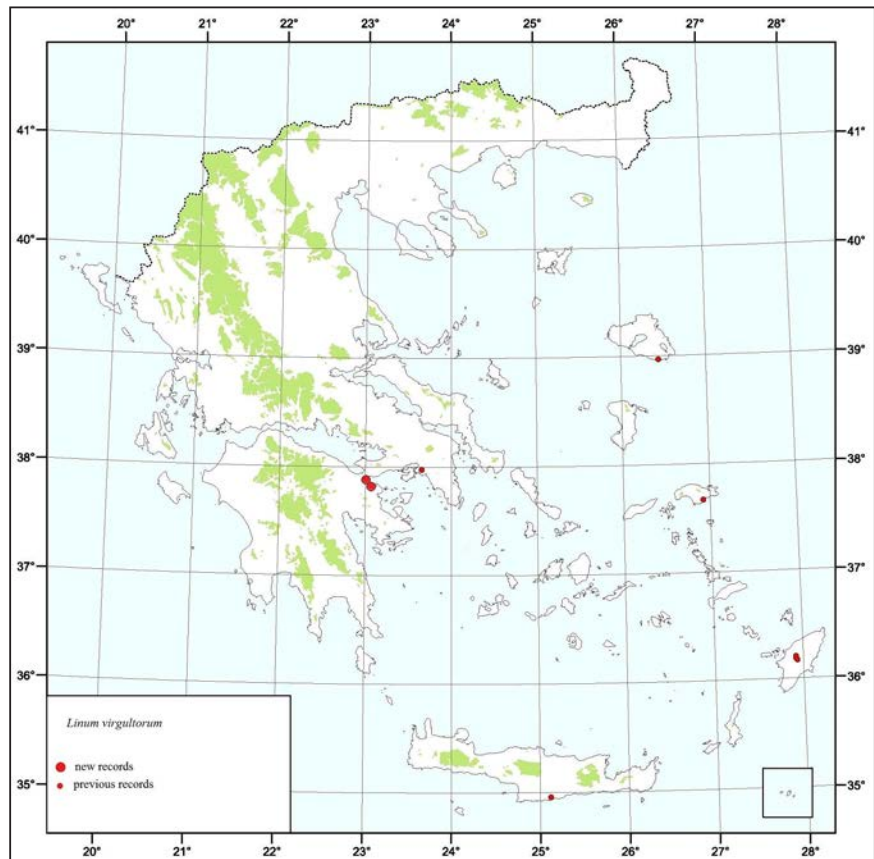


Fig. 27. Distribution of *Linum virgultorum*
in Greece.

Orobanchaceae

105. *Bellardia latifolia* (L.) Cuatrec.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.
New for eparchia.

Plantaginaceae

106. *Plantago lanceolata* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, Kit Tan & G. Vold obs.
New for eparchia.

Rosaceae**107. *Prunus mahaleb* L.**

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

108. *Prunus spinosa* L.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

109. *Pyrus spinosa* Forssk.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

110. *Rubus canescens* DC.

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

Araceae**111. *Arum italicum* Mill.**

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

Iridaceae**112. *Crocus sieberi* subsp. *nivalis* (Bory & Chaub.) B. Mathew**

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

Orchidaceae**113. *Anacamptis morio* subsp. *caucasica* (K. Koch) H. Kretzschmar & al. (Fig. 28)**

Gr Nomos & Eparchia Korinthias: W of the Feneos valley at the foot of Mt Saitas, 746 m, 37°51'N, 22°16'E, 13.04.2017, *Zarkos* obs.; *loc. ibid.*, 19.04.2017, *Zarkos* & *Christodoulou* obs.



Fig. 28. *Anacamptis morio* subsp. *caucasica* (photo G. Zarkos).

New for the Peloponnese. Kretzschmar (pers. comm., unpubl.) observed *A. morio* (L.) R.M. Bateman & al. in the northeastern corner of the Peloponnese (Nomos Attikis, Eparchia Trizinias). In *Quercus coccifera* - *Spartium junceum* scrub, together with various *Ophrys* species such as *O. sphegodes* with several subspecies, *O. lutea* subsp. *galilaea*, *O. reinholdii*, *Cephalanthera longifolia*, *Neotinea lactea*, *Aceras anthropophorum*, *Orchis italica* and *O. quadripunctata*. A surprising discovery in the area was a new locality for *Polygala rausiana*, now in its southernmost occurrence.

