

New additions to the flora of Prespa, Greece

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Abstract. Based on Pavlides (1985) and Strid & al. (2017), as a result of three further years of field research (2017–2019), a new update of the reference lists of vascular plants of the Prespa National Park, Greece, is presented. It features 259 taxa, of which 178 are new area records and the rest are 21st century reconfirmations. Nineteen taxa are reported and validated for the first time for Greece, viz.: *Acinos majoranifolius*, *Centaurea galicicae*, *Centaurea tomorosii*, *Chamaecytisus frivaldszkyanus*, *Chamaecytisus pseudojankae*, *Dianthus pancicii*, *Ficaria verna* subsp. *verna*, *Hieracium transiens* subsp. *pycnadenium*, *Hieracium vladimirovii*, *Polypodium ×shivasiae*, *Populus canescens*, *Potentilla velenovskyi*, *Ranunculus oreophilus* subsp. *balcanicus*, *Rhamnus saxatilis* subsp. *tinctoria*, *Rumex acetosella* subsp. *acetosella*, *Scabiosa cinerea*, *Viola tricolor*, and *Xanthium orientale* subsp. *saccharatum*. *Leontodon asperrimus* is new for the European flora. Collection data include locality, date, habitat, specimen numbers, herbarium, as well as floristic and taxonomic annotations.

Key words: Balkan flora, flora of Greece, Lake Prespa, Mount Devas, Mount Triklario, Mount Varnous, Prespa National Park, vascular plants.

Introduction and study area

More than 30 years after the floristic catalogue by Pavlides (1985) on the vascular plants of the Prespa National Park, Northwest Greece, Strid & al. (2017) provided a critical revision and update. Already now, only three years later, a new update becomes necessary, as field research in the period of 2017 to 2019, with many new records and reconfirmations revealed a more comprehensive picture. Collection data on hitherto overlooked and important reconfirmed species are presented in this paper.

The Prespa National Park (PNP) is situated in the municipality of Prespes in the Florina regional unit, Greece. The area under study in the trijunction formed by Albania, Greece and North Macedonia reaches slightly beyond the present PNP borders and covers about 400 km² (Fig. 1). It comprises mainly the Natura 2000 sites, Ori Varnounta (GR1340003) and Ethnikos Drymos Prespon (GR1340001), as well as Ori Varnounta – Evryteri Periochi (GR1340009) and Ethnikos Drymos Prespon – Evryteri Periochi (GR1340010), including the Greek sections of the lakes Mikri Prespa and Megali Prespa. The area has a

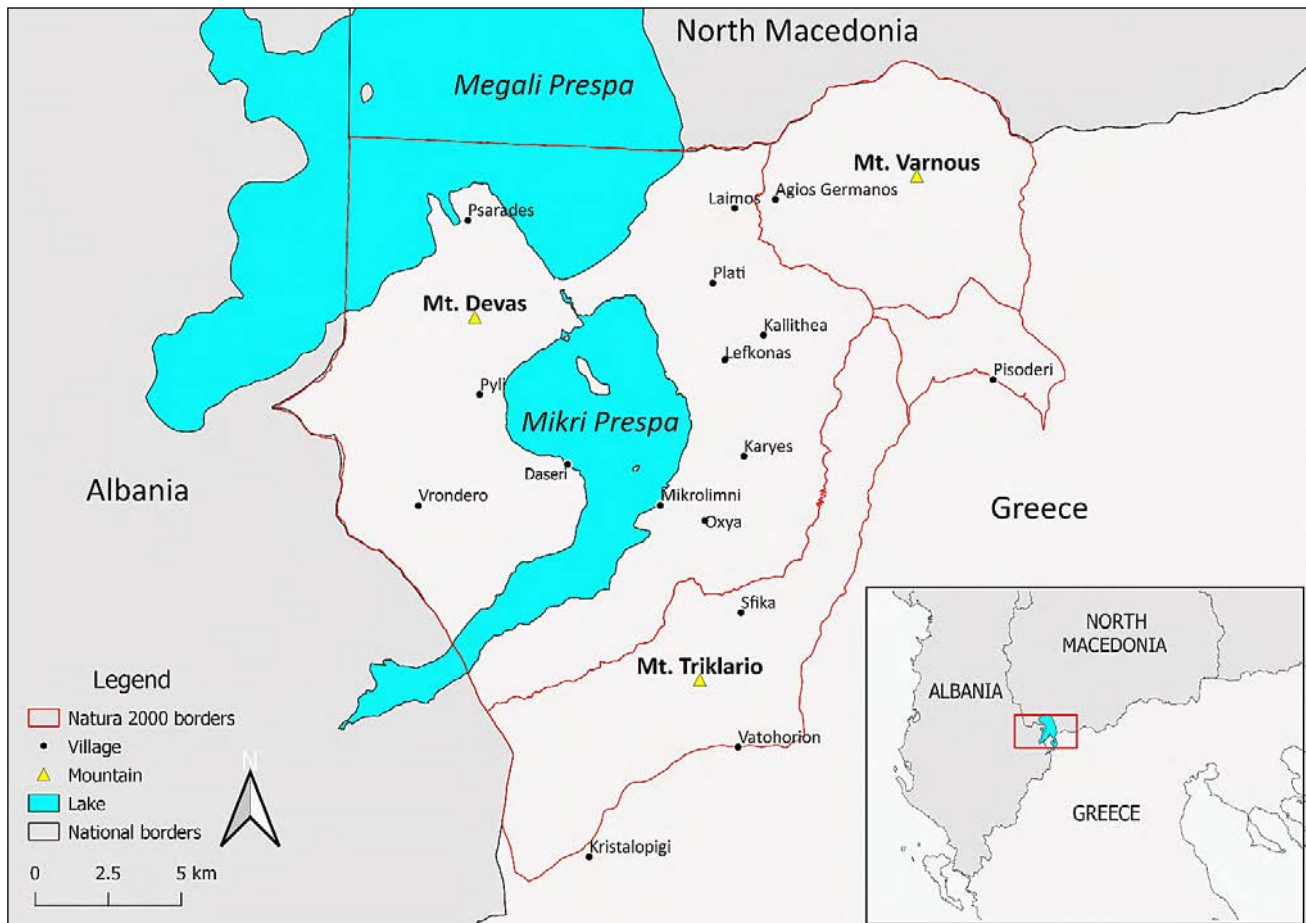


Fig. 1. Study area with the Natura 2000 sites of the Prespa National Park.

submediterranean-subcontinental climate, with considerable mesoclimatic variation caused by major differences in topography, the lakes' mitigating climatic influences and elevation difference of almost 1500 metres (850 m to 2330 m above sea level). The geology of PNP comprises Palaeozoic igneous and metamorphic base-poor rocks such as granites, gneisses, schists, and phyllites, as well as Mesozoic and Neogene sedimentary rocks such as marls, limestones and dolomitic limestones, which generate base-rich soils. In the Prespa basin, especially near Lake Mikri Prespa, fluvial and alluvial deposits and marshy ground adds to the study area's geodiversity.

Prespes is thinly populated. Apart from the lakes, the landscapes' main vegetation features are oak and other mixed deciduous forests on the lower slopes and beech forest higher up. Formerly transhumant, now largely sedentary pastoralism, with cattle and to a lesser extent sheep and goats, shapes the grazing grounds. Agriculture is the main source of livelihood. Arable farming was traditionally focused on rainfed winter cereals such as rye, barley and wheat. Presently, chief-

ly beans are cultivated in the lacustrine plain, irrigated by surface-flooding with water pumped from Lake Mikri Prespa and from the streams running down Mount Varnous. The latter is a granite-gneiss massif east of the Lake. In sharp geological and ecological contrast, on the southern and western sides of Lake Mikri Prespa, Mount Triklario (Sfika), Mount Vrondero and Mount Devas are composed of limestone and their environment is much drier (Fig. 1).

More information on the geological, settlement, land-use and botanical research history, as well as on the natural and cultural environment can be found in the works of Crivelli & Catsadorakis (1997), Catsadorakis (1999), Standing & al. (2009), Strid & al. (2017) and Strid & al. (in press).

Material and methods

Most of the floristic data listed below have been gathered during the authors' field research in the years 2017, 2018 and 2019, performed chiefly in the months (May-)

June–July. A few relevant records by others, overlooked in the previous *Additions* (Strid & al. 2017), are also included. The field research by E.B. and A.S. was made mainly for the purposes of collecting baseline data to be used for a botanical guidebook on the flora and vegetation of PNP (Strid & al. 2020), while that carried out by F.N.S. and C.S. was within the framework of various projects related to the conservation of lake-side wetlands. The collected data have been registered in the *Flora Hellenica Database* administered by A.S. and in the *Flora of Prespa Database* of F.–N.S. (Sakellarakis & al. 2019). Collected specimens indicated in the records communicated below are kept in the given public herbaria and/or in the authors' private herbaria. If not otherwise indicated, specimens of E.B. are kept in the author's private herbarium in Göttingen. The names of private herbaria are abbreviated as follows: Bergmeier (Be), Gottschlich (Go), Greuter (Gr), Kit Tan (Kit), Sakellarakis (Sa), Schuler (Sch), Strid (St), Swinkels (Sw). Names of public herbaria are indicated by their standard abbreviations (Thiers 2019). Records are referred to as new in the phytochorion of North Central Greece (NC) if not given for NC in Dimopoulos & al. (2013; 2016) unless otherwise stated. The delimitation of the phytochoria follows Strid (1986). APG IV (Angiosperm Phylogeny Group 2016) plant family names are used, with few exceptions retained (*Dipsacaceae*, *Valerianaceae*).

The floristic data included in this paper are limited to

- (1) Findings of species new for PNP (new area records)
- (2) Findings of species not recorded after 2000 (PNP 21st century confirmations).

The order of plant names is family-wise alphabetical, then genus-wise and species-wise alphabetical. The information given per record includes the

- Scientific plant name, with synonym if deviating from Dimopoulos & al. (2013; 2016) and/or Strid & al. (in press)
- Locality, with elevation
- Habitat
- Date of collection or observation
- Collector (with collection number, if any) or observer (obs.)
- Further information of floristic or taxonomic relevance.

Results

The list includes records of 259 taxa, of which about 178 represent new area records. Some of them are phyto-geographically interesting as being new for Greece or for the phytochorion of North Central Greece. The Prespa area, already renowned for its outstanding bird, mammal, fish, reptile, and invertebrate wildlife, is also floristically rich and interesting, with perhaps the highest botanical diversity in Greece. The following taxa have their only known Greek localities in the Prespa area (cf. Dimopoulos & al. 2013, 2016):

Acinos majoranifolius, *Aldrovanda vesiculosa*, *Anthriscus sylvestris* subsp. *fumarioides*, *Centaurea devasiana*, *Centaurea galicicae*, *Centaurea soskiae* subsp. *soskiae*, *Centaurea tomorosii*, *Centaurea trinifolia* subsp. *campylacme*, *Chamaecytisus frivaldskyanus*, *Chamaecytisus pseudojankae*, *Dianthus panicicii*, *Eryngium palmatum*, *Ficaria verna* subsp. *verna*, *Heracleum orphanidis*, *Hieracium retyezatense*, *Hieracium transiens* subsp. *pyncnadenium*, *Hieracium vladimirovii*, *Hyssopus officinalis* subsp. *aristatus*, *Klasea radiata* subsp. *cetinjensis*, *Leontodon asperri-mus*, *Oxybasis rubra*, *Phelypaea boissieri*, *Polypodium ×shivasiae*, *Populus canescens*, *Potentilla velenovskyi*, *Rhamnus saxatilis* subsp. *tinctoria*, *Rumex acetosella* subsp. *acetosella*, *Scabiosa cinerea*, *Schoenoplectus supinus*, *Sedum aetnense* and *Sempervivum ciliosum* subsp. *octopodes*.

AMARANTHACEAE

Polycnemum arvense L.

Isthmus between Laimos and Koula, 855 m. Edge of arable field, sand. 2017-06-13, Bergmeier 17-391 and 2017-07-12, Bergmeier 17-434. – W of Pyli, in gravel along track to Zahariadis' cave, 900–950 m. 2018-06-29, Strid 59502 (St, UPA). – 1 km NE of Oxya, 890 m. Sand pit. 2018-07-14, Bergmeier 18-565.

Populations in arable fields appear to decline in Greece and the species has been characterized as Near Threatened in the country (Bergmeier & Strid 2014).

AMARYLLIDACEAE

Allium amethystinum Tausch

Just NW of Lefkonas, 900 m. Grassland near road. 2018-06-14, Bergmeier 18-346.

First record since 1972-06-22: Stamatiadou 15850 (ATH, BM).

Allium flavum L. subsp. *tauricum* (Rchb.) K. Richt.
0.5 km SW of Vrondero, 1115 m. 2018-07-10, Bergmeier (obs.) – Above Oxya, 1220 m. Limestone rock outcrops. 2018-07-11, Bergmeier (obs.).

APIACEAE

Caucalis platycarpus L.

Pyxos, 1065 m. Wheat field. 2018-07-10, Bergmeier 18-407.

First record since Pavlides (1985: 258).

Chaerophyllum aromaticum L.

Mt. Varnous, c. 3 km SE of Ag. Germanos, 1535 m. Forest opening, gneiss. 2017-07-19, Bergmeier 17-660. – Sfika ruins, 1190 m. Wayside. 2018-06-10, Bergmeier (obs.). – Mt. Triklario, 1560 m. Deep calcareous soil, semi-shaded. 2018-07-11, Bergmeier (obs.).

First record since Zaganiaris (1940), cited by Pavlides (1985: 258).

Conium divaricatum Boiss. & Orph.

Koula at western end of sandy spit between the two lakes, 855m. 2016-06-03, Strid 58323 (herb. St). – Isthmus N of Vromolimni, near road, 852 m. 2018-07-14, Bergmeier 18-551.

Falcaria vulgaris Bernh.

Mt. Devas, E of summit, 1270 m. Edge of deciduous forest. 2019-06-10, Bergmeier 19-304.

Hellenocarum strictum (Griseb.) Kljuykov

Cape Roti, W of Psarades, 890 m. Calcareous stony ground in open woodland. 2018-07-09, Bergmeier 18-357.

First record since 1972-06-23: Stamatiadou 15906 (ATH).

Oenanthe fistulosa L.

Slatina Laimou, c. 3.5 km SW of Laimos, seasonally flooded hay meadow. 2018-06-11, Swinkels s.n. (Sw), Bergmeier 18-294. – Ibid. 2018-07-14, Bergmeier 18-552.

Oenanthe silaifolia M. Bieb.

S of Vrondero, 1075 m. Arable field, clay soil, wet-dry. 2017-06-11, Bergmeier 17-338.

First record since Pavlides (1985: 260).

Peucedanum austriacum (Jacq.) W.D.J. Koch (syn.: *Pteroselinum austriacum* (Jacq.) Rchb.)

