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Authors: Barina, Zoltán, Rakaj, Marash, and Pifkó, Dániel

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ZOLTÁN BARINA[1*], MARASH RAKAJ[2] & DÁNIEL PIFKÓ[1]

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Abstract

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Altogether 70 taxa are discussed in this contribution towards a critical floristic checklist of the Albanian flora. Of these, 21 taxa are reported as new for the country based on the authors' own field observations and collected specimens and on the revision of relevant material in European herbaria; 17 taxa are deleted from the flora and the reasons for their deletion are provided; and 32 taxa are confirmed as occurring in Albania and/or their status is amended. Revised categories for the occurrence of 18 alien taxa are given. In agreement with Parnell, *Sempervivum jakucsii* is treated as conspecific with *S. ciliosum*.

Additional key words: alien, herbarium voucher, invasive, native, revision

Introduction

A number of papers on the Albanian flora, including floristic and taxonomic works, has been published in recent years, the most recent papers being those of Barina & Pifkó (2011), Barina & al. (2011), Meyer (2011), and Shuka & al. (2011). Up until now, a large number of new or revised floristic records has accumulated for Albania, and these have partly updated or supplemented the existing works on the flora (Demiri 1983; Paparisto & al. 1988; Qosja & al. 1992; Qosja & al. 1996; Vangjeli 2003; Vangjeli & al. 2000). The next step is the preparation of a critical checklist of the Albanian flora.

After revision of the published records and herbarium vouchers and field observations, the status of altogether 70 taxa in Albania has been ascertained. Of these, 21 taxa are added to the flora, 17 taxa are deleted from it, and 32 are confirmed as occurring and/or the status of their occurrence is amended.

Thirty-two of the taxa treated here prove to be native in Albania, of which 17 have not been previously reported from the country, whereas reports of the others have been recently treated as questionable or ambiguous and are now confirmed.

Eighteen taxa are treated here as aliens, of which 15 are introduced (naturalized or casual) and three others (*Bougainvillea glabra*, *Cardiospermum halicacabum*, and *Cynara cardunculus*) can be found in natural or semi-natural habitats apparently naturalized but in fact only as remnants of earlier plantings.

Altogether 17 species have been erroneously reported from Albania. Some of these were widely known (*Alnus*

1 Department of Botany, Hungarian Natural History Museum, H-1476 Budapest, P. O. Box 222, Hungary; *e-mail: barina@bot.nhmus.hu (author for correspondence).
2 Department of Biology, Faculty of Natural Sciences, University of Shkodra "Luigj Gurakuqi", Sheshi "2 Prilli". Shkoder, Albania.

cordata, *Ambrosia artemisiifolia,* and *Biscutella laevigata*), whereas most are based on few and little-known records.

Two subspecies (*Fraxinus angustifolia* subsp. *angustifolia* and *Tragopogon crocifolius* subsp. *crocifolius*) have no records from Albania, although the species to which they belong have been reported: all records in fact refer to other subspecies (*F. angustifolia* subsp. *oxycarpa* and *T. crocifolius* subsp. *samaritanii*, respectively).

One species, *Sempervivum jakucsii* Pénzes, was described from Albania. That it is conspecific with *S. ciliosum* Craib was recognized early (Parnell 1988) but did not become well known. Based on the characters and co-occurrence of the two entities, we agree with Parnell in treating *S. jakucsii* as a synonym of *S. ciliosum*.

It has been recognized that the earliest checklist on the Albanian flora by Ascherson & Kanitz (1877) was based on the work of Grimus (1871). Grimus travelled along the Adriatic coast from Dubrovnik (Ragusa) via Bar (Antivari) to Shkodër (Scutari) and included all the taxa collected on this trip in a paper with the title "Beiträge zur Flora Albaniens" (Grimus 1871). Even though the discussed taxa are all assigned to concrete localities, Ascherson and Kanitz apparently ignored this information and listed them all from Albania.

According to our recent revisions, misapplied names are excluded and the correct names of taxa are given. Based on morphological characters, the known Albanian *Sisyrinchium* populations are identified as *S. angustifolium*; the records of "*Helleborus viridis*" are assumed to refer to *H. odorus*, "*Hesperis inodora*" to a member of *H. matronalis* group, "*Asyneuma lobelioides*" to *A. anthericoides*, and "*Sedum forsterianum*" to a member of *Sedum* ser. *Rupestria*.

It has been recognized that many records listed for Albania in Prodromus florae Peninsulae Balcanicae (Hayek 1930), without later confirmations, have been included in Flora Europaea with a question mark. In Flora Europaea, some other taxa are also listed from Albania with a question mark if they are known from all the neighbouring areas but without records from Albania.

Material and methods

Four main groups of taxa will be discussed: (1) taxa, that have never been reported from Albania before or taxa with originally doubtful but now confirmed occurrences in Albania; (2) taxa with a status different from that previously established (e.g. listed as ornamental plants, but found also as native or introduced plants); (3) taxa with erroneous records from Albania (because of mislocations, misidentifications, etc.); and (4) taxa that, according to our results, cannot be maintained as separate species and should thus also be deleted from the Albanian flora.

Cited specimens are listed at the end of each taxon together with observations; those deposited in TIR (see below) and herb. Rakaj have no herbarium number. Due to the large number of duplicates in TIR, citation of one gathering may refer to more than one specimen.

Taxa already known from Albania are discussed, listing the previous records and opinions; then contradictions about the presence of taxa and any facts that confute or make their presence unlikely are given.

Investigations on type specimens, and possibly also on type localities and living specimens, have been carried out in order to ascertain the status of taxa so that we can propose an appropriate taxonomic treatment for them.

Herbarium abbreviations follow Holmgren & al. (1990). "TIR" refers to the herbarium of the University of Tirana, which is not listed in Index Herbariorum (http://sweetgum.nybg.org/ih/), and "herb. Rakaj" to the private collection of Marash Rakaj. Voucher specimens of taxa have been searched for in the following herbaria: BEO, BEOU, BP, SO, SOM, TIR, W, WU, and in the digital materials of B, BREM, K, and P. If no others are stated, voucher specimens of the discussed taxa have not been found in the reviewed herbaria.

Native and alien taxa are distinguished. Within the aliens, neophytes and archaeophytes are used in the sense of Pyšek & al. (2002), and the usage of other subgroups of aliens follows the definitions of Pyšek & al. (2004). The status of a given taxon has been revised considering what is known about that taxon and also our actual observations.

Results and Discussion

Pteridophytes

Azolla filiculoides Lam. – introduced

This North American species has become cosmopolitan today; thus it is known also from most European countries as an alien and frequently as an invasive plant. In the Balkan countries, the species appeared as invasive in Greece (Arianoutsou & al. 2010) and in Serbia (Nikolić & al. 2001), it is present in Macedonia (Bukliev 1988), and although missing from the preliminary alien list of Croatia (Boršic & al. 2008), it has already been reported from that country (Trinajstic & Pavletic 1978, Hršak 2001). Indeed, both Croatian and Serbian records are from the Pannonian regions of those countries, not from the Balkans.

Azolla filiculoides has been discovered in two localities in Albania independently. One is Lake Prespa and the other is a small pit near Durrës, where the plant covered some square metres (the whole water surface area of the pit).

Specimens seen — District of Durrës (Rrrethi i Durrësit), Mali i Durrësit NW of city of Durrës, in a puddle, 12 Apr 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi 18828* (BP P53197); District of Korçë (Rrethi i Korçës), Liqenas, in Lake Prespa, 20 May 2011, *M. Rakaj* (BP P53239).

Cephaloceraton histrix (Bory & Durieu) Gennari – native
This Mediterranean and W European species is one of the terrestrial taxa of the genus. It is known from neighbouring Greece and Macedonia (Micevski 1985).

It has been found in S Albania, contrary to the characteristic habitat of the species in temporary ponds, on seasonally wet but not flooded sand, which completely dried out by the summer (and the vegetation was burned in August). Surprisingly, the species occurred together with the adventive *Sisyrinchium angustifolium* on a very small area.

Specimen seen — District of Vlorë (Rrethi i Vlorës), S of village Zvërnec, near lake Liqeni i Nartës, on wet sand, 23 May 2011, *Z. Barina*, *H. Mező* & *D. Pifkó 19345* (BP 755275).

Angiosperms

Amaranthaceae

Amaranthus blitoides S. Watson – introduced, previously erroneously reported
This North American species is naturalized in several parts of Europe. It is a weed with major economic impact in Macedonia (Kostov & Pacanoski 2007), is an alien with invasive behaviour in Greece, and is present also in Montenegro (Pulević 2005; Hadžiablahović 2010).

It was reported from Albania for the first time by Qosja (1968), and later by Paparisto & Qosja (1976). Based on these records, the species was commonly treated as a naturalized alien in most floristic works (Jalas & Suominen 1980; Demiri 1983; Paparisto & al. 1988; Tutin & al. 1993; Vangjeli 2003).

All the voucher specimens – referred by Paparisto & Qosja (1976) and deposited in TIR – proved to be *Amaranthus albus* L. Thus the species had no reliable records from Albania until the note of Raus (2000), who reported *A. viridis* as new for Albania and noted that it was associated with *A. blitoides*. He did not address the significance of *A. blitoides*, probably because of the generally accepted occurrence in Albania. In 2011, we also collected *A. blitoides* in Korçë. Although most of the literature records have been based on erroneously identified specimens, the species is in fact present in Albania as an alien.

Specimens seen — District of Korçë (Rrethi i Korçës), in town Korçë, on the corner of Bulevardi Rilindasit and Rruga Viktor Gjika, 18 Oct 2011, *Z. Barina*, *L. Lőkös* & *D. Pifkó 20128* (BP 756489); Durrës (plazh), 9 Sep 1953, *A. Duka* (TIR).

Chenopodium rubrum L. – native
This species is distributed throughout most of Europe, but without any previous records from Albania, and apparently missing from parts of the former Yugoslavian territory (Bosnia and Herzegovina, Montenegro, Kosovo, Macedonia).

