

## New floristic records in the Balkans: 12\*

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**Abstract:** New chorological data are presented for 102 species and subspecies from Bosnia and Herzegovina (records no. 63, 64, 69-72), Bulgaria (61, 62, 73-102), Greece (1-57), Montenegro (64, 70) and Turkey-in-Europe (58-60, 65-68). The taxa belong to the following families: *Adiantaceae* (37), *Agavaceae* (31), *Alismataceae* (90), *Amaranthaceae* (15, 16), *Amaryllidaceae* (32, 58-60), *Apiaceae* (1, 2, 17, 40, 41, 92), *Asclepiadaceae* (93), *Aspleniaceae* (38), *Asteraceae* (3-5, 18-21, 42, 83, 84, 94-99), *Boraginaceae* (69), *Brassicaceae* (43, 74), *Campanulaceae* (63), *Caryophyllaceae* (44, 75), *Chenopodiaceae* (45, 85, 86), *Crassulaceae* (6, 76-78), *Cucurbitaceae* (87), *Dipsacaceae* (7), *Ericaceae* (64), *Euphorbiaceae* (22, 100), *Fabaceae* (46, 61, 65-68, 70, 79, 88), *Gentianaceae* (62), *Grossulariaceae* (71), *Iridaceae* (72), *Juncaceae* (12, 91), *Lamiaceae* (80), *Liliaceae* s.l. (13, 33-35, 51-54), *Linaceae* (23, 81), *Nyctaginaceae* (24), *Ophioglossaceae* (39), *Orchidaceae* (55-57), *Oxalidaceae* (25), *Poaceae* (36, 102), *Portulacaceae* (26), *Primulaceae* (27, 47), *Ranunculaceae* (8, 48, 49), *Rosaceae* (9), *Sapindaceae* (89), *Scrophulariaceae* (10, 101) and *Solanaceae* (11, 28, 29), *Sparganiaceae* (14), *Urticaceae* (30), *Valerianaceae* (50), *Vitaceae* (82).

First reports for countries are: Montenegro – *Rhododendron hirsutum* (64).

The publication includes contributions by B. Biel & Kit Tan (1-14, 15-36), L. Chilton (37-57), F. Dane, G. Yılmaz & G. Dalgıç (58-60), T. Karakiev (61, 62), Đ. Milanović & V. Stevanović (63, 64), G. Savaş, G. Yılmaz, N. Başak & F. Dane (65-68), V. Stupar, Đ. Milanović, J. Brujić & V. Stevanović (69-72), K. Vassilev, V. Goranova & H. Pedashenko (73-82), V. Vladimirov (83-91), V. Vladimirov & A.S. Petrova (92-102).

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

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\* Reports for Bosnia and Herzegovina and Montenegro have been reviewed by V. Stevanović, for Bulgaria by V. Vladimirov, for Greece by Kit Tan and for Turkey-in-Europe by F. Dane.

## Reports 1-14

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

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This is the eleventh report of new plant-records for the island of Samothraki (N Aegean islands, Nomos Evrou, Eparchia Samothrakis) based on fieldwork carried out in June 2007, June and November 2008 as well as July 2009. The records listed are all new to the island, with a surprising number new to the floristic region N Aegean (NAe) as circumscribed in *Flora Hellenica* (Strid & Tan 1997) and some are even the first records for any Greek island. This indicates island floras in Greece have not been as thoroughly investigated as we had believed, and there are still discoveries to be made. Occurrence on the other N Aegean islands is also provided.

#### Apiaceae

##### 1. *Conium maculatum* L.

**Gr** Samothraki: E part of Profitis Ilias, road embankment near cemetery, 370 m, 40°25'56"N, 25°32'44"E, 21.07.2009, *Biel* 09.268.

New for the N Aegean islands. Apparently not recorded for any Aegean island with the exception of Lesbos and Kos in the E Aegean.

##### 2. *Falcaria vulgaris* Bernh.

**Gr** Samothraki: SW of Kamariotissa, grassy road embankment between fields, 10 m, 40°28'15"N, 25°27'45"E, 12.07.2009, *Biel* 09.127.

New for the N Aegean islands and apparently the first record for the Greek islands. Rare and scattered in Greece.

#### Asteraceae

##### 3. *Centaurea diffusa* Lam.

**Gr** Samothraki: E-NE of Palaeopolis, shrubby coastal road margins, 10 m, 40°30'16"N, 25°32'19"E, 19.07.2009, *Biel* 09.245.

New for Samothraki. Recorded from Thasos in the N Aegean, otherwise new for the Greek islands.

##### 4. *Pulicaria odora* (L.) Rchb.

**Gr** Samothraki: E of Alonia, slope with some fruit trees, 190 m, 40°27'58"N, 25°31'24"E, 16.07.2009, *Biel* 09.202; E part of Profitis Ilias, wet and damp

places by open water channel, 370 m, 40°26'01"N, 25°32'50"E, 21.07.2009, *Biel* 09.272.

New for N Aegean islands.

##### 5. *Sonchus asper* (L.) Hill subsp. *asper*

**Gr** Samothraki: SW of Kamariotissa, margins of seasonal pool behind coastal walls, 4 m, 40°27'38"N, 25°27'30"E, 12.07.2009, *Biel* 09.124.

New for the N Aegean islands.

#### Crassulaceae

##### 6. *Sedum dasyphyllum* L. (Fig. 1)

**Gr** Samothraki: E-SE of Chora (Samothraki), rock ledges by small stream, on schist and porphyry, 950 m, 40°27'57"N, 25°33'46"E, 11.06.2008, *Biel* 08.133.

Distinct by its pink or glaucous, fleshy, obtusely rounded leaves. Occurring in mountains of mainland Greece and N Peloponnisos from (600-)1000 to 2400 m. New for Samothraki; recorded from Thasos in the N Aegean, otherwise new for the Greek islands.



Fig. 1. *Sedum dasyphyllum* (photo B. Biel).

#### Dipsacaceae

##### 7. *Cephalaria transsylvanica* (L.) Roem. & Schult.

**Gr** Samothraki: NE of Kamariotissa, road embankment with *Quercus*, 15 m, 40°29'15"N, 25°29'14"E, 12.07.2009, *Biel* 09.134.

Confirming literature record by Katsikopoulos (1936), otherwise new for the N Aegean islands. Widespread on mainland Greece.

#### Ranunculaceae

##### 8. *Garidella nigellastrum* L.

**Gr** Samothraki: SW of Kamariotissa, in open

phrygana on coastal limestone slope, 10 m, 40°28'13"N, 25°27'31"E, 25.06.2007, *Biel* 07.238; SW of Kamariotissa, open phrygana on coastal limestone slope, 18 m, 40°28'03"N, 25°27'35"E, 16.07.2009, *Biel* 09.187.

New for the N Aegean islands. These are apparently the northernmost occurrences in Greece being further north than currently known localities at 37°30'N.

#### Rosaceae

##### 9. *Sorbus umbellata* (Desf.) Fritsch

**Gr** Samothraki: W of Anomeria-Isomata, rocky slopes at upper reaches of the Fonias river, on granite, 600 m, 40°27'49"N, 25°37'41"E, 18.07.2009, *Biel* 09.226 (det. *L. Meierott*, Gerbrunn, Germany).

A small tree (in fruit) and one shrub (vegetative) were discovered on the rock walls above the river. Other plants in the vicinity are *Alnus glutinosa*, *Fraxinus ornus*, *Asplenium adiantum-nigrum*, *Athyrium filix-femina*, *Campanula ramosissima*, *Mycelis muralis*, *Symphyandra samothracica* and *Festuca* sp., etc. New for the N Aegean islands; the species has also been recorded from Chios and Samos in the E Aegean.

#### Scrophulariaceae

##### 10. *Veronica beccabunga* L.

**Gr** Samothraki: SW of Kamariotissa, damp place, 4 m, 40°28'16"N, 25°27'49"E, 11.07.2009, *Biel* 09.114.

New to Samothraki. Recorded from Thasos in the N Aegean. Apparently not recorded for other Aegean islands except Lesvos (E Aegean) and Naxos (Kyklades).

#### Solanaceae

##### 11. *Solanum dulcamara* L.

**Gr** Samothraki: Alonia, stream banks with *Alnus*, 130 m, 40°27'49"N, 25°31'00"E, 16.07.2009, *Biel* 09.200.

Widespread weed recorded from mainland, N and C Peloponnisos. New for Samothraki; recorded from Thasos and Limnos in the N Aegean.

#### Juncaceae

##### 12. *Juncus conglomeratus* L.

**Gr** Samothraki: E-SE of Therma, margins of seasonal pool behind coastal wall, 2 m, 40°30'11"N, 25°36'48"E, 15.07.2009, *Biel* 09.176.

Mainly in the northern part of Greece. New for the N Aegean area and apparently a first report from the islands.

#### Liliaceae s.l.

##### 13. *Allium moschatum* L. (Fig. 2)

**Gr** Samothraki: E-NE of Pachia Ammos, granite rock crevices of steep coastal slope, 90 m, 40°23'42"N, 25°35'47"E, 02.11.2008, *Biel* 08.329 (identification confirmed by *D. Tzanoudakis*, Patras).

A few plants in fruit were collected. They flowered in cultivation at Höchberg during September 2009 and were photographed. New for the N Aegean islands and also for all Aegean islands. It has, however, been recorded from Kerkira (Ionian islands) by W. Gutermann, Vienna.



Fig. 2. *Allium moschatum* (photo B. Biel).

#### Sparganiaceae

##### 14. *Sparganium erectum* subsp. *neglectum* (Beeby) Schinz & Thell. (Figs. 3 & 4) (syn.: *S. neglectum* Beeby)

**Gr** Samothraki: N of Kato Karyotes, remnants of coastal alluvial forest with *Platanus*, 3 m, 40°30'31"N, 25°34'18"E, 25.06.2007, *Biel* 07.230 (identification provided by *P. Uotila*, Helsinki).

The fruits in *S. e.* subsp. *neglectum* are evenly tapered and yellowish (Fig. 3) and the staminate heads numerous (Fig. 4). In *S. e.* subsp. *microcarpum* the fruits are more abruptly tapering and greenish-black, and the staminate heads fewer in number. The species was first noted at a coastal lagoon E-SE of Therma at the mouth of the Fonias river; it has since spread rapidly. New for the N Aegean islands; for the





Fig. 3. *Sparganium erectum* subsp. *neglectum* – female (photo B. Biel).



Fig. 4. *Sparganium erectum* subsp. *neglectum* – male (photo B. Biel).

other Aegean islands, there are records from Lesbos and Kos (E Aegean). It is of scattered occurrence on the mainland, N Peloponnisos, W and C Crete.