Above Oxya towards Sfika, 1240 m. Deciduous wood, limestone. 2018-07-16, Bergmeier 18-622.

First record since Pavlides (1985: 260).

Scandix macrorhyncha C.A. Mey.

Mt. Triklario, E of summit Falakro, 1500–1700 m. Stony calcareous grassland. 2017-06-09, Bergmeier 17-234b. – Kalé hill, 1000 m. schist. 2019-06-11, Bergmeier 19-332.

APOCYNACEAE

Vincetoxicum fuscatum (Hornem.) Rchb.

N of Ag. Georgios, 1040 m, rocky woodland, calcareous soil. 2017-06-12, Bergmeier 17-354.

ARACEAE

Lemna minuta Kunth in Humb., Bonpl. & Kunth

Pyli area, 850 m. Drainage ditch next to beanfields. 2017-06-26, Sakellarakis & P. Grillas, s.n. (Sa).

In the area apparently only recently introduced and as yet casual; naturalized in parts of W, C & S Europe. New for NC Greece. In Greece it was first recorded by Th. Raus in 1988 in the Nestos River delta, and has subsequently been found also elsewhere in NE Greece, as well as in Crete. It is likely to continue spreading.

ASPARAGACEAE

Ornithogalum brevistylum Wolfner

Mt. Triklario, c. 1500 m. Calicolous grassland. 2018-07-11, Bergmeier 18-454.

First record since 1999-07-05: Schuler 99/849 (B) (Strid & al. 2017: 244).

Ornithogalum kochii Parl. s.l.

Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1825 m. Subalpine grassland. 2018-06-09, Bergmeier 18-232.

The *sensu lato* application of the name is preliminary. In its strict sense, *O. kochii* belongs to a species that is probably restricted to the S Alps. First record in the Prespa area since 1972-06-26: Stamatiadou 16133 (ATH) (Zahariadi, Stamatiadou & Dima 1982: 146; Strid & al. 2017: 244), but reports of *O. divergens* Boreau and *O. gussonei* Ten. from high-altitude Mt Varnous are almost certainly misapplied and may refer to *O. kochii* s. l.

Ornithogalum sphaerocarpum A. Kern. (syn.: *Ornithogalum pyrenaicum* L. subsp. *sphaerocarpum* (A. Kern.) Asch. & Graebn.)

C. 4–5 km N of Vrondero, 960–1085 m. 2017-06-08, Bergmeier 17-193. – Mt. Devas, 1300 m. 2017-06-10,

Bergmeier (obs.). All sites refer to oak forest over limestone.

Not recorded since 1972-06-22: Stamatiadou 15848 (ATH, St) (Zahariadi & al. 1982: 133). Pavlides (1985: 283) noted *Ornithogalum pyrenaicum* L. s.str. between Pili and Vrondero, probably in error for *O. sphaerocarpum*.

Polygonatum latifolium (Jacq.) Desf.

Mikrolimni stream NE of Oxya, 865 m. *Alnus* gallery riparian forest. 2018-07-14, Bergmeier 18-578.

ASPLENIACEAE

Asplenium lepidum C. Presl subsp. *lepidum*

Lake Megali Prespa, SW of Psarades, near the Hermitage of Metamorfosis, 855 m. Shaded crevices of overhanging limestone cliffs. 2018-07-09, Bergmeier 18-377.

Asplenium ruta-muraria L.

Mt. Triklario, 1220–1710 m. Limestone rock outcrops and crevices. 2017-06-09, 2018-06-10, 2018-07-11, Bergmeier (obs.).

ASTERACEAE

Achillea distans Willd. subsp. *distans*

Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1825 m. Subalpine grassland. 2018-06-09, Bergmeier 18-229. – Mt. Varnous, above Siroka valley, c. 7 km ENE of Ag. Germanos, 1810 m. Ruderal site. 2018-07-13, Bergmeier 18-520.

First record since 1976-08-01: Greuter 14141 (Gr, St) (Strid & al. 2017: 216).

Anthemis austriaca Jacq. (syn.: *Cota austriaca* (Jacq.) Sch. Bip.)

1–5 km N of Vrondero, 950–1120 m. Arable fields. 2017-06-08, Bergmeier 17-186; 2017-06-11, Bergmeier 17-319, Bergmeier 17-329; 2017-07-12, Bergmeier 17-445, Bergmeier 17-449; 2018-07-10, Bergmeier 18-413.

Anthemis segetalis Ten., reported by Pavlides (1985: 179) “between Garlini and Agioneri”, probably in error for *A. austriaca*.

Anthemis tenuiloba (DC.) Boiss. (*Anthemis cretica* L. subsp. *tenuiloba* (DC.) Grierson)

Mt. Triklario, 1550 m. Limestone outcrops. 2017-06-07, Bergmeier 17-169. – Mt. Devas, 1360 m. Dry rocky calcicolous grassland. 2019-06-10, Bergmeier 19-314.

Anthemis tinctoria L. subsp. *parnassica* (Boiss. & Heldr.) Nyman (syn.: *Cota parnassica* Boiss. & Heldr.) Mt. Varnous, above Siroka valley, c. 7 km ENE of Ag. Germanos, 1900 m. Ruderal site. 2018-07-13, Bergmeier 18-516.

Apparently not recorded in the area since Formánek (“M. Peristeri in Macedonia”; revised by Vandas 1909: 283) whose locality was probably north of the present border.

Artemisia alba Turra

Mt. Triklario, Agioneri, 1510 m. Rocky wayside, limestone. 2018-07-11, Bergmeier 18-434/435. – 1 km SW of Mikrolimni, towards Latsitsa, 900 m. Dry rocky grassland, limestone. 2018-07-12, Bergmeier (obs.).

First records since Pavlides (1985: 179), “between Dikorfo and Agioneri”.

Artemisia scoparia Waldst. & Kit.

Between Laimos and Koula, 855 m. Roadside, sand. 2017-06-13, Bergmeier 17-397; 2017-07-12, Bergmeier 17-429.

Carduus kernerii Simonk.

Mt. Triklario, 3 km S of Oxya, 1450 m. Rocky limestone slope in opening of *Fagus* forest. 2017-06-07, Strid (photo).

First record since 1982-07-08: Lippert 18459 (C, M), Mt. Varnous, “Aufstieg zur Kiwaniza...” (Strid & al. 2017: 217).

Carduus personata (L.) Jacq. subsp. *albidus* (Adamović) Kazmi

Mt. Varnous, c. 3 km SE of Ag. Germanos, 1530 m. Tall-herb vegetation near stream. 2017-07-19, Bergmeier 17-665.

Otherwise known in Greece only from the Rodopi Mts and in 2011 found on Mt. Tzena in a similar habitat (Chasapis & al. 2019).

Centaurea devasiana Bergmeier & Strid

All records from Mt. Devas, summit area and just W of the summit, 1250–1360 m. Rocky limestone slopes and flats. 2017-06-10, Bergmeier 17-294 (GOET); 2017-07-19, Bergmeier 17-637 (GOET); 2019-06-10, Bergmeier 19-308; 2019-07-27, Strid 60360 (ATH, B, G, LD, UPA, herb. St).

A local endemic apparently restricted to the given location (Bergmeier & Strid 2019).

Centaurea galicicae Micevski (Fig. 2)

Near Psarades village, 860 m. Limestone cliffs. 2000-06-08, Schuler 00/156 (C, Sch); 2006-07-15, Schuler 2048 (Kit). – 0,4 km SW Psarades, Randbereich des Prespa-Sees, 860 m. Felsen. 2013-07-03, Gregor 10567, 10569, 10570 & Meierott (FR, 10567 also in GOET); Meierott 2013/501-504 & Gregor (M); Meierott 2013/501, 502, 505 & Gregor (GOET). – Lake Megali Prespa, SW of Psarades, near the Hermitage of Metamorfosis, 860 m. Limestone cliffs. 2018-07-09, Bergmeier 18-358, Bergmeier 18-381.

New for Greece. A narrow endemic restricted to the Albanian, Greek and North Macedonian limestone cliffs of Lake Megali Prespa (Shuka & Tan 2013; Wagenitz & al. 2018).

Centaurea tomorosii Micevski

Above Oxya, towards Agioneri, 1220 m. Rocky wayside, limestone. 2018-07-11, Bergmeier 18-440. – Ibid., towards Sfika, 1240 m. 2018-07-16, Bergmeier 18-621.

New for Greece. A narrow endemic known otherwise only from its locus classicus Mt. Galičica (Wagenitz & al. 2018).



Fig. 2. *Centaurea galicicae* growing at a vertical limestone cliff SW of Psarades. U. Bergmeier, 2018-07-09.

Centaurea triniifolia Heuff. subsp. *campylacme* (Bornm.) Wagenitz

Isthmus between Megali and Mikri Prespa, near frontier post of Koula, 855 m, 2006-07-15, Schuler 2049 (herb. St), D. Häckel & Schuler 152 (GB). – Koula, 860 m, limestone cliff. 2017-06-05, Bergmeier 17-149.

A narrow endemic, otherwise known only from limestone cliff habitats in the Prespa area of Albania and North Macedonia (Wagenitz & al. 2018).

Centaurea tymphaea Hausskn.

Above Oxya, 1140 m. Rocky wayside, limestone outcrops. 2018-07-11, Bergmeier 18-431.

Dittrichia graveolens (L.) Greuter

SE Karyes, 1120 m. Laubwald, Krautfluren. 2014-10-09, Willing 250146 (B) (Willing & Willing 2018: 94).

Filago minima (Sm.) Pers.

Between Laimos and Koula, 855 m. Fallow fields, sand. 2017-06-04, Bergmeier 17-88; 2017-06-13, Bergmeier 17-403.

Hieracium bracteolatum Sm. subsp. *reinholdii* (Heldr. & Sart. ex Boiss.) Zahn

Just S of Lefkonas, 975 m. Steep-sloped mixed pioneer forest, schist. 2018-07-16, Bergmeier 18-636 (det. G. Gottschlich).

Hieracium camkorijense Zahn subsp. *boreograecum* Gottschl. & Dunkel

Above Oxya, towards Bela Zemja, 1070 m. Steep semi-shaded wayside, granite. 2018-07-16, Bergmeier 18-632 (det. G. Gottschlich).

New for NC Greece. The subspecies was recently described by Gottschlich & Dunkel (2018) based on collections from NE Greece.

Hieracium jankae R. Uechtr. subsp. *wagneri* Zahn

Pervali, 2.5 km ESE of Karyes, 1130 m. Steep sunny roadside bank, grus (together with *Hieracium neodivergens* Gottschl.). 2017-07-21, Bergmeier 17-689 (det. G. Gottschlich; dupl. as Go 69101).

Recently reported as rather widespread in N Greece and collected among others in the very same site near Pervali by Dunkel & Gottschlich (2018: 219; Go-68114, Du-34536).

Hieracium murorum L.

Above Oxya, towards Sfika, 1225 m. Beech forest, steep wayside, granite. 2018-06-10, Bergmeier 18-256. – 2 km SE of Agios Germanos, 1380 m. Beech

forest, ravine, gneiss. 2018-06-12, Bergmeier 18-306 (det. G. Gottschlich).

Hieracium murorum L. subsp. ***obesiglandulum*** Zahn
Above Ag. Germanos, towards Potistra, 1330–1370 m. Beech forest, steep wayside, gneiss. 2019-06-09, Bergmeier 19-284 (det. G. Gottschlich; dupl. as Go 72228).

New for NC Greece.

Hieracium pannosum Boiss.

Above Oxya, towards Agioneri, 1180 m. Limestone rock outcrop in Ostrya woodland. 2018-07-11, Bergmeier 18-429. – Mt. Triklario, 1640 m. Limestone rock ledges. 2018-07-11, Bergmeier 18-480 (det. G. Gottschlich).

Hieracium racemosum Willd.

About 3 km SE of Ag. Germanos, E of Potistra, 1530 m. Mixed beech forest, steeply sloped, granitic boulders. 2017-07-17, Bergmeier 17-651 (det. G. Gottschlich; dupl. as Go 69106).

First record since Pavlides (1985: 186) citing a collection by Greuter 11537 near the village of Plati.

Hieracium sparsum Friv. subsp. ***macedonicum*** (Boiss. & Orph.) Zahn in Engl.

Above Ag. Germanos, towards Potistra, 1370 m. Beech forest, shaded steep wayside, gneiss. 2017-07-19, Bergmeier 17-648 (det. G. Gottschlich; dubl. as Go 69105).

Hieracium sparsum Friv. subsp. ***schantzianum*** (Pančić & Vis.) Zahn in Engl.

Mt. Varnous, above Siroka valley, c. 7 km ENE of Ag. Germanos, 1740 m. Gneiss, gravel. 2017-07-20, Bergmeier 17-670 (det. G. Gottschlich).

Strid 58572, collected 2016-08-10 at 1800 m near the windmills above the pass of Pisoderi, at upper edge of *Fagus* forest, probably belongs to this subspecies.

Hieracium taygeteum Boiss. & Heldr. (syn.: *H. pannosum* subsp. *taygeteum* (Boiss. & Heldr.) Greuter)

Mt. Triklario, 1640 m. Limestone rock ledges. 2018-07-11, Bergmeier 18-479 (det. G. Gottschlich).

New for NC Greece.

Hieracium transiens (Frey) Freyn

SE above Agios Germanos, 1400 m. 2018-06-12, Bergmeier 18-335. – Above Daseri, 1000 m. Edge of deciduous oak forest, phyllite. 2019-06-08, Bergmeier 19-249 (det. G. Gottschlich; dupl. as Go-72230).

Hieracium transiens subsp. ***leilae*** (Rech. f. & Zahn)
Greuter in Greuter & Raab-Straube

Above Ag. Germanos, towards Potistra, 1355 m. Beech forest, steep wayside, gneiss, grus. 2017-07-14, Bergmeier 17-521 (det. G. Gottschlich).

New for NC Greece.

Hieracium transiens subsp. ***pycnadenium*** (Degen & Zahn) Greuter

Above Ag. Germanos, towards Potistra, 1330–1370 m. Both sites steep wayside in beech forest, gneiss. 2017-07-14, Bergmeier 17-523; 2019-06-09, Bergmeier 19-287 (det. G. Gottschlich; dupl. as Go-72229).

New for Greece.

Hieracium umbrosum Jord. subsp. ***abietinum*** (Boiss. & Heldr.) Greuter in Greuter & Raab-Straube

About 3 km SE of Ag. Germanos, E of Potistra, 1530 m. Sloped mixed beech forest, granitic boulders. 2017-07-17, Bergmeier 17-652. – Above Oxya, towards Sfika, 1225 m. Beech forest, steep wayside, granite. 2018-06-10, Bergmeier 18-257 (det. G. Gottschlich).

New for NC Greece.

Hieracium vladimirovii Szelağ

Mt. Varnous, below Toumba summit, 2110 m. Granite boulders. 2017-07-20, Bergmeier 17-686 (det. G. Gottschlich; dupl. as Go 69103).