A few specimens have been found in mud vegetation of a water reservoir, intermixed with *Chenopodium foliosum* Asch.

Specimen seen — District of Korçë (Rrethi i Korçës), in the water reservoir c. 2.5 km WSW of village Ujëbardhë, in mud vegetation, 18 Oct 2011, *Z. Barina* & *D. Pifkó 20123a* (BP 755683).

Apiaceae

Cachrys libanotis L. – erroneously reported
This W Mediterranean species was reported from Albania (and from the Balkans) only by Fiori (1928), as *Hippomarathrum libanotis* (L.) W. D. J. Koch ex DC. No voucher specimens have been found. Fiori published the species with a question mark. According to these facts, the species should be omitted from the flora of Albania until future confirmation.

Araceae

Zantedeschia aethiopica (L.) Spreng. – introduced
This S African species is mainly an ornamental plant in Europe and occasionally occurs as an alien in the Mediterranean countries (Celesti-Grapow & al. 2009; Arianoutsou & al. 2010).

In Albania some escaped specimens were found near settlements, thus the species is a casual alien also in the Albanian flora.

Specimens seen — District of Durrës (Rrethi i Durrësit); Mali i Durrësit NW of city of Durrës; escaped on waste place on flysch, 4 Dec 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi obs.*; District of Lushnjë (Rrethi i Lushnjës); in village Mizë; escaped specimens on the bank of a ditch, 4 Nov 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi obs*.

Asparagaceae

Scilla nana (Schult. & Schult. f.) Speta – erroneously reported
This is an endemic species of Crete (Fielding & Turland 2005: 488) and includes two very similar subspecies, one restricted to Lefka Ori (subsp. *nana*, *Scilla nana* s. str.) and the other to Kedros, Psiloritis, Dikti and Afendis Kavousi (subsp. *albescens* (Speta) Speta, *Scilla albescens* Speta), respectively. Qosja (1973) reported this species from Korça region (SE Albania) without any remarks on the significance of the occurrence. The record is obviously erroneous and most likely refers for *Scilla bifolia* agg., the only similar species that can be observed at melting snow there.

Specimens seen (of *Scilla bifolia* agg.) — District of Korçë (Rrethi i Korçës), Thatë Mountains (Mali i Thatë), c. 4.2 km east of village Podgorije, c. 1.9 km north of Mount Meza (1863 m) and 1.3 km east of Mount maja e Stanit (1911.6 m), in grassland, on limestone, 20 May 2007, *Z. Barina*, *D. Pifkó* & *C. Németh 11442* (BP

748216); Thatë Mountains (Mali i Thatë), c. 3.9 km east of village Podgorije, c. 1.1 km north of Mount Meza (1863 m) and 1.5 km southeast of Mount maja e Stanit (1911.6 m), in grassland, on limestone, 20 May 2007, *Z. Barina*, *D. Pifkó* & *C. Németh obs.*; District of Korçë (Rrethi i Korçës), Thatë Mountains (Mali i Thatë), c. 3.8 km northwest of village "Liqenas", c. 2.9 km northeast of the peak of Mount Buz e Korutes (2028 m), on the southern ridge of Mount of a height 2034.7 m, c. 1.1 km south of the peak, in grassland, on limestone, 22 May 2007, *Z. Barina* & *D. Pifkó obs.*; District of Korçë (Rrethi i Korçës), Mts Mali i Moravës, near the peak of Mt maja e Shëndëllisë (1365 m) above village Mborje, 4 Apr 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi obs*.

Asteraceae

Achillea ochroleuca Ehrh. – erroneously reported
Achillea ochroleuca is a characteristic species of sandy steppes (Dobolyi 1995) and its range is restricted to the lowland sandy areas of the Carpathian Basin and close surroundings (Nedelcheva & Tzonev 2006).

It was reported only by Qosja (1958) from two localities in Albania. He remarked it was a weed of arable fields at Menkulas and also at Maliq.

As the Albanian record is far from the continuous range of the species, and from a quite other habitat, the native occurrence can be excluded. Since the species does not have a weedy character (it is a vulnerable perennial), the introduction of the species to Albania can be excluded as well. All specimens identified as *Achillea ochroleuca* in TIR belong to other *Achillea* species.

Presumably, the presence of the species in the flora of Albania is simply a misapplication of the name *Achillea ochroleuca* to some yellowish-flowered *Achillea* species, thus the record of *A. ochroleuca* is regarded here as erroneous.

Ambrosia artemisiifolia L. – erroneously reported
This North American species is naturalized in many countries of Europe. It is a hazardous invasive weed, especially in C Europe (Shykoff & al. 2008), and has just recently been detected in the Balkan areas (Dimitrov & Tzonev 2002; Vladimirov & al. 2006; Bergmeier 2008; Galzina & al. 2010).

Surprisingly, it had been reported from Albania some decades earlier than from the neighbouring areas (Paparisto & Qosja 1978), and the record has been included in the main Albanian floras (Demiri 1983; Vangjeli & al. 2000; Vangjeli 2003). However, the only specimen found in TIR (collected in 1976) proved after revision to be *Ambrosia maritima*. Since this is the voucher specimen of the original report by Paparisto & Qosja (1978) and all subsequent works are most probably based on this work, the record of *A. artemisiifolia* from Albania is erroneous and the occurrence of the species there needs confirmation.

Specimen seen (of *Ambrosia maritima*) — Shkozet (Durres), Ne ranishte prane bregdetit, shume e rralle, 1976, *X. Qosja* (TIR).

Carduus personata subsp. ***albidus*** (Adamović) Kazmi – native
Since this taxon was reported from Albania only by Hayek (1930), and that report does not definitely refer to the current territory of Albania, its occurrence there has been questioned by Tutin & al. (1976). No later confirmations are known.

The found locality of *Carduus personata* is in an alder forest in the valley of the Tropojë stream, where many other novelties for the Albanian flora have been found (cf. Barina & Pifkó 2011). Contrary to the neighbouring countries, streamside alder forests are very rare in Albania, because of the different land use experienced in the country. The fragment of this habitat along the Tropojë stream is the only stand known by the present authors. Additional populations of *C. personata* might be expected in the NE part of Albania, but only with a slight chance. The collected specimens belong to subsp. *albidus*.

Specimen seen — District of Tropojë (Rrethi i Tropojës), between villages Papaj and Sylbice, in the valley of stream përroi i Tropojës, in alder forest, 7 Jul 2011, *Z. Barina*, *A. Kovács*, *G. Puskás* & *B. Sárospataki 19420* (BP 755870).

Cynara cardunculus L. – ornamental plant, with remnant of earlier plantations in natural habitats
This frequently cultivated species is known also from Albania as a garden plant (Paparisto & al. 1962; Qosja 1973; Demiri 1983; Vangjeli & al. 2000; Vangjeli 2003).

It has been found apparently out of cultivation in natural habitats, however, where presumably all the plants had originally been planted and have survived for a long time.

Specimens seen — District of Durrës (Rrethi i Durrësit), region Ishem, on the slope of 181 m high hill N of village Manzë, in the village, on flysch, 25 Apr 2009, *Z. Barina* & *D. Pifkó obs.*; District of Kavajë (Rrrethi i Kavajës); W of town Rrogozhinë; by the side of main road SH 4 (escaped specimens), 4 Nov 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi obs.*; District of Kavajë (Rrrethi i Kavajës); W of village Peqinaj; a few escaped specimens by the roadside, 4 Nov 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi obs*.

Eclipta prostrata (L.) L. – introduced
This tropical species with uncertain origin is now distributed around the world (Tzonev 2007). It is known from many European countries, including the Balkans: it is a neophyte in Greece (Arianoutsou & al. 2010) and also in Bulgaria (Tzonev 2007).

In Albania a few specimens have been found in bare, disturbed, wet parts of a sandy seashore at the foot of clay hills near the village of Karpen.

Specimen seen — District of Durrës (Rrethi i Durrësit), at the seashore at the foot of Mali i Karpënit, W of village Karpen, in disturbed, moist place, 15 Oct 2011, *Z. Barina 20068* (BP 755673).

Erigeron annuus (L.) Pers. – introduced
This North American species is widely naturalized in Europe, but is apparently missing from some countries. It is not included in the alien flora of Greece (Arianoutsou & al. 2010), although it has recorded from NW Greece (Chitos 2009) and there are several unpublished records from N Greece (Strid pers. comm.).

Only a few scattered specimens have been found in Albania in the bed of the river Luma and in the adjoining plough lands.

Specimen seen — District of Kukës (Rrethi i Kukësit), in the flood basin of river Lumë betweein villages Përbreg and Lumë, in mud vegetation, 11 Oct 2011, *Z. Barina* & *D. Pifkó 19949* (BP 755519).

Helianthus annuus L. – introduced
This is a frequently cultivated species in Albania (Paparisto & al. 1962; Qosja 1973; Tutin & al. 1976; Demiri 1983; Vangjeli & al. 2000; Vangjeli 2003), but there are no remarks on its escaping. According to our observations, it is a casual alien countrywide (cf. also *Citrullus lanatus*).

Specimens seen — District of Fier (Rrethi i Fierit); W of village Frakulla e Madhe, along main road SH8; by the roadside, 8 Aug 2011, *Z. Barina* & *G. Somogyi obs*.; District of Shkodër (Rrethi i Shkodrës); in village Bërdica e Sipërme at the junction of Shkoder-Velipoje road and road Nr. SH1 (E762); escaped neoteny specimens in safety island, 5 Aug 2011, *Z. Barina* & *G. Somogyi obs*.

