New floristic records in the Balkans: 36*

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Abstract: New chorological data are presented for 180 species and subspecies from Bulgaria (103-119, 150-155), Greece (11-102, 120-149, 156-180), and Turkey-in-Europe (1-10). The taxa belong to the following families: *Adiantaceae* (103), *Alismataceae* (144), *Apiaceae* (29, 108, 126, 156-159), *Araceae* (20, 96), *Araliaceae* (30), *Asparagaceae* (117), *Asteraceae* (11-14, 23, 31-38, 127, 128, 150-153, 155, 160), *Boraginaceae* (39-42, 121, 129-131), *Brassicaceae* (43-49, 109, 122, 123, 132-134, 161), *Campanulaceae* (50, 51, 162), *Caprifoliaceae* (1), *Caryophyllaceae* (52-56, 135, 136, 154, 163-165), *Cistaceae* (57, 58), *Convolvulaceae* (59), *Cornaceae* (2), *Crassulaceae* (3), *Cyperaceae* (145), *Dipsacaceae* (60, 61, 166), *Fabaceae* (15, 62-69, 104, 110-112, 137, 138, 167-170), *Gentianaceae* (24), *Geraniaceae* (70, 71, 139), *Hyacinthaceae* (179), *Iridaceae* (180), *Lamiaceae* (72-74, 113), *Liliaceae* s.l. (21, 97), *Linaceae* (114), *Malvaceae* (25), *Moraceae* (115, 171), *Onagraceae* (4, 149), *Orchidaceae* (98-100), *Orobanchaceae* (172, 173), *Papaveraceae* (75, 76), *Pinaceae* (28, 125), *Platanaceae* (26, 77), *Plumbaginaceae* (16, 17), *Poaceae* (22, 101-102, 107, 118-119, 146-148), *Polygonaceae* (78), *Polypodiaceae* (120), *Primulaceae* (79, 140), *Rafflesiaceae* (80), *Ranunculaceae* (81-83, 105, 141, 174, 175), *Rosaceae* (5-10, 84, 85, 116, 142), *Rubiaceae* (86, 87), *Salicaceae* (88), *Salviniaceae* (124), *Santalaceae* (89), *Saxifragaceae* (106), *Scrophulariaceae* s.l. (90, 91), *Thymelaeaceae* (18), *Urticaceae* (19, 92), *Valerianaceae* (93, 143), *Veronicaceae* (27, 176, 177), and *Violaceae* (94, 95, 178).

A new species for science is: *Silene christodouloui-zarkosii* Kit Tan & G. Vold (164).

A new species for a country is: Greece – *Dianthus aridus* (163).

The publication includes contributions by: M. Aybeke (1-10), B. Biel & Kit Tan (11-22), C. Cattaneo & M. Grano (23-27), K. Giannopolous, Kit Tan & G. Vold (28-102), G. Kunev (103-107), A. Petrova (108-119), K. Polymenakos & Kit Tan (120-123), A. Strid (124-148), L. Tsounis, Kit Tan & G. Kehayias (149), V. Vladimirov (150-154), V. Vladimirov & Z. Szeląg (155), G. Zarkos, V. Christodoulou, Kit Tan & G. Vold (156-180).

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

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

Reports 1–10

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Caprifoliaceae

1. *Lonicera caprifolium* L.

Tu(E) A1(E) Kırklareli: Demirköy, between Demirköy and İğneada, 18th km, 35 m, 41°52'28"N, 27°59'02"E, 18.05.1991, coll. & det. *C. Yarcı* (EDTU 5329).

A new species for Kırklareli in European Turkey. According to Chamberlain & Long (1972), this taxon was found in Tekirdağ, Çanakkale and A2E Istanbul.

Cornaceae

2. *Cornus sanguinea* L. subsp. ***sanguinea***

Tu(E) A1(E) Kırklareli: Demirköy, between Karanlık – Demirköy, 2nd km, 508 m, 41°54'19"N, 27°34'55"E, 03.09.1989, coll. & det. *C. Yarcı* (EDTU 4691).

A new species for European Turkey. According to Chamberlain (1972), this taxon was found in Anatolian region, A2(A) Bursa.

Crassulaceae

3. *Sedum telephium* L. subsp. ***maximum*** (L.) Krocker

Tu(E) A1(E) Kırklareli: Demirköy, between Karanlık and Karadere, 3th km, 508 m, 41°54'19"N, 27°34'55"E, 03.09.1989, coll. & det. *C. Yarcı* (EDTU 4243).

A new species for A1(E) Kırklareli in European Turkey. According to Chamberlain (1972), this taxon was discovered only in A2(E) Istanbul.

Onagraceae

4. *Circaea lutetiana* L.

Tu(E) A1(E) Kırklareli: Demirköy, Demirköy – Pınarhisar road, 16th km, 252 m, 41°49'30"N, 27°45'35"E, 27.07.1990, coll. & det. *C. Yarcı* (EDTU 5301); Kofçaz, road between Kofçaz and Ahmetler villages, 5th km, in a forest, 508 m, 41°56'41"N, 27°09'30"E, 27.06.1996, coll. & det. *C. Yarcı* (EDTU 6961).

A new species for A1(E) Kırklareli in European Turkey. According to Chamberlain & Raven (1972), this taxon occurred only in A2(E) Istanbul.

Rosaceae

5. *Agrimonia repens* L.

Tu(E) A1(E) Kırklareli: Yeşilce village, 508 m, 41°54'12"N, 27°41'56"E, 15.08.1990, coll. & det. *C. Yarcı* (EDTU 5354).

A new species for European Turkey. According to Chamberlain & Peşmen (1972), this taxon was found in Anatolian region, A2 Bursa, A4 Zonguldak, A5 Sinop, B2 Kütahya, B4 Ankara, B5 Yozgat, etc.

6. *Crataegus aronia* (L.) Bosc. ex DC. var. ***aronia***

Tu(E) A1(E) Kırklareli: Demirköy, İğneada, on the edges of lake Mert, 0 m, 41°52'28"N, 27°59'02"E, 03.06.1990, coll. *C. Yarcı*, det. *C. Yarcı* & *M. Aybeke* (EDTU 5369).

A new species for European Turkey. According to Browicz (1972), this taxon occurred in Anatolian region, B5 Kayseri.

7. *Geum urbanum* L.

Tu(E) A1(E) Kırklareli: Altındere, in a longoz forest, İğneada, 12 m, 41°52'28"N, 27°59'02"E, 02.09.1990, coll. & det. *C. Yarcı* (EDTU 5357); between Kocayazı – Kula villages, 5th km, in a mixed forest, 637 m, 41°57'56"N, 27°12'19"E, 09.07.1997, coll. & det. *C. Yarcı* (EDTU 7125).

A new species for A1(E) Kırklareli in European Turkey. According to Peşmen & Chamberlain (1972), this taxon occurred in Edirne and A2(E) Istanbul.

8. *Malus sylvestris* Mill. subsp. ***orientalis*** var. ***orientalis***

Tu(E) A1(E) Kırklareli: Demirköy, between Demirköy – Hamdibey, 2nd km, 252 m, 41°49'30"N, 27°45'35"E, 03.06.1990, coll. & det. *C. Yarcı* (EDTU 5356).

A new species for A1(E) Kırklareli in European Turkey. According to Browicz (1972), this taxon occurred only in Tekirdağ and A2(E) Istanbul.

9. *Prunus spinosa* subsp. ***dasyphylla*** (Schur) Domin

Tu(E) A1(E) Kırklareli: along the road between İğneada and Yiğitbaşı village, 301 m, 41°56'33"N, 27°39'04"E, 14.08.1990, coll. *C. Yarcı*, det. *C. Yarcı* & *M. Aybeke* (EDTU 5358).

A new species for A1(E) Kırklareli in European Turkey. According to Browicz (1972), this taxon was found only in Edirne.

10. *Pyracantha coccinea* Roemer

Tu(E) A1(E) Kırklareli: between Terzidere and Taştepe villages, 11th km, in a thinned-out forest, 605 m, 41°57'49"N, 27°08'15"E, 08.05.1996, coll. & det. *C. Yarcı* (EDTU 6777).

A new species for A(1) Kırklareli in European Turkey. According to Browicz (1972), this taxon was known only from Tekirdağ and A2(E) Istanbul.

Reports 11–22

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This is the eighth report of new plant-records for the island of Amorgos (phytogeographical region Kiklades, Nomos Kikladon, Eparchia Thiras) based on visits in April 2015, May/June 2016, May 2017 and May 2018. The 12 records listed are new to the island unless otherwise stated, and four species were found to be new for the floristic region Kiklades (Kik) as circumscribed in Flora Hellenica (Strid & Tan 1997), bringing the total number of new records we have found for this area to 51. Occurrence on the other Kikladean islands is briefly summarized.

Asteraceae

11. *Crepis foetida* subsp. ***rhoeadifolia*** (M. Bieb.) Čelak. (Fig. 1)

Gr Amorgos: E-SE of Tholaria, slope with phrygana and scrub at Pagos hill, 200 m, 36°54'51"N, 26°00'02"E, 08.05.2018, *Biel* 18.036.

Reported from Andros (N Kiklades) and Folegandros (S Kiklades).

12. *Filago minima* (Sm.) Pers.

Gr Amorgos: S-SE of Katapola, phrygana and wet ground along path near Skopi, 300 m, 36°48'19"N, 25°52'21"E, 11.05.2018, *Biel* 18.057.

New for Kiklades. Reported from Ikaria and Lesvos in the East Aegean area.

13. *Hymenonema graecum* (L.) DC.

Gr Amorgos: SW of Egiali, Kalopotamia gorge with steep rocky slopes, *ca*. 200 m from coastal road, 40 m, 36°53'18"N, 25°57'23"E, 07.05.2018, *Biel* 18.032.

Endemic to Greece. Reported from the island of Nikouria (off the northern coast of Amorgos) by Runemark (as obs.) but not from Amorgos itself.

14. *Otanthus maritimus* (L.) Hoffmanns. & Link

Gr Amorgos: Arkesini, road margins, waste places, 200 m, 36°47'11"N, 25°48'10"E, 15.05.2018, *Biel* 18.080.

On most islands in the Kiklades. Normally a widespread halophilous coastal species, its occurrence in anthropogenic habitats is accidental.

Fabaceae

15. *Lathyrus hirsutus* L. (Fig. 2)

Gr Amorgos: SW of Apano Potamos, wet area around well at marked path no. 1, 160 m, 36°53'32"N, 25°58'20"E, 12.04.2015, *Biel* obs. (photo); Katapola-Rachidi, fallow field (now pasture) near coastal road and river bed, 2 m, 36°49'40"N, 25°51'57"E, 10.05.2018, *Biel* 18.050.

Reported from Tinos (N Kiklades), otherwise a second record for the Kiklades.