New for Greece. A recently described species (Szelağ 2018) that was known only from its type locality in the Bulgarian Stara Planina. It has subsequently been found also in NE Greece.

Lactuca hispida DC.

Mt. Devas, E of summit, 1270 m. Edge of deciduous forest. 2019-06-10, Bergmeier 19-299.

Leontodon asperrimus (Willd.) Endl.

Pervali, 2.5 km E of Karyes, 1295 m. Dry grassland, granitic grus. 2018-06-07, Bergmeier 18-156. –Néo, 2 km NW of Laimos, 855 m. Sand grassland. 2018-06-08, Bergmeier 18-173. New for Greece and the European flora. Earlier reports by Halácsy (1902) and Hayek (1928-1931) have been assumed erroneous for *L. crispus* subsp. *asper* (Dimopoulos & al. 2013). The latter is common in the PNP area (see below). *L. asperrimus* differs strikingly from *L. crispus* s.l. by its much larger involucre (to 28 mm), larger achenes (to 17 mm), bracteose scape, and by leaves with 3–7-fid hairs. The PNP population consists of rather few (<25) flowering plants distributed in two sites about 6.5 km apart.

Leontodon crispus Vill. subsp. ***asper*** (Waldst. & Kit.) Rohlena (syn.: *L. biscutellifolius* DC.)

Mt. Triklario, 1500–1550 m. Dry rocky calcicolous grassland. 2017-06-07, Bergmeier 17-172. – Mt. Vrondero, 2.5 km E of Vrondero, 1260–1300 m. Limestone rock outcrops. 2018-07-15, Bergmeier 18-606. – Above Ag. Germanos, 1140–1170 m. Dry rocky grassland, gneiss. 2019-06-09, Bergmeier 19-257.

Reports by Pavlides (1985: 187) of *Leontodon crispus* subsp. *crispus* may refer to subsp. *asper*.

Picris pauciflora Willd.

3.5 km SW of Psarades, towards Pyxos, 1065 m. 2017-06-08. – Ag. Georgios, 1105 m. 2017-06-10. – 1 km SE of Psarades, 890 m. 2017-06-12. Bergmeier (obs.); all in dry rocky calcicolous grassland.

Pilosella cymosa (L.) F. W. Schultz & Sch. Bip. subsp. ***heldreichiana*** (Nägeli & Peter) Gottschl.

Mt. Triklario, 1450–1700 m. Dry rocky calcicolous grassland. 2017-06-09, Bergmeier 17-260. – Mt. Devas, 1360 m. Dry rocky calcicolous grassland. 2017-06-10, Bergmeier 17-304. – Above Oxya, towards Agioneri, 1220 m. Limestone rock outcrops. 2018-07-11, Bergmeier 18-443. – Above Daseri, 925 m. Edge of deciduous forest, limestone. 2019-06-08, Bergmeier 19-238 (det. G. Gottschlich; dupl. as Go 72226).

All records on base-rich calcareous ground; another subspecies, *Pilosella cymosa* subsp. *sabina* (Sebast.) H.P. Fuchs, is silicolous and occurs on Mt. Varnous.

Pilosella macrotricha (Boiss.) F.W. Schultz & Sch. Bip. 2.5 km WNW of Laimos, 850 m. Sand grassland. 2017-07-16, Bergmeier 17-603 (dupl. as Go 69102). – W side of Kalé hill, 920 m. Limestone. 2019-06-11, Bergmeier 19-348 (det. G. Gottschlich).

Pilosella onegensis Norrl.

Mt. Varnous, 6 km E of Ag. Germanos, Kaloneri valley, 1535–1610 m. Wet grassland. 2017-07-15, Bergmeier 17-584, Bergmeier 17-588. – Near ruins of Sfika, 1225 m. Damp wayside. 2018-06-10, Bergmeier 18-258. – Koula, 3 km WSW of Laimos, 855 m, wet-dry meadow. 2018-06-11, Bergmeier 18-287. – 1.6 W of Plati, 850 m, wet-dry meadow. 2019-06-06, Bergmeier 19-191 (det. G. Gottschlich).

Pilosella piloselloides (Vill.) Sojak

Above Pyxos, 1040–1080 m. Dry calcicolous grassland. 2018-06-13, Bergmeier 18-340 (det. G. Gottschlich).

Solidago virgaurea L.

Mt. Varnous, just E of Bela Voda summit, 2100 m. Alpine grassland. 2018-07-13, Bergmeier 18-539.

Tripleurospermum inodorum (L.) Sch. Bip.

Near ruins of Sfika, 1175 m, fallow field. 2018-06-10, Bergmeier 18-262. – Isthmus 4 km WSW of Laimos, 860 m. Arable field. 2018-06-11, Bergmeier 18-288. – Slatina, c. 4 km SW of Laimos, 855 m. Wet-dry, abandoned meadow. 2019-06-06, Bergmeier 19-204.

Xanthium orientale L. subsp. ***saccharatum*** (Wallr.) B. Bock (syn.: *X. saccharatum* Wallr.)

Lakeshore Megali Prespa, S of Cape Roti, 850 m. Pebble beach. 2018-07-09, Bergmeier 18-390. The identification is based on a specimen of the year before and the record should be confirmed on more complete plants.

New for Greece. *X. orientale* subsp. *italicum* (Moretti) Greuter is very similar and common in the area (Strid & al. 2017: 222). The species *sensu lato* has been recorded by Willing & Willing (2018: 162) 2014-10-09 N of Lefkonas, 875 m (Willing 250266).

BERBERIDACEAE

Berberis vulgaris L.

Mt Triklario, near the summit, c. 1720 m. Limestone outcrop. 2018-09-28, Sakellarakis s.n. (Sa).

New for NC Greece.

BORAGINACEAE

Cynoglossum officinale L.

Koula, 860 m. 2017-06-05, Strid (photo). – E of Vrondero, Ag. Athanasios, 1150 m. Calcareous grassland. 2017-06-13, Bergmeier (obs.). – Mt. Varnous, above Siroka valley, 1675 m. 2018-07-13, Bergmeier (obs.).

First records since 1972-06-24: Stamatiadou 16024 (ATH); 1975-05-10: Stamatiadou 18539 (ATH); 1982-07-08: Lippert 18483 (C, M); Pavlides (1985: 163).

Myosotis refracta Boiss.

Lakeshore Megali Prespa near Koula, 850 m, humus-rich sand. 2019-06-07, Bergmeier 19-223.

First record since reported by Quézel & Contandriopoulos (1968: 30) and Pavlides (1985: 163).

BRASSICACEAE

Arabis laxa Sm. (syn.: *Turritis laxa* (Sm.) Hayek)

Above Ag. Germanos, towards Potistra, 1330–1370 m.

Beech forest, steep wayside, gneiss. 2019-06-09, Bergmeier 19-283.

First record since 1990-07-25: Kit Tan & G. Vold 8137 (C, G).

Brassica rapa (L.) L. subsp. ***campestris*** (L.) A.R. Clapham

2 km WSW of Plati, near Kallithea stream, 855 m. Wayside edge of meadow, disturbed ground. 2019-06-06, Bergmeier 19-196.

Two collections of *B. rapa* L. in about the same area (NW Plati, 880 m. Krautfluren an Maisfeld, Wassergraben. 2014-10-09, 250283, 250287) by Willing & Willing (2018: 70) likely to belong here.

Erysimum cuspidatum (M. Bieb.) DC.

Néo, 2 km NW of Laimos, 850 m. Sand grassland. 2018-06-09, Bergmeier 18-194.

The record confirms field notes by G. Fotiadis.

CAMPANULACEAE

Asyneuma canescens (Waldst. & Kit.) Griseb. & Schenk Mt. Triklario, 1640 m. Limestone rock ledges. 2018-07-11, Bergmeier 18-484.

Campanula bononiensis L.

Kalé hill, 950 m. Dry grassland, gneiss. 2019-06-11, Bergmeier 19-324.

First record since 1985-07-20: Stamatiadou 2900 (ATH). Also collected on Mt. Boutsis, just S of PNP, 1985-07-15 (Strid 25683; C, G, M).

Campanula phrygia Jaub. & Spach.

Isthmus 4 km W of Laimos, 855 m. Sandy arable field,



Fig. 3. *Campanula phrygia* on sandy soil at the margin of a rye field W of Laimos. U. Bergmeier, 2019-06-07.

wet-dry. 2017-06-13, Bergmeier (obs.); ibid. 2019-06-07, Bergmeier 19-212.

CARYOPHYLLACEAE

Cerastium banaticum (Rochel) Steud. subsp. ***speciosum*** (Boiss.) Jalas

1.5 km NE of Kallithea, 1395 m. Juniperus scrub, gneiss. 2019-06-12, Bergmeier 19-359.

First record since 1972-06-25: Stamatiadou 16102 (ATH,C), 1972-06-26: 16142 (ATH,C); 1976-08-01: Greuter 14139 (B, C, G, Gr, UPA); 1976-08-03: 14239 (C, G, Gr, UPA); 1978-07-05: Krendl s.n. (UPA); 1981-06-27: Strid & al. 18243 (B, C, EGE, G, LD); 1982-07-08: Lippert 18457 (C, M), 18490 (C, Gr, M); 1986-08-21: Raus 11198 (B); 1990-06-05: Phitos & Kamari 21409 (UPA).

Cerastium glutinosum Fr. (syn.: *C. pumilum* Curtis subsp. *glutinosum* (Fr.) Jalas)

2 km SE of Ag. Germanos, 1355 m. Dry grassland, gneiss. 2018-06-12, Bergmeier 18-322a.

Lippert 18477 (M, St), collected 1982-07-08 on Mt. Varnous and first identified as *C. glutinosum*, belongs in fact to *C. rectum* subsp. *petricola*.

Cerastium semidecandrum L.

SO Psarades. 2004-05-11, Willing 127094 (B). – Isthmus 4 km W of Laimos, 855 m. Sand grassland. 2017-06-13, Bergmeier 17-407b. – 2 km SE of Ag. Germanos, 1355 m. Dry grassland, gneiss. 2018-06-12, Bergmeier 18-322b.

Also in field notes by G. Fotiadis.

Dianthus formanekii Borbás ex Formánék

Ag. Ioannis hill, 1.5 km WNW of Laimos, 880 m. Dry grassland, gneiss grus. 2017-06-04, Bergmeier 17-98.

Dianthus integer Vis. subsp. ***minutiflorus*** (Halácsy) Bornm. ex Strid

Mt. Triklario, 3 km S of Oxya, 1450 m. 2017-06-07, Strid (photo). – Mt. Triklario, 1660 m. 2017-06-09, Bergmeier 17-230. Both sites are rocky limestone slopes.

First record since Pavlides (1985: 169), who referred to the same area. Also collected 1981-07-08 on Mt. Boutsis, just S of PNP (Strid 18750, C).

Dianthus sylvestris Wulfen subsp. ***sylvestris***

Above Oxya, towards Agioneri, 1220 m. Limestone rock outcrops. 2017-07-21, Bergmeier 17-698. Also collected 1981-07-08 on Mt. Boutsis, just S of PNP (Strid 18760, C).

Dianthus pancicii Velen., non F.N. Williams (*D. tristis* Velen.)

Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1825 m. 2018-06-09, Bergmeier 18-247. – Just N of summit Bela Voda, 2125–2130 m. All sites in alpine and subalpine grassland. 2018-07-13, Bergmeier (obs.)

New for Greece. Reported as *D. tristis* already by Quézel & Contandriopoulos (1968) and Strid (1986: 199) from NC Greece but disregarded by Strid & Tan (1997) and Dimopoulos & al. (2016), and deemed dubious by Strid & al. (2017: 229). Records of *D. stenopetalus* Griseb. (Phitos & Kamari 16245 (UPA), 1977-08-08; Strid & al. 18118 (B, G, KOR, R, UPA), 1981-06-26; Lippert 18428 (C,M) & Podlech 37423 (C), 1982-07-08) and *D. cruentus* Griseb. (Stamatiadou 16111, 16137 (ATH, G), 1972-06-26; Greuter 14242, 14264 (B, C, Gr, UPA) 1976-08-03; Phitos & Kamari 16252 (UPA), 1977-08-08; Stamatiadou 22171 (ATH), 1981-06-27) from subalpine and alpine levels of Mt. Varnous most likely refer to *D. pancicii*. Taxonomy follows Dimopoulos & al. (2016: 338) who consider the younger *D. tristis* Velen. 1890 as conspecific with *D. pancicii* Velen. 1986.

Minuartia attica (Boiss. & Spruner) Vierh. subsp. ***attica***

SE above Ag. Germanos, 1140–1170 m. Rock outcrops, gneiss. 2019-06-09, Bergmeier 19-261.

First record since 1990-05-05: Phitos & Kamari 22263 (UPA); 1990-08-26: Pirker & al. 325 (B); 1998-06-30: Snogerup 15833 (LD).

Minuartia hirsuta (M. Bieb.) Hand.-Mazz. subsp. ***falcata*** (Griseb.) Mattf.

SE above Ag. Germanos, 1140–1170 m. Rock outcrops, gneiss. 2017-06-14, Bergmeier 17-425. – Pervali, 2.5 km ESE of Karyes, 1160–1290 m. Granitic grus. 2018-06-07, Bergmeier 18-141. – Above Oxya, Sfika pass, 1270 m. Schist. 2018-07-16, Bergmeier 18-623. – SE above Ag. Germanos, 1140–1170 m, rock outcrops, gneiss. 2019-06-09, Bergmeier 19-267. – Kalé hill, 950 m. Gneiss. 2019-06-11, Bergmeier 19-338. – 1.5 km NE of Kallithea, 1375 m. Gneiss. 2019-06-12, Bergmeier 19-356.

First records since Quézel & Contandriopoulos (1968: 20) and 1981-06-27: Strid & al. 18231 (St).

Minuartia verna (L.) Hiern subsp. ***verna***

Above Ag. Germanos, towards Potistra, 1370 m. Ani-

mal trail, gneiss rock outcrops. 2019-06-09, Bergmeier 19-298.

First record since 1972-06-25: Stamatiadou 16105 (ATH); 1977-08-08: Phitos & Kamari 16190 (UPA); 1981-06-27: Strid & al. 18191 (B,C,G) and Stamatiadou 22121 (ATH); 1986-08-21: Raus & Kraft 11159 (B); 1992-06-22: Anagnostopoulos & Athanasiou 3170 (UPA).

Petrorhagia obcordata (Margot & Reut.) Greuter & Burdet

0.5 km SW of Vrondero, 1115 m. Limestone rock outcrop. 2018-07-11, Bergmeier 18-422. – Just S of Oxya, 890 m. *Agrostis castellana* grassland, granitic grus. 2018-07-16, Bergmeier 18-618.

Scleranthus verticillatus Tausch

5 km N of Vrondero (Pyxos sheepfolds), 955 m. Arable field. 2017-06-08, Bergmeier 17-207.