Tragopogon crocifolius L. subsp. ***crocifolius*** – no records from Albania; subsp. ***samaritanii*** (Heldr. & Sart. ex Boiss.) I. Richardson – native

This Mediterranean species has two geographically separated subspecies: *Tragopogon crocifolius* subsp. *crocifolius* (or *T. crocifolius* s.str.) is distributed eastwards as far as Italy, while subsp. *samaritanii* (or *T. samaritanii* Heldr. & Sart. ex Boiss.) is distributed in the Balkans. There is a little confusion because of the two treatments of the name *T. crocifolius*, i.e. sensu stricto and sensu lato. Most of the Albanian records are published as *T. samaritanii* or *T. crocifolius* subsp. *samaritanii* (Alston & Sandwith 1940; Qosja 1973; Vangjeli & al. 2000; Vangjeli 2003), but some of them are published as just *T. crocifolius* (Paparisto & Qosja 1978; Demiri 1983). Paparisto & Qosja (1978) gave only the locality, but Demiri (1983) in his field guide also enclosed a short description of the taxon. According to him, the number of involucral bracts is 5–12, which is the same number given by Richardson (1976) for subsp. *crocifolius* s.str., but the value is overlapping, because 5–7 is given for subsp. *samaritanii*. Demiri (1983) did not give any characters that could serve as differential features for the two taxa, thus they cannot be distinguished by his description. Regarding the ranges of the two subspecies and the insufficient differential features given by Demiri (1983), it can be concluded that the two records of *T. crocifolius* from Albania probably refer to subsp. *samaritanii*. Thus in Albania only *T. crocifolius* subsp. *samaritanii* definitely occurs, whereas no reliable records are known for subsp. *crocifolius*.

Betulaceae

Alnus cordata (Loisel.) Duby – erroneously reported
The first record of this species from Albania (and the Balkan Peninsula) is by Mitrushi (1966). As Ilia Mitrushi was the regional contributor for the 3rd volume of Atlas Florae Europaeae (Jalas & Suominen 1976), *Alnus cordata* could be given in this work as "Al added". Based on the Atlas, the species was accepted for Albania by Greuter & al. (1984) and subsequently by the new edition of the 1st volume of Flora Europaea (Tutin & al. 1993). Nevertheless, the species was omitted from Albanian floristic works (Demiri 1983; Paparisto & al. 1988; Vangjeli 2003).

Until the report from Albania, *Alnus cordata* was known as an endemic species in NE Corsica and SW Italy and as a widely planted tree in Europe (Pignatti 1982). In Corsica and Italy it is a basically montane species in the oak, chestnut, and beech zones (Pignatti 1982; Gamisans 2006), and Muracciole & Gamisans (2007) emphasized that the species is missing from the sublittoral marshes. Against this background, it seems very surprising for this species to occur far from its known distribution in a single, non-relict-preserving place, the habitat of which is quite different from the habitats in its known range, and it is hard to believe that the species could occur here as native.

To justify the real status of *Alnus cordata* in Albania we tried to find voucher specimens. In TIR only one specimen determined as *A. cordata* could be found, collected in Tirana Botanical Garden. However, the young leafy shoot belongs to a species of *Ulmus* L. (*Ulmaceae*). In parallel, we tried to find possible surviving individuals on the lowland below Kruja, without any success. The marshes had been drained in the nineteen-sixties, and only fragments of semi-natural wet habitats could be found: a small, practically treeless swamp NE of the village of Patok, and a very narrow and practically destroyed riverine forest belt along the river Ishëm and its tributaries. In neither place was *Alnus cordata* found.

Observing thoroughly the line drawing in Mitrushi (1966), it was realized that this is not an original drawing, but only a copy and montage of the figure by Fiori & al. (1921), so there is no evidence that Mitrushi actually saw *Alnus cordata* anywhere in Albania.

Janchen (1916) had already reported an alder, the locality of which coincides with the suspected locality of

Alnus cordata ("südlich von Leš bis an den Išmi-Fluß"), and he listed it as "*A. rotundifolia* Mill." Such a name has never been validly published by Miller, but rather by Bertoloni and also by Stokes, and while Bertoloni's name is a synonym of *A. cordata*, Stokes's is a synonym of *A. glutinosa* (L.) Gaertn. "*Alnus rotundifolia* Mill." is regarded also to be a synonym of *A. glutinosa* (cf. Landolt 2001), and specimens labelled as *A. rotundifolia* by Janchen (in W) belong also to *A. glutinosa*, thus we can conclude that Janchen used the name *A. rotundifolia* for *A. glutinosa*.

We suppose that Mitrushi (1966) has misinterpreted the name "*Alnus rotundifolia* Mill." (in Janchen 1916), and consequently all references of *A. cordata* from Albania have originated from this mistake. According to the above arguments, *A. cordata* has to be deleted from the Albanian (and Balkan) flora (as either native or alien) and we should continue to treat it as an endemic of Corsica and S Italy.

Specimen seen (of *Ulmus* sp.) — Kopshti i Rajonit te Komitetiv Partis n. 3 Tirane, 3 Nov 1970, *V. Shqahu*, det.: *V. Shqahu* & *Ilia Mitrushi* (TIR).

Brassicaceae

Biscutella laevigata L. – erroneously reported

This species was originally recorded by Paparisto & Qosja (1978), from Himarë (collected on 17 April 1955) and included also in Paparisto & al. (1988) and Vangjeli (2003). Because this is the only known locality in Albania, it has been included in the national Red List as a rare species (Vangjeli & al. 1995). Due most probably to the unusual and isolated occurrence in S Albania, Jalas & al. (1996) questioned its presence at all in Albania, but it was nevertheless included in Vangjeli (2003).

The only specimen in TIR, collected in April 1955, was found to correspond well with the cited specimen in Paparisto & Qosja (1978). The specimen proves to be *Biscutella didyma* L., a species known from several localities of S Albania (Baldacci & Béguinot 1918; Alston & Sandwith 1940, and specimens cited below).

Consequently, *Biscutella laevigata* should be deleted from the Albanian flora until reliable confirmation is available.

Specimens seen (of *Biscutella didyma*) — District of Delvina (Rrethi i Delvinës), c. 1.4 km east of village "Krongji" and c. 2 km southwest of village Muzinë; by the roadside, in grassland, 17 Apr 2007, *Z. Barina*, *D. Pifkó*, *A. Csóka* & *B. Pintér 11076* (BP 747198); District of Vlorë (Rrethi i Vlorës), Mts. Mali i Çikës, in the valley below Mt. "Maja e Pandelejmonit" (805.8 m), north of village Dhërmi; in dry grassland, on limestone, 29 Apr 2009, *Z. Barina*, *L. Lőkös* & *D. Pifkó 14842* (BP 749882); District of Sarandë (Rrethi i Sarandës), on the northern part of Mt. Maja e Miles (823.7 m); on limestone rocks, 30 Apr 2009, *Z. Barina* & *D. Pifkó 14948* (BP 749879); District of Vlorë (Rrethi i Vlorës); on Porto Palermo Peninsula; in rocky scrubland on limestone; 4 Sep 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi 18701* (BP 764554); District of Vlorë (Rrethi i Vlorës); Uji i Ftohtë in city of Vlorë, at Hotel Donantelo; by the roadside, 4 Oct 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi 18757* (BP 756017); District of Vlorë (Rrethi i Vlorës), Mts. Mali i Çikës, in the valley below Mt. "Maja e Pandelejmonit" (805.8 m), north of village Dhërmi; in dry grassland, on limestone, 29 Apr 2009, *Z. Barina*, *L. Lőkös* & *D. Pifkó 14842* (BP 749882); Himare, 1 Apr 1955, *X. Qosja* (TIR).

Erysimum ×cheiri (L.) Crantz – introduced

All Albanian works included this species as an ornamental plant (Paparisto & al. 1962, 1988; Mitrushi 1966; Demiri 1983; Vangjeli 2003) without any remarks on its possible naturalization. In contrast, Jalas & Suominen (1994) listed it as questionably naturalized in Albania ([Al?]) without giving the data source. Lastly, Tutin & al. (2002) treated the species as naturalized ([Al]) in Albania, with source of the modified record again not given. Though its status previously seemed to be unclear, we can confirm that the species is naturalized in Vlorë, where a viable population has been found on maritime limestone rocks.

Specimen seen — District of Vlorë (Rrethi i Vlorës), Uji i Ftohtë in city of Vlorë, on maritime limestone rock, 9 Apr 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi 18738* (BP 764623).

Hesperis inodora L. – erroneously reported

This species is endemic of the Maritime Alps. It was reported from C Albania by Markgraf (1931). Neither previous records nor later confirmations, nor even voucher specimens are known.

The record from Albania most probably refers to some other member of the *Hesperis matronalis* group, so the species has to be deleted from the Albanian flora.

Malcolmia graeca Boiss. & Spruner

subsp. ***bicolor*** (Boiss. & Heldr.) Stork – native; subsp. ***hydraea*** (Halácsy) Stork – native

This species is known as an endemic of Greece and S Albania. All previous authors (Markgraf 1927; Greuter & al. 1986; Tutin & al. 1993; Jalas & Suominen 1994; Mullaj & al. 2010; Meyer 2011) reported only subsp. *bicolor* (Boiss. & Heldr.) Stork from Albania. Tan & Mullaj (2000) concluded that all Albanian material of *Malcolmia graeca* belongs to an undescribed subspecies of that species, thus the previously reported subsp. *bicolor* is absent from Albania. Later, the same authors (Mullaj & al. 2010) confirmed the occurrence of subsp. *bicolor* in Albania, and noted that all previous material of *M. graeca* belong to *M. maritima* (L.) R. Br. and *M. orsiniana* subsp. *serbica* Greuter & Burdet. Though the separation of the described subspecies seems clear, the outline of *M. graeca* differs in Ball & Akeroyd (2002), and respective-

ly in Georgiou (2002), and the distinguishing characters given in the two works only slightly overlap.

Until now, we have found *Malcolmia graeca* in four sites of S Albania. Based on the distinguishing characters given by both Ball & Akeroyd (2002) and Georgiou (2002), in addition to the already known subsp. *bicolor*, one of our specimens (BP 756015) belongs to subsp. *hydraea* (Halácsy) Stork. The two other specimens were collected in August and the shape of the basal leaves could not be examined (this, however, contradicts Georgiou (2002), who stated that basal leaves are usually persistent).