Plumbaginaceae

16. *Limonium ocymifolium* (Poir.) Kuntze

Gr Amorgos: SW of Aghia Thekla, sandy beach at estuary Ormos Ag. Saranta, 2 m, 36°48'33" N, 25°50'45" E, 13.05.2018, *Biel* 18.069.

On several islands in the Kiklades.

Fig. 1. *Crepis foetida* subsp. *rhoeadifolia* (photo B. Biel).

Fig. 2. *Lathyrus hirsutus* (photo B. Biel).

17. *Plumbago auriculata* Lam.

Gr Amorgos: W of Lagadha, paved road below village, 190 m, 36°54'17"N, 25°59'40"E, 08.05.2018, *Biel* 18.038.

First report for Kiklades. Native to S Africa, several plants noted, perhaps an established escape. Noted by A. Cheke and R. Ashcroft (Oxford, U.K.) as locally established, an escape from gardens. In Greece it is possibly naturalized on Crete (ruins of Knossos) and Lesvos.

Thymelaeaceae

18. *Thymelaea tartonraira* (L.) All.

Gr Amorgos: Vroutsi to Old Arkesini (Akrokastri), stony phrygana, 100–200 m, 36°48'N, 25°49'E, 26.05.2017, *Kit Tan* & *G. Vold* 32459.

Widespread on islands in the C Kiklades.

Urticaceae

19. *Parietaria officinalis* L. (Fig. 3)

Gr Amorgos: N-NE of shady defile with *Quercus* above dry river bed, near chapel Ag. Zoni, 220 m, 36°55'01"N, 26°00'22"E, 05.05.2018, *Biel* 18.025.

New for the Kiklades. The calyx segments of *P. officinalis* are broadly acuminate, those of *P. judaica* are narrowly acuminate (see Figure). The seeds of *P. officinalis* are 1.4–1.5 mm long while those of *P. judaica* are smaller, being 1.1 mm.

Araceae

20. *Arum maculatum* L. (Fig. 4)

Gr Amorgos: E of Lagadha, cliffs with crevices at northern slope of Krikelos, 780 m, 36°54'29"N, 26°01'31"E, 01.06.2016, *Biel* 16.121; E of Lagadha, rocks with crevices at eastern slope of Krikelos, 790 m, 36°54'28"N, 26°01'32"E, 06.05.2018, *Biel* 18.029; E-NE of Lagadha, crevices of steep rocky slope, above path to Stavros, 600 m, 36°54'39"N, 26°02'05"E, 28.05.2017, *Kit Tan* & *G. Vold* obs.; *loc. ibid*., 09.05.2018, *Biel* 18.044.

Fig. 3. Seeds of *Parietaria officinalis* (upper row) and *P. judaica* (photo B. Biel).

Fig. 4. *Arum maculatum* (photo B. Biel).

New for the Kiklades, southernmost occurrence in Greece and Europe. Occurring also on the E Aegean islands of Ikaria and Samos.

Liliaceae

21. *Lilium candidum* L. (Fig. 5)

Gr Amorgos: S of Kato Potamos, steep phrygana slope with terraces above village, 36°53'43"N, 25°58'35"E, 04.05.2018, *Biel* obs. (photo); NE of Lagadha, phrygana slope with *Quercus* scrub at steep path, 290 m, 36°54'33"N, 26°00'18"E, 05.05.2018, *Biel* 18.017.

Reported from the islands of Iraklia, Kea and Thira (Santorini).

Poaceae

22. *Bromus chrysopogon* Viv.

Gr Amorgos: E-NE of Lagadha, phrygana at narrow defile (dry river bed), 470 m, 36°54'42"N, 26°01'05"E, 30.05.2016, *Biel* 16.108a; E-NE of Lagadha, phrygana at paved path near Kaloneriko, 450 m, 36°54'39"N, 26°00'57"E, 05.05.2018, *Biel* 18.018; SW of Egiali, Kalopotamia gorge with steep rocky slopes, 170 m, 36°53'09"N, 25°57'29"E, 07.05.2018, *Biel* 18.033; SW of Egiali, northern exposed cliffs above Kalopotamia gorge, 280 m, 36°53'02"N, 25°57'24"E, 07.05.2018, *Biel* obs. (photo).

Second report in the Kiklades, reported from Paros.

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

Fig. 5. *Lilium candidum* (photo B. Biel).

Reports 23–27

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Five new records are provided for the island of Simi (phytogeographical region E Aegean, Nomos Dodekanisou, Eparchia Rodou).

Asteraceae

23. *Tolpis umbellata* Bertol.

Gr Simi: fields around Pedi, 27 m, 36°36'44"N, 27°50'54"E, 30.04.2018, *Cattaneo* 692 (herb. Cattaneo).

Widespread in most parts of Greece.

Gentianaceae

24. *Blackstonia perfoliata* (L.) Huds.

Gr Simi: Nanou bay, open woodland, 157 m, 36°34'56"N, 27°50'48"E, 27.04.2018, *Cattaneo* 633 (herb. Cattaneo).

Widespread in Greece except in North Central and North East.

Malvaceae

25. *Malva neglecta* Wallr.

Gr Simi: Panormitis, along the coast on sedimentary soil, 6 m, 36°33'03"N, 27°50'52"E, 29.04.2018, *Cattaneo* 628 (herb. Cattaneo).

In the E Aegean, recorded from Lesvos, Rodos and Chalki.

Platanaceae

26. *Platanus orientalis* L.

Gr Simi: Niborios bay, near a water source, 130 m, 36°37'19"N, 27°48'27"E, 30.04.2018, *Cattaneo* & *Grano* obs.

Veronicaceae

27. *Cymbalaria muralis* G. Gaertn. & al.

Gr Simi: Panormitis, on rocks near the coast, 6 m, 36°33'07"N, 27°50'54"E, 29.04.2018, *Cattaneo* 637 (herb. Cattaneo).

In the E Aegean, recorded from Lesvos, Samos and Rodos.

Reports 28–102

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Pinaceae

28. *Abies cephalonica* Loudon

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1060 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia and nomos Ilias.

Apiaceae

29. *Scandix pecten-veneris* L.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Araliaceae

30. *Hedera helix* L.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern

lower slopes, 1120 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Asteraceae

31. *Bellis sylvestris* Cirillo
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

32. *Centaurea raphanina* subsp. ***mixta*** (DC.) Runemark
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1220 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

33. *Crepis rubra* L.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1080 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

34. *Doronicum orientale* Hoffm.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1200 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

35. *Lactuca muralis* (L.) Gaertn.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1080 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

36. *Ptilostemon afer* (Jacq.) Greuter
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1210 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

37. *Scorzonera crocifolia* Sm.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1090 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

38. *Sonchus oleraceus* L.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1110 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Boraginaceae

39. *Anchusa undulata* subsp. ***hybrida*** (Ten.) Bég.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1060 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

40. *Cynoglossum columnae* Ten.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1070 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

41. *Echium plantagineum* L.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1040 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

42. *Myosotis ramosissima* Rochel
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1080 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Brassicaceae

43. *Arabidopsis thaliana* (L.) Heynh.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1040 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

44. *Arabis verna* (L.) R. Br.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

45. *Capsella bursa-pastoris* (L.) Medik.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1040 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

46. *Cardamine graeca* L.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1170 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

47. *Nasturtium officinale* R.Br.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

48. *Noccaea graeca* (Jord.) F.K. Mey.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia and eparchia Ilias.

49. *Sisymbrium officinale* (L.) Scop.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1080 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
— Mt Skiadovouni, southern lower slopes, 1180 m, 37°54'N, 21°44'E, 15.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia and Mt Skiadovouni.

Campanulaceae

50. *Campanula spatulata* Sm. subsp. ***spatulata***
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1180 m, 37°53'N, 21°44'E, 15.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* 32715.
New for Mt Skiadovouni, recorded for Lambia.

51. *Legousia hybrida* (L.) Delarbre
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1140 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Caryophyllaceae

52. *Arenaria serpyllifolia* L.
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1100 m, 37°54'N, 21°44'E, 15.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Skiadovouni.

53. *Agrostemma githago* L. (Fig. 6)
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1110 m, 37°54'N, 21°44'E, 15.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* 32741.
New for Mt Skiadovouni.

54. *Saponaria calabrica* Guss.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1040 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

55. *Silene italica* subsp. ***peloponnesiaca*** Greuter
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1140 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

56. *Stellaria cupaniana* (Jord. & Fourr.) Bég.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1160 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Fig. 6. *Agrostemma githago* (photo K. Giannopolous).

Cistaceae

57. *Fumana thymifolia* (L.) Webb
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

58. *Helianthemum salicifolium* (L.) Mill.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1130 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
— Mt Skiadovouni, southern lower slopes, 1120 m, 37°54'N, 21°44'E, 15.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* 32718.
New for Mt Lambia and Mt Skiadovouni.

Convolvulaceae

59. *Convolvulus elegantissimus* Mill.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Dipsacaceae

60. *Knautia integrifolia* (L.) Bertol.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1080 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

61. *Pterocephalus perennis* Coult. (Fig. 7)

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1130 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia and nomos Ilias.

Fabaceae

62. *Anthyllis vulneraria* subsp. ***rubriflora*** (DC.) Arcang.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1140 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

63. *Coronilla scorpioides* (L.) W.D.J. Koch

Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1100 m, 37°54'N, 21°44'E, 15.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* 32716.

New for Mt Skiadovouni.

64. *Lathyrus aphaca* L.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

65. *Lens nigricans* (M. Bieb.) Godr.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1200 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopoulos* obs.

New for Mt Lambia and eparchia Ilias

Fig. 7. *Pterocephalus perennis* (photo K. Giannopolous).

66. *Lupinus luteus* L. (Fig. 8)

Gr Nomos & Eparchia Ilias: Enipeas valley, 250 m, 37°44'N, 21°34'E, 03.04.2018, *K. Giannopolous* obs.

New for nomos Ilias.

67. *Ononis spinosa* subsp. ***antiquorum*** (L.) Arcang.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

68. *Trifolium aurantiacum* Boiss. & Spruner

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1130 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

69. *Trifolium physodes* M. Bieb.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1130 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Geraniaceae

70. *Erodium cicutarium* (L.) L'Hér.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern

Fig. 8. *Lupinus luteus* (photo K. Giannopolous).

lower slopes, 1090 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan, G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

71. *Geranium lucidum* L.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1070 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Lamiaceae

72. *Clinopodium vulgare* L.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1040 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

73. *Lamium amplexicaule* L.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1140 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

74. *Stachys germanica* subsp. ***heldreichii*** (Boiss.) Hayek (Fig. 9)
Gr Nomos & Eparchia Ilias: Mt Skiadovouni, southern lower slopes, 1140 m, 37°54'N, 21°44'E, 15.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Skiadovouni and eparchia Ilias.