All cited vouchers are provisionally kept in the private herbarium of B. Biel at Hochberg (herb. Biel).

## Reports 15-36

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

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This is the first report of new plant-records for the island of Chalki (E Aegean islands, Nomos Dodekanisou, Eparchia Rodou) based on a brief three-day visit in October 2009. The records listed are all new to the island but none are new to the floristic region E Aegean (EAe) as circumscribed in *Flora Hellenica* (Strid & Tan 1997), except *Chamaesyce nutans* which proved to be the third record for Greece. Presence of taxa on Rodos, the geographically nearest E Aegean island, is noted as

also occurrence on the other E Aegean islands. The first record of *Chamaesyce nutans* in the nomos of Lasithiou, eparchia Sitias is likewise reported, this is the second record for Crete.

### Amaranthaceae

#### 15. *Amaranthus deflexus* L.

**Gr** Chalki: Emborios, roadside slopes, ruderal places and waste land in village, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs.

This taxon has so far not been reported for Rodos although noted to occur on the E Aegean islands of Lesbos, Chios and Kos.

#### 16. *Amaranthus hybridus* L.

**Gr** Chalki: Emborios, road embankments, ruderal places in village, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs.

Also on Lesbos, Chios, Kalimnos and Kos but not recorded for Rodos.

### Apiaceae

#### 17. *Eryngium glomeratum* Lam.

**Gr** Chalki: W of Emborios, edge of dirt road with stone walls, in olive grove near the small chapel

of Ag. Fanourios, 40 m, 36°13'21"N, 27°35'55"E, 20.10.2009, *Biel* obs. (photo).

Common on Rodos in fields and roadsides, also on several E Aegean islands including Lesvos, Samos, Kalimnos, Kos and Simi. Although it has been collected on Nisos, the small island in the harbour of Chalki (Emborios), it has not been recorded from the main island itself.

#### Asteraceae

##### 18. *Carthamus boissieri* Halácsy

**Gr** Chalki: E of Chorio, at foot of high rock wall near Koukiali above road to Emborios, 100 m, 36°13'19"N, 27°35'43"E, 22.10.2009, *Biel* obs. (photo); N-NE of Emborios, *Coridothymus-Sarcopoterium* phrygana by road to Kania beach, 40 m, 36°13'53"N, 27°36'52"E, 22.10.2009, *Biel* obs.

Recorded from Rodos and Simi in the E Aegean area.

##### 19. *Conyza bonariensis* (L.) Cronquist

**Gr** Chalki: Emborios, road embankments, ruderal places in village, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs.

Common on Rodos and reported from nearly all E Aegean islands.

##### 20. *Conyza canadensis* (L.) Cronquist

**Gr** Chalki: Emborios, road embankments, ruderal places in village, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs.

Also on Rodos and the other E Aegean islands.

##### 21. *Dittrichia graveolens* (L.) Greuter (syn.: *Inula graveolens* (L.) Desf.)

**Gr** Chalki: E-SE of Chorio, rocky ridge with open

phrygana near chapel of Ag. Katerini, 210 m, 36°13'13"N, 27°35'18"E, 20.10.2009, *Biel* obs.

Common and widespread on all E Aegean islands. Occurring with *Asphodelus ramosus*, *Ballota acetabulosa*, *Delphinium staphisagria*, *Euphorbia characias*, *Euphorbia dendroides*, *Nicotiana glauca* (see following entries), *Origanum onites*, *Scilla autumnalis* and *Urginea maritima* (see following entries).

#### Euphorbiaceae

##### 22. *Chamaesyce nutans* (Lag.) Small (Figs. 5 & 6)

**Gr** Chalki: Emborios, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs. (Fig. 5).

— Nomos Lasithiou, eparchia Sitias: Sitias, 30 m, 35°12'36"N, 26°06'26"E, 12.10.2009, *Biel* obs. (Fig. 6).

This taxon, of scattered occurrence in the Mediterranean area, was reported from Crete fairly recently. The occurrence on Chalki is new for the E Aegean islands, and is the third record for Greece. The record from Crete is first for the eparchia of Sitias as well as for the nomos of Lasithi, and represents the second record for Crete, the first being that from nomos Irakliou and eparchia Padiados (Bergmeier 2007: 439).

#### Linaceae

##### 23. *Linum trigynum* L.

**Gr** Chalki: NE of Emborios near Acrocana, rocky slopes with *Coridothymus-Sarcopoterium* phrygana above coastal road, 15 m, 36°13'55"N, 27°37'14"E, 22.10.2009, *Biel* 09.005.

Together with two, as yet unidentified, species



Fig. 5. *Chamaesyce nutans* (photo B. Biel).



Fig. 6. *Chamaesyce nutans* (photo B. Biel).



of *Allium*. Recorded from Rodos and all major E Aegean islands.

#### Nyctaginaceae

##### 24. *Mirabilis jalapa* L.

**Gr** Chalki: Emborios, road embankments, ruderal places and waste land in village, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs.

Native to America, naturalized. On all larger E Aegean islands.

#### Oxalidaceae

##### 25. *Oxalis corniculata* L.

**Gr** Chalki: Emborios, roadside slopes and ruderal places in village, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs.

Not yet recorded from Rodos but on all other major E Aegean islands.

#### Portulacaceae

##### 26. *Portulaca oleracea* L.

**Gr** Chalki: Emborios, road embankments, ruderal places and waste land in village, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs.

On Rodos and all major E Aegean islands.

#### Primulaceae

##### 27. *Cyclamen persicum* Mill.

**Gr** Chalki: Emborios, beneath *Pinus*, uncultivated ground at southern outskirts of village, 20 m, 36°13'13"N, 27°36'44"E, 22.10.2009, *Biel* obs. (photo).

On nearby Rodos, Simi and Tilos, as well as Chios and Lipsi further north.

#### Solanaceae

##### 28. *Nicotiana glauca* Graham

**Gr** Chalki: E-SE of Chorio, rocky ridge with open phrygana near chapel of Ag. Katerini, 210 m, 36°13'13"N, 27°35'18"E, 20.10.2009, *Biel* obs.

Reported from Rodos by Boratyński & al. (1992: 162), on all major E Aegean islands.

##### 29. *Solanum nigrum* L.

**Gr** Chalki: Emborios, ruderal places and waste land in village, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs.

Widespread weed on all major E Aegean islands.

#### Urticaceae

##### 30. *Parietaria judaica* L.

**Gr** Chalki: Emborios, road embankments,

ruderal places and waste land in village, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs.

Common on waste ground in Rodos and all major E Aegean islands.

#### Agavaceae

##### 31. *Agave americana* L.

**Gr** Chalki: NW outskirts of Emborios, stony pasture with phrygana, 30 m, 36°13'24"N, 27°36'33"E, 20.10.2009, *Biel* obs. (photo).

Naturalized on Rodos, Simi, Kalimnos, Nisiros and Chios.

#### Amaryllidaceae

##### 32. *Sternbergia lutea* (L.) Ker Gawl. ex Spreng.

**Gr** Chalki: NE outskirts of Chorio, limestone rock ledges and slopes above dirt road, 200 m, 36°13'18"N, 27°35'08"E, 21.10.2009, *Biel* obs. (photo).

On Rodos and all major E Aegean islands.

#### Liliaceae s.l.

##### 33. *Colchicum macrophyllum* B.L. Burt

**Gr** Chalki: W of Emborios, edge of dirt road with stone walls, in olive grove near chapel of Ag. Fanourios, 40 m, 36°13'21"N, 27°35'55"E, 20.10.2009, *Biel* obs. (photo).

An autumn-flowering, mainly south Aegean species. It has been reported from Nisos, the small island in the harbour of Chalki (Emborios) but not from Chalki itself. Other E Aegean island records are Rodos, Simi and Kos, otherwise on Crete (from where the type was described) and Evvia.

##### 34. *Colchicum pusillum* Sieber (Fig. 7)

**Gr** Chalki: N of Chorio, rocky summit of Mt Meroighli, 600 m, 36°13'57"N, 27°35'05"E, 21.10.2009, *Biel* obs. (photos);



Fig. 7. *Colchicum pusillum* (photo B. Biel).

Autumn-flowering species. Together with *Sarcopoterium spinosum* and *Urginea maritima* (see following entry). Known from E Aegean islands of Rodos, Simi and Tilos.

**35. *Urginea maritima* (L.) Baker**

**Gr** Chalki: E-SE of Chorio, rocky ridge with open phrygana near chapel of Ag. Katerini, 210 m, 36°13'13"N, 27°35'18"E, 20.10.2009, *Biel* obs.; N of Chorio, rocky slopes and summit of Mt Meroighli, 550–600 m, 36°13'N, 27°35'E, 21.10.2009, *Biel* obs.

**Poaceae**

**36. *Setaria viridis* (L.) P. Beauv.**

**Gr** Chalki: Emborios, road embankments, ruderal and waste places in village, 20 m, 36°13'12"N, 27°36'44"E, 22.10.2009, *Biel* obs.

On Rodos, Lesvos, Chios and Samos.

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

## Reports 37-57

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Floristic notes are provided for 21 taxa recorded as new to the North Aegean Greek island of Thasos. Of these, *Lilium martagon*, *Polygonatum multiflorum* and *Thalictrum aquilegifolium* appear to be first records for any Greek island.

Thasos in the North Aegean is Greece's most northerly island, and – apart from its own little satellite islet Thasopoula – well isolated from the other Greek islands. It is roughly circular, and approximately 25 km across (ca. 385 km<sup>2</sup>). A semicircle of high mountains runs around the northeast quadrant of the island, with palisaded cliffs or steep slopes to the north and east, while much of the interior is a gentler incline sloping down to the southwest and cut by deep valleys. The highest point is Mt Ypsario (1204 m), composed of schist and non-calcareous substrates; the other distinct summits, from northwest to southeast, Tsetsos-Toumba (1105–1127 m) and Profitis Ilias (1107 m), are marble. The island has been famous since Roman times for its white marble exports. The main town and harbour is Limenas (also known as *Thasos Town*), directly opposite and 12 km from Keramoti port on the mainland, though the island

also has ferry and hydrofoil connections with Kavala, the provincial capital to the northwest.