Specimens seen (of *Malcolmia graeca* s.l. unless subspecies is indicated) — District of Vlorë (Rrethi i Vlorës), on Palermo peninsula near village Qeparo, in rocky grassland, on limestone, 22 May 2011, *Z. Barina*, *H. Mező* & *D. Pifkó 19300* (BP 756015 = subsp. *hydraea*); District of Sarandë (Rrethi i Sarandës), on the northern part of Mt. Maja e Miles (823.7 m), on limestone rocks, 30 Apr 2009, *Z. Barina* & *D. Pifkó 14951* (not in BP = subsp. *bicolor*); District of Vlorë (Rrethi i Vlorës), next to the gorge of brook Ngjipë, near village Ilias, in limestone scree, 13 Aug 2010, *Z. Barina*, *D. Pifkó* & *L. Lőkös 18245* (BP 764198); District of Tepelenë (Rrethi i Tepelenës), western ridge of mount "Goliku" (1721.4 m), 2.05 km east of village Kodër, on limestone rock, 11 Aug 2006, *Z. Barina*, *D. Pifkó* & *D. Schmidt 10392a* (BP 751144).

Campanulaceae

Asyneuma anthericoides (Janka) Bornm. – native

This is an endemic species restricted to the Eastern Balkans in SE Serbia (Obradović 1974), Romania (Sârbu & al. 2009; Oprea & al. 2010), and Bulgaria (Assyov & Petrova 2006). According to Hartvig (1991), its single record from Greece needs confirmation. It is relatively widespread in Bulgaria but very rare in Serbia (Obradović 1974) and Romania (Sârbu & al. 2009; Oprea & al. 2010). Many of the Balkan records were published as *A. lobelioides* (Willd.) Hand.-Mazz., but *A. lobelioides* is an Anatolian species without any confirmed European occurrences.

Asyneuma lobelioides was reported from Albania by Markgraf (1927) for the first time. However, plants published under the same name from Greece have been identified as *A. limonifolium* (Hartvig 1991). Hayek (1930) listed *A. anthericoides* from Albania, probably based on the record of Markgraf (1927); later Qosja (1973) reported it from the surroundings of Korça and also it was included in Demiri (1983), both as *A. anthericoides* and probably simply based on the record of Hayek (1930), which work encompasses a larger area under the name of Albania than today, Tutin & al. (1976) and Greuter & al. (1984) questioned the occurrence of *A. anthericoides* in Albania, and it is completely missing from the new Albanian floristic works (Qosja & al. 1996; Vangjeli 2003), despite the same author (Xhafer Qosja) having previously published it from Albania (Qosja 1973).

Actually, *Asyneuma anthericoides* has been found in SE Albania, on serpentine rocks above the valley of the river Devoll. We suppose that the earlier record of *A. lobelioides* also refers to *A. anthericoides*, and since no voucher specimens of *A. anthericoides* as reported in literature have been found, the new occurrence can be regarded as the confirmation of *A. anthericoides* in Albania.

Specimen seen — District of Korçë (Rrethi i Korçës), on the S exposed serpentine rocks of Shkdopi Rocks SW of village Dobërçan, 18 May 2011, *Z. Barina*, *H. Mező* & *D. Pifkó 19067* (BP 764694).

Cannabaceae

Cannabis sativa L. – introduced

This SE Russian species is naturalized or casual in most parts of Europe. It is included in several Albanian works (Paparisto & al. 1962, 1988; Demiri 1983; Vangjeli 2003), but in all cases only as a cultivated plant with no mention of it being naturalized or a casual escape.

Some specimens have been found in Korçë in an abandoned, ruderal place as a casual.

Specimen seen — District of Korçë (Rrethi i Korçës), in town Korçë: in the destroyed place of T.E.C. factory at Rruga Midhi Kostani, in ruderal place, 11 Aug 2011, *Z. Barina* & *G. Somogyi 19888* (BP 755444)

Caryophyllaceae

Dianthus haematocalyx Boiss. & Heldr.

subsp. ***haematocalyx*** – native; subsp. ***pindicola*** (Vierh.) Hayek – native; subsp. ***ventricosus*** Maire & Petitm – erroneously reported.

This is a S Balkan endemic restricted to Albania, Macedonia, and Greece. Three subspecies can be distinguished within its range: subsp. *haematocalyx*, subsp. *pindicola* (Vierh.) Hayek, and subsp. *ventricosus* Maire & Petitm. Subsp. *pindicola* is clearly reported from S Albania by several authors (Greuter & al. 1984; Jalas & Suominen 1986; Strid 1986; Paparisto & al. 1988; Tutin & al. 1993; Vangjeli 2003) based most probably on the record of Alston & Sandwith (1940). Subsp. *ventricosus* has been published from S Albania more often, uniformly as subsp. *sibthorpii* (Vierh.) Hayek (Alston & Sandwith 1940; Paparisto & al. 1988; Vangjeli 2003). However, according to Strid (1986, 1997), all Albanian records of this subspecies apparently refer to subsp. *pindicola*. This point of view has been accepted by Greuter & al. (1984) and Jalas & Suominen (1986); thus subsp. *ventricosus* was deleted from the Albanian flora and only subsp. *pindicola* became regarded as occurring there (this new contribution was not included by Paparisto & al. 1988 and Vangjeli 2003). According to Ball (2011), Hepburn had collected a specimen of subsp. *haematocalyx* from Alba-

nia (deposited in Kew) and Baldacci (1894) published the record of that subspecies.

We have collected subsp. *haematocalyx* in several localities in Korçë County (BP 755273, BP 755274, BP 755280, and BP 755530) and subsp. *pindicola* near Tepelenë (BP 755270).

Specimens seen — District of Tepelenë (Rrethi i Tepelenës), Griba mountains (Mali i Gribes), northern ridge of mount "Tartari" (mali i Tartarit, 1946.1 m), 500 m north-northeast of the peak, in limestone rocky grassland, 12 Aug 2006, *Z. Barina*, *D. Pifkó* & *D. Schmidt 10499* (BP 755270, subsp. *pindicola*); District of Korçë (Rrethi i Korçës), between villages Zvarisht and Strelcë, above the valley of River Devoll, on Mount "Proseh" (932 m), in open scrubland, on serpentine, 10 Aug 2008, *Z. Barina 14277* (BP 755273, subsp. *haematocalyx*); District of Korçë (Rrethi i Korçës), between villages Floq and Helmes, near the main road, in open grassland, on serpentine, 12 Aug 2008, *Z. Barina 14341* (BP 755274, subsp. *haematocalyx*); District of Korçë (Rrethi i Korçës), Thatë Mountains (Mali i Thatë), on the southern ridge of Mt. "Brinja e Cfarit" (2238 m), c. 6.4 km SW of village Gorica e Madhe, in rocky grassland, on limestone, 11 Aug 2008, *Z. Barina*, *C. Németh* & *A. Schmotzer 14316* (BP 755280, subsp. *haematocalyx*); District of Korçë (Rrethi i Korçës), 900 m southwest of village Vithkuq, on the northeastern ridge of Mount Rrungajë (1944.4 m), in open grassland, 20 Jul 2006, *Z. Barina*, *D. Pifkó*, *G. Király* & *C. Németh 10019* (BP 755530, subsp. *haematocalyx*).

Dianthus monadelphus subsp. ***pallens*** (Sm.) Greuter & Burdet – native

In Europe this species is restricted to the E Balkan Peninsula, represented by subsp. *pallens* (Jalas & Suominen 1976). In addition to Romania, Bulgaria, and Greece it occurs also in Macedonia (Micevski 1993) and S Serbia (Jovanović 2011; Nestorović & Konstantinović 2011).

In Albania, a few specimens have been found above Lake Prespa, at only a dozen metres from the Macedonian border.

Specimen seen — District of Devoll (Rrethi i Devollit), on the S slope of Mt Gogozit (1326.3 m), above lake Prespa e Vogël (Small Prespa lake) near village Shuec, in shrubland, on limestone, 9 Aug 2010, *Z. Barina* & *D. Pifkó 18085* (BP 755369).

Silene uniflora Roth – native

Chater & Walters (1964), in the first edition of Flora Europaea Volume 1, treated this taxon as *Silene vulgaris* subsp. *prostrata* (Gaudin) Schinz & Thell. and as occurring "Usually on mountains ?• Alps and S. Europe". In the second edition of volume 1, the taxon is treated as *S. uniflora* subsp. *prostrata* (Gaudin) Chater & Walters with the following remark: "Mountain rocks. S. Europe, from N. Spain to E. Greece" (Chater & al. 1993) while the species *S. uniflora* is given with a question mark for Albania.

Based probably on the first edition of Flora Europaea, Greuter & al. (1984) listed "*Silene uniflora* agg." as surely occurring in Albania. As no records were known from Albania, and Hayek (1927) listed it only from the neighbouring countries, the question mark for Albania was maybe an assumption based on the occurrences of the taxon in the neighbouring countries (cf. *Asyneuma anthericoides* and *Crypsis alopecuroides*). Thus *S. uniflora* has not previously been definitely reported from Albania, but rather its occurrence there has been assumed.

Only one confirmed population of *Silene uniflora* subsp. *prostrata* has been found in Albania. It is restricted to a foothill of Mount Korab and is a characteristic species of the steep, bare slope there.

Specimen seen — District of Dibër (Rrethi i Dibrës), Korab Mountains (Mali i Korabit), c. 1.7 km east of town Peshkopi, between Peshkopi and village Bellovë, in open grassland on evaporite baserock, 25 Jun 2007, *Z. Barina*, *G. Pinke* & *D. Schmidt 12044* (BP 756487).