Papaveraceae

75. *Papaver apulum* Ten.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1140 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

76. *Papaver rhoeas* L.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1140 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Platanaceae

77. *Platanus orientalis* L.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1020 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Polygonaceae

78. *Rumex acetosella* L.
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1040 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Primulaceae

79. *Cyclamen hederifolium* Sol. ex Aiton
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1120 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.
New for Mt Lambia.

Rafflesiaceae

80. *Cytinus ruber* (Fourr.) Willd. (Fig. 10)
Gr Nomos Ilias , Eparchia Olimbias: locality Babes near ancient Olymbia, 280 m, 37°37'N, 21°39'E, 21.04.2018, *K. Giannopolous* obs.
Second report for eparchia Olimbias.

Ranunculaceae

81. *Anemone apennina* subsp. ***blanda*** (Schott & Kotschy) Nyman
Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1130 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

Fig. 9. *Stachys germanica* subsp. *heldreichii* (photo K. Giannopolous).

Fig. 10. *Cytinus ruber* (photo K. Giannopolous).

New for Mt Lambia.

82. ***Clematis vitalba*** L.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

83. ***Ranunculus sardous*** Crantz

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1060 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Rosaceae

84. ***Crataegus monogyna*** Jacq.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1260 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* 32761.

New for Mt Lambia.

85. ***Potentilla micrantha*** DC.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1120 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Rubiaceae

86. ***Rubia peregrina*** L.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1040 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

87. ***Sherardia arvensis*** L.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1090 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Salicaceae

88. ***Salix alba*** L.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Santalaceae

89. ***Viscum album*** subsp. ***abietis*** (Wiesb.) K. Malý

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1110 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia; hemi-parasitic on *Abies cephalonica*.

Scrophulariaceae

90. ***Verbascum epixanthinum*** Boiss. & Heldr.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1100 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

91. ***Veronica anagallis-aquatica*** L.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1040 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Urticaceae

92. ***Urtica dioica*** L.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1040 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Valerianac.eae

93. ***Valeriana italica*** Lam. (Fig. 11)

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1080 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia and eparchia Ilias.

Violaceae

94. ***Viola alba*** subsp. ***dehnhardtii*** (Ten.) W. Becker

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1180 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

95. ***Viola arvensis*** Murray

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1160 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia and eparchia Ilias.

Araceae

96. ***Biarum tenuifolium*** (L.) Schott

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1220 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Liliaceae

97. ***Muscari comosum*** (L.) Mill.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1110 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Fig. 11. *Valeriana italica* (photo K. Giannopolous).

Orchidaceae

98. *Cephalanthera damasonium* (Mill.) Druce

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1220 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

99. *Epipactis microphylla* (Ehrh.) Sw.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1160 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

100. *Orchis quadripunctata* Cirillo ex Ten.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1300 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

Poaceae

101. *Aegilops biuncialis* Vis.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1110 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

102. *Hordeum murinum* L.

Gr Nomos & Eparchia Ilias: Mt Lambia, southern lower slopes, 1080 m, 37°52'N, 21°46'E, 16.05.2018, *Kit Tan*, *G. Vold* & *K. Giannopolous* obs.

New for Mt Lambia.

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Adiantaceae

103. *Adiantum capillus-veneris* L. (Fig. 12)

Bu Rhodopi Mts (*Eastern*): Fotinovo village, Kardzhali district, on shady damp rocks, a short distance away from the farm buildings and the motorway, 310 m, 41°23'21.50"N, 25°21'13.66"E, 05.05.2018, coll. *G. Kunev* (SO 107896).

The current record represents a new locality of this Critically Endangered fern species entered in the *Red Data Book of the Republic of Bulgaria*, vol.1 (Ivanova 2015) and listed in Annex III of the Biodiversity Act. This protected species is already known from the floristic region of the Rhodopi Mts (*Eastern*), from three

Fig. 12. *Adiantum capillus-veneris* (photo G. Kunev).

localities, two of which are protected areas – 'Nahodishte na venenrin kosam [Locality of Maidenhair Fern]' and 'Oreshari', and the third one close to the Enchets village, Kardzhali district (Ivanova & al. 2011). The most recent find lies southwest of Slashten village, Blagoevgrad district (Dimitrov & al. 2013, Ivanova 2013).

The new locality consists of nearly 25 patches of different size, growing on sheer, wet, damp rocks within the village of Fotinovo. The rock walls are shaded by different tree species, such as *Robinia pseudoacacia*, *Ulmus minor*, *Quercus* spp., and in the lower parts by some shrubs and herbaceous plants – *Ligustrum vulgare*, *Rosa* spp., *Rubus* spp., *Urtica dioica*, *Euphorbia cyparissias*, *Galium verum*. The walls of a closely located small barn also cast some shade on the fern tuffs. Some grasses and other herbaceous plants, mosses and lichens in low abundance can be found growing along with Maidenhair Fern on the rock wall: *Teucrium chamaedrys*, *Hypericum cerastioides*, *Sedum* spp., and *Thymus* spp.

Fabaceae

104. *Vicia incisa* M. Bieb. (Fig. 13)

Bu Rhodopi Mts (*Eastern*): Madzharovo town, Haskovo district, in a pasture, on the left bank of river Arda, at the base of shrubby individuals of *Carpinus orientalis* and *Acer monspessulanum*, 150 m, 41°38'56.82"N, 25°52'4.68"E, 28.04.2018, with flowers, coll. *G. Kunev* (SO 107894)

Vicia incisa is Endangered according to the *Red Data Book of the Republic of Bulgaria* (Dimitrov 2015). It has been known so far from the floristic regions of the Black Sea Coast (*Southern*), Mt Slavyanka, Rhodopi Mts (*Eastern*), and Mt Strandzha, but recently reported from the Thracian Lowland (Vassilev & Filipova 2018) and Tundzha Hilly Country (Petrova & Vassilev 2016). This is a new locality in the Rhodopi (*Eastern*) floristic region. About 15 individuals were recorded in an open shrub community in a spot used as pasture on the left bank of river Arda, in the vicinity of Madzharovo town. A high level of ruderalization and overgrazing was observed in the community.

Ranunculaceae

105. *Ranunculus lateriflorus* DC. (Fig. 14)

Bu Rhodopi Mts (*Eastern*): E from Polyanets village, Kardzhali district, on the banks of a micro-dam, 275 m, 41°28'25.29"N, 25°22'4.71"E, 05.05.2018, with flowers, coll. *G. Kunev* (SO 107895).

This is a new species for this floristic region (see Assyov & Petrova 2012).

Fig. 13. *Vicia incisa* (photo G. Kunev).

Fig. 14. *Ranunculus lateriflorus* (photo G. Kunev).

Saxifragaceae

106. *Saxifraga graeca* Boiss. & Heldr.

Bu Rhodopi Mts (*Western*): S from Eleshnitsa village, Blagoevgrad District, in communities of *Genista rumelica*, 710 m, 41°49'55.02"N, 23°37'13.62"E, 09.04.2017, with flowers, *G. Kunev* obs.

This is the first record of this species for the floristic region of Rhodopi Mts (*Western*) (see Assyov & Petrova 2012).

Poaceae

107. *Molineriella minuta* (L.) Rouy

Bu Pirin Mts (*Northern*): E from Kornitsa village, Blagoevgrad District, in opened xerothermic grassland communities, 670 m, 41°38'3.69"N, 23°41'35.64"E, 09.04.2017, with flowers and seeds, *G. Kunev* obs.

This tiny Mediterranean annual grass occupies some eroded places on the screes above river Marevska, close to Kornitsa village. So far it has not been reported for the floristic region of Pirin Mts (*Northern*) (see Assyov & Petrova 2012).

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Apiaceae

108. *Peucedanum alsaticum* L.

Bu Mt Slavyanka: Parilski Dol locality, in thinned-out forests on the slopes at the lower part of the ravine, GL28, 04.08.2010, coll. *A. Petrova* (SOM 174316).

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

Brasicaceae

109. *Berteroa obliqua* (Sm.) DC.

Bu Rila Mts: Samokov Plain, on the edges of meadows along the road to Dragoshinovo village, GM09, app. 42.36881°N, 23.545950°E, 16.06.2002, coll. *A. Petrova* (SOM 174371).

A new species for this floristic region (Ančev 2007).

Fabaceae

110. *Albizzia julibrissin* Durazz

Bu Black Sea Coast (*Northern*): Golden Sands Resort northwards of Varna town, near Melia Hotel, NH89, 43.289673°N, 28.043041°E, 20.11.2016, coll. *A. Petrova* (SOM 173263).

A new species for this floristic region. Many seedlings in their second year were observed below a tree in the green belt of the Hotel. *Albizzia julibrissin* is a very popular ornamental tree. It is naturalized in many countries and is considered invasive in some southeastern states in the USA (Swearingen & Bargeron 2016; CABI 2017; Global Invasive Species Database 2017). In Bulgaria, it is used as an ornamental plant in cities and resort areas with mild climate. Only recently, Sokolov & al. (2016) reported about its seed self-reproduction in Plovdiv city (Thracian Lowland floristic region).

111. *Laburnum anagyroides* Medik.

Bu Black Sea Coast (*Northern*): Varna town, Primorski Park, Saltanat locality, NH78, 43.21340°N, 27.94752°E., 28.08.2017, coll. *A. Petrova* (SOM 174217);

A plant used widely as ornamental in Bulgaria, recently reported as naturalized in some regions (Petrova & al. 2012).

112. *Lupinus polyphyllus* Lindl.

Bu Vitosha region: Mt Plana, Mechkata Summer Houses Area along the road to Samokov town, GN00, 42.424816°N, 23.525410°E & 42.422850°N, 23.525133°E, 850 m, 08.08.2017 & 12.09. 2017, coll. *A. Petrova* (SOM 174218, 176290).

Abundant populations of the plant were found in both places among the summer houses and in some villa yards. Vladimirov (2012) reported the species for the same region from Mt Vitosha.

Lamiaceae

113. *Betonica bulgarica* Gaertn.

Bu Balkan Range (*Eastern*): in a meadow eastwards of Zheravna village, MH54, app. 42.82469°N, 26.50957°E, 13.06.2008, coll. *A. Petrova* (SOM 174223).

According to Grozeva & al. (2014) and Genova (2015), this threatened species has been known from a few areas in the Eastern Stara Planina Mts: Mt Slivenska. This report shows a wider distribution in this floristic subregion. For the moment, this is the easternmost locality of this Bulgarian endemic.

Linaceae

114. *Linum hologynum* Rchb.

Bu Mt Sredna Gora (*Western*): Mt Lozenska, in dry grasslands near peak Lalina Mogila, GN01, 12.06.2005, coll. *A. Petrova* (SOM 174315).

A new species for this floristic region.

Moraceae

115. *Broussonetia papyrifera* (L.) Vent.