Botanical visitors, from 1546 onward, included Belon, Hawkins, Dumont d'Urville, Grisebach, Bornmüller and Sintenis, Dimonie, Tedd, and Regel. Between 1941 and 1943 the Bulgarian botanists Stojanov & Kitanov (1950) visited the island and recorded extensively. A visit by a student group from the University of Copenhagen in May 1997, was detailed in Strid & Tan (1998: 52–63, 84–90), and resulted in 18 new records for Thasos. *Lathraea rhodopea* was included as a new record, but had already been recorded in 1909 by Dimonie (in Rechinger, 1943: 486). The Copenhagen group refound the endemic *Paronychia bornmuelleri* at Langades, southwest of Ypsario, not seen since the type collection there 96 years earlier (Sintenis & Bornmüller no. 631, 30 May 1891). *Geocaryum bornmuelleri*, similarly unseen since its type collection nearby (Sintenis & Bornmüller no. 654, 31 May 1891), has yet to be refound.

The present author visited the island in September–October 1996, May 1998, May 2000, September 2002, May 2004 and May 2008.

Although once largely covered by predominantly coniferous woodland – *Pinus halepensis* subsp. *brutia* at lower altitudes, *Pinus nigra* subsp. *nigra* and occasional *Abies xborisii-regis* at higher altitudes – forest fires in the 1980s and 1990s have denuded the landscape, reducing woodland to a small area in the north east of the island. A replacement evergreen scrub of *Erica-*Arbutus** or *Cistus* is developing in the burned areas. Patchy areas of open forest of *Juniperus excelsa* survive on the marble uplands of the centre of the island. The main deciduous tree in the lower altitude coniferous woodland is *Castanea sativa*, with *Platanus orientalis* in riparian situations, plus some *Carpinus orientalis*, *Fraxinus ornus*, *Ostrya carpinifolia*, *Quercus* spp., *Tilia tomentosa* and *Ulmus* spp. On the large, fertile, northeastern coastal plain between Skala Potamias and Khrysi Amoudia, a dwindling number of *Populus nigra* are reminders of the landscape before the increasingly rapid marshland drainage and development of holiday accommodation.

Of Thasos' three highest peaks, Profitis Ilias is perhaps the most interesting botanically. Most of the higher summit, its northeastern ridge towards Tsetsos-Toumba and its precipitous southern slopes are exposed and devoid of woodland, however the lower parts of its shaded, N-facing marble cliffs are shel-

tered by *Pinus nigra* woodland, with the following, previously recorded, species in evidence: *Acer monspessulanum*, *Alyssoides utriculata*, *Arabis bryoides*, *Arenaria filicaulis*, *Asplenium ruta-muraria*, *Asplenium trichomanes*, *Aubrieta deltoidea*, *Campanula jacquinii* subsp. *rumeliana*, *Cardamine graeca*, *Centaurea thasia* (incl. *C. ipsaria*), *Ceterach officinarum*, *Corydalis thasia*, *Cyclamen hederifolium*, *Geranium lucidum*, *Hypericum athoum*, *Inula aschersoniana*, *Laserpitium siler*, *Muscari neglectum*, *Primula veris* subsp. *columnae*, *Ranunculus thasius*, *Saxifraga hederacea*, *Saxifraga sempervivum*, *Scilla bifolia*, *Sedum album*, *Sedum dasyphyllum*, *Symphytum ottomanum*, *Taxus baccata* and *Thlaspi ochroleucum*.

The easternmost point of the cliffs is a prow-like corner, beyond which they swing back to the south-east around the barer, sun-baked south side of Profitis Ilias. On the south side the vegetation is much sparser, but includes: *Alyssum montanum*, *Astragalus angustifolius* subsp. *angustifolius*, *Cerastium decalvans* subsp. *glutinosum* (a Thasos endemic), *Coronilla valentina*, *Minuartia verna* subsp. *collina*, *Salvia argentea* and *Satureja cuneifolia*.

Of particular interest are a few tens of metres of northern cliff, near the eastern end, which have small populations of *Lilium martagon*, *Polygonatum multiflorum* and *Thalictrum aquilegifolium*, all not previously recorded for the island. It would appear that the rock here has higher levels of moisture than the rest of the northern cliff, possibly retaining more from the cloud and mist which frequently form around these cliffs.

On 25 May 2004, the author visited the northeast-facing cliffs at Kammenos Vrakhos, west of the church of Profitis Ilias Theologos. This is the southeastern end of the ridge that extends through Tsetsos-Toumba, Profitis Ilias and Ypsario. These are considerably more exposed and less shady than northeastern Profitis Ilias, and no *Lilium*, *Polygonatum* or *Thalictrum* could be found, although *Achillea ageratifolia* subsp. *aizoon*, which is apparently absent from Profitis Ilias, was there.

The following are new records for the Nomos of Kavala, Eparchia Thasou, in the phytogeographical region North Aegean (NAe) as circumscribed in Flora Hellenica (Strid & Tan 1997). Map references are given as 40°44'02"N, 24°42'42"E. Collection references to *Chilton s.n.* indicate specimens kept in the author's private herbarium. Cited photographs are kept in the author's private collection.

#### Adiantaceae

##### 37. *Anogramma leptophylla* (L.) Link

**Gr** Thasos: W of Panagia village, 40°44'02"N, 24°42'42"E, earth bank in open pine woodland, ca. 550 m, 22.05.2000, *Chilton* obs.; W of Potamia village, 40°43'00"N, 24°42'22"E, marble bank in open pine woodland, ca. 400 m, 02.05.2004, *Chilton* obs.; Theologos to Paleo Kastro, 40°39'36"N, 24°40'31"E, exposed marble bank, ca. 320 m, 28.05.2004, *Chilton* (photo); W of Skala Potamias, 40°42'24"N, 24°44'50"E, shaded low cliff in maquis, ca. 65 m, 13.05.2008, *Chilton* obs. Although flourishing in the few sites seen, this small fern is far less widespread than might be expected. New to Thasos.

#### Aspleniaceae

##### 38. *Phyllitis scolopendrium* (L.) Newman

**Gr** Thasos: E of Panagia village, between Margarites Pigadia/Drakotripa cave and steep concrete road to Khrysi Amoudia, 40°44'01"N, 24°43'52"E, growing with *Equisetum telmateia* alongside small artificial water channel, ca. 160 m, 19.05.2004, *Chilton* (photo).

Only a few plants were seen. Neither the *Phyllitis* nor the *Equisetum* were recorded by Stojanov & Kitanov (1950), who visited Drakotripa on 04.04.1942. A comparison of the today's dense, jungle-like, vegetation, with the list of species from over sixty years ago, suggests the locality is now far more overgrown and humid than it then was, however there are a number of springs in the area producing high volumes of water and shady, eroded, waterside rock niches suitable for pteridophytes. The *Phyllitis* here may represent an overlooked species of restricted habitat, a recent natural arrival, or an escape from cultivation in Panagia village above. New to Thasos.

#### Ophioglossaceae

##### 39. *Ophioglossum vulgatum* L.

**Gr** Thasos: upper Kaminorema valley, waterfall to northeast of Paleo Kastro village, streamside with *Platanus orientalis* and *Listera ovata*, 40°40'41"N, 24°40'51"E, ca. 410 m, 28.05.2004, *Chilton* (photo).

There were a few plants below the waterfall and a larger number along the streamside above the waterfall, where there was still plenty of water at the end of May. The streamside *Platanus* and pine



woodland of the upper Kaminorema valley have escaped recent fires, and the area seems to have been little explored botanically. New to Thasos.

#### Apiaceae

**40. *Chaerophyllum temulum* L.** (syn.: *C. temulentum* L.)

**Gr** Thasos: W of Potamia, 40°43'06"N, 24°42'58"E, in hedges alongside concrete road, ca. 180 m, 21.05.2000; *ibid.*, 26.05.2004, *Chilton* (photo); *ibid.*, May 2008.

The species is fairly common in the valley west of Potamia, but not elsewhere, so may represent a recent arrival. Recorded from Samothraki by Biel & Tan (2007). New to Thasos.

**41. *Pseudorhiza daucooides* Grande**

**Gr** Thasos: Khrysi Amoudia, beach near campsite, 40°43'29"N, 24°45'28"E, sea-level, 15.05.2008, *Chilton* (photo).

New to Thasos.

#### Asteraceae

**42. *Achillea pannonica* Scheele**

**Gr** Thasos: ridge between Panagia and Potamia, 40°43'33"N, 24°43'39"E, among low shrubs in open area (old firebreak), ca. 360 m, 23.05.2000, *Chilton* s.n.

I looked for but was unable to find this plant in September 2002 or May 2004. Its brief presence suggests an isolated, short-lived naturalisation. New to Thasos.

#### Brassicaceae

**43. *Hesperis laciniata* All. subsp. *laciniata***

**Gr** Thasos: S of Mt Profitis Ilias, 40°43'33"N, 24°41'54"E, among low shrubs in open sunny area at foot of S-facing cliffs, and on cliff ledges, ca. 970 m, 21.05.2000, *Chilton* s.n.; *ibid.*, 20.05.2004, *Chilton* (photo); *ibid.*, 18.05.2008, *Chilton* (photo).

Not recorded for Thasos in Strid & Tan (2002: maps 984-985), although present on the mainland to the north and northwest, and on Mt Athos. At Profitis Ilias this plant is confined to the exposed, sunny, south-facing cliffs. New to Thasos.

#### Caryophyllaceae

**44. *Velezia rigida* L.**

**Gr** Thasos: dirt road above Khrysi Amoudia, 40°43'54"N, 24°44'55"E, ca. 200 m, 27.05.2004,

*Chilton* (photo); dirt road above Khrysi Amoudia, 40°44'00"N, 24°45'14"E, in abundance amongst grassy vegetation, ca. 200 m, 14.05.2008, *Chilton* obs.

Not recorded for Thasos in Strid & Tan (1997, map 721). Not seen elsewhere on Thasos by the author, but the plants are small and easily overlooked. New to Thasos.

#### Chenopodiaceae

**45. *Chenopodium vulvaria* L.**

**Gr** Thasos: roadside east of Khrysi Amoudia, near Irene Apartments, 40°41'01"N, 24°45'58"E, bare, sandy ground, ca. 25 m, 12.05.2008, *Chilton* obs. New to Thasos.

#### Fabaceae

**46. *Ononis reclinata* L.**

**Gr** Thasos: Aliko marble quarry, 40°36'07"N 24°44'25"E, 10 m, 21.05.2000, coll. A. Andrews, det. *Chilton*, *Chilton* s.n.

New to Thasos.

#### Primulaceae

**47. *Lysimachia nummularia* L.**

**Gr** Thasos: Khrysi Amoudia, 40°43'23"N, 24°45'16"E, roadside ditch alongside road to Skala Potamias, ca. 5 m, 05.1998; *ibid.*, 05.2000; *ibid.*, 21.05.2008, *Chilton* (photo).