Colchicaceae

Colchicum neapolitanum (Ten.) Ten. – erroneously reported

Pignatti (1982) treated this taxon in a wide sense, including all taxa within the *Colchicum autumnale* group occurring in Italy. Similarly, Brickell (1980) treated *C. neapolitanum* also in a wider sense, including *C. longifolium* Castagne and *C. kochii* Parl. as well, thus giving a wider distribution of the species from Portugal to Greece. Based on cytological data, Persson (2007) gave a novel approach of the genus *Colchicum* (see also in Marhold 2009). According to the new results, *C. neapolitanum* as member of the *C. autumnale* group is endemic to S Italy and Sicily.

Colchicum neapolitanum was reported from Albania only by Ubrizsy & Pénzes (1960), based on a very late observation (14 May–10 Jun). All the listed plants were identified by Antal Pénzes, and deposited in BP, however, even after reviewing all the *Colchicum* material, no voucher specimens have been found there. The presence of *C. neapolitanum* even in the wider sense is doubtful, and the report probably refers to some other members of the *C. autumnale* group. Since according to the new results *C. neapolitanum* is restricted to Italy and Sicily, the species should be deleted from the Albanian flora.

Crassulaceae

Sedum forsterianum Sm. – erroneously reported

This is a W European species with adventive occurrences also in N and W Europe (Hart 2003). There is one record from Albania, from Mali me Gropë (Buzo 1982). The record derives from natural habitat, from an undisturbed place. The natural range of the species is far from Albania, and Mali me Gropë ("mountain with holes") is a dry limestone area, which is normally not preferred by *Sedum*

forsterianum (Hart 2003). Two other members of *S.* ser. *Rupestria*, i.e. *S. ochroleucum* Chaix and *S. rupestre* L. are widespread in Albania, and indeed Buzo (1982) reported *S. ochroleucum* Chaix from Mali me Gropë and Paparisto & al. (1962) reported *S. rupestre* from the vicinity of Mali me Gropë. No specimens of *S. forsterianum* could be found at TIR. Regarding the known range of *S. forsterianum*, its habitat preference, and the presence of two very similar taxa in Albania, it can be concluded that the single Albanian record of *S. forsterianum* should be treated as an error, probably referring to either *S. ochroleucum* or *S. rupestre*.

Sedum roseum (L.) Scop. – native
This is a circumboreal species occurring in the mountains of C and S Europe and very rare in the Balkans. It is a critically endangered species in Bulgaria (Petrova & Vladimirov 2009), and is endangered in Bosnia and Herzegovina (Galambosi 2006) and in Macedonia (Euro+Med 2006–).

In Albania, it has been found in the Northern Albanian Alps (Prokletije, Bjeshkët e Nëmuna), as only a few individuals in limestone scree vegetation (BP756488).

Specimen seen — District of Tropojë (Rrethi i Tropojës), on Mt Maja a Gjytetit (2044 m), above village Çerem, in limestone scree, 10 Jul 2011, *Z. Barina*, *A. Kovács*, *G. Puskás* & *B. Sárospataki 19573* (BP 756488).

Sempervivum jakucsii Pénzes – synonym of *S. ciliosum* Craib
Sempervivum jakucsii was described from Albania, from the Thatë Mts (Pénzes 1965: "Albania or. In rupestribus calcareis mt. Mali That, inter pag. Pojan et Podgorje, ad opp. Korça"). Later, the related *S. ciliosum* was recorded from Albania and until recently known exclusively also from the Thatë Mts (Paparisto & al. 1988; Vangjeli & al. 1995 Vangjeli 2003). Meyer (2011) reported *S. ciliosum* also from the Ostrovica Mts. Greuter & al. (1986) and Jalas & al. (1999) listed both *S. ciliosum* and *S. jakucsii* from Albania, despite records of the two taxa referring to the same houseleek population in the Thatë Mts and despite Parnell (1988: 218) having concluded that *S. jakucsii* is a synonym of *S. ciliosum*.

The description of *Sempervivum jakucsi* did not include any features to differentiate it from *S. ciliosum*, and only slight differences from *S. kindingeri* Adamovic were mentioned (flowers smaller and sepals obtuse, not acuminate).

Based on the description and examination of type material, we can confirm that *Sempervivum jakucsii* cannot be maintained as a separate species but is only a synonym of *S. ciliosum*.

Specimen seen — Albania or. In rupestribus calcareis mt. Mali That, inter pag. Pojan et Podgorije, ad opp. Korca., 16 Jul 1960, *P. Jakucs* (BP 590543, holotype of *Sempervivum jakucsii* Pénzes).

Cucurbitaceae

Citrullus lanatus (Thunb.) Matsum. & Nakai – introduced
This is a widely cultivated species in Albania (Paparisto & al. 1962; Demiri 1983; Qosja & al. 1992; Vangjeli 2003) and it has also been observed as a frequent casual countrywide.

Specimens seen — District of Kukës (Rrethi i Kukësit), in the flood basin of river Lumë between villages Përbreg and Lumë, in mud vegetation, 11 Oct 2011, *Z. Barina* & *D. Pifkó 19947* (BP 755518); District of Shkodër (Rrethi i Shkodrës), on the slope of Mali i Rencit SE of village Gadoci, escaped specimen in the disturbed part of Mediterranean scrubland, on limestone, 5 Aug 2011, *Z. Barina* & *G. Somogyi 19753* (BP 755977); District of Skrapar (Rrethi i Skraparit), above the valley of river Osum next to Çorovode, by the roadside, 13 Oct 2010, *Z. Barina 18389a* (BP 763601); District of Bulqizë (Rrethi i Bulqizës); at town Bulqizë along road SH6; on debris heaps, 6 Aug 2011, *Z. Barina* & *G. Somogyi obs.*; District of Durrës (Rrethi i Durrësit); at the seashore at the foot of Mali i Karpënit, W of village Karpen; on sand dunes, 15 Oct 2011, *Z. Barina*, *L. Lőkös* & *D. Pifkó obs.*; District of Durrës (Rrethi i Durrësit); in the mud vegetation of the water reservoir above village Shkallnur, 15 Oct 2011, *Z. Barina* & *D. Pifkó obs.*; District of Lezhë (Rrethi i Lezhës); Kune beach S of Shëngjin; in disturbed place, 13 Oct 2011, *Z. Barina*, *L. Lőkös* & *D. Pifkó obs.*; District of Lezhë (Rrethi i Lezhës); SE of village Tale, in the valley of river Mat; in abandoned gravel pit, 13 Oct 2011, *Z. Barina* & *D. Pifkó obs.*; District of Pogradec (Rrrethi i Pogradecit): at the foot of Mt Krasta e Glavës (884 m), between villages Alarup and Gurras (Zagorçan); on midden, 9 Aug 2010, *Z. Barina*, *D. Pifkó* & *L. Lőkös obs.*; District of Sarandë (Rrethi i Sarandës); in town Sarandë; by the roadside, 18 Oct 2010, *Z. Barina obs.*; District of Sarandë (Rrethi i Sarandës); S part of town Sarandë; in rocky bushland, between the houses, on limestone, 16 Oct 2010, *Z. Barina obs.*; District of Shkodër (Rrethi i Shkodrës); c. 1 km NW of village Ashtë, in an abandoned gravel pit in the vallex of river Drin, 10 Dec 2011, *Z. Barina* & *D. Pifkó obs.*; District of Shkodër (Rrethi i Shkodrës); in town Shkodër: Rruga Ali Pashë Gucia, by the roadside, 10 Dec 2011, *Z. Barina*, *L. Lőkös* & *D. Pifkó obs*.

Cyperaceae

Carex punctata Gaudin – native
This European species extends as far as N Africa and Turkey, too. The distribution in the Balkan Peninsula is insufficiently known (Stešević & Drescher 2010). It is very rare in Bulgaria (Hájek & al. 2005, 2007) and in Greece (Akeroyd & Preston 1981), and it was just recently discovered in Montenegro (Stešević & Drescher 2010) and Croatia (Koopman & Topić 2011).

It has been found only in a single locality in N Albania, in the bare and wet bed of a stream on serpentine.

Specimen seen — District of Mirditë (Rrethi i Mirditës), at the foot of Mt Dardha (1238.6 m) below Mt Munellë, above village Zall-Xhuxhë, along a brooklet, on serpentine, 26 May 2010, *Z. Barina & D. Pifkó 17411* (BP 756057).

Eleocharis ovata (Roth) Roem. & Schult. – native
This is a C European species with a highly isolated occurrence in Malta (Haslam & al. 1977).

This species was only very recently reported from Albania by Schuett (in Ball 2011), from near Gomshiqe in the north, but is absent from all the neighbouring countries according to our present knowledge. Confirming its presence in Albania, we have found a few plants near Velipoje and another population at Lake Shkodra, so that the species is known in three localities of N Albania. Other occurrences may be expected.

Specimens seen — District of Shkodër (Rrethi i Shkodrës), marsh Rrjoll E of village Baks-Rrjoll, at the foot mts. Mali i Rencit, in mud vegetation, 5 Aug 2011, *Z. Barina & G. Somogyi 19733* (BP 755436); District of Shkodër (Rrethi i Shkodrës), Kosan Marsh at Lake Shkodër, *M. Rakaj* (herb. Rakaj).

Schoenoplectiella supina – native
Distributed in W, C, and S Europe, but apparently missing from some Balkan countries, including Albania (Euro+Med 2006+). It is known from Greece, near the Albanian border (Schuler 2007).

A few specimens have been observed in the Rjoll marsh in N Albania, however, and considering Schuler's (2007) record, additional occurrences may be expected anywhere in the country.

Specimen seen — District of Shkodër (Rrethi i Shkodrës), marsh Rrjoll E of village Baks-Rrjoll, at the foot of mts Mali i Rencit, in mud vegetation, 5 Aug 2011, *Z. Barina & G. Somogyi 19734* (BP 755944).