Bu Tracian Lowland: near Kurtovo Konare village, KG87, 42.098234°N, 24.516990°E, 27.06.2017, coll. *A. Petrova* (SOM 176290); also observed close to Trakia Motorway, near a petrol station, LG06, 42.264780°N, 24.307166°E, 27.06.2017, *A. Petrova* obs.

Sokolov & al. (2016) reported a vegetative sprouting and expansion of the species in Plovdiv city, but no seed reproduction. Visual observations presume both seed and vegetative reproduction in both places. These observations confirm the distribution of this alien species in the Tracian Lowland.

Rosaceae

116. *Cydonia oblonga* Mill.

Bu Balkan Range (*Eastern*): Sinite Kamani locality above Sliven town, in rocky places near the lower lift station, MH42, 42.698391°N, 26.350734°E, 27.04.2017, coll. *A. Petrova* (SOM 173743); observed also at Sarlaka locality (Matzulka Hill), app. 42.702202°N, 26.336692°E, 27.06.2018, *A. Petrova* obs.

This traditionally cultivated species in Bulgaria persists locally in abandoned places, but data on naturalized populations are very scarce (Petrova & Vassilev 2016). In the first place, some unsuccessful attempts were made to build summer houses with orchards on a dry stony terrain some 35 years ago. Recently, about 10 groups of plants have sprouted. In Sarlaka locality, a few groups of sprouts grew not far away (100–200 m) from some of the villas.

Asparagaceae

117. *Asparagus acutifolius* L.

Bu Pirin Mts (*Southern*): in dry places near Rozhen Monastery, GM00, 17.09.2017, coll. *A. Petrova* (SOM 174531).

A new species for this floristic subregion (Assyov & Petrova 2012).

Poaceae

118. *Agrostis castellana* Boiss. & Reut.

Bu Valley of River Struma (*Southern*): in dry grasslands near the road to Hotovo village, FL99, 17.09.2017, coll. *A. Petrova* (SOM 174525).

A new species for this floristic subregion (Assyov & Petrova 2012).

119. *Eleusine indica* (L.) Gaertn.

Bu Black Sea Coast (*Southern*): Burgas, in crevices of the pavement along Aleksandrovska Str., NH30, 42.493609°N, 27.472529°E, 28.09.2017, coll. *A. Petrova* (SOM 174540); along paths in a nursery for ornamental plants near Ravda village, NH52, 42.652270°N, 27.668177°E, 29.07. & 25.09.2017, coll. *A. Petrova* (SOM 174128, 174541).

Already reported for this floristic subregion by Vladimirov (2011) from Nesebar town. Here, new localities are reported for this noxious invasive alien (DAISIE 2018), demonstrating its wider distribution in the floristic subregion.

Reports 120–123

Kostas Polymenakos[1] & Kit Tan[2]

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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).

Polypodiaceae

120. *Polypodium cambricum* L.

Gr Nomos Evvias, Eparchia Chalkidos: Mt Kandili, on the way from Neos Pagondas to Prokopi, on trunk of *Platanus orientalis* near Alepotripa stream, 210 m, 38°41'N, 23°32'E, 11.03.2018, *Polymenakos*, *Kofinas* & *Papanikolaou* 413 (ATHU).

New for Mt Kandili, also documented elsewhere in Chalkidos.

Boraginaceae

121. *Nonea echioides* (L.) Roem. & Schult. (Fig. 15)

Gr Nomos Evvias, Eparchia Chalkidos: 2.2 km W-SW of Politika, edge of olive grove, sandy flats with few trees of *Pinus halepensis* and *Sarcopoterium spinosum* scrub, 90 m, 38°35'N, 23°31'E, 11.03.2018, *Polymenakos*, *Kofinas* & *Papanikolaou* 412 (ATHU).

New for Evvia and W Aegean islands.

Brassicaceae

122. *Capsella grandiflora* (Fauché & Chaub.) Boiss.

Gr Nomos Evvias, Eparchia Chalkidos: Mt Kandili, 0.8 km W of Prokopi, on the way to Dafnousa, 75 m, 38°44'N, 23°28'E, 11.03.2018, *Polymenakos*, *Kofinas* & *Papanikolaou* 415 (ATHU).

New for Evvia and W Aegean islands. At edge of cereal field, next to a shed, inter-mixed with plants of *Capsella bursa-pastoris*.

123. *Iberis acutiloba* Bertol. (Fig. 16)

Gr Nomos Evvias, Eparchia Chalkidos: 2.2 km W-SW of Politika, edge of olive grove, sandy flats with few trees of *Pinus halepensis* and *Sarcopoterium spinosum*, 90 m, 38°35'N, 23°31'E, 11.03.2018, *Polymenakos*, *Kofinas* & *Papanikolaou* 411 (ATHU).

New for Evvia and W Aegean islands.

Reports 124–148

Arne Strid

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The far north-east of Greece is floristically poorly explored. On an excursion 06.05. – 12.05.2018 the author with his colleagues were able to make 900 records. Those listed below represent species which are new for their respective nomi or eparchies. Several of them are rather trivial and widespread species, confirming the impression that this was (and still is) a neglected corner of Greece. Per Hartvig and Georgios Korakis are thanked for good company and assistance on joint field work. Travel was supported by a grant from the Velux Foundation, Denmark.

Salviniaceae

124. *Azolla filiculoides* Lam.

Gr Nomos Evrou, eparchia Orestiados: 6 km N-NE of Orestiada, 30 m, roadsides in agricultural area, in a small pool, 41°33'N, 26°34'E, 07.05.2018, *Strid* & al. (obs.).

New for nomos and eparchia. An introduced species, spreading in the Balkans and undoubtedly more common than indicated by the relatively few records. The nearest Greek localities are in the Nestos river delta.

Pinaceae

125. *Pinus sylvestris* L.

Gr Nomos Rodopis, eparchia Sapon: 4 km NW of the village of Ourania near the Bulgarian border, 1000 m, ridge in opening of *Fagus* forest, acid rocks, 41°18'N, 25°54'E, 09.05.2018, *Strid* & al. (obs.).

New for eparchia. Planted but probably also native in the area. *Pinus sylvestris* forms extensive natural forest in some mountains of northern Greece, notably in Rodopi and Vrondous, and is also commonly planted.

Apiaceae

126. *Anthriscus cerefolium* (L.) Hoffm.

Gr Nomos Evrou, eparchia Orestiados: 6 km NNE of Orestiada, 30 m, roadsides in agricultural area, partly wet, 41°33'N, 26°34'E, 07.05.2018, *Strid* & al. 59230 (UPA).

— Nomos Rodopis, eparchia Sapon: 4 km NW of the village of Ourania, near the Bulgarian border, ridge in opening of *Fagus* forest, acid rocks, 1000 m, 41°18'N, 25°54'E, 09.05.2018, *Strid* & al. 59295 (UPA).

New for nomi. The nearest Greek localities are in the Nestos river delta.

Fig. 15. *Nonea echioides* (photo K. Polymenakos).

Fig. 16. *Iberis acutiloba* (photo K. Polymenakos).

Asteraceae

127. *Tussilago farfara* L.

Gr Nomos Rodopis, eparchia Sapon: Just SE of the village of Chloi, 570 m, meadow in opening of deciduous oak forest, 41°17'N, 25°52'E, 10.05.2018, *Strid* & al. obs.

— Nomos Rodopis, eparchia Komotinis: 3 km ENE of Organi, 650 m, damp meadows, 41°15'N, 25°42'E, 10.05.2018, *Strid* & al. obs.

New for nomos. The nearest Greek localities are slightly to the west.

128. *Urospermum picroides* (L.) F. W. Schmidt

Gr Nomos Evrou, eparchia Alexandroupoleos: 4 km W of the village of Nipsa, 160 m, abandoned fields and wet places by a small stream, 06.05.2018, *Strid* & al. obs.

New for eparchia, common almost throughout Greece.

Boraginaceae

129. *Cynoglossum columnae* Ten.

Gr Nomos Evrou, eparchia Alexandroupoleos: 1 km N of the village of Nipsa, 200 m, deciduous oak woodland and abandoned fields, 40°56'N, 26°00'E, 06.05.2018, *Strid* & al. 59121 (UPA).

— Nomos Evrou, eparchia Orestiados: 7 km W of Pentalofos, near the Bulgarian border, 450–500 m, mixed deciduous woodland and patches of meadow over schist, 41°39'N, 26°06'E, 11.05.2018, *Strid* & al. 59423 (UPA).

New for eparchies. Widespread in Greece.

130. *Myosotis arvensis* (L.) Hill

Gr Nomos Evrou, eparchia Alexandroupoleos: 4 km W of the village of Nipsa, 160 m, abandoned fields and wet places by a small stream, 40°56'N, 26°03'E, 06.05.2018, *Strid* & al. 59209 (UPA).

New for eparchia. Common in most of Greece.

131. *Onosma kittanae* Strid (Figs. 17–18)

Gr Nomos Rodopis, eparchia Komotinis: 14 km from Organi along road to Chloi, 600 m, rocky serpentine slopes with open *Juniperus* scrub, 41°17'N, 25°48'E, 10.05.2018, *Strid* & al. 59357 (UPA, herb. Strid).

New for nomos and eparchia. This slender and elegant species was described from a serpentine outcrop SW of Dadia (41°06'N, 26°06'E). In the new locality *ca.* 35 km to the northwest it is much more abundant than at the *locus classicus* (see Fig. 17). It also occurs in the Bulgarian Rhodopi.

Brassicaceae

132. *Arabis collina* Ten.

Gr Nomos Evrou, eparchia Alexandroupoleos: 4 km W of the village of Nipsa, abandoned fields and wet places by a small stream, 160 m, 40°56'N, 26°03'E, 06.05.2018, *Strid* & al. 59200 (UPA).

New for nomos and eparchia. The nearest Greek locality is on the island of Thasos.

133. *Erophila macrocarpa* (Boiss. & Heldr.) Boiss.

Gr Nomos Rodopis, eparchia Sapon: just SE of the village of Chloi, 570 m, meadow in opening of deciduous oak forest, 41°17'N, 25°52'E, 10.05.2018, *Strid* & al. (obs.).

New for eparchia. Although completely past flowering, the long fruits identify these plants as *E. macrocarpa* which is rare and scattered in NE Greece.

134. *Rorippa amphibia* (L.) Besser

Gr Nomos Evrou, eparchia Orestiados: 6 km N-NE

Fig. 17. *Onosma kittanae* in abundance on rocky serpentine slopes between the villages of Organi and Chloi (photo A. Strid).

Fig. 18. *Onosma kittanae* at *locus classicus* SW of Dadia (photo A. Strid).

of Orestiada, 30 m, wet spot by roadside in agricultural area, 41°33'N, 26°34'E, 07.05.2018, *Strid* & al. 59226 (UPA).

New for nomos and eparchia. Fairly rare and scattered on the Greek mainland; the nearest locality is by Lake Mitrikou *ca*. 120 km to the southwest.