Ruscaceae**114. *Ruscus aculeatus* L.**

Gr Nomos Arkadias, Eparchia Megalopoleos: 3 km NW of Megalopolis, on Psari - Sirna road, in *Quercus frainetto* woodland, 400 m, 37°25'N, 22°08'E, 25.02.2017, *Kit Tan* & *G. Vold* obs.

New for eparchia.

References

- Assyov, B. & Petrova, A.** (eds). 2012. Conspectus of the Bulgarian Vascular Flora. Distribution Maps and Floristic Elements. Ed. 4. Bulgarian Biodiversity Foundation, Sofia.
- Baliouis, E.** 2014. Recent data from the flora of the island of Limnos (NE Aegean, Greece): new alien invasive species affecting the agricultural economy of the island. - *Edinb. J. Bot.*, **71**(2): 275-285.
- Biel, B. & Tan, Kit** 2016. Reports 2-19. - In: **Vladimirov, V. & Tan, Kit** (comp.), New floristic records in the Balkans: 31. - *Phytol. Balcan.*, **22**(3): 429-467.

- Chamberlain, D.F.** 1972. *Ammannia*. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 4, p. 179. Edinburgh Univ. Press, Edinburgh.
- Cheshmedzhiev, I.** 2003. *Asclepiadaceae* (pp. 295-296), *Crassulaceae* (162-167), *Dipsacaceae* (291-294), *Linaceae* (246-249), *Rubiaceae* (299-306). – In: **Delipavlov, D. & Cheshmedzhiev, I.** (eds), Key to the Plants of Bulgaria. Agrarian Univ. Acad. Press, Plovdiv (in Bulgarian).
- Clapham, A.R., Tutin, T.G. & Warburg, E.F.** 1957. Flora of the British Isles: Illustrations. Cambridge Univ. Press.
- Coode, M.J.E. & Cullen, J.** 1967. *Retrorrhagia*. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 2, p.135. Edinburgh Univ. Press, Edinburgh.
- Cullen, J.** 1972. *Sanguisorba*. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 4, pp. 78-80. Edinburgh Univ. Press, Edinburgh.
- DAISIE.** European Invasive Alien Species Gateway, 2012. *Platycladus orientalis*. – <http://www.europe-aliens.org/species-Factsheet.do?speciesId=368> [accessed 27.08.2016].
- Delipavlov, D.** 2003. *Geraniaceae* (pp. 250-253), *Orchidaceae* (457-466), *Poaceae* (482-520). – In: **Delipavlov, D. & Cheshmedzhiev, I.** (eds), Key to the Plants of Bulgaria. Agrarian Univ. Acad. Press, Plovdiv (in Bulgarian).
- Dimitrov, D. & Assyov, B.** 2003. New taxa for the Bulgarian flora. – God. Sofijsk. Univ. "St. Kliment Ohridski", 95(4): 269-272.
- Dinter, I.** 2011. Nordostgriechenland mit Insel Thasos. Botanische Studienreise vom 3-17 Juni 2010 (incl. DVD). Privately published.
- Gabrielian, E.T.** 1972. *Sorbus*. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 4, p. 149. Edinburgh Univ. Press, Edinburgh.
- Greuter, W.** 2012. Results of the seventh "Iter Mediterraneum" in the Peloponnese, Greece, May to June 1995. – *Bocconea* 25: 5-127.
- Gugler, W.** 1903. Ueber *Centaurea adami* Willd. – *Allgem. Bot. Zeitschr.*, 9: 88-91.
- Halácsy, E.v.** 1904. *Conspectus Florae Graecae*. Vol. 3. G. Engelmann, Leipzig.
- Jakobsen, K.** 1978. *Centaureum*. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 6, pp. 178-179. Edinburgh Univ. Press, Edinburgh.
- Jordanov, D.** 1963. *Alismataceae*. – In: **Jordanov, D.** (ed.), Fl. Reipubl. Popularis Bulgaricae. Vol. 1, pp. 217-221. In *Aedibus Acad. Sci. Bulgaricae, Serdicae* (in Bulgarian).
- Karetos, G.** 2002. An ecological and vegetational study of Mount Iti [*Meleti tis ikologias ke tis vlastisis tou orous Iti*]. Ph.D. thesis. Univ. of Patras, Patras (in Greek with English summary).
- Lambdon, P.W., Pyšek, P., Basnou, C., Hejda, M., Arianoutsou, M., Essl, F., Jarošík, V., Pergl, J., Winter, M., Anastasiu, P., Andriopoulos, P., Bazos, I., Brundu, G., Celesti-Grapow, L., Chassot, P., Delipetrou, P., Josefsson, M., Kark, S., Klotz, S., Kokkoris, Y., Kühn, I., Marchante, H., Perglová, I., Pino, J., Vilà, M., Zikos, A., Roy, D. & Hulme, P.E.** 2008. Alien flora of Europe: species diversity, temporal trends, geographical patterns and research needs. – *Preslia*, 80: 101-149.