Only seen at this site. This species is occasionally cultivated as an ornamental on Thasos, so it is possible that these occurrences do not represent native plants. None was seen in 2004, though it was in 2008, but it must be vulnerable to the drainage and destruction of this wetland. New to Thasos.

#### Ranunculaceae

**48. *Ranunculus ophioglossifolius* Vill.**

**Gr** Thasos: Khrysi Amoudia, 40°43'35"N, 24°45'19"E, marsh, ca. 2 m, 09.05.1998; *ibid.*, 18.05.2000, *Chilton* obs.

Not recorded for Thasos in Strid & Tan (2002: map 828). This site has now been mostly destroyed by building work. I have not found the plant in potential habitats elsewhere and it may now be extinct on the island. New to Thasos.

**49. *Thalictrum aquilegifolium* L.**

**Gr** Thasos: NE of Mt Dio Kefali, 40°44'11"N, 24°40'56"E, damp, shaded overhang in woodland stream gully, ca. 700m, 22.05.2000, *Chilton* s.n.;

NE of Mt Dio Kefali near "7A/7B" markings on dirt track, 40°44'14"N, 24°40'52"E, shady woodland stream gully, ca. 700 m, 22.05.2000, *Chilton* obs.; NE of Mt Profitis Ilias, 40°43'35"N, 24°41'51"E, damp N-facing cliffs, ca. 1000 m, 20.05.2004, *Chilton* obs.

Not recorded for Thasos in Strid & Tan (2002: map 850) – the nearest sites indicated are in the Rodopi mountains of the mainland to the north. At the first Dio Kefali site, the *Thalictrum* grows with *Polygonatum multiflorum*, as it does on Profitis Ilias. It is surprising this conspicuous species was not recorded by Stojanov & Kitanov (1950). New to the Greek Islands.

#### Valerianaceae

##### 50. *Valerianella eriocarpa* Desv.

**Gr** Thasos: W of Khrysi Amoudia, 40°43'29"N, 24°45'06"E, abandoned field, 5 m, 13.05.2008, coll. R. George, det. *Chilton*, *Chilton s.n.*

New to Thasos.

#### Liliaceae s.l.

##### 51. *Allium roseum* L.

**Gr** Thasos: Khrysi Amoudia, 40°42'39"N, 24°44'35"E, grassy vegetation beside dirt track, 13.05.2008, *Chilton* obs.

New to Thasos.

##### 52. *Allium sphaerocephalon* L. subsp. *sphaerocephalon*

**Gr** Thasos: road from Panagia village to Khrysi Amoudia, 40°43'31"N, 24°44'50"E, grassy roadside verge, ca. 15 m, 20.05.2000, *Chilton* obs.; Skala Potamias, 40°42'39"N, 24°45'12"E, dirt road alongside concrete-walled flood channel, ca. 10 m, 24.05.2004, *Chilton* (photo).

New to Thasos.

##### 53. *Lilium martagon* L.

**Gr** Thasos: NE of Mt Profitis Ilias, 40°43'35"N, 24°41'51"E, inaccessible ledges on damp N-facing cliffs, ca. 1000 m, 21.05.2000; *ibid.*, 20.05.2004, *Chilton* (photo); E of Mt Profitis Ilias, 40°43'33"N, 24°41'53"E, single plant in shaded gully in SE-facing cliff, ca. 980 m, 18.05.2008, *Chilton* obs.

At Profitis Ilias this plant is almost entirely confined to rock pockets and ledges in a short length of the sheltered, shady N-facing cliffs, where it grows with *Laserpitium siler*, *Polygonatum multiflorum*, and *Thalictrum aquilegifolium*. It was first seen as a

few large, chasmophytic individuals, ca. 60 cm tall, in tight bud in May 2000. An already broken-off stem was collected and its identity later confirmed by Dr Keith Allen. In September 2002, no evidence of any plants could be seen. In May 2004, a few smaller chasmophytes, and two flowering-size plants (though the top parts broken/eaten off), were seen, plus one plant in bud high on the cliff. A few, 2-4-leaved, young plants were observed at the foot of the cliff on 20.05.2004; these had gone and much of the surrounding vegetation had been grazed and trampled by sheep, on 26.05.2004. Presumably flowering occurs in June, and must sometimes be completed successfully, judging by the presence of a few young plants – although grazing (and mechanical damage to the flower spike) appear to be a severe constraint. I have searched in other potential sites unsuccessfully for this plant, but it seems that the precise ecological niche combination of shade, moisture and inaccessibility is a rare one. If this is the island's only site for *Lilium martagon*, then Thasos's tiny population must be at risk. A curious observation is that in May 2000, when the original specimen bud spike was in Skala Potamias, two local persons separately referred to this as a "peony". I have been unable to confirm Dimonie's record (Rechinger 1943: 177) of a *Paeonia* species ("*P. officinalis* L. var. *banatica* (Rochel) Hayek"), on Thasos, despite searching for it. *Paeonia peregrina* is recorded for Thasos in Strid & Tan (2002: 77, map 854). New to the Greek Islands

##### 54. *Polygonatum multiflorum* (L.) All.

**Gr** Thasos: NE of Mt Profitis Ilias, 40°43'35"N, 24°41'51"E, inaccessible ledges on damp N-facing cliffs, ca. 1000 m, 21.05.2000, *Chilton s.n.*; *ibid.*, 20.05.2004, *Chilton* (photo); *ibid.*, 17.05.2008, *Chilton* (photo); steep hillside NE of Mt Dio Kefali, 40°44'11"N, 24°40'56"E, damp, shaded overhang in stream gully, ca. 700 m, 22.05.2000, S. Swindells, det. *Chilton* (photo).

At the Dio Kefali site, the *Polygonatum* grows with *Thalictrum aquilegifolium*, as it does at Profitis Ilias. On Profitis Ilias there is one small colony, plus a few scattered individuals. New to the Greek Islands.

#### Orchidaceae

##### 55. *Cephalanthera rubra* (L.) Rich.

**Gr** Thasos: SE of Potamia village, 40°42'N, 24°44'E, shady abandoned dirt track, under pine trees

with minimal ground cover vegetation, *ca.* 110 m, 21.05.2004; *ibid.*, 24.05.2004, H. Shipton, det. Chilton (photo); *ibid.*, 17.05.2008, Chilton (photo); Kaminorema valley, NE of Paleo Kastro village, 40°40'N, 24°40'E, pine woodland, with minimal ground cover vegetation, *ca.* 400 m, 28.05.2004, Chilton (photo); SE of Panagía, 40°43'N, 24°43'E, clearing in pine woodland, *ca.* 260 m, 21.05.2008, A. Hoaksey (photo).

At the Potamia site in 2004, 16 plants were counted, of which 10 were in flower, despite the close proximity of a busy goat farm. Six flowering plants were counted at the Paleo Kastro site. Although plants were looked for elsewhere in the Potamia and Panagía valleys, none were seen – possibly due to an excess of ground cover plants. New to Thasos.

#### 56. *Platanthera chlorantha* Rchb.

**Gr** Thasos: SW of Potamia village, 40°42'43"N, 24°43'01"E, mixed woodland of *Pinus halepensis* subsp. *brutia* and *Castanea sativa*, *ca.* 350 m, 29.05.2004, Chilton (photo); Megalos Prinos (Megalo Kazaviti), one plant in woodland S of road, 05.1994, J.H.D. Hooper.

I have been unable to find any other confirmed records for this species for Thasos. The flowers of the plants at Potamia were the size of *P. chlorantha* but their green colour showed the possible influence of *P. holmboei*, which occurs in the Greek island of Lesbos and in Asia Minor.

#### 57. *Serapias bergonii* E.G. Camus

**Gr** Thasos: above Platanos beach, E of Khrysi Amoudia, 40°44'05"N, 24°46'22"E, grassy olive grove, *ca.* 15 m, 12.05.2008, Chilton obs.

New to Thasos.

The long palisade of cliffs, mainly marble, which stretches for nearly 7 km (from Kammenos Vrakhos through Ypsario, Profitis Ilias, Dio Kefali, and Toumba to Tsetsos) appears to be largely unexplored botanically. There are no asphalt roads near it, only long, poorly surfaced dirt roads, and the latter only approach the cliffs in a few places – namely below them at Kammenos Vrakhos and Dio Kefali, and above them at Ypsario, Dio Kefali and Toumba. Access to Toumba is restricted because of its array of telecommunications masts. There is a well-marked and well-used path up the gentler northwestern side of Ypsario, but accessing the base of its northern and eastern cliffs would involve a

very long steep ascent through pine woodland. The author has found on the Profitis Ilias cliffs three conspicuous species not previously recorded from Thasos, one of them apparently confined to the cliffs. Further exploration, in particular of the long stretch from Ypsario to Kammenos Vrakhos, ought to reveal more of interest.

There is probably little threat in the near future to the chasmophytic flora of Thasos, other than from being incidentally damaged by fire from nearby woodland. However, the wetland areas, of which Khrysi Amoudia had until recently some of the best examples, is probably the island's most threatened habitat. In addition to plants such as *Leucojum aestivum*, with viable populations probably now lost from both its Limenas and Khrysi Amoudia sites, these marshes are also home to scarce fauna. Fowles (2002) reported the presence of three whorl snail species from the *Equisetum telmateia* marsh near Limenas, all new to Thasos and two of them, *Vertigo angustior* and *V. moulinsiana* rare throughout Europe, and included on Annex II of the EC Habitats Directive (Council Directive 92/43/EEC). The remaining wetlands of Khrysi Amoudia are likely to be drained and developed for tourist facilities; those at Limenas are being covered with – or having their water supplies disrupted by – the tipping of discarded marble waste.

The developing tourism at Khrysi Amoudia may also be a threat to the cave-cricket, *Dolichopoda thasosensis* (*Rhaphidophoridae*), described in 1964, which is endemic to the nearby Drakotripa cave below Panagia. This insect, like many highly specialized cave endemics, is likely to be very vulnerable to disturbance of its habitat. A similar cave-cricket has been found in 2008 by the author in the small church of Agios Nikolaos above Potamia, and may represent the same species.