Confirms Vandas (1909: 214) who cited a collection by Formánek from “M. Peristeri in Macedonia” which is probably N of the present border.

Silene armeria L. (syn.: *Atocion armeria* (L.) Raf.)

Néo, 2 km NW of Laimos, 855 m. Sand grassland, disturbed. 2018-06-08, Bergmeier 18-183. – Above Ag. Germanos, towards Potistra, 1340 m. Beech forest, steep wayside, gneiss. 2019-06-09, Bergmeier (obs.).

First recorded in the area 1990-07-25 just outside PNP, along road to Ag. Trias, 3 km from Antartiko, 2 km from Pisoderi, at 1250 m, by Kit Tan & G. Vold 8148 (C, E, G, RSA).

Silene bupleuroides L. subsp. ***staticifolia*** (Sm.) Chowdhuri

Mt. Triklario, 1610 m. Dry calcicolous rocky grassland. 2018-07-11, Bergmeier 18-471.

First record in the area since 1972-06-23 (Stamatiadou 15915, ATH).

Silene gigantea L. subsp. ***rhodopea*** (Janka) Greuter
Above lakeshore Megali Prespa, S of Cape Roti, 850–890 m. Pebble beach and among limestone boulders. 2018-07-09, Bergmeier 18-382.

CISTACEAE

Fumana procumbens (Dunal) Gren. & Godron

0.5 km N of Karyes, 980 m. Red colluvial soil. 2017-07-18, Bergmeier (obs.). – E foot of Kalé hill, 950 m. *Cistus creticus* shrubland. 2019-06-11, Bergmeier 19-341.

Helianthemum nummularium* (L.) Mill. subsp. *nummularium

Mt. Devas, 1360 m. Dry rocky calcicolous grassland. 2017-06-10, Bergmeier 17-293.

This subspecies differs from plants of subsp. *tomentosum* (Scop.) Schinz & Thell. by its narrower leaves and smaller flowers. It was found on calcareous soil while subsp. *tomentosum* has been recorded in PNP in silicolous dry grassland.

CONVOLVULACEAE

***Ipomoea purpurea* (L.) Roth**

0.5 km S of Pyli, 855 m. Edge of reedbed. 2018-07-10, Bergmeier 18-396. – Ibid. 2018-08-11, Sakellarakis s.n. (Sa).

A xenophyte native to Central America; new to NC Greece.

CRASSULACEAE

***Sedum alpestre* Vill. subsp. *erythraeum* (Griseb.) 't Hart**

Mt. Varnous, summit of Bela Voda, 2175 m. Gneiss rocks and grus. 2018-07-13, Bergmeier 18-542 (photo).

First record since Strid (1986: 348) where a confirmed record from “Varnous” is cited; the latter may have been based on a collection by Formánek from “M. Peristeri in Macedonia”.

***Sedum annuum* L.**

Above Ag. Germanos, 1140–1170 m. Gneiss rock outcrops. 2019-06-09, Bergmeier 19-263.

First record since 1976-08-01: Greuter 14178 (C, Gr); 1981-06-27: Strid & al. 18198 (C, G); 1990-08-26: Pirker & al. 321 (B); 1998-06-15: Strid & al. 46601 (G, St). Also reported by Vandas (1909: 218), Quézel & Contandriopoulos (1968: 24), and by Pavlides (1985: 193).

***Sedum magellense* Ten. subsp. *olympicum* (Boiss.) Greuter & Burdet**

Mt. Triklario, 1700 m. Limestone rock crevices. 2018-07-11, Bergmeier 18-469.

First record since reported in Strid (1986: 353) from “Varnous” without further details.

***Sedum stefco* Stef.**

Mt. Varnous, 4 km NE of Agios Germanos, 1377 m. Gneiss outcrop next to the dirt road. 2017-6-15, Goula 2164 & Sakellarakis (ATHU).

Listed as Near Threatened in the *Greek Red Data Book* (Eleftheriadou & al. 2009).

***Sempervivum ciliosum* Craib subsp. *octopodes* (Tur-**

rill) Zonn. (syn.: *Sempervivum octopodes* Turritt) Mt. Varnous, summit of Bela Voda, 2175 m. Gneiss rocks and grus. Sterile plants. 2018-07-13, Bergmeier (obs., photo).

New for Greece. Described from Mt. Pelister, just N of the border to North Macedonia. *S. ciliosum* (probably subsp. *ciliosum*) was collected 1981-07-08 by Strid (18724, B, G, St) on Mt. Boutsis just S of PNP; in 2016 sterile specimens, presumably of the same taxon, from Mt. Triklario were transplanted to Ørbæk, Denmark, as Strid 58451; they were still not flowering in 2019. In 2018, the small population on Mt. Triklario interpreted as subsp. *ciliosum* was again sterile (Bergmeier, obs.).



Fig. 4. Sterile *Sempervivum ciliosum* subsp. *octopodes* on granitic rock at 2175 m on Mt. Varnous. U. Bergmeier, 2018-07-13.

CYPERACEAE

***Carex digitata* L.**

2 km SE above Ag. Germanos, 1290 m. Damp beech forest, ravine, steep wayside slope. 2019-06-09, Bergmeier 19-276.

***Carex distachya* Desf.**

Psarades towards Pyli, 940 m. Juniper woodland, limestone. 2017-06-12, Bergmeier 17-370. – Just N of Karyes, 980 m. Oak forest, schistose soil. 2017-07-18, Bergmeier (obs.).

***Carex divulsa* Stokes**

Ag. Ioannis hill, 1.5 km WNW of Laimos, 890 m. Oak woodland. 2017-06-04, Bergmeier 17-113. – W of Laimos, near Lake Megali Prespa, 855 m. Sand grassland. 2018-06-08, Bergmeier 18-172.

It is not clear whether a record of this species by Pavlides (1985: 265) as well as a field note by G. Fotiadis belong to this species or to *C. polyphylla* (*C. divulsa* subsp. *leersii*). The latter is more common in the area than *C. divulsa*.

Carex liparocarpos Gaudin subsp. *liparocarpos*
Mt. Triklario, 1500–1700 m. Dry grassland, limestone. 2017-06-09, Bergmeier 17-229.

C. liparocarpos is scattered southwards to Sterea Ellas, but much less common than the similar *C. carophyllea* Latourr.

Carex pendula Huds.

2.5 km W of Pisoderi, above Mon. Agia Triada, 1410 m. Beech forest, ravine. 2019-06-13, Bergmeier 17-367.

With whitish ligule and smooth peduncle of the lowermost spike, the specimen has been identified as *C. pendula* s. str., not as *Carex agastachys* L. f., which is said to occur in the eastern part of the range of the *C. pendula* aggregate (Míguez & al. 2018).

Carex phyllostachys C.A. Mey.

1 km E of Vrondero, 1180 m. Juniper woodland, limestone, stony ground. 2017-06-13, Bergmeier 17-385. – Above Daseri, 925 m. Edge of deciduous forest, limestone. 2019-06-08, Bergmeier 19-236.

Carex polyphylla Kar. & Kir. (syn.: *C. leersii* F.W. Schultz)

Mt. Triklario, Agioneri, 1500 m. *Brachypodium* grassland, limestone. 2017-06-09, Bergmeier 17-240. – 0.5 km N of Karyes, 980 m. Red colluvial soil. 2017-07-18, Bergmeier 17-629 and 17-631. – Mt. Varnous, c. 3 km SE of Ag. Germanos, 1535 m. Forest opening, gneiss. 2017-07-19, Bergmeier 17-667. – Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1825 m. Subalpine grassland. 2018-06-09, Bergmeier 18-238. – 1.6 km W of Plati, 850 m, wet-dry meadows. 2019-06-06, Bergmeier 19-189 and Bergmeier 19-200. – Daseri, 895 m. Mesic grassland. 2019-06-08, Bergmeier 19-251.

CYSTOPTERIDACEAE

Cystopteris fragilis (L.) Bernh.

Above Ag. Germanos, 1160 m. Outcrops of granitic rock. 2019-06-09, Bergmeier 19-268.

First record since 1972-07-09: Haristos 4118 (ATH); 1972-06-21: Stamatiadou 15705 (ATH); 1975-05-09: Stamatiadou 18484, 18494, ATH); 1981-06-27:

Stamatiadou 22127 (ATH); also reported by Pavlides (1985: 156).

DIPSACACEAE

Knautia midzorensis Formáneek

2 km SE of Agios Germanos, 1380 m. Grassy opening in beech forest, gneiss. 2018-06-12, Bergmeier 18-304

First record since reported by Quézel & Contandriopoulos (1968: 33) and Pavlides (1985: 200), perhaps erroneous for *Knautia magnifica* Boiss. & Orph., described on a collection by Orphanides from Mt. Pelister, just N of the present border; the latter has been collected several times also on the Greek side on Mt. Varnous, where it is a fairly uncommon sight. *K. midzorensis* was described from Mt. Midzor in Serbia, and there are scattered records from northern Greece. The overall and local variation of the two species needs further study.

Pterocephalus plumosus (L.) Coult.

Mt. Devas, Ag. Georgios, 1105 m. Dry grassland, calcicolous, together with *Lomelosia rotata*. 2017-06-10, Bergmeier 17-275a.

First record since 1998-07-30: Willing 71584 (B). More recently also reported by G. Fotiadis.

Scabiosa cinerea Lam.

Mt. Triklario, 1650 m. Dry grassland with limestone rock outcrops. 2018-07-11, Bergmeier 18-475.

New for Greece. The southernmost known locality.

EUPHORBIACEAE

Euphorbia falcata L.

Pyxos, 1060 m. Barley field. 2018-07-10, Bergmeier 18-404.

FABACEAE

Anthyllis vulneraria L. subsp. *pindicola* Cullen

Mt. Triklario, 1450–1600 m. 2017-06-07, Strid (photo); 2017-06-09, Bergmeier 17-225; 2018-06-10, Bergmeier (obs.). All sites are dry grassland with limestone rock outcrops.

Anthyllis vulneraria L. subsp. *scardica* (Wettst.) Bergmeier

Mt. Triklario, 1660 m. Dry rocky grassland, limestone. 2017-06-09, Bergmeier 17-224.

Astragalus tymphresteus Boiss. & Spruner

1 km SE of Psarades, 890 m. Dry juniper woodland with openings, limestone. 2017-06-12, Bergmeier 17-

376. – Above Pyxos, 1040–1080 m. Dry calcicolous grassland. 2018-06-13. Bergmeier 18-338.

First records since 1975-05-10: Stamatiadou 18531 (ATH, G, as “*A. sirinicus* Ten.”; Strid & al. 2017: 238).

Chamaecytisus frivaldszkyanus (Degen) Kuzmanov Just E of Agios Germanos, 1160 m. Dry grassland, gneiss. 2017-06-14, Bergmeier 17-424. – Potistra, about 2 km SSE of Ag. Germanos, 1410 m. Dry grassland, gneiss-granite. 2017-07-14, Bergmeier 17-535. – Pervali, 2.5 km E of Karyes, 1200–1300 m. Dry grassland, gneiss. 2018-06-07, Bergmeier 18-154, Bergmeier 18-160. – Quarry at eastern foot of Kalé hill, between Karyes and Lefkonas, 920 m, gneiss gravel. 2018-06-07, Bergmeier 18-170. – 1.5 km NE of Agios Germanos, 1080 m. Dry grassland, gneiss. 2018-06-12, Bergmeier 18-317.

New for Greece. Specimens from the area identified as *Chamaecytisus eriocarpus* (Boiss.) Rothm. appear to belong to *C. frivaldszkyanus*. *C. eriocarpus* s. str. has been described from W Turkey and is scattered in the Balkans with westernmost occurrences in Albania (Pifkó & Barina 2016; Barina & al. 2017). It remains to be established to what extent populations of *C. eriocarpus* in N Greece (southward to c. 39°30'N) belong to this species or to *C. frivaldszkyanus*. The latter has been synonymized with *Chamaecytisus lasiosemius* (Boiss.) Pifkó but is considered a separate species by D. Pifkó, who identified the specimens from Prespa given above.

Chamaecytisus pseudojankae Pifkó & Barina Above Pyxos, 1040–1080 m. Edge of oak woodland on calcareous ground. 2018-06-13, Bergmeier 18-339. – Mt. Vrondero, summit Tsoutsouli, 4 km E of Vrondero, 1450 m. Limestone rock outcrops and boulders. 2018-07-15, Bergmeier 18-608. – Above Daseri, 925–1000 m. Waysides and edges of deciduous oak forest, limestone and phyllite. 2019-06-08, Bergmeier 19-237, 19-241, 19-243 & 19-248. – Mt. Devas, E of summit, 1270 m. Edge of deciduous forest. 2019-06-10, Bergmeier 19-302.

Records of *Chamaecytisus austriacus* (L.) Link from the area (see Strid & al. 2017: 238) appear to refer to *C. pseudojankae* which has been described as new by Pifkó & Barina (2016) and was known hitherto only from the mountain ranges Mali i Thatë and Galičica in nearby Albania and North Macedonia, respectively (Barina & al. 2017). All collections given above were identified by D. Pifkó.

Chamaecytisus triflorus (Lam.) Skalická (syn.: *Cytisus hirsutus* auct. non L.)

Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1710–1825 m. Subalpine grassland, granite. 2018-06-09. Bergmeier 18-208 & 18-228. – SE above Agios Germanos, 1400 m. 2018-07-12, Bergmeier 18-321 & 18-334.

Records from Mt. Varnous of *Chamaecytisus hirsutus* (L.) Link and *Chamaecytisus polytrichus* (M. Bieb.) Rothm. refer to *C. triflorus*, e.g., 1972-06-25: Stamatiadou 16066 (ATH, G) and 1981-06-27: Stamatiadou 22146 (ATH). The collections cited above were revised by D. Pifkó. The taxonomy follows Skalická (1986). *C. triflorus* was lumped together with *C. hirsutus* by Dimopoulos & al. (2013: 268).

Lathyrus hirsutus L.

0.5 km S of Pyli, 860 m. Damp ruderalized open site between wayside and reeds. 2018-07-10, Bergmeier 18-392.

First record since 1972-06-21: Stamatiadou 15773 (ATH).

Lens culinaris Medik.

5 km N of Vrondero (Pyxos sheepfolds), 955 m. Arable field. 2017-06-08, Bergmeier 17-184.

Probably a relict of former cultivation mixed in current local seed corn.

Melilotus neapolitanus Ten.

Lakeshore Megali Prespa, S of Cape Roti, 850 m. Pebble beach. 2018-07-09, Bergmeier 18-379.

Securigera elegans (Pančić) Lassen

2 km SE of Agios Germanos, 1380 m. Beech forest, steep-sloped wayside, gneiss. 2018-06-12, Bergmeier 18-305.

Trifolium dubium L.