Caryophyllaceae

135. *Cerastium fontanum* subsp. ***vulgare*** (Hartm.) Greuter & Burdet

Gr Nomos Rodopis, eparchia Sapon: 4 km NW of the village of Ourania, near the Bulgarian border, ridge in opening of *Fagus* forest, acid rocks, 1000 m, 41°18'N, 25°54'E, 09.05.2018, *Strid* & al. 59301 (UPA).

New for nomos and eparchia. A widespread taxon. The nearest Greek localities are in nomos Xanthis at *ca*. 25°E.

136. *Spergula arvensis* L.

Gr Nomos Evrou, eparchia Soufliou: Dadia, by the ecotouristic station, slightly wet spot by a temporary stream in outcrop of dark acid rocks, 100 m, 41°08'N, 26°14'E, 08.05.2018, *Strid* & al. 59271 (UPA, herb Strid).

New for nomos and eparchia. *Spergula pentandra* has previously been reported from this locality. However, our specimens have lenticular seeds without or with a very narrow wing, whereas *S. pentandra* has flat seeds with a broad wing. Our collection apparently represents a small, native form of the widespread, often weedy *S. arvensis*. The nearest Greek localities for the latter are *ca*. 80 km to the west.

Fabaceae

137. *Chamaecytisus eriocarpus* (Boiss.) Rothm.

Gr Nomos Evrou, eparchia Orestiados: 3 km W of Pentalofos, openings in deciduous oak forest, 250–300 m, 41°39'N, 26°09'E, 11.05.2018, *Strid* & al. 59407 (UPA).

New for nomos and eparchia, rather widespread in northern Greece.

138. *Trifolium incarnatum* subsp. ***molinerii*** (Hornem.) Syme

Gr Nomos Rodopis, eparchia Sapon: by the village of Chamilo just NE of Kechros, meadows, 600 m, 41°15'N, 25°52'E, 09.05.2018, *Strid* & al. 59329 (UPA).

— Nomos Rodopis, eparchia Sapon: just SE of the village of Chloi, 570 m, meadow in opening of deciduous oak forest, 41°17'N, 25°52'E, 10.05.2018, *Strid* & al. 59347 (UPA).

— Nomos Rodopis, eparchia Komotinis: 3 km E-NE of Organi, 650 m, damp meadows, 41°15'N, 25°42'E, 10.05.2018, *Strid* & al. 59373 (UPA); 1 km S of Sarakini, 450 m, meadows and deciduous oak scrub, on schist, 41°17'N, 25°33'E, 04.06.1991, *Strid* & *Kit Tan* 31291 (C).

New for nomos. Scattered in N Greece, southwards to *ca.* 39°50'N.

Geraniaceae

139. *Geranium divaricatum* Ehrh.

Gr Nomos Evrou, eparchia Soufliou: Small mountain known as Hill 552, NW of the village of Lefkimi, 500 m, mixed deciduous woodland over igneous rocks, 41°05'N, 26°08'E, 12.05.2018, *Strid* & al. 59438 (herb. Strid).

New for nomos and eparchia. Rare and scattered in northern Greece.

Primulaceae

140. *Primula vulgaris* L.

Gr Nomos Evrou, eparchia Orestiados: 7 km W of Pentalofos near the Bulgarian border, wet road embankment in mixed deciduous woodland, 450–500 m, 41°39'N, 26°06'E, 11.05.2018, *Strid* & al. obs.

New for nomos and eparchia. The nearest Greek localities are *ca.* 100 km to the W-SW.

Ranunculaceae

141. *Ranunculus ophioglossifolius* Vill.

Gr Nomos Evrou, eparchia Soufliou: 17.5 km from Dadia along road to Loutros, 370 m, by a small stream in deciduous oak woodland near a serpentine outcrop, 41°06'N, 26°07'E, 08.05.2018, *Strid* & al. 59280 (UPA).

New for eparchia. The nearest Greek localities are in the Porto Lagos area and on the island of Samothraki.

Rosaceae

142. *Mespilus germanica* L.

Gr Nomos Evrou, eparchia Orestiados: 7 km W of Pentalofos, near the Bulgarian border, 450–500 m, mixed deciduous woodland and patches of meadow over schist, 41°39'N, 26°06'E, 11.05.2018, *Strid* & al. (obs.).

New for eparchia. Appearing native or at least well established. Rare and scattered in Greece. The nearest Greek localities are on the Athos peninsula and the island of Samothraki.

Valerianaceae

143. *Valerianella locusta* (L.) Laterr.

Gr Nomos Evrou, eparchia Orestiados: 6 km NNE of Orestiada, 30 m, roadsides in agricultural area, partly wet, 41°33'N, 26°34'E, 07.05.2018, *Strid* & al. 59218 (UPA).

New for eparchia. Fairly common in C & N Greece.

Alismataceae

144. *Alisma plantago-aquatica* L.

Gr Nomos Evrou, eparchia Didimotichou: Just E of the village of Mikro Derio, by a stream, 100 m, 41°19'N, 26°06'E, 09.05.2018, *Strid* & al. obs.

New for eparchia, sterile material. The similar *A. lanceolatum* has previously been reported in the area.

Cyperaceae

145. *Schoenus nigricans* L.

Gr Nomos Rodopis, eparchia Komotinis: 14 km from Organi along road to Chloi, 600 m, wet spot by rocky serpentine slopes with open *Juniperus* scrub, 41°17'N, 25°48'E, 10.05.2018, *Strid* & al. 59366 (UPA, herb. Strid).

Also reported from coastal wetland *ca*. 60 km to the south-west.

Poaceae

146. *Aegilops markgrafii* (Greuter) K. Hammer

Gr Nomos Evrou, eparchia Orestiados: 6 km N-NE of Orestiada, 30 m, roadsides in agricultural area, partly wet, 41°33'N, 26°34'E, 07.05.2018, *Strid* & al. 59243 (UPA, herb. Strid).

New for eparchia, the nearest Greek records are on the island of Samothraki. Widespread in southern Greece but rare in the north and considered endangered in Bulgaria.

147. *Bromus inermis* Leyss.

Gr Nomos Evrou, eparchia Orestiados: SE of the village of Nea Vissa, 30 m, roadsides in agricultural area, 41°34'N, 26°34'E, 09.06.2017, *Strid* 58902 (UPA, herb. Strid): *loc. ibid*., 07.05.2018, *Strid* & al. 59241 (herb. Strid).

Verified from the Arachova region of Sterea Ellas (Damanakis & Scholz 1990: 420) and Northern Pindos, "Bord de jachère entre Gyphtokampos et Iliochorion" (Authier 1994: 532). Dimopoulos & al. (2013: 123) listed it for Peloponnisos (Pe) and northeastern Greece (NE) based on specimens in the Berlin herbarium (B) which are actually *Festuca arundinacea* Schreb. (thanks are due to Thomas Raus for examining the latter).

148. *Poa annua* L.

Gr Nomos Evrou, eparchia Orestiados: 6 km NNE of Orestiada, 30 m, roadsides in agricultural area, partly wet, 41°33'N, 26°34'E, 07.05.2018, *Strid* & al. (obs.).

— Nomos Evrou, eparchia Didimotichou: Just E of the village of Mikro Derio, by a stream, 100 m, 41°19'N, 26°06'E, 09.05.2018, *Strid* & al. (obs.).

— Nomos Evrou, eparchia Didimotichou: by Erythropotamos river S-SE of the village of Ellinochorio (W of Didimoticho), 50 m, 41°22'N, 26°27'E, 11.05.2018, *Strid* & al. (obs.).

New for eparchies. Common in the area.

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Onagraceae

149. *Ludwigia peploides* subsp. ***montevidensis*** (Spreng.) P.H. Raven (Figs. 19–21)

Gr Nomos Etolias-Akarnanias, Eparchia Trichonidos: Abaria area, near village of Panetolio at northern edge of Lake Trichonis, 15 m, 38°34'12"N, 21°33'06"E, 09.06.2015, *L. Tsounis* obs.; near Dougri, 18 m, 38°35'59"N, 21°34'23"E, 11.06.2015, *L. Tsounis* obs.; Sitaralona at eastern shore of Lake Trichonis, 23 m, 38°31'03"N, 21°39'27"E, 11.06.2015, *L. Tsounis* obs.; Kapsorahi, at southeastern edge of Lake

Fig. 19. *Ludwigia peploides* subsp. *montevidensis* (photo L. Tsounis).

Trichonis, 18 m, 38°30'31"N, 21°36'31"E, 11.06.2015, *L. Tsounis* obs.; connecting channel between Lakes Trichonis and Lysimachia, 15 m, 38°33'05"N, 21°26'25"E, 11.06.2015, *L. Tsounis* obs.

New for Lake Trichonis, naturalized. This S American species has been recorded from Lake Lysimachia (Zotos & al. 2006), which is connected to Lake Trichonis to the east by a 6.5 km long channel. *Ludwigia grandiflora* has been reported from the northern edge of Lake Lysimachia, together with *L. peploides* subsp. *montevidensis* (Tan & al. 2009). The third species in the area is *L. palustris* which is found at the eastern shore of Lake Lysimachia and between Lakes Trichonis and Angelokastro. *Ludwigia peploides* subsp. *montevidensis* is both aquatic and terrestrial (see Fig. 20) with stems rooting at the nodes, and its occurrence at the five localities on Lake Trichonis (Fig. 21) has never been previously documented. The first author is currently carrying out his doctoral work on trophic relationships of the fish fauna in the lakes of Aetolia-Akarnanias.

Fig. 20. *Ludwigia peploides* subsp. *montevidensis* locally established in old fishing boat anchored at lake shore (photo. L. Tsounis).

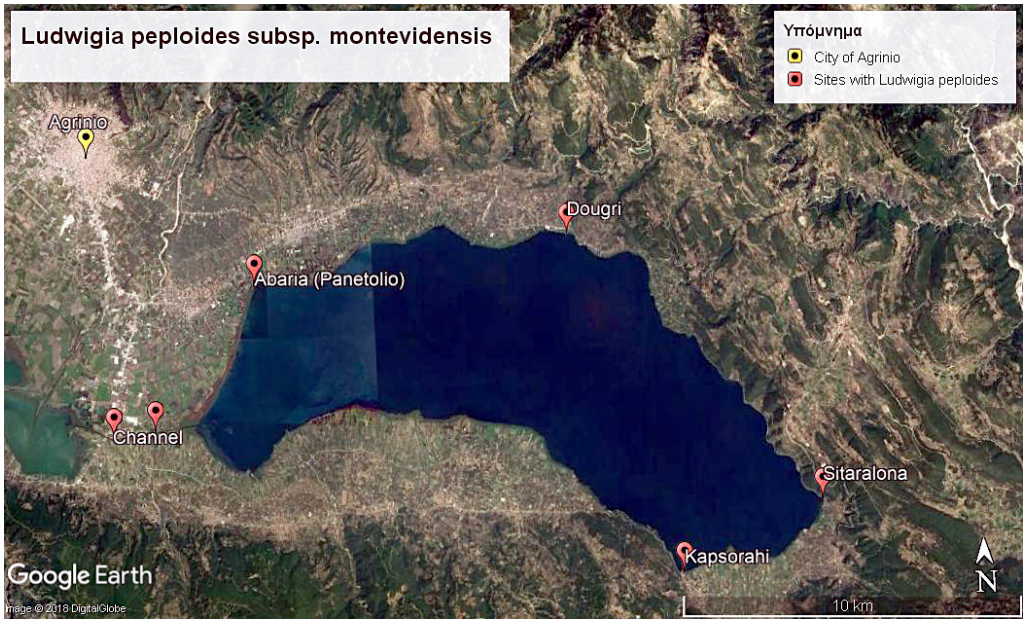

Fig. 21. Distribution map of *Ludwigia peploides* on Lake Trichonis.