- Mermvlgas, D., Tan, Kit & Yannitsaros, A.** 2010. A new species of *Iris* (*Iridaceae*) from the northern Peloponnese (Greece). – *Phytol. Balcan.*, 16(2): 263-266.
- Peev, D. & Tsoneva, S.** 2009. *Heracleum angustisectum*. – In: **Petrova, A. & Vladimirov, V.** (eds), Red List of Bulgarian vascular plants. – *Phytol. Balcan.*, 15(1): 84.
- Peev, D.** 1982. *Heracleum*. – in: **Velchev, V.** (ed.), Fl. Reipubl. Popularis Bulgaricae. Vol. 8, pp. 246-251. In *Aedibus Acad. Sci. Bulgaricae, Serdicae* (in Bulgarian).
- Peşmen, H. & Chamberlain, D.F.** 1972. *Filipendula*. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 4, p. 29. Edinburgh Univ. Press, Edinburgh.
- Petrova, A.** 1979. *Linaceae*. – In: **Jordanov, D.** (ed.), Fl. Reipubl. Popularis Bulgaricae. Vol. 7, pp. 79-110. In *Aedibus Acad. Sci. Bulgaricae, Serdicae* (in Bulgarian).
- Petrova, A.** 2009. *Spiranthes spiralis*. – In: **Petrova, A. & Vladimirov, V.** (eds), Red List of Bulgarian vascular plants. – *Phytol. Balcan.*, 15(1): 87.
- Petrova, A.** 2013. Reports 43–53. – In: **Vladimirov, V. & al.** (comp.), New floristic records in the Balkans: 23. – *Phytol. Balcan.*, 19(3): 382-384.
- Petrova, A.** 2015. *Himantoglossum caprinum* (p. 674), *Ophrys apifera* (561). – In: **Peev, D. & al.** (eds), Red Data Book of Republic of Bulgaria. Vol. 1. Plants & Fungi. BAS & MOEW, Sofia.
- Petrova, A., Sopotlieva, D. & Apostolova, I.** 2015. Reports 202–206. – In: **Vladimirov, V. & al.** (comp.), New floristic records in the Balkans: 26. – *Phytol. Balcan.*, 21(1): 76-77.
- Petrova, A., Vassilev, R., Gerasimova, I. & Venkova, D.** 2013a. Reports 87–99. – In: **Vladimirov, V. & al.** (comp.), New floristic records in the Balkans: 22. – *Phytol. Balcan.*, 19(2): 283-285.
- Petrova, A. & Vladimirov, V.** 2012. A contribution to the alien flora of Bulgaria. – *Compt. Rend. Acad. Bulg. Sci.*, 65(6): 771-778.
- Petrova, A., Vladimirov, V. & Georgiev, V.** 2012a. Distribution of alien and invasive plant species, reported for Bulgaria during the past 20 years (1991–2011). – In: **Petrova, A.** (ed.), Proceedings of the 7th National Conference of Botany, 29–30.09.2011, Sofia. Pp. 339-348. Bulgarian Botanical Society, Sofia.
- Petrova, A., Vladimirov, V. & Georgiev, V.** 2012b. Invasive Alien Species of Plants in Bulgaria. IBER-BAS, Sofia (in Bulgarian).
- Petrova, A., Vladimirov, V. & Georgiev, V.** 2013b. Invasive Alien Speices of Vascular Plants in Bulgaria. IBER-BAS, Sofia.
- Popova, M.** 2003. *Ranunculaceae* (pp. 41-53), *Rosaceae* (170-198). – In: **Delipavlov, D. & Cheshmedzhiev, I.** (eds), Key to the Plants of Bulgaria. Agrarian Univ. Acad. Press, Plovdiv (in Bulgarian).
- Prodan, J.** 1930. *Centauree Românici (Centaureae Romaniaae)*, Monographie. Cluj.
- Raycheva, Ts. & Stoyanov, K.** 2015. Chorological data for vascular plants in Bulgaria. – *Scientific Works (Agricultural Univ., Plovdiv)*, 59(2): 19-25.
- Renz, J. & Taubenheim, G.** 1984. *Cephalanthera*. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 8, p. 460. Edinburgh Univ. Press, Edinburgh.
- Stojanov, N. & Kitanov, B.** 1945. Flora der Insel Thasos. – *God. Sofijsk. Univ. Fiz.-Mat. Fak.*, 41: 233-320.
- Stojanov, N. & Kitanov, B.** 1946. Flora der Insel Thasos. – *God. Sofijsk. Univ. Fiz.-Mat. Fak.*, 42: 89-196.
- Stoyanov, S.** 2010. Reports 71–73. – In: **Vladimirov, V. & al.** (comps), New floristic records in the Balkans: 13. – *Phytol. Balcan.*, 16(1): 157.