Near Oxya, 860 m, wet-dry hay meadow. 2017-06-07, Strid (photo) and Bergmeier. – In meadows just N (Koula), NE (Slatina) and E (N of Mikrolimni) of Lake Mikri Prespa. 2018-06-11, Swinkels & Bergmeier (obs.).

First records since 1998-07-29: Willing 71263 (B).

Trifolium incarnatum L. subsp. *incarnatum*

1.6 km W of Plati, 850 m, wet-dry hay meadow. 2019-06-06, Bergmeier 19-197.

Apparently indigenous and not introduced and sown for fodder or meadow improvement as is often done in Europe and overseas. *T. incarnatum* subsp. *molinerii* (Hornem.) Syme, with corollas whitish to

pale-pink, is also known in the area and has been found in similar grassland habitats.

Trifolium pallidum Waldst. & Kit.

5 km N of Vrondero (Pyxos sheepfolds), 960 m. Arable field. 2017-06-08, Bergmeier 17-197.

Trifolium retusum L.

1.5 km W of Plati, 850 m, wet-dry sandy wayside. 2019-06-06, Bergmeier 19-187.

First record in the area since 1998-06-15: Strid & al. 46625 (G, Kit, LD, St), 3 km SSW of Andartiko, 950 m.

Trifolium trichopterum Pančić

Above the village of Kotas, 1000–1100 m. Gravelly road embankments in deciduous oak woodland, sandstone. 2010-06-06, Strid 57150 (G, St). – Isthmus c. 0.5 km E Koula, 860 m. Sand grassland. 2017-06-13, Bergmeier 17-411. – N and E of Ag. Germanos, 1000–1500 m. Gneiss/granite slopes with rock outcrops, grus. 2017-06-14, 2017-07-15 and 2017-07-20, Bergmeier (obs.). – Pervali, 2.5 km ESE of Karyes, 1190–1290 m. Granitic grus. 2018-06-07, Bergmeier 18-165.

Vicia dalmatica A. Kern.

Pyxos, 1060 m. Woodland edge. 2018-07-10, Bergmeier 18-410. – 0.5 km N of Oxya, 870 m. Deciduous scrub. 2019-06-11, Bergmeier 19-342.

Not reported since Pavlides (1985: 224), although a record of “*Vica tenuifolia*” from 2016-06-16 by Kit Tan & al. 32201 (Kit) may belong here.

Vicia lutea L. subsp. *lutea*

Koula, 855 m. 2017-06-05, Strid 58887 (UPA). – Ibid. 2018-07-14, Bergmeier (obs.). – 5 km N of Vrondero (Pyxos sheepfolds), 960 m. Arable field. 2017-06-08, Bergmeier (obs.). – Vromolimni NE of Mikri Prespa, 855 m. Wet-dry meadow. 2019-06-06, Bergmeier 19-203.

First records since 1975-05-08: Stamatiadou 18427 (ATH) and 1989-08-31: Raus & al. 13652 (B).

Vicia narbonensis L.

1 km S of Vrondero, 1090 m. Arable field. 2017-06-11, Bergmeier 17-340.

Strid 58308 (St), cited as *V. narbonensis* (Strid & al. 2017: 242), belongs to *V. serratifolia* Jacq.

Vicia segetalis Thuill. (*V. angustifolia* L. subsp. *segetalis* (Thuill) Ces.)

1.5 km WSW of Plati and Slatina, c. 4 km SW of Laimos, 855 m. 2019-06-06, Bergmeier 19-202 and Bergmeier 19-206. Both sites wet-dry meadows.

New for NC Greece. Earlier records of *Vicia sativa* subsp. *nigra* (L.) Ehrh. and *V. angustifolia* L. s.l. (Pavlides 1985: 224; Willing 126965 (B), 2004-05-11; Strid 58881 (UPA), 2017-06-05) probably belong here.

Vicia serratifolia Jacq.

Between Karies and Lefkonas, 900 m (Strid & al. 2017: 242, as *V. narbonensis*). 2016-04-28, Strid 58308 (St). – 1.5 km W of Plati, 850 m. Fallow field, deep alluvial soil. 2019-06-06, Bergmeier 19-190.



Fig. 5. *Vicia serratifolia* on a fallow field W of Plati. U. Bergmeier; 2019-06-06.

Vicia tenuifolia Roth

Mt. Devas, E of summit, 1270 m. Edge of deciduous forest. 2019-06-10, Bergmeier 19-301.

Similar are *V. dalmatica* A. Kern. and *V. incana* Gouan, both of which occur in the area. Reported by Pavlides (1985: 224); a record from 2 km SW of Psarades at 2016-06-16 by Kit Tan & al. 32201 (Kit) probably refers to *V. dalmatica*.

Vicia villosa Roth

Koula, 855 m. Wet-dry meadow. 2018-06-11, Bergmeier 18-283. – Isthmus, 4 km W of Laimos, 855 m. Sandy arable field. 2019-06-07, Bergmeier 19-208.

First records of the species *sensu stricto* since reported by Pavlides (1985: 224) and collected 1998-07-30 by Willing (71624, B).

FAGACEAE

Quercus petraea (Mattf.) Liebl. subsp. *petraea*

1.8 km SSE above Ag. Germanos, towards Potistra, 1390 m. Beech-oak forest. 2017-07-14, Bergmeier 17-530. – Above Oxya, towards Sfika, 1000–1150 m. Mixed oak forest. 2017-07-21, Bergmeier 17-694+695. – Above Oxya, towards Bela Zemina, 1070 m. Mixed beech forest. 2018-07-16, Bergmeier 18-633. All sites over granitic bedrock.

The subspecies *petraea* was first recorded 2000-07-22 in the area by Schuler (00/397; Schuler 2007: 234).

Quercus petraea (Matt.) Liebl. subsp. *polycarpa* (Schur) Soó

2.5 km ENE of Ag. Germanos, lower N slope of summit Kotsifa, 1260 m. Edge of beech forest. Quartzitic bedrock. 2017-07-18, Bergmeier 17-620. – Above Oxya, towards Sfika, 1200 m. Mixed deciduous forest, steep slope, limestone screes. 2018-07-16, Bergmeier 18-629.

This is the more common subspecies in the area which was first identified in Prespa in 2000 by Schuler (2007: 234; as subsp. *medwediewii* (A. Camus) Menitsky). The Central European subsp. *petraea* and the Balkan/Anatolian subsp. *polycarpa* (syn.: *Q. polycarpa* Schur) meet in N Greece and the PNP area. The former has flat cupule scales and \pm irregular and deeply lobed leaf blades, while subsp. *polycarpa* has usually \pm regular, shallow leaf lobes and tuberculate cupule scales. Whether the latter can be further differentiated in subsp. *polycarpa* s. str. and “*Q. dalechampii*” auct., non Ten. (tuberculate cupule scales, \pm irregularly, deep lobed leaves) is an unresolved question.

Quercus robur L. subsp. *pedunculiflora* (K. Koch) Menitsky

Near Ag. Paraskevi between Oxya and Mikrolimni, 860 m, single old tree. 2018-07-14, Bergmeier 18-492. – 1 km NE of Oxya, 890 m. Group of young trees above sand pit. 2018-07-14, Bergmeier 18-560+562.

This is the rarest of oaks in the area and the first reports of it since Pavlides (1985: 204).

GENTIANACEAE

Gentiana cruciata L.

Mt. Triklario, 1560 m. Deep calcareous soil. 2018-07-11, Bergmeier (obs.).

First record since 1985-07-20 from just outside PNP, Papadima near the Albanian border 8–9 km N of Kristallopigi, by Stamatiadou 22861 (ATH).

GERANIACEAE

Erodium hoefftianum C.A. Mey.

Néo, 2 km NW of Laimos, 855 m. Sand grassland. 2018-06-08, Bergmeier 18-185.

Geranium versicolor L.

2 km SE above Ag. Germanos, 1320 m. Beech mixed forest, ravine. 2017-06-14, Bergmeier 17-420. – Mt. Varnous, c. 6 km ESE of Ag. Germanos, Giovanitsa, 1700 m. Beech forest, ravine. 2017-07-14, Bergmeier (obs.).

Confirms Pavlides (1985: 207) who cited Karidas (1979).

JUNCACEAE

Juncus anceps Laharpe

Slatina, c. 3.5 km SW of Laimos, seasonally flooded meadow. 2018-07-14, Bergmeier 18-553.

Records of *Juncus acutiflorus* Ehrh. ex Hoffm. (Strid & al. 2017: 245) and *J. alpinoarticulatus* \times *articulatus* (Stamatiadou 13640, ATH, 1971-07-29; Schuler 99/1418, B, 1999-08-23), all in about the same area, may refer to the same taxon that is here identified as *J. anceps*. The *alpinoarticulatus-anceps* complex needs further study.

LAMIACEAE

Acinos alpinus (L.) Moench subsp. *hungaricus* (Simonk.) Sojak (syn.: *Clinopodium alpinum* subsp. *hungaricum* (Simonk.) Govaerts)

E just above Ag. Germanos, 1080 m. Dry grassland, gneiss. 2018-06-12, Bergmeier 18-316. – SE above Ag. Germanos, 1140–1170 m, dry rocky grassland, gneiss. 2019-06-09, Bergmeier 19-258, 262.

Records of the species *sensu lato* and of subsp. *majoranifolius* (Mill.) P.W. Ball by Pavlides (1985: 209), Stamatiadou 16145 (ATH, 1972-06-26), Stamatiadou 22179 (ATH, 1981-06-27) and others from Ag. Germanos and Mt. Varnous probably refer to subsp. *hungaricus*.

Acinos majoranifolius (Mill.) Šilic (syn.: *Clinopodium alpinum* subsp. *majoranifolium* (Mill.) Govaerts)

Mt. Vrondero, summit Tsoutsouli, 4 km E of Vrondero, 1450 m. Limestone rock outcrops and boulders. 2018-07-15, Bergmeier 18-610 & Sakellarakis.

New for Greece. Reported by Pavlides (1985: 209) but this likely refers to *A. alpinus* subsp. *hungaricus*.

Ballota nigra L. subsp. *sericea* (Vandas) Patzak Lefkonas, 930 m. 2014-10-09, Willing 250257 (B) (Willing & Willing 2018: 66). – Above lakeshore of Megali

Prespa, S of Cape Roti, 855 m. On limestone pebbles under an overhanging cliff. 2018-07-09, Bergmeier 18-385.

Ballota nigra L. subsp. ***ruderalis*** (Sw.) Briq. (syn.: *Ballota nigra* subsp. *uncinata* (Fiori & Bég.) Patzak) Karyes, 935 m. 2014-10-09, Willing 250199 (B) (Willing & Willing 2018: 67). – 0.5 km S of Pyli, 855 m. Ruderal wayside at edge of reeds. 2018-07-10, Bergmeier 18-395.

Calamintha nepeta (L.) Savi subsp. ***glandulosa*** (Req.) P. W. Ball (syn.: *Clinopodium nepeta* subsp. *nepeta* var. *glandulosum* (Req.) B. Bock)

Above lakeshore of Megali Prespa, S of Cape Roti, 850–860 m. Pebble beach and among limestone boulders. 2018-07-09, Bergmeier 18-384.

Galeopsis ladanum L.

1 km NW of Vrondero, 1120 m. Arable field. 2017-06-11, Bergmeier 17-332; 2017-07-12, Bergmeier 17-440.

A rare species in Greece, confined to the north-central mainland, in decline due to agricultural intensification and field abandonment, characterized as Endangered (Bergmeier & Strid 2014).

Micromeria juliana (L.) Rchb.

Above lakeshore of Megali Prespa, S of Cape Roti, 850–860 m. Limestone boulders. 2018-07-09, Bergmeier 18-373. – 1 km SW of Mikrolimni, towards Latsitsa, 900 m. Dry rocky grassland, limestone. 2018-07-12, Bergmeier 18-511.

First records since 1971-07-28: Stamatiadou 13608 (ATH), and Pavlides (1985: 212).

Nepeta nuda L. subsp. ***nuda*** (syn.: *N. pannonica* L.)

Sfika ruins, 1190 m. Ruderal vegetation. 2018-06-10, Bergmeier 18-275. – Mt. Triklario, 1560 m. Deep calcareous soil. 2018-07-11, Bergmeier 18-450.

Sideritis scardica Griseb.

Mt. Devas, near the summit, 1200–1300 m. Rocky limestone slopes with open woodland of *Quercus trojana* and *Juniperus*. 2014-07-12, Strid 58094. – Mt. Vrondero, 2.5 km E of Vrondero, 1280–1300 m. Dry rocky calcicolous grassland. 2018-07-15, Bergmeier 18-594.

Stachys annua (L.) L.

Pyxos, 1060 m. Barley field. 2018-07-10, Bergmeier 18-401.

Stachys recta L.

0.5 km SW of Pyli, 870 m. Steep wayside with scrub, phyllite. 2017-06-08, Bergmeier 17-196.

First record in the area since 1998-07-30: Willing 71588 (B), NE of Pyli.

Thymus leucotrichus Halácsy

Mt. Devas, summit, 1360 m. 2017-06-10, Bergmeier 17-299a. – Mt. Vrondero, 2.5 km E of Vrondero, 1280–1300 m. 2018-07-15, Bergmeier 18-600. – Mt. Devas, summit ridge, 1350 m. 2019-06-10, Bergmeier 19-318. All sites refer to dry rocky calcicolous grassland habitats.

Previously reported by Pavlides (1985: 215) and collected 1999-07-05 by Schuler 99/854 (B, Sch).

Thymus praecox Opiz subsp. ***jankaе*** (Čelak.) J alas

Mt. Varnous, c. 8 km E of Ag. Germanos and 4 km N of Pisoderi, 1900 m. 2017-07-13, Bergmeier 17-516. – Mt. Varnous, summit above Siroka valley, 2100 m. Both sites refer to alpine granitic grassland. 2017-07-20, Bergmeier 17-676.

Thymus stojanovii Degen

Mt. Varnous, just E of summit Bela Voda, 2040 m. Snow-rich slope concavity. – 2018-07-13, Bergmeier (obs.).

First records since Quézel & Contandriopoulos (1968: 32), Quézel (1969) and 1976-08-01: Greuter 14130 (Gr, St).

LINACEAE

Linum flavum L. subsp. ***albanicum*** (Janch.) Hartvig

Mt. Triklario, 1630 m. Calcicolous *Brachypodium* grassland. 2018-07-11, Bergmeier 18-485.

Strid 58464 (G, St) from 2016-06-07, reported as *Linum elegans* Spruner ex Boiss. (Strid & al. 2017: 248), belongs to *L. flavum*.

LYTHRACEAE

Lythrum portula (L.) D.A. Webb

1.5 km E above Ag. Germanos, 1390 m. Wet wayside. 2018-06-12, Bergmeier 18-330. – 1 km NE of Oxya, 890 m. Edge of seasonal in sand pit. 2018-07-14, Bergmeier 18-564.

First records since 1998-08-07: Strid & Kit Tan 47619 (ATH, G, St).