Reports 150–154

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Asteraceae

150. *Helminthotheca echioides* (L.) Holub

Bu Valley of River Struma (*Northern*): Kocherinovo town, on the pavement along a street, *ca.* 440 m, FM76, 42.08712°N, 23.06110°E, 01.08.2018, coll. *V. Vladimirov* (SOM).

First report of the species for this floristic region and subregion. So far it has been reported from the following floristic regions: Black Sea Coast, Northeast Bulgaria, Danubian Plain, Forebalkan (*Eastern*), Sofia region, Znepole region, Thracian Lowland, Tundzha Hilly Country (Assyov & Petrova 2012).

151. *Lactuca hispida* DC. [syn. *Cephalorrhynchus tuberosus* (Steven) Schchian, nom. illeg.]

Bu Balkan Range (*Central*): NE of Tazha village, lower parts of Kurudere locality, *ca.* 645 m, LH42, 42.66753°N, 25.13991°E, 12.05.2018, coll. *V. Vladimirov* (SOM).

First report of the species for this floristic subregion. So far it has been reported from the following floristic regions: Northeast Bulgaria, Balkan Range (*Eastern*), Valley of River Struma, Rhodopi Mts (*Central*, *Eastern*), Tundzha Hilly Country (Delipavlov 2011; Assyov & Petrova 2012).

152. *Leontodon saxatilis* Lam.

Bu Balkan Range (*Western*): Barzia village, Montana district, lawns in the yard of Petrohan training and experimental forestry station, *ca.* 540 m, FN78, 43.18841°N, 23.15531°E, 26.06.2018, coll. *V. Vladimirov* (SOM).

— Sofia region: Sofia city, lawns by the Parliament in the center of the city, *ca.* 550 m, FN92, 42.69402°N, 23.33329°E, 15.07.2017, *V. Vladimirov* obs.

First report of the species for Sofia region. Already reported from the Balkan Range (*Western*) from the areas of Varshets town and Spanchevtsi village (Dimitrova & al. 2005).

153. *Leontodon tuberosus* L.

Bu Rhodopi Mts (*Eastern*): dry grassland between the Odrintsi and Siv Kladenets villages, *ca.* 100 m, MF28, 41.42450°N, 26.15309°E, 05.05.2018, coll. *V. Vladimirov* (SOM); left bank of Byala River by the road to Siv Kladenets village, *ca.* 80 m, 41.42884°N, 2.15320°E, 05.05.2018, *V. Vladimirov* obs.

First report of the species for this floristic region.

Caryophyllaceae

154. *Silene fabarioides* Hausskn.

Bu Pirin Mts (*Northern*): open groud on a ski run above Bansko town, limestone bedrock, *ca.* 1200 m, GM03, *ca.* 41.80765°N, 23.45838°E, 20.06.2018, coll. *V. Vladimirov* (SOM)

First report of the species for this floristic subregion. So far it has been known from the Vitosha Region, Znepole region, Valley of River Struma, Mt Slavyanka, Pirin Mts (*Soutern*), Mt Sredna Gora (*Western*), Rhodopi Mts (*Central*) and Thracian Lowland floristic regions (Assyov & Petrova 2012).

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Asteraceae

155. *Leontopodium nivale* subsp. ***alpinum*** (Cass.) Greuter (Fig. 22)

Bu Balkan Range (*Central*): Ispolin peak, North-facing rocks above *Fagus sylvatica* forest, *ca.* 1510 m, LH53, *ca.* 42.73891°N, 25.25272°E, 22.07.2018, *V. Vladimirov* & *Z. Szeląg* obs.

This Endangered in the Bulgarian flora species is well known from this floristic region and subregion from the areas of Kozyata Stena peak, Kurudere, Mazalat, Zli Vrah peak (Bancheva 2015). The present locality is the easternmost locality of the species in Bulgaria, extending its distribution area with *ca.* 30 km eastwards. Only a single tuft was observed with 7 flowering stems, perhaps all belonging to a single individual.

Fig. 22. *Leontopodium nivale* subsp. *alpnum*, Ispolin peak locality (photo V. Vladimirov).

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Reports 156–180

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The following are new plant records based on floristic investigations in the prefectures of Korinthias, Achaias and Arkadias in north and central Peloponnese; five of them are new for this phytogeographical region Peloponnisos (Pe). A diagonal running from the NE to the SW of the peninsula still represents an under-explored area. In addition, *Dianthus aridus*, a species new for Greece, is recorded from Nomos Evrou in North East Greece.

Apiaceae

156. *Ammi majus* L.

Gr Nomos & Eparchia Korinthias: Akrocorinthos, along dirt road and phrygana between the Castle and Penteskoufi hill, 350 m, 29.06.2017, *Zarkos* & *Christodoulou* obs.; *loc. ibid*., 31.05.2018, *Kit Tan* & *G. Vold* 32860; near summit of Penteskoufi hill, 450 m, 31.05.2018, *Kit Tan* & *G. Vold* 32871.

Reported from Korinthias at a low altitude near Asopos (10 m, April 1960 by K. Walther) and above Sikyon (June 1862 by the philosopher J.S. Mill). At ancient Corinth the plants were abundant with *Sulla spinosissima* and *Heptaptera colladonioides* not far distant in each locality respectively.

157. *Ammoides pusilla* (Brot.) Breistr. (Fig. 23)

Gr Nomos & Eparchia Korinthias: near the Environmental Museum at Lake Stymfalia, 650 m, 20.05.2018, *Zarkos* & *Christodoulou* obs.; *loc. ibid.,* 30.05.2018, *Kit Tan* & *G. Vold* 32839.

Only once reported from Korinthias, between Galatas and Psari. In large quantities at the Museum, forming snow-white drifts on a slope, together with *Consolida ajacis*.

158. *Bupleurum subovatum* Spreng. (Fig. 24)

Gr Nomos & Eparchia Korinthias: cultivated fields on slopes of Mt Stauraetos, above the village of Psari, 920 m, 03.06.2018, *Zarkos* & *Christodoulou* obs.

First report for Korinthias in the floristic region Peloponnisos. The species is often confused with *B. lancifolium* but can be distinguished by the shape of its lower cauline leaves and larger fruits (3.5–5 mm) with a

Fig. 23. *Ammoides pusilla* (photo V. Christodoulou).

Fig. 24. *Bupleurum subovatum* (photo G. Zarkos).

broader stylopodium. As well as open forest it occurs in man-made habitats, e.g., along paths, cultivated cereal fields, vine yards and waste ground. There are a few reports from the Peloponnese, mainly coastal or at low altitude. Our record is at a relatively high altitude.

159. *Heptaptera colladonioides* Margot & Reuter (Fig. 25)

Gr Nomos & Eparchia Korinthias: Akrocorinthos, west side of Penteskoufi hill, in between limestone rocks just below the summit, 450 m, 04.05.2018, *Zarkos* & *Christodoulou* obs.; *loc. ibid.*, 31.05.2018, *Kit Tan* & *G. Vold* 32870; rocky limestone slopes and phrygana east of Lake Stymfalia, 18.05.2018, *Kit Tan* & *G. Vold* 32786 (flowering); *loc. ibid.*, 30.05.2018 *Kit Tan* & *G. Vold* 32831 (in fruit); *loc. ibid.*, 12.09.2017, *Zarkos* obs.: *loc. ibid.*, 08.07.2018, *Kit Tan* & *G. Vold* 33009 (mature fruit).

Fig. 25. *Heptaptera colladonioides* (photo G. Zarkos).

Endemic to Greece, new for Korinthias and most northerly distributed in the Peloponnese; conspicuous in flower and even more so in fruit. Already noted at Stymfalia by G. Zarkos on 30 May 2011. The number of segments in the basal leaves varies from 7 to 11. *Heptaptera colladonioides* is unusual in having a 7-winged fruit, the outer mericarp with 4 wings, inner with 3, hence the generic name '*Heptaptera*'. The flowers have a 'fishy' odour, reminiscent of burnt bakelite, the first synthetic plastic.

Asteraceae

160. *Centaurea orphanidea* Heldr. & Sartori ex Boiss. (Fig. 26)

Fig. 26. *Centaurea orphanidea* (photo G. Zarkos).

Gr Nomos & Eparchia Korinthias: Akrocorinthos, 380 m, 28.05.2018, *Zarkos* & *Christodoulou* obs.

Endemic to Greece, first report for the Peloponnese. Recorded from Sterea Ellas and Evvia. Only one large clump was noted, in between *Sarcopoterium spinosum* and *Thymbra capitata*, together with *Asphodelus ramosus*, *Scolymus hispanicus* and *Drimia maritima*.

Brassicaceae

161. *Cardamine calliphaea* Kit Tan, G. Vold & Giannopoulos (Fig. 27)

Gr Nomos Achaias, Eparchia Kalavriton: Vouraikos gorge, slopes to the left and right of the Diakopto – Kalavrita railway line, 600 m, 21.04.2018, *Zarkos* & *Christodoulou* obs.; *loc. ibid.*, 18.05.2018, *Kit Tan* & *G. Vold* 32775.

Fig. 27. *Cardamine calliphaea* (photo V. Christodoulou).

Endemic to Greece; new for nomos & eparchia. Almost extinct at the *locus classicus* at Kaiafas, Ilias as most of the large fruiting individuals had been collected before seed is fully ripe. However, there are still many plants in the Vouraikos gorge. The vertical limestone cliffs of the Klissoura gorge in Mesolongiou, the gorge at Leonidio, south Parnon and the Vouraikos gorge are natural habitats whereas at Kaiafas and Kiato, the habitats are man-made.

Campanulaceae

162. *Campanula asperuloides* (Boiss. & Orph.) Engl.