Illustrations relating to many of the taxa in the text can be seen at the author's website [www.marengowalks.com/newspp.html](http://www.marengowalks.com/newspp.html)

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## Reports 58-60

### Feruzan Dane, Gülden Yılmaz & Güler Dalgıç

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#### Amaryllidaceae

##### 58. *Galanthus elwesii* Hook. f.

- Tu(E)** A1(E) Edirne: Center, 26 m, 41°40'28"N, 26°33'39"E, 22.03.1992, coll. & det. *G. Dalgıç* (EDTU 4749); Sarayakpinar village, 135 m, 41°46'39"N, 26°28'51"E, 15.02.1992, coll. & det. *G. Dalgıç* (EDTU 4753); Lalapasa: Hanlıyenice, 229 m, 41°52'00"N, 26°42'00"E, 04.03.1989, coll. & det. *N. Başak* (EDTU 3013).
- A1(E) Kirklareli: Center, 194 m, 41°43'54"N, 27°13'29"E, 02.03.1993, coll. & det. *G. Dalgıç* (EDTU 5576); Sogucak village, 316 m, 41°39'00"N, 27°39'00"E, 05.03.1993, coll. & det. *G. Dalgıç* (EDTU 5578).
- A1(E) Tekirdag: Saray, Kadıkoy village, 130 m, 41°26'15"N, 27°41'57"E, 24.02.1991, coll. & det. *G. Dalgıç* (EDTU 4756).
- New for A1(E) Edirne, Kirklareli and Tekirdag in the European Turkey. So far the species has been known from A1(E) Canakkale (Brickell 1984).

##### 59. *Galanthus gracilis* Čelak.

- Tu(E)** A1(E) Edirne: Center, Büyükismailce village, 118 m, 41°48'00"N, 26°29'00"E, 28.01.1994, coll. *G. Dalgıç*, *N. Başak*, *H. Ersoy* & *N. Güler*, det. *G. Dalgıç* (EDTU 5727).
- A1(E) Kirklareli: Sogucak village, 316 m, 41°39'00"N, 27°39'00"E, 09.03.1991, coll. & det. *G. Dalgıç* (EDTU 4757).
- New for A1(E) Edirne and Kirklareli in the European Turkey. So far the species has been known from A1(E) Tekirdag (Brickell 1984).

##### 60. *Galanthus nivalis* L. subsp. *nivalis*

- Tu(E)** A1(E) Edirne: Meric, 20 m, 41°11'22"N, 26°25'03"E, 25.02.1994, coll. *G. Dalgıç* & *N. Başak* (EDTU 5733); Havsa: Kuleli village, 65 m, 41°33'01"N, 26°49'13"E, 03.03.1994, coll. *B. Guven* (EDTU 5741).
- A1(E) Kirklareli: Center, Sogucak village, 316 m, 41°39'00"N, 27°39'00"E, 20.03.1993, coll. & det. *G. Dalgıç* (EDTU 5615); Vize: 186 m, 41°34'21"N, 27°45'57"E, 07.03.1992, coll. & det. *G. Dalgıç* (EDTU 4760); Demirköy: around Saka lake,

244 m, 41°49'17"N, 27°45'38"E, 07.03.1992, coll. & det. *G. Dalgıç* (EDTU 5306).

New for A1(E) Edirne and Kirklareli in the European Turkey. So far the species has been known from A2(E) Istanbul (Brickell 1984).

## Reports 61-62

### Todor Karakiev

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#### Fabaceae

##### 61. *Coronilla emerus* subsp. *emeroides* (Boiss. & Spruner) Hayek

- Bu** Balkan Range (*Western*): on S-facing calcareous rocks, in a little valley W of Breze village, FN-86, 500 m, 29.06.2009, coll. *T. Karakiev* (SOM 165166).

New for this floristic subregion.

#### Gentianaceae

##### 62. *Gentianella ciliata* (L.) Borkh.

- Bu** Mt. Slavianka: in herbaceous calcareous areas, in a forest of *Pinus heldreichii*, on the left side of Parilski Dol, GL-29, 1600 m, 28.09.2009, coll. *T. Karakiev* (SOM 165164).

New for this floristic region.

## Reports 63-64

### Đorđije Milanović<sup>1</sup> & Vladimir Stevanović<sup>2</sup>

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#### Campanulaceae

##### 63. *Adenophora lilifolia* (L.) Ledeb. ex A. DC.

- BH** Drina valley, Bastasi locality, ca. 300 m upstream from the confluence of the rivers Sutjeska and Drina, on river bank, 420 m, 43°22'09"N, 18°47'40"E, 10.08.2006, coll. *J. Vilimonović* (private collection of Đ. Milanović no. 26/35/06).

*Adenophora lilifolia* is distributed mainly in C and E Europe, reaching southward to N Italy and W Balkans. On the Balkan Peninsula it is distributed in Croatia, Bosnia and Herzegovina, Montenegro and

Serbia, where lies the SE border of its range (Fig. 8), It is particularly common along the Tara and Drina river valleys, in canyons and gorges in Montenegro and W Serbia. The eastern limits of its distribution in the Balkans runs in river Ibar valley in SW Serbia (Stevanović & Lakušić 1999).

It is a very rare plant in Bosnia and Herzegovina, recorded only in a few localities: the valley of river Unac (Fiala in Beck & al. 1983), Salkine Stijene – Koprivnica (Beck & al. 1983), the valley of river Rakitnica in the vicinity of Konjic, and near the village Dubočani (Beck & al. 1983), on Mt Visočica (Maly in Beck & al. 1983), in the canyon of river Lim, 2-3 km upstream from its confluence with river Drina (Redžić & Šoljan 1988), and on the right bank of river Drina, 2 km downstream from the inflow of river Lim (Redžić & Šoljan 1988). This new record is a link between the places found in the river Tara canyon and the northern records from the outflow of river Lim into river Drina.

#### Ericaceae

#### 64. *Rhododendron hirsutum* L.

**BH** Mt Maglić, boundary ridge on the northern side of mountain, steep rocky slopes, *Pinetum mughi*, ca. 1950 m, 43°17'03"N, 18°44'30"E, 10.07.2008, coll. Đ. Milanović (no. 12/07/08), Fig. 9.

**Cg** Mt Maglić, Konj locality, on limestone cliffs and steep rocky slopes, ca. 1920 m, 43°16'47"N, 18°44'40"E, 10.07.2008, coll. Đ. Milanović (no. 12/06/08).

The species is widely distributed in the calcareous and dolomitic regions of the Alps, stretching eastward to the Dinaric Alps in Croatia and Bosnia and Herzegovina. In the Balkans it is distributed in the western part of the Peninsula, with numerous localities in W Croatia: Velebit, Risnjak, Velika Kapela, Gorski Kotar, Plješevica Mts (Fig. 10). Only two separate localities in Bosnia and Herzegovina are known: Mt Vranica (Murbeck in Beck & al. 1967) and Mt Maglić (Skoberne 1984). Maly's record from Mt Bjelašnica – Veliki Kotlovi locality – is incorrect in regard to *Arctostaphylos alpinus* (L.) Sprengel (Fukarek 1958).

In past several years of research on Mt Maglić, Peter Skoberne's record was confirmed and new species were discovered, some in scattered subalpine *Pinus mugho* communities on steep N-facing rocky slopes on both sides of BH-Mt boundary. The newly-

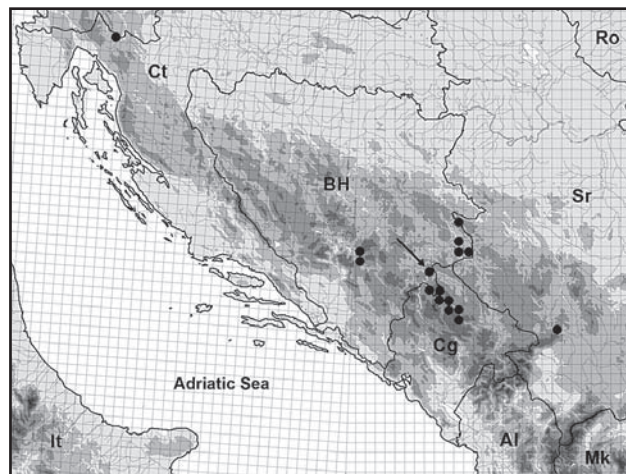


Fig. 8. Distribution of *Adenophora liliifolia* in the Balkans. The new locality in Bosnia and Herzegovina is indicated by an arrow.



Fig. 9. *Rhododendron hirsutum* in the easternmost locality of the species at Mt Maglić, which borders on Bosnia and Herzegovina and Montenegro (photo Đ. Milanović).

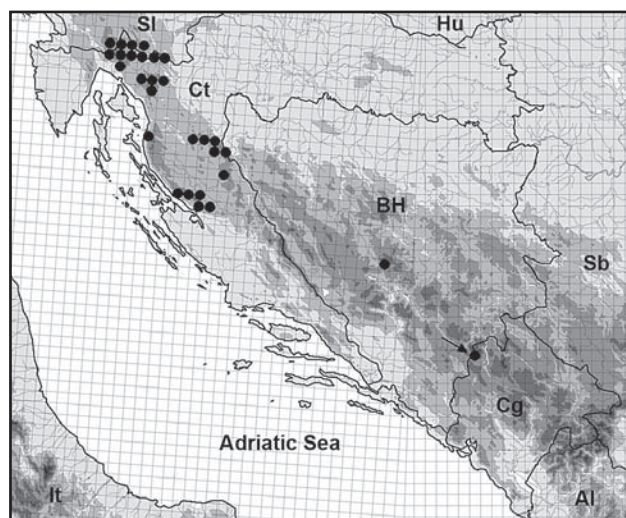


Fig. 10. Distribution of *Rhododendron hirsutum* in the Balkans. The locality at Mt Maglić is indicated by an arrow.



discovered localities are *ca.* 110 km southwestwards from Mt Vranica in C Bosnia and represent the easternmost and southernmost limits of the species range. New species for Montenegro.

Vouchers are kept in the private collection of Đ. Milanović.

## Reports 65-68

### Gülsemin Savaş, Gülden Yılmaz, Nesibe Başak & Feruzan Dane

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#### Fabaceae

#### 65. *Trifolium arvense* L. var. *arvense*

**Tu(E)** A1(E) Edirne: Center, Elcili village, 53 m, 41°27'04"N, 26°37'16"E, 07.06.1989, coll. *F. Dane & N. Polat* (EDTU 3314); Karaagac: Sogutluk, 23 m, 41°39'28"N, 26°31'25"E, 10.08.1998, coll. *F. Dane & S. Okan* (EDTU 3810); around Faculty of Medicine, 26 m, 41°40'28"N, 26°33'39"E, 20.05.1999, coll. *G. Savaş* (EDTU 7369); Kesan: Yerlisu village, 162 m, 40°44'00"N, 26°43'00"E, 22.05.1999, coll. *N. Başak & N. Guler* (EDTU 7455); Enez: Abdurrahim village, 40 m, 40°38'31"N, 26°15'25"E, 22.05.1999, coll. *G. Savaş* (EDTU 7409); Mecidiye, at the seaside, 0 m, 40°38'20"N, 26°32'14"E, 11.06.1997, coll. *N. Başak & N. Guler* (EDTU 7475); Suloglu: near a dam, 156 m, 41°46'02"N, 26°54'43"E, 28.05.1994, coll. *G. Dalgiç* (EDTU 5216); Demirhanli village, 123 m, 41°41'51"N, 26°44'24"E, 16.07.1999, coll. *G. Savaş* (EDTU 7420).