MALVACEAE

Malva moschata L.

Mt. Varnous, 3 km N of Pisoderi, 1950 m. Rocky grassland, granite. 2017-07-13, Bergmeier 17-486.

Confirms Vandas (1909: 117) who identified and cited a collection by Formánek from “M. Peristeri in Macedonia”.

***Tilia cordata* Mill.**

Néo, 2.5 km NW of Laimos, 855 m. Edge of *Populus-Betula* pioneer forest. 2018-06-08, Bergmeier 18-181.

New to NC Greece although given for NC in Dimopoulos & al. (2013) based on unconfirmed records. Elsewhere in Greece known with certainty only from the Rodopi Mountain Range. This first record in PNP refers to a single mature tree, obviously spontaneously established. Reports by Pavlides (1985: 256) between Vrondero and Agathoto and between Oxya and Sfikas are most likely in error for *T. platyphyllos* subsp. *Pseudorubra*, which occurs in the indicated sites (see below).

***Tilia platyphyllos* Scop. subsp. *pseudorubra* C.K. Schneid.**

Above Oxya, towards Sfika, 1200–1220 m. Mixed deciduous forest, steep slope, limestone. 2017-07-21, Bergmeier 17-691 & 17-696. – Ibid. 2018-07-16, Bergmeier 18-626 & 18-631. – Mt. Triklario, 1715 m. Limestone rock outcrops. 2018-07-11, Bergmeier 18-465. – Mt. Devas, E of summit, 1270 m. Mixed deciduous forest. 2019-06-10, Bergmeier 19-305.

Records of *Tilia rubra* DC. which has been included in *T. platyphyllos* (Pigott 2012) reported in Strid & al. (2017: 265; Bergmeier 16-130, 2016-07-20; Bergmeier 16-273, 2016-09-05) and of *T. platyphyllos* s. l. (Strid 57152, G, St, 2010-06-06) belong here.

MONTIACEAE

***Montia fontana* L. subsp. *amporitana* Sennen**

Mt. Varnous, c. 3.5 km E of Ag. Germanos, towards Vigla, 1340 m. Spring. 2017-07-18, Bergmeier 17-617. – Mt. Varnous, Siroka valley, c. 3 km NE of Ag. Germanos, 1365 m. Rivulet. 2018-06-09, Bergmeier 18-249. – 0.5 km E above Ag. Germanos, 1080 m. Gully, wet-dry siliceous soil. 2018-06-12, Bergmeier 18-309.

This and the similar *Montia arvensis* Wallr. (Strid & al. 2017: 258) occur in the same area at overlapping elevation ranges but have not been found growing together.

ONAGRACEAE

***Epilobium lanceolatum* Sebast. & Mauri**

Above Oxya, Sfika pass, 1270 m. Wayside, siliceous grus. 2018-07-16, Bergmeier 18-624.

First record since 1972-06-21: Rechinger 44860 (W) and Stamatiadou 15711 (ATH); also reported by Quézel & Contandriopoulos (1968: 26) and Pavlides (1985: 227).

OPHIOGLOSSACEAE

***Ophioglossum vulgatum* L.**

Koula, wet-dry grassland. 2018-06, Swinkels (photo).

A population of about 5 individuals was encountered.

ORCHIDACEAE

***Orchis palustris* L. subsp. *elegans* (Heuff.) Nyár. (syn.: *Anacamptis palustris* subsp. *elegans* (Heuff.) R.M. Bateman & al.)**

Slatina Laimou, c. 3.5 km SW of Laimos, seasonally flooded meadow. 2018-06-11, Swinkels (photo) & Bergmeier (fragment as 18-295). A single flowering plant has been found.

***Epipactis palustris* (L.) Crantz**

S of Pyli, near karst spring Neraidopigi, 855 m. Wet grassland in semi-shade. 2018-06, Swinkels (photo); 2018-07-10, Bergmeier (obs.). A population of c. 35 aerial stems close together (with c. 20 fruiting) was found.

***Corallorhiza trifida* Châtel.**

Mt. Varnous, 3 km SE of Ag. Germanos, between Potistra and Moutsara. *Fagus-Abies* forest. 2017-07-14, Bergmeier 17-532 (photo of fruiting plant).

Previously known just outside PNP above Vigla (Strid & al. 2017: 249).

OROBANCHACEAE

***Euphrasia salisburgensis* Hoppe**

Mt. Triklario, 1640 m. Limestone rock ledges. 2018-07-11, Bergmeier 18-483.

***Lathraea squamaria* L.**

2 km SE above Ag. Germanos, 1300 m. Beech mixed forest, ravine. 2019-05, Sakellarakis, comm. by Eleana Kazila (photo). – Ibid. 2019-06-09, Bergmeier 19-274.

Included in the Greek *Red Data Book* as Data Deficient (Constantinidis & al. 2009).

***Orobanche minor* Sm.**

2–3 km from Psarades along road to Vrondero, 900–950 m. Rocky limestone slopes in open deciduous woodland. 2017-06-05, Strid (photo).

PAPAVERACEAE

Fumaria petteri Rchb.

Isthmus, 5 km W of Laimos, 855 m. Arable field, sandy soil. 2019-06-07, Bergmeier 19-217.

Previously found “just outside PNP, [...] at c. 800 m” (Strid & al. 2019).

Papaver albiflorum (Elkan) Pacz.

Mt. Devas, 1220–1250 m. Wayside, grassy coarse limestone gravel. 2019-06-10, Bergmeier 19-323. Few plants seen; latex yellow.

First record since 1979-05-23: Artelari & Zouridis 344 (UPA), and 1995-05-08: Strid 38956 (C). There is also a photo by K. Goula, taken 2016-04-16 in Prespes, published in http://portal.cybertaxonomy.org/flora-greece/cdm_dataportal/taxon/5bc33cf2-7569-4cef-86af-1b2f6f8458d0 (accessed 08-09-2019).



Fig. 6. *Papaver albiflorum*, flower and capsule, halfway to the summit area of Mt. Devas. U. Bergmeier, 2019-06-10.

Papaver apulum Ten.

Isthmus, 5 km W of Laimos, 855 m. Arable field (rye), sandy soil. 2019-06-07, Bergmeier 19-213. – Kalé hill, 950 m. Dry grassland, gneiss. 2019-06-11, Bergmeier 19-329.

First record in the area since 1979-05-23: Artelari & Zouridis 314 (UPA).

Populations are locally decreasing, characterized as Near Threatened (Bergmeier & Strid 2014).

Papaver argemone L.

Isthmus between Laimos and Koula, 855 m. Edge of arable field, rye sown, sand. 2017-07-14, Bergmeier 17-426 (photo).

New for NC Greece. Very rare in the country, reaching its southern limits of distribution in northernmost Greece, associated with traditional agriculture (Bergmeier & Strid 2014).

Papaver dubium L. subsp. *dubium*

Kalé hill, 950 m. Wayside, gneiss grus. 2019-06-11, Bergmeier 19-333.

P. dubium subsp. *lecoyii* (Syme) Lamotte occurs also in the area (Strid & al. 2017: 252); earlier records of *Papaver dubium* s.l. may belong to either of the two taxa.

PLANTAGINACEAE

Veronica chamaedrys L. subsp. *chamaedryoides* (Bory & Chaub.) M.A. Fisch.

Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1825 m. 2018-06-09, Bergmeier 18-244.

First record since 1975-05-10: Stamatiadou 18513 (ATH).

Veronica polita Fr.

S of Vrondero, 1075 m. Cereal field. 2017-07-12, Bergmeier 17-450.

Veronica praecox All.

Mt. Vrondero, 2.5 km E of Vrondero, 1270–1300 m. Dry calcicolous grassland. 2018-07-15, Bergmeier 18-604.

Veronica teucrioides Boiss. & Heldr. (syn.: *V. orsiniana* Ten. subsp. *teucrioides* (Boiss. & Heldr.) M.A. Fisch.)

Above Oxya, towards Agioneri, 1220 m. Limestone rock outcrops. 2018-07-11, Bergmeier 18-441.

Stamatiadou 18481 (ATH), found 1975-05-09 by the Greek-Albanian frontier, SW of the village of Vrondero, (Strid & al. 2017: 266) was identified by M.A. Fischer as *V. orsiniana* Ten., but site and habitat are more indicative for *V. teucrioides*.

Veronica triloba (Opiz) Wiesb.

5 km N of Vrondero (Pyxos sheepfolds), 955 m. Arable field. 2017-06-08, Bergmeier (obs., photo).

Other plant records of the *V. hederifolia* aggregate in the area belong to *V. hederifolia* L. s. str. *V. triloba* has been assessed Near Threatened in Greece (Bergmeier & Strid 2014).

PLATANACEAE

***Platanus orientalis* L.**

Néo, 2.5 km NW of Laimos, 855 m. Single tree at edge of *Populus-Betula* pioneer forest. 2018-06-08, Bergmeier 18-182.

First record of a definitely spontaneously established mature tree in PNP. Pavlides (1985: 230) reported *P. orientalis* by the filakio at Koula, probably referable to planted trees.

POACEAE

Alopecurus arundinaceus* Poir. subsp. *arundinaceus Slatina, c. 3.5 km SW of Laimos, seasonally flooded meadow. 2018-06-11, Bergmeier 18-297 & Swinkels. – Ibid. 2018-07-14, Bergmeier 18-556.

Confirmed for NC Greece; indicated as doubtfully present by Dimopoulos & al. (2013: 122).

***Avena fatua* L.**

1 km NW and just N and S of Vrondero, 1080–1120 m. Cereal fields. 2017-06-11, Bergmeier 17-331+343; *ibid.*, 2017-07-12, Bergmeier 17-441, Bergmeier 17-453. – 5 km N of Vrondero (Pyxos sheepfolds), 960 m. Arable fields. 2017-06-12, Bergmeier 17-352.

***Avenula pubescens* (Huds.) Dumort.**

Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1825 m. Subalpine grassland. 2018-06-09, Bergmeier 18-237.

First record since 1972-06-26: Stamatiadou 16151 (ATH, G); 1976-08-01: Greuter 14192 (C, Gr); and 1982-07-08, Lippert 18450 (C); also reported by Quézel & Contandriopoulos (1968) and Quézel (1969).

***Bromus cappadocicus* Boiss. & Balansa subsp. *lacmonicus* (Hausskn.) P.M. Smith (syn.: *Bromopsis cappadocica* subsp. *lacmonica* (Hausskn.) H. Scholz & Valdés)** Mt. Triklario, 1500–1700 m. Dry grassland with limestone rock outcrops. 2017-06-09, Bergmeier 17-238; *ibid.* 2018-07-11, Bergmeier 18-473. – Mt. Vrondero, 2.5 km E of Vrondero, 1260–1300 m. Dry calcicolous grassland. 2018-07-15, Bergmeier 18-605.

Recorded 1999-07-05 above Oxya by Schuler 99/834 (B, Sch) (Strid & al. 2017: 254); records of *B. erectus* Huds. (Pavlides 1985: 270) almost certainly belong to *B. cappadocicus*.

Bromus commutatus* Schrad. subsp. *commutatus

Latsitsa, 1.5 km S of Mikrolimni, 855 m. Wet grassland. 2018-07-12, Bergmeier 18-495.

While *B. commutatus* subsp. *commutatus* appears to be rare in the Prespa area, subsp. *decipiens* (Bomble & H. Scholz) H. Scholz is locally common in cereal fields (Strid & al. 2017: 254). Whether *Bromus commutatus* subsp. *neglectus* (Parl.) P. M. Sm. (Lavrentiades 1956: 77, as *B. racemosus* var. *neglectus* (Parl.) Asch. & Graebn., “pr. Antartikon”) indeed occurs in the area, is an unresolved question.

Bromus hordeaceus* L. subsp. *hordeaceus

5 km N of Vrondero (Pyxos sheepfolds), 955 m. Arable field. 2017-06-08, Bergmeier 17-206. – 2 km SE of Ag. Germanos, 1355 m. Dry grassland, gneiss. 2018-06-12, Bergmeier 18-323.

Perhaps common in the area but subspecies identity is unknown in most records of *B. hordeaceus*.

Bromus racemosus* L. subsp. *racemosus

Near the village of Oxya, 880 m. Wet meadows. 2016-06-06, Strid 58409 (St); *ibid.* photo 2017-06-07. – N (Koula) and NW (Slatina) of Lake Mikri Prespa, 855 m. Wet-dry meadows. 2018-06, Swinkels s.n. (Sw); 2018-06-11, Bergmeier 18-286, Bergmeier 18-293.

***Bromus riparius* Rehmman subsp. *riparius* (syn.: *Bromopsis riparia* (Rehmman) Holub subsp. *riparia*)** Mt. Varnous, 1.7 km E of summit Bela Voda, c. 3.3 km W of Kratero, 1710 m. Waterlogged slope. 2018-06-09, Bergmeier & al. 18-212.

First record (just outside PNP) since Quézel (1969), cited by Pavlides (1985: 270) and questioned by Strid & al. (2017: 254).

***Cleistogenes serotina* (L.) Keng (syn.: *Kengia serotina* (L.) Packer)**

1 km SW of Mikrolimni, towards Latsitsa, 900 m. Dry rocky grassland, limestone. 2018-07-12, Bergmeier 18-498.

***Echinaria capitata* (L.) Desf.**

1.5 km SE of Psarades, towards Ag. Georgios, 990 m. Dry calcicolous grassland. 2017-06-12, Bergmeier 17-359.

First record since 1972-06-22: Stamatiadou 15814 (ATH).

***Elytrigia intermedia* (Host) Nevski subsp. *trichophora* (Link) Á. Löve & D. Löve**

Kalé hill, 950 m. Dry grassland, gneiss. 2019-06-11, Bergmeier 19-330.

First record since Pavlides (1985: 272).

Elytrigia repens (L.) Nevski subsp. *repens*

Between Mikrolimni and Oxya, 860 m. Wet-dry hay meadow. 2017-06-07, Bergmeier (obs.). – 1 km NW and just S of Vrondero, 1080–1120 m. Cereal fields. 2017-06-11, Bergmeier (obs.). – Laimos, Ag. Germanos river, 890 m. Riparian habitat, stony alluvium. 2017-07-16, Bergmeier (obs.). – Just N and E of Lake Mikri Prespa, 855 m. Wet meadows. 2018-06, Swinkels s.n. (Sw). – Sfika ruins. Abandoned fields, 1175 m. 2018-06-10, Bergmeier & al. (obs.). – Koula, 855 m. Wet-dry grassland on sandy soil. 2018-06-11, Bergmeier & Swinkels (obs.). – 0.5 km S of Pyli, 855 m. Ruderal wayside at edge of reeds. 2018-07-10, Bergmeier (obs.). – Pyxos, 1060 m. Arable field edges. 2018-07-10, Bergmeier (obs.). – Mt. Triklario, 1560 m. Deep calcareous soil, semi-shaded. 2018-07-11, Bergmeier (obs.).