Gr Nomos & Eparchia Korinthias: Mikri Ziria, NW of village Bouzi, 1670 m, 04.08.2017, *Zarkos* obs.; near summit Kleftaki above Lake Dasiou, crevices of shaded limestone rock, 1525 m, 11.06.2016, *Kit Tan*, *G. Vold* & *Zarkos* obs.; *loc. ibid*., 1624 m, 23.06.2018, *Zarkos* & *Christodoulou* obs.; south of village Kesari, vertical limestone rocks, 795 m, 25.06.2018, *Zarkos* & *Christodoulou* obs. (vegetative state); *loc. ibid*., 08.07.2018, *Kit Tan* & *G. Vold* 33008 (in full flower forming soft little hedgehogs of palest blue).

Endemic to Greece. We reported this species from the Flabouritsa gorge in 2011 (Zarkos & al. 2011), Bouzi and Kleftaki are additional localities from Mt Killini. The Kesari report is another record from nomos Korinthias, the others are from Lake Stymfalia, Mavro Oros and Kato Tarsos. The species is restricted to shaded limestone rocks in the area of Chelmos and Killini in north Peloponnese, and Parnonas, Koulochera and Taigetos in the south.

Caryophyllaceae

163. *Dianthus aridus* Griseb. ex Janka (Fig. 28)

Gr Nomos Evrou, Eparchia Orestiados: near Dikea, 50 m, 41°42'N, 26°18'E, 19.08.2008, *Christodoulou* obs.; dry grassy slopes in grounds of small church near Nea Vissa, 50 m, 41°35'N, 26°33'E, 24.08.2014, *Christodoulou* obs.; near the Orestiada sugar factory, 32 m, 41°28'N, 26°31'E, 03.08.2018, *Christodoulou* s.n. (ATH, herb. Kit).

New for Greece, occurring also in S and SE Bulgaria from where it was first described. A small population of 10 plants was noted at Nea Vissa together with *Dianthus monadelphus* subsp. *pallens*, and *ca*. 20 plants near the Orestiada sugar factory. We could not key out the species according to current Greek Floras and thank A. Strid for providing a name for our plants which are identical to material he collected for the first time on 9 July 2018, near the village of Asimenio in Eparchia Didimotichou (*Strid* & *al*. 59543). No material from Greece had previously been seen, the earliest collection is by V. Christodoulou in 2008.

164. *Silene christodouloui-zarkosii* Kit Tan & G. Vold, **sp. nov.** (Fig. 29)

Gr Nomos & Eparchia Korinthias: in open *Quercus*

Fig. 28. *Dianthus aridus* (photo V. Christodoulou).

woodland and along paths in Mougosto forest, 890 m, 08.07.2018, in flower and early fruit, *Kit Tan* & *G. Vold* 32995 (**holotype** C; **isotypes** ATH, LD); *loc. ibid*., 27.07.2012, 02.07.2014, 06.07.2014, 13.08.2015, 21.07.2017, 25.06.2018, *Zarkos* & *Christodoulou* obs., 14.08.2014, *Kit Tan*, *G. Vold, Zarkos* & *Christodoulou* 31740 (in fruit); 22.05.2018, *Kit Tan* & *G. Vold* 32800.

— Nomos Arkadias, Eparchia Gortinias: in deciduous oak woodland on banks of Lousios river near Monastery of Moni Prodromi, 325–565 m, 11.07.2017, *Zarkos* obs.

Perennial with branched woody stock producing several short vegetative shoots bearing narrow, linear-lanceolate leaves and a few erect stems 40–90 cm tall; rosette leaves often withered at anthesis. Lower part of stems densely pubescent. Basal leaves linear-lanceolate, 60–75 (–100) × 5–15 mm, densely scabrid-pubescent on both surfaces. Cauline leaves in 4–8 distant pairs, diminishing in size upwards. Bracts lanceolate, *ca.* 1.5 mm. Inflorescence viscid-sticky on internodes, with a terminal flower and 3–5 lateral flowers on each branch. Flowers hermaphrodite, erect in bud and at anthesis, never nodding. Pedicels usually 4.5–6 mm long. Calyx 12–16 mm long, puberulous; teeth reddish-maroon, *ca*. 2 mm, ciliolate, membranous at margin. Anthophore 5.0–7.5 mm long, pubescent. Petal claw 9–10 mm long, exserted from calyx; coronal scales absent; limb 6–8 mm long, bifid for more than half its length into narrow lobes, white above, yellowish-green with prominent reddish-brown veins beneath. Stamens 5 + 5; filaments 13–16 mm, much exserted from corolla, puberulous below and glabrous above; anthers 2.0–2.5 mm long, greenish-yellow turning reddish-maroon. Styles 3. Capsule ovoid, 6–9 × 3.5–5.0 mm, exserted from calyx. Seeds reniform, 1.0–1.1 × 0.8 mm, dark brown at maturity.

Plants were first noted in the Mougosto forest by G. Zarkos and V. Christodoulou in July 2012. Since then they have been monitored in May, June, July and August during the years 2014, 2015, 2017 and 2018. The Silene is an unusual and distinct species, however, not easily noticed in its oak forest habitat when not flowering. Our collections demonstrate how little known the Peloponnese still is despite extensive botanical exploration.

Silene christodouloui-zarkosii superficially resembles *S. guicciardii* Boiss. & Heldr. which was described based on a collection by J.B. Samaritani and J. Guicciardi on 5 July 1857 from an altitude of 1050 m on Mt Parnassos (Sterea Ellas). The latter is endemic to Greece and a member of the predominantly SW Asiatic *Silene* sect. *Lasiostemones* Boiss. On 4 June 2017, Kit Tan and G. Vold saw plants of *S. guicciardii* on Alafókastro, a small hill (summit 1223 m) southwest of the Livadi Arachovas plateau. *Silene christodouloui-zarkosii* is a Greek endemic distinct from *S. guicciardii* and the Irano-Turanian *S. marschallii* C.A. Mey. The latter species occurs in Anatolia and from northeastern Iraq to central Iran.

Our species differs from *S. guicciardii* (from *locus classicus*) in having longer flowering stems pubescent at the base, broader basal leaves, more numerous pairs of cauline leaves, a longer calyx and anthophore, and smaller capsules. The flowers are always erect and never nodding. Coronal scales are absent. It occurs in shady deciduous oak forest at altitudes of 325 m to 900 m whereas *S. guicciardii* was noted at higher altitudes on open grassy slopes with rock outcrops. A detailed study reveals the differences between the two taxa and a comparison of morphological characters is presented in Table 1.

Table 1. Comparison of morphological characters in *Silene christodouloui-zarkosii* **and** *S. guicciardii*

	Silene christodouloui-zarkosii	*S. guicciardii*
Flowering stem length (cm)	45–90	20–45
Basal internodes	densely pubescent	minutely papillate
Basal leaves (mm)	60–75(–100) × 5–15	15–60 × 0.3–1.2
Shape	linear-lanceolate	linear-filiform
Indumentum	densely pubescent on both surfaces	glabrous above, minutely papillate beneath
Cauline leaves	4–8 pairs	3–4 pairs
Flowers	always erect	nodding at anthesis
Calyx length (mm)	12–16	8.5–12
Anthophore length (mm)	5–7.5, more than ½ length of capsule	2.0–3.5, less than ⅓ length of capsule
Petal limb	bifid to slightly more than ½ of its length	bifid for ½ – ¼ of its length
Coronal scales	absent	present
Capsule (mm)	6–9 × 3.5–5	10–11 × 4.5–6
Habitat	in deciduous oak forest	open grassy slopes with rock outcrops

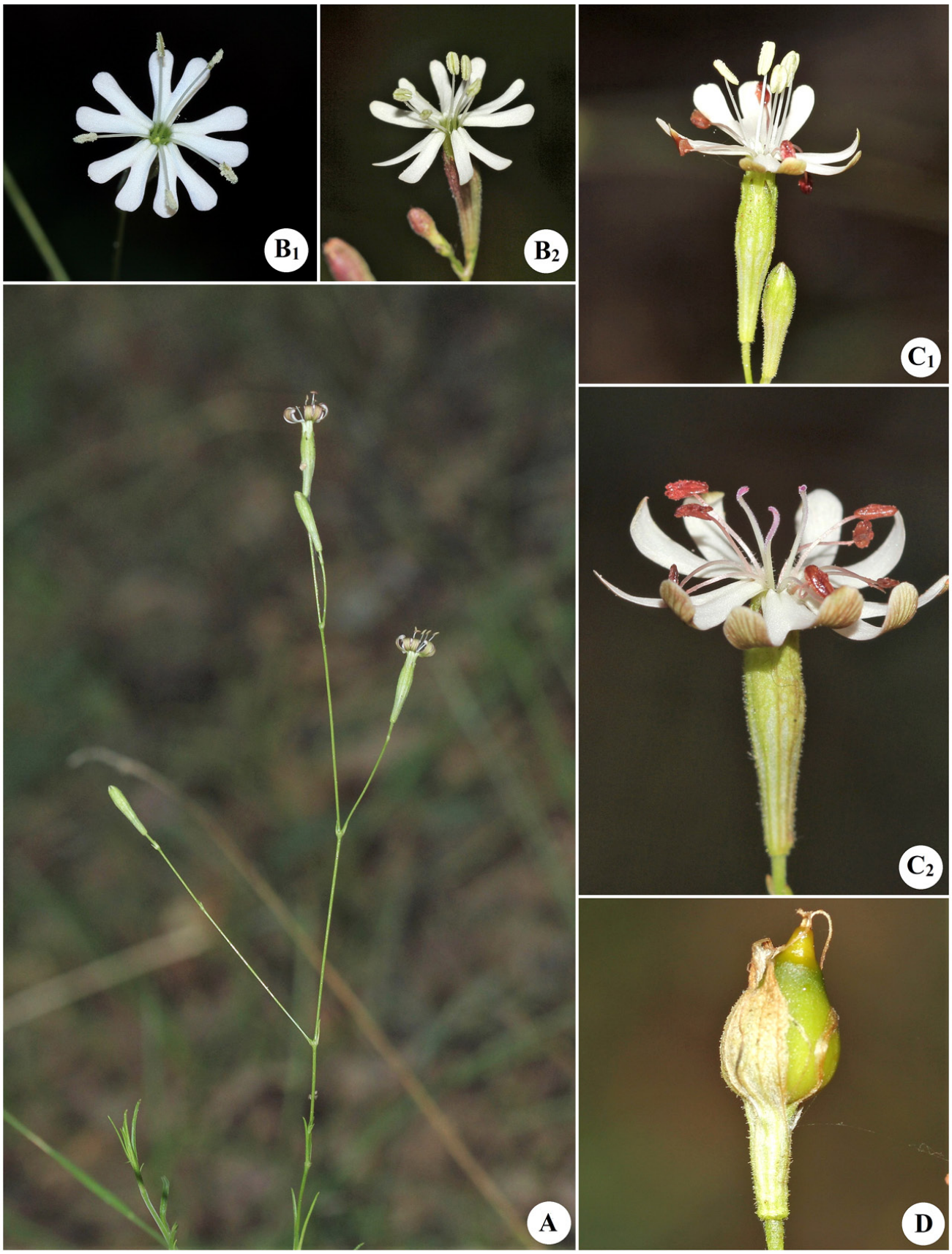

Fig. 29. *Silene christodouloui-zarkosii*: A, inflorescence; B1 & B2, flowers in frontal view; C1 & C2, flowers in lateral view; D, capsule (photos G. Zarkos).