Fabaceae

Anthyllis barba-jovis L. – erroneously reported
The only record of this species from Albania is by Rodriguez (1923). The record was probably accepted by Demiri (1983), but questioned by Hayek (1927), Tutin & al. (1968), and Greuter & al. (1989). The original record by Rodriguez derives from the Thatë Mts in SE Albania, c. 130 km from the sea, at an altitude of 1900 m, and on limestone, which largely contradicts the known distribution and habitat preference of the taxon (Panda & Skvorc 2003). The range of the species is in the W Mediterranean, where it is a coastal species of siliceous rocks, and it is rare, very scattered, and vulnerable along the Balkan coast (Kovačić & al. 2000).

Even Turrill (1939) discredited the Albanian record of the species ("The record of M. L. Rodriguez from Albania: Mali Thate 1900 m (in Bull. Mus. Nat. Hist. Nat. 1923, 618) is very doubtful)".

Since the only Albanian record of *Anthyllis barba-jovis* is almost certainly erroneous, the species has to be deleted from the flora.

Chamaecytisus spinescens (C. Presl) Rothm. – erroneously reported
The range of this species (treated as including *Chamaecytisus creticus* (Boiss. & Heldr.) Rothm.) is divided into three disjunct parts: S Italy, the NE coast of the Adriatic Sea, and S Peloponnesos and Crete (Cristofolini 1991; Tan & Iatrou 2001), where it occurs as subsp. *graeca* (Boiss. & Heldr.) Christensen (Christensen 2011) or as *C. creticus* (Tan & Iatrou 2001).

The first record from Albania was in Ascherson & Kanitz (1877), as *Cytisus spinescens* Sieb., but without locality or even reference, and since the authors did not refer for any works, the source of this record is obscure.

From his Albanian route, Grimus (1871) mentioned *Cytisus spinescens* from the neighbourhood of Ragusa (Dubrovnik, Croatia) together with some other taxa (e.g. *Gnaphalium angustifolium*, *Phlomis fruticosa*, and *Salvia officinalis*), which all are included in the work of Ascherson & Kanitz (1877) as Albanian plants. Presumably, they added all taxa included in Grimus (1871) to their list of the Albanian flora, regardless of the exact locality, thus taxa were erroneously listed from Albania and included in subsequent works, e.g. *Diplotaxis viminea*, which had been reported by Grimus (1871) from Budva (Montenegro), but was listed by Ascherson & Kanitz (1877) from Albania (cf. Barina & al. 2011).

The species appeared again at Mitrushi (1966, as *Cytisus spinescens* Sieb.), as an occasionally occurring species in rocky places between sea level and 1300 m ["Aty këtu në shullënj plot shkëmbinj (0–1300 m)"]. A line drawing was also given, but the picture is the same as that in Fiori & al. (1921), thus it cannot help to inform more on the Albanian occurrence (see *Alnus cordata*). References, data sources, or exact localities were not given by Mitrushi (1966), who presumably merely borrowed from Ascherson & Kanitz (1877).

Again without giving sources, Cristofolini (1976: 273) also gave *Chamaecytisus spinescens* from Albania with a continuous distribution from the northern Adriatic region as far south as S Peloponnesos. Somewhat later, he gave the range of the species based only confirmed records, this time omitting the Albanian localities (Cristofolini 1991: 195).

Other comprehensive works (Hayek 1927; Heywood & Frodin 1968; Qosja & al. 1992) did not include the misinterpreted record of *Chamaecytisus spinescens* from Albania.

We have found no vouchers of *Chamaecytisus spinescens* in Albania during our field work and herbarium studies. As all mentions of the species from Albania are likely based on the misinterpretation of Ascherson &

Kanitz (1877), we propose to omit it from the Albanian flora. However, considering the distribution of the species, the possibility of its presence in Albania cannot be excluded.

Melilotus messanensis (L.) All. – native
This Mediterranean species is known from all European countries on the Mediterranean Sea except, until now, Albania (Euro+Med 2006–).

A few specimens have been found at the edge of disturbed saline grasslands.

Specimen seen — District of Vlorë (Rrethi i Vlorës), near village Akerni, N of Lake Liqen i Nartës, in grased saline grassland, 23 May 2011, *Z. Barina*, *H. Mező* & *D. Pifkó 19351* (BP 764604).

Vicia faba L. – introduced
This is an alien species frequently becoming wild in Europe. Previously it was reported from Albania only as cultivated plant (Paparisto & al. 1962; Demiri 1983; Qosja & al. 1992; Vangjeli 2003).

It has been found also on plough lands as a residue of previous cultivation. According to our records, it should be regarded as a casual alien in Albania, similar to its status in most European countries.

Specimens seen — District of Sarandë (Rrethi i Sarandës), S of village Çukë, in plough-land, 24 Mar 2010, *Z. Barina*, *D. Pifkó* & *B. Pintér 16443* (BP752354); District of Skrapar (Rrethi i Skraparit), S of town Çorovodë, in cereal field as residue of previous cultivation, 4 May 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi 18547* (BP 764668).

Gentianaceae

Centaurium littorale (Turner) Gilmour – erroneously reported
The only record of this species from Albania was published by Jávorka (1926), albeit designated it with a question mark ("*Centaurium uliginosum* (W. & K.) Beck?"). All subsequent works have taken this record also as questionable (Hayek 1930; Greuter & al. 1986). The voucher specimen, deposited in BP, proved to be *C. erythraea* Rafn. Therefore, *C. littorale* should be omitted from the Albanian flora.

Specimen seen (of *Centaurium erythraea*) — Montes Albaniae boreali-orientalis inter opp. Prizren et Debra jacentes: in lapidosis ad pedem declivium borealium montis nivalis Galica Lums supra rivum Luma adversus pagum Podbregja prope stationem militarem Kula Lums, altit. circa 450 m s. m., sol. calc., 27 Jun 1918, *J. B. Kümmerle* (BP 393715).

Iridaceae

Iris graminea L. – native
This C and partly S European species was listed by Ascherson & Kanitz (1877) and Hayek (1930) for "Albania", but not by all means from the present territory of the country. Previously Grimus (1871) and also Janchen (1920) reported it from the vicinity of Shkodër. However, Janchen noted that the specimens may belong to *I. sintenisii* (although he had not collected it). Grimus (1871) mentioned *I. graminea* from wet meadows associated with "*Scirpus maritimus* L., *Cyperus longus* L., *Alopecurus utriculatus* L., *Carex riparia* Curt., *Carex ampullacea* Good, *Carex hirta* L., *Isoetes tenuis* Presl, *Oenanthe fistulosa* L., *Oenanthe pimpinelloides* L., and *Butomus umbellatus* L." Since *Iris graminea* is mainly a species of dry oak woodlands, woodland edges, forest clearings and grasslands throughout its European range (cf. Pignatti 1982, Hrouda 2002; Dietrich 2005; Mesterházy & Király 2009), the report from a clearly wet lowland habitat seems quite uncertain.

We believe that the record of Janchen (1920) much more likely refers to *Iris sintenisii* Janka, a species widespread in the lower hilly regions of Albania, while that of Grimus (1871) to some other species. Similarly, the later record of Qosja (1973) from the surroundings of Korçë, though the habitat would be suitable for *I. graminea* ("Ne pyje e shkurreta, e zakonshme" = in forest and scrub, common), most likely refers to the truly frequent *I. sintenisii*, because the region is far from the continuous distribution area of *I. graminea*. Probably, the inclusion of *I. graminea* in Demiri (1983) is based on the above record; however, the species is missing from the most recent monographs (Vangjeli & al. 2000; Vangjeli 2003) and only *I. sintenisii* is included.

The new locality of *Iris graminea* in Albania closely corresponds with the distribution area of the species in the Balkans (Rohlena 1942; Millaku & al. 2011).

Specimen seen — District of Has (Rrethi i Hasit), on the southern slope of Mt Pashtrik (1998 m) above village Pogaj, in bushy forest on limestone, 22 May 2010, *Z. Barina* & *D. Pifkó 17145* (BP 752432).

Sisyrinchium angustifolium Mill. – introduced
The genus is native to North America. The treatment of European representatives of *Sisyrinchium* is much confused. According to Popescu & Boruz (2008), following the concept of Flora Europaea, *S. californicum* (Ker Gawl.) Dryand (with yellow flowers) and *S. bermudianum* sensu Coste non L. (*S. angustifolium* Mill.) occur in Europe only in Ireland, whereas the widely naturalized species in Europe is *S. montanum*. The species is reported from Bulgaria under this name (Assyov & Petrova 2006), but from Croatia and Slovenia under the name *S. bermudianum* (Baćić 2000, FCD 2004+).

According to Brummitt (2011) the name *Sisyrinchium bermudianum* was applied in Europe to *S. angustifolium* Mill., and the widely introduced species in Europe is *S. angustifolium*.

The species has been independently found at two localities in Albania. One place is a petrol station in N

Albania, while the other one is a natural wet sand in S Albania (see also *Cephaloceraton*).

Sisyrinchium angustifolium differs from *S. montanum* by its predominantly branched stems (Cholewa & Henderson 2002). Specimens from Zvërnec are clearly branched, but those from Mamurras are much less branched. So, based on Brummitt (2011) and Cholewa & Henderson (2002), both Albanian populations obviously belong to *S. angustifolium*.

Specimens seen — District of Laç (Rrethi i Laçit), Mamurras, petrol station, 18 May 2011, *M. Rakaj* (BP 756172); District of Vlorë (Rrethi i Vlorës), S of village Zvërnec, near lake Liqeni i Nartës, on wet sand, 23 May 2011, *Z. Barina*, *H. Mező* & *D. Pifkó 19344* (BP 764700).

Juncaceae

Juncus tenuis Willd. – introduced

This North American species is naturalized in most countries of Europe, but has been regarded as missing from Albania and, according to Arianoutsou & al. (2010), also from Greece, although there are records from the latter country near the Albanian border (Pavlides 1982, 1985; Chitos 2009; Strid pers. comm.).

Up to now only one specimen is known, collected in C Albania (Bizë). It represents the only record from Albania, and lacks recent confirmation.