Festuca cyllenica Boiss. & Heldr.

Mt. Triklario, 1650–1680 m. Dry grassland with limestone rock outcrops. 2017-06-09, Bergmeier 17-264.

Records of “*F. varia*” from Mt. Triklario and the Vrondero area (e.g. Pavlides 1985: 273; Strid 58469 (G, St), 2016-06-07) belong to *F. cyllenica*. *F. varia* Haenke s. str. does not occur in Greece (Dimopoulos & al. 2013: 275).

Festuca drymeja Mert. & W.D.J. Koch (syn.: *Drymochloa drymeja* (Mert. & W.D.J. Koch) Holub)

Above Oxya, towards Agioneri, 1345 m. Beech forest, limestone. 2017-06-07, Bergmeier (obs.). – About 3 km SE of Ag. Germanos, E of Potistra, 1530 m. Beech-fir forest, granite. 2017-07-19, Bergmeier 17-650.

First record since 1999-07-05 (Schuler 99/859, B), above Oxya.

Festuca gigantea (L.) Vill. (syn.: *Schedonorus giganteus* (L.) Holub)

2.5 km WNW Laimos, 855 m. Edge of riparian forest. 2017-07-18, Bergmeier 17-627. – Mt. Varnous, c. 3 km SE of Ag. Germanos, 1530 m. Tall-herb vegetation near stream. 2017-07-19, Bergmeier (obs.).

First reported from the Prespa area by Schuler (2004: 104) in a dot map with no details available.

Festuca kozanensis Foggi & Joch. Müll.

Mt. Varnous, c. 5 km SE of Agios Germanos, 1900 m. Alpine grassland with granite boulders. 2017-07-14, Bergmeier 17-542. – Mt. Varnous, below Toumba

summit, 2000–2100 m. Granite boulders. 2017-07-20, Bergmeier 17-680.

Records of “*F. varia*” from Mt. Varnous may belong here.

Festuca peristereae (J. Vetter) Markgr.-Dann.

Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1825 m. Subalpine grassland. 2018-06-09, Bergmeier 18-231.

Glyceria notata Chevall.

Mt. Varnous, Kotsifa, c. 2 km above Ag. Germanos, 1325 m. Spring. 2018-06-12, Bergmeier 18-319. – Lakeshore of Megali Prespa near Koula, 850 m, wet sand. 2019-06-07, Bergmeier 19-220.

First records since Pavlides (1985: 273).

Hordeum geniculatum All.

S of Vrondero, 1075 m. Dirth road. 2017-06-11, Bergmeier 17-335.

Koeleria pyramidata (Lam.) P. Beauv.

Mt. Triklario, 1500–1550 m. Dry rocky calcicolous grassland. 2017-06-07, Bergmeier 17-171.

First record since Pavlides (1985: 274) from “Pelasgos”.

Lolium multiflorum Lam.

5 km N of Vrondero (Pyxos sheepfolds), 955 m. Arable field. 2017-06-08, Bergmeier 17-202. – Slatina-Plateos SW of Laimos, 850 m. Wet-dry hay meadows. 2018-06, Swinkels s.n. (Sw).

Melica ciliata L. subsp. *taurica* (K. Koch) Tzvelev

1 km SE of Psarades, 890 m. Dry juniper woodland with openings, limestone. 2017-06-12, Bergmeier 17-377. – Isthmus between Laimos and Koula, 855 m. Sand grassland. 2017-06-13, Bergmeier 17-409. – Néo, 2 km NW of Laimos, 855 m. Sand grassland. 2018-06-08, Bergmeier 18-190. – 1 km SW of Mikrolimni, towards Latsitsa, 900 m. Dry rocky grassland, limestone. 2018-07-12, Bergmeier 18-501.

Apparently the only subspecies of *M. ciliata* in the area; a specimen believed to be subsp. *ciliata* (Bergmeier 16-172; Strid & al. 2017: 255) refers to subsp. *taurica*.

Melica cretica Boiss. & Heldr. subsp. *monticola* (Prokudin) W. Hempel (syn.: *Melica monticola* Prokudin)

Mt. Triklario, 1700 m. Limestone rock outcrops. 2018-07-11, Bergmeier 18-457.

Melica transsilvanica Schur subsp. **klokovii** Tzvelev
Mt. Varnous, c. 2 km SE of Ag. Germanos, below Potistra, 1350 m. Dry grassland, gneiss. 2017-07-15, Bergmeier 17-557. – 2.5 km WNW of Laimos, 850 m. Sand grassland. 2017-07-16, Bergmeier 17-610. – 1.5 km NE of Agios Germanos, 1080 m. Dry grassland, gneiss. 2018-06-12, Bergmeier 18-313.

Phleum subulatum (Savi) Asch. & Graebn.
A specimen cited in Strid & al. (2017: 256), Strid 58351 (G, St), refers to *P. exaratum* Griseb.

Poa angustifolia L.
Near the village of Oxya, 880 m. Wet meadows. 2016-06-06, Strid 58408 (G, St). – Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1825 m. Subalpine grassland. 2018-06-09, Bergmeier & al. 18-220. – Koula, 855 m. Wet-dry meadow. 2018-06-11, Bergmeier 18-279 & Swinkels.

First records since 1972-06-21: Stamatiadou 15710 (ATH, G).

Poa palustris L.
Laimos, Ag. Germanos river, 890 m. Riparian habitat, stony alluvium. 2017-07-16, Bergmeier 17-600.
New for NC Greece.

Poa timoleontis Heldr.
Mt. Triklario, 1600–1680 m. Dry calcicolous grassland. 2017-06-09, Bergmeier & al. 17-233.

Stipa balcanica (Martinovský) Kožuharov (syn.: *Stipa joannis* Čelak. subsp. *balcanica* Martinovský)
1.5 km NE of Kallithea, S slope of Vasilopigi, 1380 m. Dry silicolous grassland, gneiss. 2019-06-12, Bergmeier 19-355.

A collection from 1981-06-26 by Strid & al. 18153 (B, EGE, G, KOR, St), Mt. Varnous, 5 km S-SSE of the peak of Kortsia Toumba (peak 2334), 1700–1800 m, may also belong here.

Stipa pulcherrima K. Koch subsp. **crassiculmis** (P.A. Smirn.) Tzvelev
Hill of Ag. Ioannis, 1.5 km WNW of Laimos, 900 m. Dry grassland, gneiss. 2017-06-04, Bergmeier 17-118. – Pervali, 2.5 km ESE of Karyes, 1150 m. Dry silicolous grassland. 2018-06-07, Bergmeier 18-143. – Néo, 2 km NW of Laimos, 855 m. Sand grassland. 2018-06-08, Bergmeier 18-184.

Stipa pulcherrima K. Koch subsp. **epilosa** (Martinovský) Tzvelev

Berg Devas südl. Psarades, südwärts unterhalb der Antennen-Station am Gipfel, 1340 m. Stipa-reiche Trockenrasen über Kalkgestein. 2011-06-25, Raus & al. 32526 (B). – Mt. Triklario, 1610 m. Dry rocky grassland, limestone. 2018-07-11, Bergmeier 18-461. – Mt. Devas, summit ridge, 1350 m. Dry rocky calcicolous grassland. 2019-06-10, Bergmeier 19-310.

Ventenata dubia (Leers) Coss.
1 km NW of Vrondero, 1120 m. Fallow field. 2017-06-11, Bergmeier 17-318. – 0.5 km E above Ag. Germanos, 1080 m. Wayside, gneiss grus. 2018-06-12, Bergmeier 18-312.

Vulpia bromoides (L.) Gray
Oxya, 860 m. Wet-dry meadow. 2017-06-07, Bergmeier 17-175.

Vulpia ciliata Dumort.
Ag. Ioannis hill, 1.5 km WNW of Laimos, 900 m. Dry grassland, gneiss. 2017-06-04, Bergmeier (obs.). – Pervali, 2.5 km ESE of Karyes, 1150 m. Dry silicolous grassland. 2018-06-07, Bergmeier (obs.). – Néo, 2 km NW of Laimos, 855 m. Sand grassland. 2018-06-08, Bergmeier 18-188.
First record since 1998-06-15: Strid & al. 46631 (ATH, G, LD).

Vulpia fasciculata (Forssk.) Fritsch
Néo, 2 km NW of Laimos, 855 m. Sand grassland. 2018-06-08, Bergmeier 18-198.

POLYGONACEAE

Polygonum aviculare L. subsp. **rurivagum** (Boreau) Berher
Isthmus between Laimos and Koula, 855 m. Rye field, sand. 2017-06-14, Bergmeier 17-427. – Ibid. 2017-07-11, Bergmeier 17-433. – Pyxos, 1060 m. Barley field. 2018-07-10, Bergmeier 18-402a.

Rumex acetosella L. subsp. **acetosella**
Mt. Varnous, 3 km N of Pisoderi, 1950 m. Rocky grassland, granite. 2017-07-13, Bergmeier 17-491. – Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1825 m. Subalpine grassland. 2018-06-09, Bergmeier 18-227. – Mt. Varnous, just E of summit Bela Voda, 2040 m. Snow-rich wayside, sand. 2018-06-09, Bergmeier 18-252. – Ibid. 2018-07-13, Bergmeier 18-532.

New for Greece. Confined to (sub)alpine levels with long-lasting snow cover; the species is represented

elsewhere in the area at all levels by subsp. *acetoselloides* (Balansa) Nijs. Both subspecies are gymnocarpous.

Rumex tuberosus L. subsp. *horizontalis* (K. Koch) Rech. f. Mt. Triklario, 1700–1720 m. Limestone rock outcrops. 2018-07-11, Bergmeier 18-467.

POLYPODIACEAE

Polypodium cambricum L.

Above Oxya towards Sfika, 1220 m. Steep wooded slope, limestone rock debris. 2018-07-16, Bergmeier (obs.).

Polypodium* ×*shivasiae Rothm.

Lake Megali Prespa, SW of Psarades, near the Hermitage of Metamorfosis, 855 m. Foot of limestone cliff. 2018-07-09, Bergmeier 18-372 (det. W.H. Benkert).

New for Greece. Hybridogenic and intermediate between the diploid *P. cambricum* and the hexaploid *P. interjectum*. The latter is yet to be found in PNP as well as in Greece and the Balkans.

Polypodium vulgare L.

Above Ag. Germanos, 1300 m. Granite boulders in wooded ravine. 2019-06-09, Bergmeier 19-273.

First record since Quézel (1969; cited by Pavlides 1985: 157); 1976-08-01: Greuter 14117 (C, G, Gr, UPA); 1981-06-27: Stamatiadou 22102 (ATH) and Strid & al. 18232 (B, C).

PRIMULACEAE

Anagallis foemina Mill.

S of Vrondero, 1075 m. Arable field, calcareous, seasonally wet, clayey. 2017-06-11, Bergmeier 17-336.

This species, with populations on arable fields declining, has been rated Vulnerable in Greece (Bergmeier & Strid 2014).

Anagallis minima (L.) E.H.L. Krause (syn.: *Centunculus minimus* L.)

0.5 km E above Ag. Germanos, 1080 m. Gully, wet-dry siliceous soil. 2018-06-12, Bergmeier 18-310.

New for NC Greece.

RANUNCULACEAE

Aquilegia nigricans Baumg.

Mt Varnous, E of Ag. Germanos, 1490 m. Margins of *Fagus* forest. 2018-06-12, Sakellarakis, comm. by Julian Hoffman and Julia Henderson (obs., photo).

Listed as Vulnerable in the Greek *Red Data Book* (Snogerup & Snogerup 2009).

Ficaria verna Huds. subsp. *verna* (syn.: *Ranunculus ficaria* L. subsp. *ficaria*)

2 km SE above Ag. Germanos, 1300 m. Beech mixed forest, ravine. 2019-06-09, Bergmeier 19-272.

New for Greece. Another taxon of *Ficaria* occurs in the area (e.g., Bergmeier obs. 2018, S of Vrondero) but could not yet be identified with certainty. Taxonomy follows Veldkamp (2015) and Drenckhahn & al. (2017).

Ranunculus oreophilus M. Bieb. subsp. *balcanicus* Micevski

Mt. Varnous, 3 km N of Pisoderi, 1980 m. 2017-07-13, Bergmeier 17-508. – Mt. Varnous, 8 km W of Ag. Germanos, below summit of Bela Voda, 2065 m. 2017-07-20, Bergmeier (obs.). – Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1825 m. 2018-06-09, Bergmeier 18-243. All sites are siliceous alpine grassland habitats.

New for Greece. Hitherto lumped together with *R. sartorianus* Boiss. & Heldr. (Strid 1985; Dimopoulos & al. 2013; Strid & al. 2017) but distinct as already explained by Micevski (1983: 141). Reports of the calcicolous *R. sartorianus* from the granitic Mt. Varnous (Strid & al. 2017: 260) refer to *R. oreophilus* subsp. *balcanicus*.

Thalictrum aquilegifolium L.

About 3 km SE of Ag. Germanos, 1530 m. Tall-herb vegetation near stream. 2017-07-19, Bergmeier (obs.).

First records since 1972-06-25: Stamatiadou 16059 (ATH, C) and 1981-06-27: Stamatiadou 22147 (ATH). Also reported by Quézel (1969), cited by Pavlides (1985: 238).

RHAMNACEAE

Paliurus spina-christi Mill.

Kalé hill, c. 960 m. Deciduous scrub on rocky slope. 2017-07, Sakellarakis (obs.).

Rhamnus saxatilis Jacq subsp. *tinctoria* Nyman

Mt. Triklario, 1700 m. Limestone rock outcrop. 2018-07-12, Bergmeier 18-460.

New for Greece. Confirms entries by Halácsy (1900: 318) and Hayek (1925: 612) deemed incorrect (Dimopoulos & al. 2013: 293).

ROSACEAE

Alchemilla acutiloba Opiz

5 km ENE of Ag. Germanos, 1500–1600 m. Subalpine grassland and rocky granitic slopes above small stream. 2016-06-17, Kit Tan & al. 32216. – Mt. Varnous, 6 km E of Ag. Germanos, Kaloneri valley, 1610 m. Wet grassland. 2017-07-15, Bergmeier 17-581.

First records since 1981-07-16: Frost-Olsen 3999a (AAU, C).

Amelanchier ovalis Medik. subsp. *ovalis*

Mt. Triklario, 1650–1700 m. Limestone rock outcrops. 2017-06-07, Strid (photo). – Ibid. 2017-06-09, Bergmeier 17-259. – Ibid. 2018-07-11, Bergmeier 18-478. – Mt. Vrondero, summit Tsoutsouli, 4 km E of Vrondero, 1450 m. Limestone rock outcrops and boulders. 2018-07-15, Bergmeier (obs.).

Plants in the same area have been identified as subsp. *integrifolia* (Boiss. & Hohen.) Bornm. (Strid & al. 2017: 261) but may refer to subsp. *ovalis*.