Eponymy: named after our good friends Giorgos Zarkos (high school teacher of mathematics) and Vasilis Christodoulou (high school teacher of physics) who have generously shared their many new and interesting botanical discoveries with us [Kit Tan and G. Vold].

165. *Silene roemeri* subsp. ***macrocarpa*** (Vandas) Greuter (Fig. 30)

Gr Nomos & Eparchia Korinthias: Mt Killini, 2010 m, 10.07.2018, *Zarkos* & *Christodoulou* obs.

New for Mt Killini, nomos and eparchia. Second record from the Peloponnese, the first being from Mt Panachaiko. *Silene roemeri* subsp. *macrocarpa* occurs in the mountains of Sterea Ellas, N and S Pindos, East and North Central; *S. roemeri* subsp. *roemeri* is distributed further to the north, in North Central and North East.

Fig. 30. *Silene roemeri* subsp. *macrocarpa* (photo G. Zarkos).

Fig. 31. *Gonocytisus dirmilensis* (photo G. Zarkos).

Dipsacaceae

166. *Scabiosa columbaria* L.

Gr Nomos & Eparchia Korinthias: southeast of Lake Stymfalia, 25.06.2018, *Zarkos* obs.; *loc. ibid.*, 08.07.2018, *Kit Tan* & *G. Vold* 33010; south of village Kesari, 760 m, 08.07.2018, *Kit Tan* & *G. Vold* 32997; Akrocorinthos, 380 m, 28.05.2018, *Zarkos* & *Christodoulou* obs.

In Korinthias, it has been reported from Mt Killini. The Akrocorinthos record is the easternmost locality in the Peloponnese.

Fabaceae

167. *Gonocytisus dirmilensis* Hub.-Mor. (Fig. 31)

Gr Nomos Arkadias, Eparchia Kinourias: Mt Parnon, conglomerate slopes along road from Moni Elonis to Kosmas, 760 m, 08.06.2018, flowering, *Zarkos* & *Christodoulou* obs.; *loc. ibid.*, 21.07.2018, in fruit, *Kit Tan*, *G. Vold* & *Giannopoulos* 33033.

New for nomos, eparchia and mountain range Parnonas; most southern and eastern localities in Greece. Second record for the Peloponnese, the first being from Nomos

Ilias (*Kit Tan*, *G. Vold* & *Giannopoulos* 31063). Originally described by Huber-Morath in 1965 as endemic to SW Anatolia, Turkey, its occurrence in Greece is disjunct.

168. *Lens culinaris* Medik.

Gr Nomos & Eparchia Korinthias: outside forest near village of Velina, 1000 m, 05.05.2018, *Kit Tan*, *G. Vold*, *Zarkos* & *Christodoulou* 32701.

First report for Korinthias. Long cultivated by local shepherds for animal fodder.

169. *Sulla spinosissima* (L.) B.H. Choi & H. Ohashi (syn: *Hedysarum spinosissimum* L) (Fig. 32)

Gr Nomos & Eparchia Korinthias: Akrocorinthos, along dirt road and phrygana between the Castle and Penteskoufi hill, 350 m, 13.05.2018, *Zarkos* & *Christodoulou* obs.; *loc. ibid.*, 31.05.2018, *Kit Tan* & *G. Vold* 32861.

New for the Peloponnese. The plants spread by heavy run off in the gullies, with rain washing down large quantities of seed. The white *Helianthemum apenninum*, *Fumana thymifolia*, *Thymbra capitata*, *Atractylis cancellata*, *Onobrychis aequidentata* and *O. caput-galli* were found close by and plants have been photographed in flower on Gerania in Sterea Ellas (09.04.2011, by G. Zarkos) but thought to be *O. caput-galli*. However, in fruit, the plants are unmistakable (see figure).

170. *Trifolium ochroleucon* subsp. ***roseum*** (C. Presl) Lassen

Gr Nomos & Eparchia Korinthias: outside forest near village of Velina, 1000 m, 05.05.2018, *Kit Tan*, *G. Vold, Zarkos* & *Christodoulou* 32700; *loc. ibid.*, 01.06.2014, *Zarkos* & *Christodoulou* obs.; in clearings and along paths in Mougosto forest, 890 m, 22.05.2018, *Kit Tan* & *G. Vold* 32797; *loc. ibid.*, 03.07.2014, *Zarkos* & *Christodoulou* obs.; 14.08.2014, *Kit Tan* & *G. Vold* obs.

Fig. 32. *Sulla spinosissima* (photo V. Christodoulou).

New for Korinthias, surprisingly, never collected or previously noted although fairly widespread in north central Peloponnese. The reddish-pink corolla and short hairs on the calyx tube relate it more to subsp. *roseum* than to subsp. *ochroleucon* which has an off-white corolla. *Trifolium o.* subsp. *ochroleucon* has a more northwesterly distribution in Greece (N and S Pindos, N Central and North East).

Moraceae

171. *Maclura pomifera* (Raf.) C.K. Schneid. (Fig. 33)

Gr Nomos & Eparchia Korinthias: outside village of Souli, planted at roadside, flowering, 690 m, 05.05.2018, *Kit Tan*, *G. Vold*, *Zarkos* & *Christodoulou* 32785 (flowering); *loc. ibid.*, 08.07.2018, *Kit Tan* & *G. Vold* obs. (in fruit).

First report for the Peloponnese. Native to N. America. Also recorded as planted or escape from cultivation in Kerkira, Prevezis, Pierias and Thessalonikis.

Fig. 33. *Maclura pomifera* (photo V. Christodoulou).

Orobanchaceae

172. *Macrosyringion glutinosum* (M. Bieb.) Rothm. [syn.: *Odontites glutinosa* (M. Bieb.) Benth.] (Fig. 34)

Gr Nomos & Eparchia Korinthias: Mt Killini, in crevices of limestone rock below summit Simeio, 1910 m, 17.07.2018, *Kit Tan*, *G. Vold*, *Zarkos* & *Christodoulou* 33015.

New for Mt Killini, nomos and eparchia. Recorded from Mts Chelmos and Taigetos in the Peloponnese. The nearest locality is on Mt Giona (Paliovouni) where it was noted by Kit Tan and G. Vold in July 2006.

Fig. 34. *Macrosyringion glutinosum* (photo G. Zarkos).

173. *Phelipanche purpurea* (Jacq.) Soják (Fig. 35)

Gr Nomos & Eparchia Korinthias: Mt Killini, limestone rock below summit Simeio, 1910 m, 10.07.2018, *Zarkos* & *Christodoulou* obs.; *loc. ibid*., 17.07.2018, *Kit Tan*, *G. Vold*, *Zarkos* & *Christodoulou* 33017 (det. H. Uhlich and S. Rätzel).

New for Mt Killini, nomos and eparchia; first record from the Peloponnese, other than from the island of Kithira. Six plants, 30 to 52 cm in height, were observed on the loose limestone scree. They differ from typical *P. purpurea* in having very acute lobes on the lower lip. Our thanks go to H. Uhlich and S. Rätzel for their kind help in identification.

Ranunculaceae

174. *Myosurus minimus* L.

Gr Nomos & Eparchia Korinthias: mud flats at Lake Dasiou, 1478 m, 26.04.2017, *Zarkos* obs.

We had earlier published this under the name *M. sessilis* S. Watson [syn. *M. sessilis* auct. fl. graec., *M. minimus* subsp. *heldreichii* (H. Lév.) O. Bolòs & Vigo], see Zarkos & al. (2017). Apparently the correct name is *M. minimus*, this record is thus a first report for the Peloponnese.

Fig. 35. *Phelipanche purpurea* (photos G. Zarkos and V. Christodoulou).

175. *Ranunculus repens* L. (Fig. 36)

Gr Nomos & Eparchia Korinthias: northern shore of Lake Stymfalia, 700 m, 20.05.2018, *Christodoulou* obs.; *loc. ibid*., 30.05.2018, *Kit Tan* & *G. Vold* 32851.

New for Korinthias; in Peloponnese, so far reported only from Nomos Achaias. Several large populations were in flower at the lake edge, together with *R. sardous*, *Galium debile* and *Potentilla reptans*.

Fig. 36. *Ranunculus repens* (photo V. Christodoulou).

Veronicaceae

176. *Veronica chamaedrys* subsp. ***chamaedryoides*** (Bory & Chaub.) M.A. Fisch. (Fig. 37)

Gr Nomos & Eparchia Korinthias: west side of Mt Vezisa near the village of Kesari, 1080 m, 01.05.2010, *Zarkos* & *Christodoulou* obs.

Second report from Korinthias, apparently only documented for Mt Killini. The subspecies is fairly widespread in central and southern Greece but more commonly occurring as the blue-flowered form. On Mt Vezisa (summit 1171 m), pink- and blue-flowered variants occur in the same population in *Abies cephalonica* and *Quercus pubescens* – *Q. frainetto* forest. The photo shows the pink variant which is exhibited on some websites as *V. vindobonensis* which does not occur in Greece.

177. *Veronica persica* Poir.

Gr Nomos Arkadias, Eparchia Mandinias: Mt Oligirtos, 1285 m, 11.04.2018, *Zarkos* obs.

New for Mt Oligirtos. Widespread on mainland Greece.

Fig. 37. *Veronica chamaedrys* subsp. *chamaedryoides* (photo V. Christodoulou).

Violaceae

178. *Viola mercurii* Orph. ex Halácsy

Gr Nomos Arkadias, Eparchia Mandinias: Mt Oligirtos, 1285 m, 11.04.2018, *Zarkos* obs.

Endemic to Greece, new for Mt Oligirtos. Restricted to several mountains in the Peloponnese. A report from Sterea Ellas at 605 m (*Willing* 205775) is probably erroneous, the species is so far, not known outside Peloponnisos nor at low altitudes.

Hyacinthaceae

179. *Muscari botryoides* (L.) Mill.

Gr Nomos Arkadias, Eparchia Mandinias: Mt Oligirtos, 1285 m, 11.04.2018, *Zarkos* obs.

New for Mt Oligirtos. We have noted it on mountains in north central Peloponnese – Chelmos, Dourdouvana, Killini and Menalo.

Iridaceae

180. *Iris attica* Boiss. & Heldr.

Gr Nomos Arkadias, Eparchia Mandinias: Mt Oligirtos, 1285 m, 11.04.2018, *Zarkos* obs.

New for Mt Oligirtos. In Peloponnese recorded from Mts Killini, Menalo and Parnonas.

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