New for A1(E) Edirne. So far the species has been known from A1(E) Tekirdag and A2(E) Istanbul (Zohary 1970).

#### 66. *Trifolium cherleri* L.

**Tu(E)** A1(E) Edirne: Enez, Abdurrahim village, 40 m, 40°38'31"N, 26°15'25"E, 22.05.1999, coll. *G. Savaş* (EDTU 7410); Lalapasa, 172 m, 41°50'00"N, 26°44'00"E, 08.06.1999, coll. *N. Başak & N. Guler* (EDTU 7438); Suloglu: near dam, 156 m, 41°46'02"N, 26°54'43"E, 01.06.1999, coll. *N. Başak & N. Guler* (EDTU 7441).

New for A1(E) Edirne. So far the species has been known from A1(E) Tekirdag and A2(E) Istanbul (Zohary 1970).

#### 67. *Trifolium hirtum* All.

**Tu(E)** A1(E) Edirne: Center, around Faculty of Medicine, 26 m, 41°40'28"N, 26°33'39"E, 31.05.1988, coll. *F. Arslanoglu* (EDTU 2073); around Faculty of Education, 26 m, 41°40'28"N, 26°33'39"E, 16.05.1998, coll. *G. Savaş* (EDTU 7337); Havsa: near Sinit lake, 65 m, 41°33'01"N, 26°49'13"E, 20.05.1999, coll. *G. Savaş* (EDTU 7364); Kesan: Celebi village, 113 m, 40°40'00"N, 26°21'00"E, 22.05.1999, coll. *G. Savaş* (EDTU 7402); Yerlisu village, 162 m, 40°44'00"N, 26°43'00"E, 25.05.1999, coll. *N. Başak & N. Guler* (EDTU 7456); Enez: Abdurrahim village, 40 m, 40°38'31"N, 26°15'25"E, 22.05.1999, coll. *G. Savaş* (EDTU 7406); Lalapasa: Taslimusellim village, 193 m, 41°49'00"N, 26°47'00"E, 01.06.1987, coll. *G. Olgun, F. Dane, H. Arda & A. Asan* (EDTU 702).

New for A1(E) Edirne. So far the species has been known from A1(E) Tekirdag and A2(E) Istanbul (Zohary 1970).

#### 68. *Trifolium lappaceum* L.

**Tu(E)** A1(E) Edirne: Center, around Faculty of Education, 26 m, 41°40'28"N, 26°33'39"E, 28.05.2000, coll. *G. Savaş* (EDTU 7494); Kesan: Celebi village, 113 m, 40°40'00"N, 26°21'00"E, 22.05.1999, coll. *G. Savaş* (EDTU 7400); Enez: Mecidiye, 61 m, 40°38'20"N, 26°32'14"E, 26.05.1997, coll. *N. Başak & N. Guler* (EDTU 7465).

New for A1(E) Edirne. So far the species has been known from A1(E) Tekirdag and A2(E) Istanbul (Zohary 1970).

## Reports 69-72

### Vladimir Stupar<sup>1</sup>, Đorđije Milanović<sup>1</sup>, Jugoslav Brujić<sup>1</sup> & Vladimir Stevanović<sup>2</sup>

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#### Boraginaceae

#### 69. *Echium russicum* J.F. Gmel.

**BH** Mt Borja, Miljkovača Creek locality, at the bottom of the creek valley, on a peridotite-serpentine complex, 480 m, 44°33'27"N,



17°43'33"E, 10.05.2007, coll. V. Stupar (Herbarium Fac. Silv. 07/62); Mt Ozren, SW from Bosansko Petrovo selo, Maglajska Kosa locality, on steep serpentine slopes ca. 570 m, 06.09.2008, coll. Đ. Milanović (no. 10/25/08).

The Balkan section of the range of this Pontic species covers mainly C & E part of the Peninsula. It inhabits both serpentines and limestones. In C & W Serbia it is very common, but restricted on serpentine soils, while it is scattered in E Serbia, where it is restricted only to limestones (Fig. 11).

So far it has been known only from two localities in the vicinity of the eastern border between Bosnia and Herzegovina and Serbia (Mt. Varda near Rudo and Vardište near Višegrad). These localities are a continuation of the species range from the serpentine areas in W Serbia.

So far it has not been recorded in the serpentine areas of C Bosnia (Ritter-Studnička 1953, 1963). The new localities in C Bosnia are distant, situated at the westernmost limits of the species distribution in the Balkans and also restricted to serpentine habitats (Fig. 11). Populations are very small, only of few plants in both localities. This species is listed in Annex II of the EC Habitats Directive (Council Directive 92/43/EEC), as a species of Community Interest. According to IUCN Red List Categories and Criteria Version 3.1 (IUCN 2001), it is an Endangered species in Bosnia and Herzegovina (Šilić 1996).

#### Fabaceae

##### 70. *Vicia montenegrina* Rohlena

BH Mt Klekovača, Kraljeve Livade locality, ca. 1 km

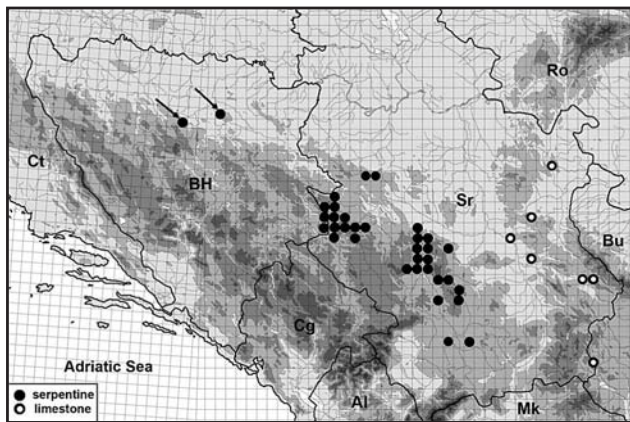


Fig. 11. Distribution of *Echium russicum* in Bosnia and Herzegovina and Serbia. The new westernmost records of the species in the Balkans are indicated by arrows.

N from the mountain top, at the bottom of the cirque, on moraine debris, 1660 m, 44°25'42"N, 16°31'05"E, 29.07.2007, coll. V. Stupar, Đ. Milanović, J. Brujić & J. Travar (Herbarium Fac. Silv. 06/354).

Cg Mt Maglić, Suva Jezerina locality, in the valley between Maglić and Volujak Mts, on moraine debris, 1360 m, 43°15'57"N, 18°43'15"E, 20.08.2008, coll. Đ. Milanović (no. 19/52/08).

This endemic plant of the west Balkan Peninsula is distributed mainly in Bosnia and Herzegovina and Montenegro, while its isolated easternmost locality is situated around Mavrovo – W Macedonia (Micevski 2001) (Fig. 12). It has been recorded in only few localities in Bosnia and Herzegovina (Mt Bokševica, Maly 1923), in the mountains near Sarajevo (Maly 1920; Bjelčić 1964/65), and in the canyon of river Rakitnica (Šilić 1972/73) and Mt. Šator (Šilić 1972/73). The presently reported new record lies ca. 35 km N-NW from the so far westernmost and northernmost locality on Mt Šator (Fig. 12).

#### Grossulariaceae

##### 71. *Ribes uva-crispa* L.

BH Mt. Klekovača, Klekovačka Kosa locality, NE slopes of Mt Klekovača, on limestone, 1305 m, 44°24'02"N, 16°34'08"E, 28.07.2006, coll. V. Stupar, Đ. Milanović, J. Brujić & J. Travar (Herbarium Fac. Silv. 06/338); Vođenica village, ca. 15 km W from Bos. Petrovac, Bakova Dolina locality, at the bottom of a karst sinkhole, on limestone, 620 m, 44°36'24"N, 16°15'32"E,

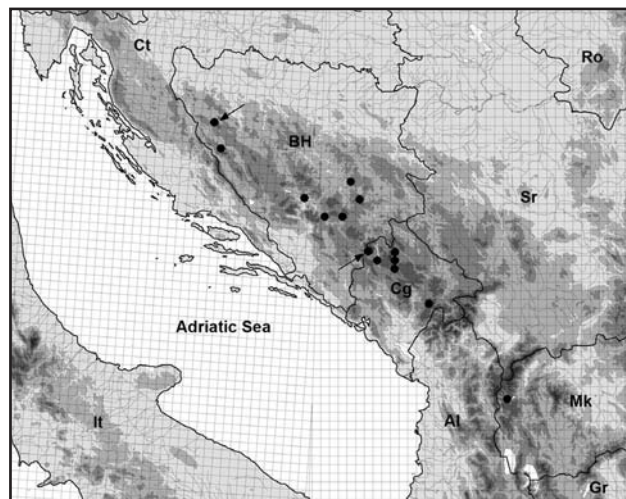


Fig. 12. Distribution of the endemic Dinaric species *Vicia montenegrina* in the Balkans. New records are indicated by arrows.

18.04.2007, coll. V. Stupar (Herbarium Fac. Silv. 07/42); Mt. Čemernica, locality „Žbanjić peak“, *Abio-Fagetum*, limestone, 1320 m, 44°29'52"N, 17°16'12"E, coll. J. Brujić & Đ. Milanović (Herbarium Fac. Silv. 09/346).

The species has been recorded in the mountain regions of C & SE Bosnia and Herzegovina (Beck-Mannagetta 1927). So far the westernmost localities of the species in Bosnia and Herzegovina have been in the mountains around Glamočko Polje karst field (Šilić 2005), ca. 65 km eastward from the newly-discovered location in Mt. Klekovača and around Bosanski Petrovac.

#### *Iridaceae*

##### 72. *Iris sibirica* L.

**BH** North slopes of Mt Klekovača, Kozila locality, in damp grassland on dolomite, 800 m, 44°28'59"N, 16°31'03"E, 03.06.2006, coll. V. Stupar, Đ. Milanović, J. Brujić & J. Travar (Herbarium Fac. Silv. Banja Luka 06/102) (Fig. 13).

This species is scattered across the Balkans, mainly restricted to mountain wetlands in W & C part of the Peninsula. It was known only from a few localities in Bosnia and Herzegovina (Mt Čvrstica (Šilić 2002), from Glamočko Polje karst field (Ritter-Studnička 1953), Livanjsko Polje karst field (Ritter-Studnička 1954), Mt Baba (Hawelka in Beck 1903), and the vicinities of Pale (Fiala in Beck 1903)). The new record represents the westernmost and northernmost locality in Bosnia and Herzegovina.