Cotoneaster parnassicus Boiss. & Heldr.

Mt. Triklario, 1650–1700 m. Limestone rock outcrops. 2017-06-09, Bergmeier 17-255b. – 2 km SSW of Mikrolimni, towards Kranies, S of Latsitsa, 900 m. Limestone rock outcrops. 2018-07-12, Bergmeier 18-496.

First records since 1973-08-03: Greuter 11524 (ATH) (Strid & al. 2017: 261).

Cotoneaster tomentosus (Aiton) Lindl.

Mt. Triklario, 1600–1700 m. 2017-06-09, Bergmeier 17-246. – Mt. Triklario, 1640–1740 m. 2018-07-11, Bergmeier 18-482. – Above Oxya, towards Sfika ruins, 1220 m. 2018-07-16, Bergmeier 18-625. All sites are limestone rock outcrops and boulders.

Confirms undocumented reports from the same area by Pavlides (1985: 239) and Fotiadis & al. (2012).

Malus florentina (Zucc.) C.K. Schneid.

N foot of Ag. Ioannis hill, 1.5 km WNW of Laimos, 865 m. Oak woodland. 2017-06-04, Bergmeier 17-130 & Sakellarakis.

A rare species of which only two shrubs have been discovered in the area.

Potentilla inclinata Vill.

Mt. Varnous, c. 3 km SE of Ag. Germanos, 1535 m. Forest opening, gneiss. 2017-07-19, Bergmeier 17-663. – 1.5 km NE of Kallithea, S slope of Vasilopigi, 1375 m. Dry silicolous grassland, gneiss. 2019-06-12, Bergmeier 19-366.

Reported by Pavlides (1985: 241) and in 1998, outside PNP, N of Prasino and E of Pisodheri, collected by Willing (71214, B; 72087, B).

Potentilla laciniosa Nestl. (syn.: *P. recta* L. subsp. *laciniosa* (Nestl.) Nyman)

Ag. Ioannis hill, 1.5 km WNW of Laimos, 880 m. Dry grassland, gneiss grus. 2017-06-04, Bergmeier 17-94. – Pervali, 2.5 km ESE of Karyes, 1150 m. Dry silicolous grassland. 2018-06-07, Bergmeier 18-149. – 0.5 km SW of Vrondero, 1115 m. Limestone rock outcrop. 2018-07-10, Bergmeier 18-421. – Above Daseri, 1000 m. Wayside in oak forest, phyllite. 2019-06-08, Bergmeier 19-246. – Kalé hill, 950–970 m. Silicolous grassland and *Cistus creticus* shrubland, gneiss. 2019-06-11, Bergmeier 19-328, 19-336.

Potentilla macedonica Micevski (syn.: *P. recta* L. subsp. *pilosa* (Poir.) Jáv.)

Mt. Devas, 1360 m. Dry rocky calcicolous grassland. 2017-06-10, Bergmeier 17-301.

New for NC Greece.

Potentilla neglecta Baumg.

Pervali, 2.5 km ESE of Karyes, 1150 m. Dry silicolous grassland. 2018-06-07, Bergmeier 18-142. – 1.5 km W of Plati, 850 m, wet-dry sandy wayside. 2019-06-06, Bergmeier 19-186. – Kalé hill, 950–970 m. Silicolous grassland, gneiss. 2019-06-11, Bergmeier 19-335.

Potentilla pindicola Hausskn.

Mt. Varnous, 3 km N of Pisoderi, 1980 m. Alpine grassland, granite. 2017-07-13, Bergmeier 17-517. – Mt. Varnous, below Toumba summit, 2000–2100 m. Granite boulders. 2017-07-20, Bergmeier 17-681. –



Fig. 7. *Malus florentina* in an oak woodland just N of Ag. Ioannis WNW of Laimos. E. Bergmeier, 2017-06-04.

Mt. Varnous, 1.7 km E of summit Bela Voda, 3 km W of Kratero, 1710–1825 m. Subalpine grassland. 2018-06-09, Bergmeier 18-203+204. – Mt. Varnous, below summit Bela Voda, 2040 m. Alpine grassland, granite. 2018-07-13, Bergmeier 18-548. – 1.5 km NE of Kallithea, S slope of Vasilopigi, 1375 m. Dry silicolous grassland, gneiss. 2019-06-12, Bergmeier 19-360.

Plants from Mt. Varnous representing *P. pindicola* have been variously named “*P. detommasii*” or suspected hybrid of *P. astracanica* and *P. laciniosa* or *P. recta*. *P. detommasii* Ten. occurs in PNP in dry calcicolous grasslands.

***Potentilla velenovskyi* Hayek**

Mt. Triklario, 1650 m. Dry grassland with limestone rock outcrops. 2018-07-11, Bergmeier 18-472.

New for Greece. The species differs from similar species of the *recta* group by the nearly glabrous lower part of stem and the leaflets, of which there are commonly 7, being glabrous above, pilose at the margins and shortly glandular-pubescent beneath.

***Pyrus pyraster* (L.) Burgsd.** (syn.: *P. communis* L. subsp. *pyraster* (L.) Ehrh.)

Pyxos, 1060 m. Woodland edge. 2018-07-10, Bergmeier 18-412.

It is not clear whether reports of *Pyrus communis* L. from Agathoto, Kalé and Karyes belong to *P. pyraster* or *P. communis* s. str., the cultivated pear that sometimes occurs as an escape.

***Rosa corymbifera* Borkh.**

Mt. Triklario, 1500-1600, Shrubs scattered in grassland over limestone. 2017-06-09, Bergmeier 17-247. – Mt. Varnous, 2.5 km N of Pisoderi, 1980 m. *Juniperus nana* scrub near treeline, granite. 2017-07-13, Bergmeier 17-472. – Mt. Varnous, c. 3 km SE of Ag. Germanos, 1535 m. Beech forest opening, gneiss. 2017-07-19, Bergmeier 17-657.

***Rosa gallica* L.**

Mt. Devas, 1200–1275 m. Deciduous oak forest, limestone. 2017-06-10, 2017-07-19, Bergmeier (obs.).

***Rosa glauca* Pourr.**

Above Oxya, towards Sfika ruins, 1110 m. Limestone rock outcrops. 2018-07-11, Bergmeier 18-433.

***Rosa heckeliana* Tratt.**

Mt. Triklario, 1650–1700 m. Limestone rock outcrops. 2017-06-09, Bergmeier 17-258. – Mt. Triklario, 1640–



Fig. 8. *Rosa heckeliana*, a small shrub between limestone boulders in the upper part of Mt. Triklario. U. Bergmeier, 2018-07-11.

1720 m. 2018-07-11, Bergmeier 18-481a. – Mt. Varnous, c. 1.5 km W of summit Bela Voda, c. 2000 m. Granite boulders. 2018-07-13, Bergmeier 18-534.

First records since 1982-07-08: Podlech 37418 (St) (Strid & al. 2017: 262).

***Rosa montana* Chaix**

Mt. Varnous, 2.5 km N of Pisoderi, 1980 m. *Juniperus nana* scrub near treeline, granite. 2017-07-13, Bergmeier 17-474. – Mt. Varnous, c. 3 km SE of Ag. Germanos, 1535 m. Beech forest opening, gneiss. 2017-07-19, Bergmeier 17-658.

***Rubus praecox* Bertol.**

Pervali, c. 2.5 km ESE of Karyes, viewpoint, parking bay, 1120 m. Deciduous scrub. 2018-07-08, Bergmeier 18-353.

Reports of *Rubus candicans* Rchb. by Pavlides (1985: 244) may refer to *R. praecox*. After revision of the South Central and West European distribution of the *R. praecox-procerus* complex (Matzke-Hajek 2016) the Balkanic populations obviously remain in need of further study.

***Sorbus aria* (L.) Crantz**

Above Oxya, towards Sfika, 1000–1150 m. Mixed deciduous forest. 2017-07-21, Bergmeier 17-697.

Confirms reports by Pavlides (1985: 245) and a record by Strid 56173 in 2006-10-14. The similar *Sorbus graeca* (Spach) Lodd. ex S. Schauer and *Sorbus umbellata* (Desf.) Fritsch also occur in the area.

RUBIACEAE

Galium avascense Krendl

Koula, 855 m. Sand grassland. 2019-06-07, Bergmeier 19-227.

New for NC Greece. Unexpected find, as hitherto known only from Thrace. The plants are glabrous, with linear leaves without marginal teeth; flowers white; inflorescence long with partial inflorescences shorter than internodes. Apparently indistinguishable from the Thracian plants as described by Krendl (1988: 80). It is different from *G. agrophilum* Krendl with which it has been synonymized (Dimopoulos & al. 2013).

Galium elongatum C. Presl

Karst spring Neraidopigi S of Pyli, 855 m. Reeds at the pond. 2018-07-10, Bergmeier 18-398.

Galium hellenicum Krendl

Koula, 860 m. Limestone rock ledge. 2017-06-05, Bergmeier 17-145.

Galium parisiense L.

Mt. Vrondero, 2.5 km E of Vrondero, 1280–1300 m. 2018-07-15, Bergmeier 18-584.

Galium rigidifolium Krendl

1.5 km NE of Kallithea, S slope of Vasilopigi, 1380 m. Dry silicolous grassland, gneiss. 2019-06-12, Bergmeier 19-354.

First record in the area since 1978-07-05: Krendl 3037 (C, WU).

Galium verticillatum Danthoine

Koula, 855 m. Sandy wayside. 2017-06-05, Bergmeier 17-143, Strid (photo).

SALICACEAE

Populus canescens (Aiton) Sm.

Megali Prespa, NW of Laimos, 855 m. Lakeside birch-poplar pioneer forest, sandy ground. 2017-07-16, Bergmeier 17-604+605. – Lakeshore of Megali Prespa, S of Cape Roti, 850m. Pebble beach. 2018-07-09, Bergmeier 18-383.

New for Greece. In riparian woodland by Lake Megali Prespa, locally more common than both its parent species *P. alba* L. and *P. tremula* L. Not reported

from natural habitats elsewhere in Greece but likely overlooked and mistaken for *P. alba*.

SANTALACEAE

Thesium bavarum Schrank

1.8 km SSE above Ag. Germanos, towards Potistra, 1390 m. Edge of beech-oak forest, gneiss. 2017-07-14, Bergmeier 17-531. – Mt. Triklario, 1650–1700 m. Dry grassland with limestone rock outcrops. 2018-07-11, Bergmeier 18-474 & 477. – Above Ag. Germanos, towards Potistra, 1370 m. Forest opening, gneiss. 2019-06-09, Bergmeier 19-290.

Thesium parnassi A. DC.

Mt. Varnous, just E of summit Bela Voda, 2040 m. Snow-rich slope concavity. 2018-07-13, Bergmeier 18-530.

First record since Zaganiaris (1940), cited by Pavlides (1985: 249).



Fig. 9. Tiny *Thesium parnassi*, Mt. Varnous, summit area near Bela Voda. U. Bergmeier, 2018-07-13.

Thesium ramosum Hayne (syn.: *T. arvense* Horvátovszky)

Mt. Vrondero, 2.5 km E of Vrondero, 1280–1300 m. 2018-07-15, Bergmeier 18-585.

SAXIFRAGACEAE

Saxifraga paniculata Mill.

Mt. Triklario, 1700–1720 m. Limestone rock outcrops. 2018-07-11, Bergmeier 18-468.

Also in field notes by G. Fotiadis.

SCROPHULARIACEAE

Scrophularia laciniata Waldst. & Kit.

Lake Megali Prespa, SW of Psarades, near the Hermitage of Metamorfosis, 855 m. Shaded crevices of overhanging limestone cliffs. 2018-07-09, Bergmeier 18-368.

Not reported since Pavlides (1985: 252).

Verbascum chaixii Vill. subsp. **austriacum** (Roem. & Schult.) Hayek

Above Oxya, towards Agioneri, 1350 m. Wayside in beech forest. 2018-07-11, Bergmeier 18-446.

Verbascum speciosum Schrad. subsp. **speciosum**

2 km NE above Ag. Germanos, 1170 m. Wayside and valley, locally common. 2017-07-15, Bergmeier 17-548.

New for NC Greece. Also reported by Strid, in 2014-07-13, from near Andartiko, just outside PNP.

THYMELAEACEAE

Thymelaea passerina (L.) Coss. & Germ.

Pyxos, 1060 m. Barley field. 2018-07-10, Bergmeier 18-406.

First record since 1985-07-20: Stamatiadou 22885 (ATH), in about the same locality.

ULMACEAE

Ulmus glabra Huds.

Mt. Devas, E of summit, 1270 m. Mixed deciduous forest. 2019-06-10, Bergmeier 19-306.

First record since Pavlides (1985: 256).

URTICACEAE

Parietaria judaica L.

Above lakeshore of Megali Prespa, Giantsa, S of Cape Roti, 855 m. On limestone pebbles under an overhanging cliff. 2018-07-09, Bergmeier 18-386.

VALERIANACEAE

Valeriana officinalis L. subsp. **officinalis**

Between Mikrolimni and Karyes, 860 m. Irrigation ditch. 2018-06-11, Bergmeier 18-299.

First record since Pavlides (1985: 262).

Valerianella costata (Steven) Betcke

Lakeshore of Megali Prespa W of Laimos, 855 m. Wet sand. 2018-06-08, Bergmeier 18-202b. – Koula, Lakeshore of Megali Prespa, 855 m. Disturbed sand. 2019-06-07, Bergmeier 19-233.

Not found since Pavlides (1985: 262) who reported

it at about the same locality, “from the shores of Lake Megali Prespa”; his record, however, has been revised to *V. carinata* Loisel. (Strid & al. 2017: 265).

Valerianella dentata (L.) Pollich

S of Vrondero, 1080 m. Cereal field. 2017-06-11, Bergmeier 17-342.

Although often mistaken for related species and thus with limited evidence it may be concluded that populations in arable fields appear to decline in Greece. The species was tentatively assessed Near Threatened in the country (Bergmeier & Strid 2014).

VIOLACEAE

Viola tricolor L.

Near ruins of Sfika, 1175 m, fallow field. 2018-06-10, Bergmeier 18-261.

New for Greece. Reported for PNP by Pavlides (1985: 264) and by Willing 1998-07-297 (71327) and 1998-08-01 (71964, 72010) (all B), but it is not clear whether these refer to *V. tricolor* s. str. or to *Viola macedonica* Boiss. & Heldr. (*V. tricolor* subsp. *macedonica* (Boiss. & Heldr.) A. Schmidt; the latter is by far more common in the area. Excluded from the Greek flora by Dimopoulos & al. (2016: 321, 347) as, according to Erben (1985: 651), Greek records of *V. tricolor* in earlier floristic literature are referable to *V. macedonica*. The above collection differs from *V. macedonica* in its smaller corolla (incl. spur to 16 mm), shorter peduncles (to 7 cm) and non-tufted, mostly single-stemmed annual habit.

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