Specimen seen — Bicë, 1200 m, plateau, fagne, 8 Jul 1953 (SOM 10957).

Lamiaceae

Rosmarinus officinalis L. – native and planted

This is a widespread species along the Mediterranean coast including the Balkan countries. Though it is regarded as native in the Balkan Peninsula, it is treated only as alien in Albania and Bulgaria (Euro+Med 2006–).

All the Albanian sources (Paparisto & al. 1962; Mitrushi 1966; Qosja 1973; Demiri 1983; Qosja & al. 1996; Vangjeli 2003) considered it simply as an ornamental plant with no native or escaped populations. On the other hand, Tutin & al. (1972) treated it as a non-native, naturalized species in Albania; however, the source of this information is unknown.

In 2011, a native population of *Rosmarinus officinalis* was found near Kavajë. The plants grew on gravelly substrate in Mediterranean scrubland together with *Erica arborea*, *Phlomis fruticosa*, *Quercus coccifera*, *Spartium junceum*, etc. Later, in the Dumrë region, another inland population was found. However, there the plants had probably been planted into the dry grassland and scrubland. Summarizing, *R. officinalis* is a rare native species in Albania as well as being cultivated in gardens and planted outside of them.

In Greece, this species is widely cultivated and naturalized, but there are also populations that are definitely wild, e.g. in E Sterea Ellas opposite the island of Evvia, growing in the same kind of habitat as described for the Albanian population (Strid pers. comm.).

Specimens seen — District of Kavajë (Rrethi i Kavajës), on the hills above Plazh i Gjeneralit W of village Peqinaj, in Mediterranean scrubland, 4 Nov 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi 18817* (BP 764651); District of Elbasan (Rrethi i Elbasanit), Region Dumrë, at village Seferan, in scrubland, above the road (planted?), 20 May 2011, *Z. Barina*, *H. Mező*, *D. Pifkó 19168* (BP 764691).

Lentibulariaceae

Utricularia australis R. Br. – native

A sub-cosmopolitan species widespread in Europe but frequently confused with the similar *Utricularia vulgaris*. Though widely distributed, it is rare in most of the European countries and also in the Balkans. It is critically endangered in Bulgaria (Ivanova 2011), rare in Serbia (Vukov & al. 2003; Stanković 2011), and "data deficient" in Croatia (FCD 2004+).

It has been found in N Albania, in shallow water at Lake Shkodra.

Specimen seen — District of Shkodër (Rrethi i Shkodrës), Pylli i Dobraçit at Lake Shkodër, 14 Sep 2011, *M. Rakaj* (BP 756177).

Malvaceae

Kitaibelia vitifolia Willd. – native

This N Balkan endemic is distributed southwards to S Macedonia (Micevski 1998), known also from neighbouring Montenegro (Pulević 2005) and Kosovo (Tomović & al. 2007). The species is rare in all of its range: critically endangered in Croatia (FCD 2004+) and vulnerable in Serbia (Tomović & al. 2007).

The species was collected by Rakaj in the valley of the river Mat, and an additional herbarium specimen was found collected by Pál Jakucs near Librazhd. Similar to the Serbian occurrences, both Albanian localities lie in river valleys, but in xero-mesophilous habitats. The Albanian occurrences extend the distribution of the species farther to the southwest, and the locality at Librazhd is the southernmost.

Specimens seen — Albania media. In dumetis rupestribus decl. ad margines fluvii Shkumbini, inter pag. Librazhdi et opp. Elbasan. In Ass. Buxo-Cotinetum. prov., 15 Jul 1960, *P. Jakucs*, det. A. Pénzes (BP 589952); District of Mat (Rrethi i Matit), Klos: Ura e Vashes, 22 Jun 2011, *M. Rakaj* (BP 756173).

Nyctaginaceae

Bougainvillea glabra Choisy – ornamental plant, with remnants of earlier plantings in natural habitats

This South American species is a popular ornamental plant that can occasionally be naturalized too (Khuroo & al. 2007). However, there are no reports on its naturaliza-

tion in Europe, although it is widely cultivated, especially in the Mediterranean countries.

In Albania, we have found a few specimens in Sarandë (BP 764555), where they have been observed on a limestone cliff, surrounded by houses. Though the vegetation of the cliff seems semi-natural, with many native species (such as *Asplenium ceterach*, *Asphodelus fistulosus*, and *Ephedra foeminea*), more non-native species can also be found (such as *Cardiospermum halicacabanum*, *Opuntia ficus-indica*, and *Senecio angulatus*). All the above-mentioned alien taxa, including *Bougainvillea glabra*, are regarded as the remnants of earlier plantings and not naturalized aliens with spreading populations.

Specimen seen — District of Sarandë (Rrethi i Sarandës), in town Sarandë, on the remnants of limestone rocks, 4 Sep 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi 18691* (BP 764555).

Oleaceae

Fraxinus angustifolia Vahl
subsp. ***angustifolia*** – no records from Albania; subsp. ***oxycarpa*** (Willd.) Franco & Rocha Afonso – native
Most authors have published *Fraxinus angustifolia* from Albania without specifying subspecies. Only Paparisto & al. (1962) discussed "*F. oxycarpa*", which is *F. angustifolia* subsp. *oxycarpa* (Willd.) Franco & Rocha Afonso. Baldacci mentioned *F. rostrata* Guss., which is treated as synonym of *F. angustifolia* subsp. *oxycarpa* by Flora Europaea (Tutin & al. 1972); however, Greuter & al. (1989) treated it as synonym of *F. angustifolia* subsp. *angustifolia*.

According to our observations, only *Fraxinus angustifolia* subsp. *oxycarpa* occurs in Albania, as a widely distributed taxon on the lowland between Vlorë and Shkodër.

Specimens seen — District of Durrës (Rrethi i Durrësit), NW of village Shënpjetër, near cape "Kepi i Rodonit"; along a dirty road side, on flysch, 26 Apr 2009, *Z. Barina*, *L. Lőkös* & *D. Pifkó 14744* (BP 749862); District of Lezhë (Rrethi i Lezhës); Ishull i Lezhes, south of "Laguna Blu"; in marshland, 11 Aug 2009, *Z. Barina 16101* (BP 750229); District of Shkodër (Rrethi i Shkodrës), marsh Rrjoll E of village Baks-Rrjoll, at the foot mts. Mali i Rencit, on sand dunes, 5 Aug 2011, *Z. Barina* & *G. Somogyi 19751* (BP 755447).

Orobanchaceae

Melampyrum nemorosum L. – erroneously reported
This C and N European species has a restricted distribution in the Balkans: it is missing from Bulgaria (Assyov & Petrova 2006), but present in Croatia (FCD 2004+), Serbia (Jovanović-Dunjić 1974), and Montenegro (Pulević 2005).

There is a single mention of the species from Albania by Rakaj (2009). However, after revision the voucher specimen proved to be *Melampyrum heracleoticum* Boiss. & Orph., thus *M. nemorosum* does not have confirmed records from Albania. The species is, however, known from neighbouring countries and the occurrence of *M. nemorosum* in N Albania is not unlikely.

Specimen seen (of *Melampyrum heracleoticum*) — District of Malësi e Madhe (Rrethi i Malësisë së Madhe), at Shpella Pejës above Theth, 8 Jul 2009, *M. Rakaj* (BP 756179).

Plantaginaceae

Callitriche obtusangula Le Gall ex Hegelm. – native
This is a SW and WC European species with records also from the Balkan Peninsula. Because of the difficult identification of members of the genus, Schotsman & Mathez (1984) questioned the presence of *Callitriche obtusangula* in Greece, but took it as conceivable. Later it was confirmed in Greece by Papastergiadou & Babalonas (1993) from the NE part of the country.

The species has also been found in Albania in a lowland canal near Shkodër. Regarding the widespread habitat yet long distances between the known localities in the E Mediterranean, it should be borne in mind that this can be an overlooked species, and more occurrences are expected even in Albania.

Specimens seen — District of Lezhë (Rrrethi i Lezhës), Fusha e Balldrenit, c. 4 km NW of village Balldreni i Ri, in a canal, 4 Dec 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi*, det. *A. Mesterházy 18851* (BP 755331) and *18850* (BP 755332).

Poaceae

Beckmannia syzigachne (Steud.) Fernald – erroneously reported
This circumpolar species has only scattered occurrences in Europe and is regarded to be an alien in some E European countries (Fremstad & Elven 1997; Pyšek & al. 2002; Verloove 2006; Yavorska 2009). The species has been reported by Dhora & Rakaj (2010) from Lake Shkodra, far from its native range and even farther from its adventive occurrences in Europe. After revision, the voucher specimens (in herb. Rakaj) proved to be *Beckmannia eruciformis* (L.) Host, thus *B. syzigachne* has to be deleted from the flora of Albania.

Crypsis alopecuroides (Piller & Mitterp.) Schrad. – native
This species was included in Flora Europaea (Tutin & al. 1980) as a questionably occurring species in Albania, supposedly on the basis of the record of Hayek (1930) (cf. *Asyneuma anthericoides* and *Silene uniflora*). However, there are also two previous records from the country: one from Vlorë (Baldacci 1896; Halácsy 1904) and another from Shkodër (Janchen 1920). Later, Demiri (1983) included it in his floristic work, but it is missing from later works (Vangjeli & al. 2000; Vangjeli 2003).

According to our records, *Crypsis alopecuroides* is a widespread but, owing to its special habitat, rare species in Albania.