**Fig. 13.** *Iris sibirica* in a natural habitat at Mt Klekovača (photo V. Stupar).

## Reports 73-82

### Kiril Vassilev, Valentina Goranova & Hristo Pedashenko

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#### *Brassicaceae*

##### 74. *Camelina sativa* (L.) Crantz

**Bu** Valley of River Mesta: dry grasslands on the hill above the village of Beslen, Hadzhidimovo Municipality, Gotse Delchev district, GL-49, 04.05.2009, coll. V. Goranova & K. Vassilev, det. M. Ančev (SOM 165175).

This is a new species for the flora of the Valley of River Mesta. So far it has been reported only for North Bulgaria and the Valley of River Struma (*Northern*) (Assyov & Petrova 2006; Ančev 2007).

#### *Caryophyllaceae*

##### 75. *Silene roemerii* Friv.

**Bu** Valley of River Mesta: grasslands along river Mesta, between Bukovo and Filipovo villages, Gotse Delchev district, GM-22, 04.10.2009, coll. K. Vassilev, V. Goranova & H. Pedashenko (SOM 165169).  
— On the right-side bank of Mesta, S of Mesta village, Gotse Delchev district, 30.06.2004, coll. D. Stoyanov (SOM 161054).

This species has not been reported so far from this region.

#### *Crassulaceae*

##### 76. *Sedum annuum* L.

**Bu** Valley of River Mesta: in rocky places around the Momina Kula Restaurant, close to Bukovo village, Gotse Delchev district, GM-22, 13.06.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova (SOM 165173); along the road between Godeshevo and Tuhovishta villages, Hadzhidimovo Municipality, Gotse Delchev district, KF-59, 04.10.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova.

This species was found in two localities in the northernmost and southernmost parts of the region and it is new for the Valley of River Mesta.

##### 77. *Sempervivum leucanthum* Pančić

**Bu** Valley of River Mesta: in rocky places around the Momina Kula Restaurant, close to Bukovo village, Gotse Delchev district, GM-22, 13.06.2009, coll. H. Pedashenko, K. Vassilev & V. Goranova (SOM 165170).

*Sempervivum leucanthum* is a Bulgarian endemic species not very common in the country (Assyov & Petrova 2006; Petrova & Velchev 2006). It has not been reported so far for the Valley of River Mesta.

#### 78. *Umbilicus erectus* DC.

**Bu** Valley of River Mesta: in rocky places to the north-west of Banichan village, Gotse Delchev district, GM-21, 13.06.2009, coll. *H. Pedashenko, K. Vassilev & V. Goranova*, det. *S. Stoyanov* (SOM 165174).

First record for the species from the Valley of River Mesta.

#### Fabaceae

#### 79. *Amorpha fruticosa* L.

**Bu** Valley of River Mesta: on the riverbank of Mesta, between Baldevo and Gospodintsi villages, Gotse Delchev district, GM-21, 13.06.2009, coll. *H. Pedashenko, V. Goranova & K. Vassilev* (SOM 165171).

*Amorpha fruticosa* is an invasive species, with quick expansion in the country. It has not been reported so far for this floristic region.

#### Lamiaceae

#### 80. *Satureja cuneifolia* Ten.

**Bu** Valley of River Mesta: dry grasslands with rocky outcrops on the slopes above river Mesta at Beslen village, Hadzhidimovo Municipality, Gotse Delchev district, GL-49, 04.10.2009, coll. *H. Pedashenko, K. Vassilev & V. Goranova* (SOM 165167); between Koprivlen and Ilinden villages, GL-39, 04.10.2009, coll. *H. Pedashenko, K. Vassilev & V. Goranova*.

New species for this floristic region.

#### Linaceae

#### 81. *Linum hologynum* Rchb.

**Bu** Valley of River Mesta: on the slopes eastwards from the road between Sadovo village and Ilinden frontier checkpoint, Gotse Delchev district, GL-39, 12.06.2009, coll. *V. Goranova, H. Pedashenko & K. Vassilev* (SOM 165168).

The species has not been reported so far for the Valley of River Mesta. The reported locality lies in the westernmost part of the floristic region, at the border with the Pirin Mts (*Southern*) floristic region, where the species is already known (Assyov & Petrova 2006).

#### Vitaceae

#### 82. *Vitis sylvestris* C.C. Gmel.

**Bu** Valley of River Mesta: in scrubland along a dirt road between Beslen village and Mesta riverside,

Hadzhidimovo Municipality, Gotse Delchev district, GM-22, 12.06.2009, coll. *K. Vassilev, V. Goranova & H. Pedashenko* (SOM 165172).

New species for the Valley of River Mesta.

**Acknowledgements.** Fieldwork was partly financed under the Project B-1503/05 by the National Science Fund of the Ministry of Education and Science.

## Reports 83-91

### Vladimir Vladimirov

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All species listed below are alien for the Bulgarian flora.

#### Asteraceae

#### 83. *Bidens frondosus* L.

**Bu** Valley of River Struma (*Southern*): along river Strumeshnitsa (close to the road to Macedonia), ca. 2 km W of Strumeshnitsa village, 41.39602°N, 23.02677°E, 10.10.2009, coll. *V. Vladimirov* (SOM 165392), about one hundred specimens; in wet places along river Strumeshnitsa, ca. 0.5 km E of Strumeshnitsa village, 41.39598°N, 23.05338°E, 10.10.2009, coll. *V. Vladimirov* (SOM 165393, 165394), hundreds of specimens; along river Struma, near the bridge on the road from Petrich to Kulata, 41.41645°N, 23.31819°E, 10.10.2009, obs. *V. Vladimirov*, hundreds of specimens.

New for this floristic region.

#### 84. *Erigeron annuus* (L.) Pers.

**Bu** Valley of River Struma (*Northern*): along the road from Nevestino to Katrishte villages, Kyustendil district, 42°17'00.2"N, 22°49'41.5"E, 04.07.2009, coll. *V. Vladimirov* (SOM 165402).

— Valley of River Struma (*Southern*): along the road from Petrich to Strumeshnitsa village, 41°23'58.3"N, 23°04'27.6"E and 41°23'57.7"N, 23°04'17.7"E, 16.06.2009, coll. *V. Vladimirov* (SOM 165395, 165396, 165397), hundreds of specimens in both localities.

— Valley of River Mesta: along the road from Gotse Delchev to Bansko, ca. 1 km after Gospodintsi village, 41°39'44.0"N, 23°44'16.7"E, 22.06.2009, coll. *V. Vladimirov* (SOM 165398, 165399), several solitary plants.



- Rhodopi Mts (*Western*): along the road from the Batak Dam to Rakitovo, 48°58'04.1"N, 24°06'14.4"E, 30.06.2009, coll. V. Vladimirov (SOM 165400, 165401), several specimens.  
New for these floristic regions and subregions.

#### *Chenopodiaceae*

##### 85. *Chenopodium ambrosioides* L.

- Bu** Valley of River Struma: along river Struma, near the bridge on the road from Sandanski to Petrich, 41.48839°N, 23.26168°E, 09.10.2009, coll. V. Vladimirov (SOM 165403); on gravel along river Strumeshnitsa, ca. 0.5 km E of Strumeshnitsa village, 41.39598°N, 23.05338°E, 10.10.2009, coll. V. Vladimirov (SOM 165404).

New for this floristic region.

##### 86. *Chenopodium multifidum* L.

- Bu** Northeast Bulgaria: at railway station in Kardam village, Dobrich district, 43.75365°N, 28.11535°E, 26.08.2009, coll. V. Vladimirov (SOM 165405).

New for this floristic region. Other noted localities are: Black Sea Coast (*Northern*): at railway station in the city of Varna, 43.20098°N, 27.90023°E, 02.10.2009, coll. V. Vladimirov, A.S. Petrova & I. Yankov (SOM 165406); near the railway station in Ezerovo village, Varna district, 43.19885°N, 27.77019°E, 02.10.2009, coll. V. Vladimirov, A.S. Petrova & I. Yankov (SOM 165407, 165408); Valley of River Struma (*Southern*): on gravel along river Strumeshnitsa, ca. 0.5 km E of Strumeshnitsa village, 41.39598°N, 23.05338°E, 10.10.2009, coll. V. Vladimirov (SOM 165409).

#### *Cucurbitaceae*

##### 87. *Sicyos angulatus* L.

- Bu** Danubian Plain: along river Iskar, near the bridge on the road from Iskar village to Knezha, 43.45368°N, 24.22820°E, 28.08.2009, coll. V. Vladimirov (SOM 165414), many flowering and fruiting individuals.

Already reported from this floristic region (Tzonev 2005), from the Belene Island in the Danube River. However, this is the first record of the species from one of the tributaries to the Danube.

#### *Fabaceae*

##### 88. *Amorpha fruticosa* L.

- Bu** Valley of River Struma: ca. 2 km before Gabrene village, along the road from the Zlatarevo border checkpoint, 41°23'22.3"N, 22°58'17.2"E, 16.06.2009, coll. V. Vladimirov (SOM 165410).

- Pirin Mts (*Northern*): ca. 4 km from Dobrinishte village, along the road to Gotse Delchev, 41°49'07.0"N, 23°37'07.1"E, 20.06.2009, coll. V. Vladimirov (SOM 165411); planted and self-established plants.
- Pirin Mts (*Southern*): a few km off Nova Lovcha village, along the road to Gotse Delchev, 41°27'04.4"N, 23°44'08.6"E, 21.06.2009, coll. V. Vladimirov (SOM 165413). Planted and self-established plants.
- Rhodopi Mts (*Western*): near Ablanitsa village, several shrubs of different age scattered along the road to Valkosel village, 41°32'04.1"N, 23°56'35.1"E, 20.06.2009, obs. V. Vladimirov; along the road between Blatsko and Ablanitsa villages, 41°32'38.3"N, 23°54'33.9"E, 20.06.2009, coll. V. Vladimirov (SOM 165412). Planted and self-established plants in both sites.  
New for these floristic regions and subregions.

#### *Sapindaceae*

##### 89. *Koelreuteria paniculata* Laxm.

- Bu** Forebalkan (*Western*): ca. 1 km before Gorno Tserovene village, along the road from Beli Mel village, 43°23'56.3"N, 23°05'43.4"E, 04.05.2009, obs. V. Vladimirov.

New for this floristic region. Several fruiting trees (planted as ornamental) and hundreds of self-established young trees and seedlings were recorded.