- Stöhr, O.** 2010. Die Unterarten und Hybriden von *Asplenium trichomanes* L. im Bundesland Salzburg (Österreich). – *Stapfia*, **92**: 29-44.
- Strid, A.** 2016. Atlas of the Aegean flora. Part 1. – *Englera*, **33**(1).
- Strid, A. & Tan, Kit** (eds). 1997. Flora Hellenica. Vol. 1. Koeltz Scientific Books, Königstein.
- Tan, Kit, Sfikas, G. & Vold, G.** 1999. *Juniperus drupacea* (*Cupressaceae*) in the southern Peloponnese. – *Acta Bot. Fenn.*, **162**: 133-135.
- Tan, Kit, Shuka, L., Gjeta, E. & Vold, G.** 2015. The rediscovery of *Astragalus autranii* (Fabaceae) on Mt Tomor, south central Albania. – *Phytotaxa*, **234**(1): 83-89.
- Tashev, A., Dimitrov, D. & Delcheva, M.** 2016. Reports 159–163. – In: **Vladimirov, V. & Tan, Kit** (comp.), New floristic records in the Balkans: 31. – *Phytol. Balcan.*, **22**(3): 455-457.
- Tsoneva, S., Georgiev, V., Valchev, V. & Ganeva, A.** 2012. Atlas of Aquatic and Wetland Plants in Bulgaria. Institute of Biodiversity and Ecosystem Research, Sofia (in Bulgarian).
- Turrill, W.B.** 1932. On the flora of the Nearer East: XIII. Miscellaneous new records and extensions of known distribution. – *Bull. Misc. Inform. Kew*, **1932**: 450-454.
- Tzonev, R., Zielinski, J. & Kit Tan** 2003. *Cyperus strigosus* (*Cyperaceae*), a naturalized species new to Bulgaria. – *Polish Bot. J.*, **48**(1): 47-49.
- Verloove, F.** 2014. A conspectus of *Cyperus* s.l. (*Cyperaceae*) in Europe (incl. Azores, Madeira and Canary Islands), with emphasis on non-native naturalized species. – *Webbia: Journal of Plant Taxonomy and Geography*, **69**: 179-223.
- Vladimirov, V.** 2006. Reports 83–95. – In: **Vladimirov, V. & al.** (comp.), New floristic records in the Balkans: 1. – *Phytol. Balcan.*, **12**(1): 125-126.
- Vladimirov, V.** 2009. Reports 83–91. – In: **Vladimirov, V. & al.** (comp.), New floristic records in the Balkans: 20. – *Phytol. Balcan.*, **15**(3): 431-452.
- Vladimirov, V.** 2011. Reports 124–130. – In: **Vladimirov, V. & al.** (comps), New floristic records in the Balkans: 17. – *Phytol. Balcan.*, **17**(3): 379-380.
- Vladimirov, V.** 2012. Reports 176–188. – In: **Vladimirov, V. & al.** (comp.), New floristic records in the Balkans: 20. – *Phytol. Balcan.*, **18**(3): 333-373.
- Vladimirov, V. & Petrova, A.** 2012. *Grindelia squarrosa*: a new alien species for the Bulgarian flora. – *Phytol. Balcan.*, **18**(3): 315-318.
- Vladimirov, V., Petrova, A. & Assyov, B.** 2014. *Euphorbia prostrata* – a new alien species to the Bulgarian flora. – *Compt. Rend. Acad. Bulg. Sci.*, **67**(4): 527-532.
- 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.
- Zohary, M.** 1970. *Trifolium*. – In: **Davis, P.H.** (ed.), *Flora of Turkey and the East Aegean Islands*. Vol. 3, p. 414. Edinburgh Univ. Press, Edinburgh.
-