Specimens seen — District of Fier (Rrethi i Fierit), Pishë-Poro Nature Reserve, between village Pishë and the Adriatik Sea, in mud vegetation, 12 Aug 2010, *Z. Barina*, *D. Pifkó* & *L. Lőkös 18198* (BP 752885); District of Kukës (Rrethi i Kukësit), in the flood basin of river Lumë between villages Përbreg and Lumë, in mud vegetation, 11 Oct 2011, *Z. Barina* & *D. Pifkó 19956* (BP 755514); District of Gjirokastër (Rrethi i Gjirokastrës), in the bed of water reservoir Liqeni i Viroit c. 3 km SE of village Mashkullorë, in mud vegetation, 17 Oct 2011, *Z. Barina* & *D. Pifkó 20100* (BP 755664); District of Sarandë (Rrethi i Sarandës), at the shore of lake Liqeni i Mursit opposite to village Mursi, 17 Oct 2010, *Z. Barina 18466* (BP 763739); District of Vlorë (Rrethi i Vlorës); between villages Çerven and Mifol, on the right bank of river Vjosë; in gravel pit, 12 Aug 2010, *Z. Barina*, *D. Pifkó* & *L. Lőkös obs*.

Elymus elongatus (Host) Runemark – native
Hayek (1930) reported this species from Epirus, a record that could refer to Albania. No later records were known from Albania. It has now been found on maritime sand in S Albania.

Specimen seen — District of Vlorë (Rrethi i Vlorës), SW of village Zhukë-Grykëshqipe, S of the backwater of River Vjosë called Gryka e Vjetër, on maritime sand dunes, 8 Aug 2011, *Z. Barina* & *G. Somogyi 19822* (BP 755392).

Panicum dichotomiflorum Michx. – introduced
This North American species is a relatively newly but widely distributed alien weed in C, E, S, and W Europe. It is known from most of the European countries, such as Croatia (Ilijanić & Marković 1986), France (Le Clerch 1973), Germany (Braun 1986; Weber 1990), Hungary and Slovenia (Csiky & al. 2004), Italy (Fenaroli & Lorenzoni 1964), and N Caucasus (Tzvelev 2006), etc., but is apparently missing from most parts of the Balkan Peninsula. The first record from the Balkans is only from the recent past, from Greece (Arianoutsou & al. 2010).

In Albania only a few specimens have been found at the edge of poplar plantation at the bank of the river Lumi i Zezës together with many other aliens (e.g. *Artemisia annua*, *Bassia scoparia*, *Eleusine indica*, *Helianthus tuberosus*, *Ipomoea purpurea*, *and Lycopersicon esculentum*). Presently the species cannot be regarded as a naturalized alien, although its status may change in the near future.

Specimen seen — District of Krujë (Rrethi i Krujës), next to village Luz at the bank of river Lumi i Zezës, in disturbed place, 13 Oct 2011, *Z. Barina*, *L. Lőkös* & *D. Pifkó 20043* (BP 755598).

Ranunculaceae

Helleborus viridis L. – erroneously reported
This is a C and W European species with no occurrences in the Balkans. The name *Helleborus viridis* had been frequently misapplied to various taxa and used in an extremely wide sense (Soó 1966; cf. Greuter & al. 1989; Strid 2002), consequently giving a wide geographical range. *Helleborus viridis* was reported from Albania only by Markgraf (1931). Later Greuter & al. (1989) listed *H. viridis* agg. from Albania, probably based on Markgraf's record. However, in agreement with the species concept of Greuter & al. (1989), *H. viridis* does not occur in Albania and Markgraf's record refers probably to *H. odorus* Waldst. & Kit. ex Willd., which species is widespread in Albania.

Rosaceae

Potentilla multifida L. – erroneously reported
This arctic, circumpolar species occurs in Scandinavia, the Ural Mountains, and the European Alps, as both the *Potentilla multifida* group and the species *P. multifida* s.str. (Kurtto & al. 2004). A single record was published from Albania, without any precedents or confirmations, by Rodriguez (1923) from the foot of the Thatë Mts at Sveti Naum (St-Naoum). At that time, when Rodriguez visited SE Albania, the state border lay more to the east, whereas today Sveti Naum belongs to Macedonia. However, as the monastery of Sveti Naum lies directly at the state border, the record may refer to a nearby Albanian locality.

The southernmost (isolated) populations of *Potentilla multifida* can be found in the European Alps; there are no additional records from the Balkans. The reported locality is at the northern foot of the Thatë Mts, around 1000 m above sea level in the oak forest zone, without any possible refugia or microhabitats that could be suitable for this species.

Based on the above information, *Potentilla multifida* should be deleted from the Albanian flora.

Prunus persica (L.) Stokes – introduced
This is a widely cultivated species in S Europe, and also in Albania (Demiri 1983; Mitrushi 1966). All the Albanian works mentioned it only as a cultivated species (Demiri 1983; Mitrushi 1966; Paparisto & al. 1962; Qosja & al. 1992; Vangjeli 2003), but Flora Europaea (Tutin & al. 1968) mentioned it as escaping there.

The presence of the species outside of cultivation has now been confirmed; it is a casual, only with young specimens, along roadsides.

Specimens seen — District of Shkodër (Rrethi i Shkodrës), in village Bahçallëk, escaped specimen in ruderal place by the side of road Nr. SH1 (E762), 5 Aug 2011, *Z. Barina* & *G. Somogyi 19754* (BP 755976); District of Shkodër (Rrethi i Shkodrës); between villages Beltojë

and Plezhë along road Nr. SH1 (E762); by the roadside, 6 Aug 2011, Z. *Barina* & *G. Somogyi obs*.

Sapindaceae

Acer negundo L. – introduced
This North American species has become naturalized in many parts of Europe and can be dangerously invasive (Udvardy 2004; Saccone & al. 2010).

In Albania it is frequently cultivated in parks and towns and sometimes turns up as a casual, especially in urban habitats. It has been observed as naturalized only in the valley of the river Vjosë at the edge of the town of Përmet, whereas all other occurrences should be treated as casuals.

Specimens seen — District of Vlorë (Rrethi i Vlorës), in city Vlorë, in a small street near the main road SH8, in pavement gaps, 24 Aug 2011, *Z. Barina* & *G. Somogyi 19832* (BP 755376); District of Bulqizë (Rrethi i Bulqizës); c. 200 m E of town Bulqizë along road SH6; by the roadside, 6 Aug 2011, *Z. Barina* & *G. Somogyi obs.*; District of Gjirokastër (Rrethi i Gjirokastrës); in city Gjirokastër: Rruga 18 Shtatori; in pavement gaps, 9 Aug 2011, *Z. Barina* & *G. Somogyi obs.*; District of Korçë (Rrethi i Korçës); in town Korçë: in the destroyed place of T.E.C. factory at Rruga Midhi Kostani; in ruderal place, 11 Aug 2011, *Z. Barina* & *G. Somogyi obs.*; District of Korçë (Rrethi i Korçës); in town Korçë: in the destroyed place of T.E.C. factory at Rruga Midhi Kostani; in ruderal place, 11 Aug 2011, *Z. Barina* & *G. Somogyi obs.*; District of Përmet (Rrethi i Përmetit); in the valley of river Vjosë within town Përmet near the bridge; naturalized specimens, 11 Aug 2011, *Z. Barina* & *G. Somogyi obs.*; District of Skrapar (Rrethi i Skraparit); planted in the park of town Çorovodë, 4 May 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi obs*.; District of Tiranë (Rrethi i Tiranës); Tiranë: Rruga e Elbasanit near Faculteti i Ekonomise; by the roadside, 14 Oct 2011, *Z. Barina*, *L. Lőkös* & *D. Pifkó obs.*; District of Vlorë (Rrethi i Vlorës); in village Nartë, at the end of the new motorway SH8; by the roadside, 8 Aug 2011, *Z. Barina* & *G. Somogyi obs*.

Cardiospermum halicacabum L. – ornamental plant, with remnants of earlier plantings in natural habitats
This tropical American species is a garden plant in Europe and could behave as invasive in some countries (Arianoutsou & al. 2010).

In Albania we have found it in Sarandë, where it formed an extensive net around houses, together with some additional aliens, such as *Bougainvillea glabra* and *Opuntia ficus-indica* in semi-natural limestone vegetation. Although more aliens were found in great quantity, all species seemed to be remnants of earlier plantings (cf. *Bougainvillea glabra*).

Specimens seen — District of Sarandë (Rrethi i Sarandës), in town Sarandë, on the remnants of limestone rocks, 9 Apr 2011, *Z. Barina*, *D. Pifkó* & *G. Somogyi 18686* (BP 764710).

Typhaceae

Sparganium angustifolium Michx. – native
This circumpolar species has a centre of distribution in Europe in the North, with very scattered occurrences southwards (Dítě & al. 2004). In the Balkans it is known from Montenegro (Pulević 2005), Bulgaria (Assyov & Petrova 2006), and Greece (Saria-Hatzinikolau & al. 1997).

The species has been found in a few glacial lakes in the Gash Region, near the Montenegro and Kosovo border. The region is unique in Albania, as its bedrock is radiolarite and granite and the whole area is completely treeless with glacial lakes in the upper zone (around 2000 m).

According to Saria-Hatzinikolau & al. (1997), *Sparganium angustifolium* is a rare or undercollected species in Greece. We believe that it is also a very rare species in Albania, although it can be dominant in parts of the observed lakes, thus it is a noticeable and easily collectable species. Further occurrences might be expected in the extended serpentine areas, although many of those are well investigated (e.g. Lura Lakes).

Specimens seen — District of Tropojë (Rrethi i Tropojës), from tarn Liqeni i Dashit towards village Dobërdol, in a tarn, 9 Jul 2011, *Z. Barina*, *A. Kovács*, *G. Puskás* & *B. Sárospataki 19513* (BP 755874); District of Tropojë (Rrethi i Tropojës), between villages Sylbice and Dobërdol, near pass qafa e Dobërdolit, in tarn, 8 Jul 2011, *Z. Barina*, *A. Kovács*, *G. Puskás* & *B. Sárospataki 19473* (BP 755876); District of Tropojë (Rrethi i Tropojës), from tarn Liqeni i Dashit towards village Dobërdol; in a tarn, 9 Jul 2011, *Z. Barina*, *A. Kovács*, *G. Puskás* & *B. Sárospataki obs.*

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