#### *Alismataceae*

##### 90. *Sagittaria latifolia* Willd.

- Bu** Danubian Plain: along river Iskar, near the bridge on the road from Iskar village to Knezha, 43.45368°N, 24.22820°E, 28.08.2009, coll. V. Vladimirov (SOM 165415, 165416), a few groups of 1 to 15 m<sup>2</sup> each, comprising few to many individuals.  
New for this floristic region.

#### *Juncaceae*

##### 91. *Juncus tenuis* Willd.

- Bu** Rhodopi Mts (*Western*): in damp places on the shore of the Batak Dam, 41°56'27.7"N, 24°10'25.3"E, 30.06.2009, coll. V. Vladimirov (SOM 165417, 165418).  
New for this floristic region.

**Acknowledgements.** Financial support of the National Science Fund under Project DO-02-194 is gratefully acknowledged.

## Reports 92-102

### Vladimir Vladimirov<sup>1</sup> & Antoaneta S. Petrova<sup>2</sup>

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<sup>2</sup> Botanical Garden, Bulgarian Academy of Sciences, P.O. Box 664, 1000 Sofia, e-mail: petrovabotgar1@abv.bg

All species listed below are alien for the Bulgarian flora.

#### Apiaceae

##### 92. *Foeniculum vulgare* Mill.

- Bu** Balkan Range (*Eastern*): above Sotirya village, along the road to Sliven town, MH-52; 22.07.2009, groups of flowering plants, obs. V. Vladimirov & A.S. Petrova.
- Rhodopi Mts (*Western*): near Slashten village, along the road to Tuhovishta village, 41°29'56.1"N, 24°01'27.2"E, 20.06.2009, obs. V. Vladimirov, group of ca. 20-30 plants.

New for these floristic regions.

#### Asclepiadaceae

##### 93. *Asclepias syriaca* L.

- Bu** Forebalkan (*Eastern*): along the road from Yablanitsa to Pleven, at the end of Radomirtsi village, 43.25486°N, 24.18660°E, 01.10.2009, coll. A.S. Petrova & V. Vladimirov (SOM 165419).

New for this floristic region.

#### Asteraceae

##### 94. *Ambrosia artemisiifolia* L.

- Bu** Black Sea Coast (*Northern*): at railway station in the city of Varna, 43.20098°N, 27.90023°E, 02.10.2009, coll. V. Vladimirov, A.S. Petrova & I. Yankov (SOM 165388), many hundreds of specimens.
- Northeast Bulgaria: at railway station in Kardam village, Dobrich district, 43.75365°N, 28.11535°E, 26.08.2009, coll. V. Vladimirov (SOM 165382, 165383), several hundreds of specimens; at railway station in General Toshevo, Dobrich district, 43.70179°N, 28.03413°E, 26.08.2009, coll. V. Vladimirov (SOM 165384), several scores of specimens; at Razdelna shunting yard of the railway station, Varna district, 43.16748°N, 27.63644°E, 27.08.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165385), ca. 20 specimens; at railway station in Sindel village, Varna district, 43.12063°N, 27.59920°E, 27.08.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165386),

many hundreds of specimens; at railway station in Devnya town, Varna district, 43.21782°N, 27.59544°E, 27.08.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165387); along the Shumen – Varna motorway, near the fork to Neofit Rilski village, 43.25461°N, 27.49933°E, 21.08.2009, obs. V. Vladimirov, about a hundred specimens; along the railroad tracks near Yovkovo village, Dobrich district, 43.77004°N, 28.12511°E, 26.08.2009, obs. V. Vladimirov, several scores of specimens.

New for the Black Sea Coast and Northeast Bulgaria floristic regions. Other new localities are provided for the Danubian Plain and Znepole Region floristic regions from where the species has already been reported (Assyov & Petrova 2006; Vladimirov 2006b): Danubian Plain, on the bank of the Danube at Svishtov town, 43.62194°N, 25.35456°E, 01.10.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165389), hundreds of specimens; Znepole region, at railway station of Stanyantsi village, 43.04671°N, 22.92120°E, 13.08.2009, coll. V. Vladimirov & A. Petrova (SOM 165390, 165391), many hundreds of specimens.

##### 95. *Eclipta prostrata* (L.) L.

- Bu** Danubian Plain: on the bank of the Danube, ca. 2 km below the town of Belene, 43.63926°N, 25.15254°E, 01.10.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165420); on the bank of the Danube, between Belene and Svishtov towns, near the Svishtov Irrigation System, 43.64439°N, 25.23664°E, 01.10.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165421); on the bank of the Danube, near the harbour of Svishtov town, 43.62194°N, 25.35456°E, 01.10.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165422).

New for this floristic region.

##### 96. *Erigeron bonariensis* L.

- Bu** Black Sea Coast (*Northern*): along the railroad tracks at the railway station in the city of Varna, 43.2009°N, 27.90023°E, 02.10.2009, coll. V. Vladimirov, A.S. Petrova & I. Yankov (SOM 165423), a single plant found and collected to prevent establishment.

New for this floristic region. The earlier report (Vladimirov 2006a) of the species for this floristic region is incorrect and should be referred to *E. sumatrensis* Retz.

##### 97. *Helianthus tuberosus* L.

- Bu** Danubian Plain: on the margin of arable land and

forests along the road from Belene to Svishtov, 43.63449°N, 25.29641°E, 01.10.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165424), many hundreds of flowering specimens.

- Forebalkan (*Eastern*): on the banks of river Yantra in Veliko Tarnovo, LH-86, 03.10.2009, obs. V. Vladimirov, many hundreds of flowering specimens; along the road Yablanitsa – Pleven, before Radomiritsi village, KH-79, and in Rumyantsevo village, KH-68, 01.10.2009, obs. A.S. Petrova & V. Vladimirov.
- Thracian Lowland: sandy places along River Maritsa N of Zlokuchane village, Pazardzhik district, KG-67, 18.08.2009, with flowers, coll. A.S. Petrova (SOM 165337).

First records of the naturalised populations of the species for these floristic regions.

**98. *Matricaria discoidea* DC.** (syn.: *Chamomilla suaveolens* (Pursh) Rydb.)

- Bu** Balkan Range (*Eastern*): along the asphalt road in the Karandila locality, Sinite Kamani Nature Park, 42°42'54.7"N, 26°22'11.9"E, 22.07.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165426), several scores of flowering and fruiting individuals recorded.

New for this floristic region. Another noted locality is the Pirin Mts (*Northern*): in sandy places at the lowermost lift station (near Gotse Delchev shalet), above Dobrinishte village, 41°44'53.1"N, 23°33'16.0"E, 03.07.2009, coll. V. Vladimirov (SOM 165425), several hundred specimens.

**99. *Solidago gigantea* Aiton**

- Bu** Danubian Plain: on the bank of the Danube, ca. 2 km E of Belene town, 43.63926°N, 25.15254°E, 01.10.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165433, 165434); on the bank of the Danube, between Belene and Svishtov towns near the Svishtov Irrigation System, 43.64439°N, 25.23664°E, 01.10.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165435).
- Forebalkan (*Eastern*): along the road from Yablanitsa to Pleven, at the end of Radomiritsi village, 43.25486°N, 24.18660°E, 01.10.2009, coll. V. Vladimirov & A.S. Petrova (SOM 165432).
  - Znepole region: along river Nishava, near the bridge on the road in Kalotina village, 42°59'27.6"N, 22°51'48.9"E, 11.08.2009, coll. V. Vladimirov & A. Petrova (SOM 165429, 165430),

several groups of flowering plants; along the river and the road between Komshtitsa and Smolcha villages, 43.08039°N, 22.97803°E, 13.08.2009, coll. V. Vladimirov & A. Petrova (SOM 165431), a group of ca. 2 m<sup>2</sup>.

- Valley of River Struma (*Southern*): Gabrene village, in wet place along the road to Petrich, 41°22'06.6"N, 22°58'19.8"E, 16.06.2009, coll. V. Vladimirov (SOM 165427), two groups of plants of ca. 1 m<sup>2</sup> each.
- Valley of River Mesta: along the road from Bansko to Gotse Delchev, ca. 5 km before Gospodintsi village, 41°41'21.0"N, 23°42'44.1"E, 01.08.2009, coll. V. Vladimirov (SOM 165428), 12 groups of plants (each group with 10 to 30 flowering stems) were observed occupying a total area of ca. 20 m<sup>2</sup>.

New for these floristic regions.

**Euphorbiaceae**

**100. *Euphorbia nutans* Lag.**

- Bu** Black Sea Coast (*Northern*): along the railroad tracks at the railway station in Beloslav town, Varna district, 43.19861°N, 27.70403°E, 30.08.2009, coll. A.S. Petrova (SOM 165302) & 02.10.2009, coll. A.S. Petrova, V. Vladimirov & I. Yankov (SOM 165439, 165440, 165441).

New for this floristic region.

**Scrophulariaceae**

**101. *Lindernia dubia* (L.) Pennell**

- Bu** Valley of River Struma: on the right bank of river Struma, below the bridge on the road from Petrich to Kulata, 41.41645°N, 23.31819°E, 10.10.2009, coll. V. Vladimirov (SOM 165437), several scores of flowering and fruiting individuals.
- Rhodopi Mts (*Eastern*): close to river Arda, in an area of a rubble pit near Dolno Cherkovishte village, 41°37'20.9"N, 25°44'21.5"E, 15.08.2009, with flowers and young fruits, coll. A. S. Petrova (SOM 165325), a numerous population.

New for these floristic regions. Other localities noted were: Danubian Plain, on the bank of the Danube, above the ferry harbour complex near Vidin town, 44.00869°N, 22.93702°E, 21.09.2009, coll. V. Vladimirov (SOM 165436), several hundred of individuals; Thracian Lowland, sandy places along River Maritsa N of Zlokuchane village, Pazardzhik district, KG-67, 18.08.2009, with flowers, coll. A.S. Petrova (SOM 165232).



**Poaceae****102. *Paspalum paspalodes* (Michx.) Scribn.**

**Bu** Danubian Plain: on the bank of the Danube, near the harbour of Svishtov town, 43.62194°N, 25.35456°E, 01.10.2009, coll. A.S. Petrova & V. Vladimirov (SOM 165438).

New for this floristic region. So far known in Bulgaria from the floodplains of the larger rivers in the southern part of the country – the floristic regions of the Valley of River Struma, Rhodopi Mts (*Eastern*), Thracian Lowland, and Tundzha Hilly Country (Assyov & Petrova 2006). It was registered as recently spreading in the Serbian section of the Danube (Stevanović & al. 2004) and in Romania: the Danube delta and other regions in East Romania (Anastasiu & al. 2008) and Caras-Severin area (Oprea 2005).

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