

## **Euro+Med-Checklist Notulae, 12**

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ECKHARD VON RAAB-STRAUBE<sup>1\*</sup> & THOMAS RAUS<sup>1</sup> (ed.)

## Euro+Med-Checklist Notulae, 12

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**Abstract:** This is the twelfth of a series of miscellaneous contributions, by various authors, where hitherto unpublished data relevant to both the Med-Checklist and the Euro+Med (or Sisyphus) projects are presented. This instalment deals with the families *Asparagaceae* (incl. *Hyacinthaceae*), *Boraginaceae*, *Cactaceae*, *Caryophyllaceae*, *Chenopodiaceae*, *Compositae*, *Crassulaceae*, *Euphorbiaceae*, *Gramineae*, *Haloragaceae*, *Iridaceae*, *Labiatae*, *Leguminosae*, *Malvaceae*, *Orchidaceae*, *Orobanchaceae*, *Plumbaginaceae*, *Polygonaceae*, *Rosaceae*, *Scrophulariaceae* (incl. *Buddlejaceae*), *Solanaceae* and *Umbelliferae*. It includes new country and area records and taxonomic and distributional considerations for taxa in *Abutilon*, *Aegilops*, *Amelanchier*, *Andryala*, *Aruncus*, *Asparagus*, *Bellevalia*, *Brugmansia*, *Buglossoides*, *Bupleurum*, *Cortaderia*, *Crassula*, *Datura*, *Dysphania*, *Euphorbia*, *Fallopia*, *Iris*, *Lycianthes*, *Myriophyllum*, *Nicodemia*, *Onobrychis*, *Ophrys*, *Opuntia*, *Orobanche*, *Phelipanche*, *Plumbago*, *Salvia*, *Silene*, *Stellaria* and *Wisteria*, and new combinations in *Amelanchier* and *Phelipanche*.

**Key words:** distribution, Euro+Med PlantBase, Europe, Med-Checklist, Mediterranean, new combination, new record, taxonomy, vascular plants

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## Notice

A succinct description of the Euro+Med project, with a list of recognized territories and their abbreviations, and the conventions used to indicate the status and presence of taxa, can be found in the introduction to the first instalment of the Euro+Med Notulae (Greuter & Raab-Straube 2005: 223–226) and on the Euro+Med PlantBase website (Euro+Med 2006+). For the previous instalment of the Euro+Med-Checklist Notulae, see Raab-Straube & Raus (2019).

## Contributors

- Z. Baumwol, Birmont Medical Group, 11/44 Kadish Luz st., Kiryat Motzkin 2640306, Israel; e-mail: [zalmanpenl@gmail.com](mailto:zalmanpenl@gmail.com)
- I. Bazos, National and Kapodistrian University of Athens, Faculty of Biology, Department of Ecology and Systematics, Panepistimiopolis, 15784 Athens, Greece; e-mail: [ibazos@biol.uoa.gr](mailto:ibazos@biol.uoa.gr)
- R. Böcker, Institut für Landschafts- und Pflanzenökologie der Universität Hohenheim, August-von-Hart-

<sup>1</sup> Botanischer Garten und Botanisches Museum Berlin, Freie Universität Berlin, Königin-Luise-Str. 6–8, 14195 Berlin, Germany; \*e-mail: [e.raab-straube@bgbm.org](mailto:e.raab-straube@bgbm.org) (author for correspondence), [t.raus@bgbm.org](mailto:t.raus@bgbm.org)

- mann-Straße 3, 70599 Stuttgart, Germany; e-mail: reinhard.boecker@uni-hohenheim.de
- S. Bogdanović, University of Zagreb, Faculty of Agriculture, Department of Agricultural Botany, Herbarium ZAGR, Svetošimunska cesta 25, 10000 Zagreb, Croatia; e-mail: sbogdanovic@agr.hr
- M. Bou Dagher Kharrat, Laboratoire Biodiversité et Génomique Fonctionnelle, Faculté des Sciences, Université Saint-Joseph, Campus Sciences et Technologies, Mar Roukos, Mkalles, BP: 1514 Riad el Solh, Beirut 1107 2050, Lebanon; e-mail: magda.boudagher@usj.edu.lb
- M. Chasapis, Forest Office of Aridaia, Xenitidi & Ermou str. 5, 58400 Aridaia, Greece; e-mail: minxas1@gmail.com
- S. S. Cohen, Birmont Medical Group, 8 Enzo Sereni, Haifa 3297208, Israel; e-mail: nycthantes@icloud.com
- D. De Beer, Blancefloerlaan 15, 2050 Antwerpen, Belgium; e-mail: dirk.debeer@telenet.be
- G. De Bélair, Université Badji Mokhtar, BP 512, 23000 Annaba, Algeria; e-mail: debelaigr@yahoo.com
- G. Domina, Department of Agricultural, Food and Forest Sciences, University of Palermo, Palermo, Viale delle Scienze Bldg. 4, 90128 Palermo, Italy; e-mail: gianniantonio.domina@unipa.it
- R. El Mokni, Department of Pharmaceutical Sciences "A", Laboratory of Botany, Cryptogamy and Plant Physiology, Faculty of Pharmacy of Monastir, BP. No. 207, Avenue Avicenne, 5000 Monastir, Tunisia; e-mail: riridah@hotmail.com
- E. Eleftheriadou, Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Forestry and Natural Environment, Laboratory of Forest Botany/Geobotany, 54124 Thessaloniki, Greece; e-mail: eelefthe@for.auth.gr
- A. V. Fateryga, T. I. Vyazemsky Karadag Scientific Station, Nature Reserve of the Russian Academy of Sciences, Branch of A. O. Kovalevsky Institute of Biology of the Southern Seas, Nauki Str. 24, Kurortnoye, Feodosiya 298188, Crimea; e-mail: fater\_84@list.ru
- R. Fekete, Department of Botany, University of Debrecen, Egyetem tér 1, 4032 Debrecen, Hungary; e-mail: feketereka722@gmail.com
- M. Z. Ferreira, Madeira Botany Group, University of Madeira, Campus Universitário da Penteada, 9020-105 Funchal, Madeira, Portugal; e-mail: mztaferreira@sapo.pt
- A. Fridlender, Faculté des Sciences, Département Pluri-disciplinaire, Université AMU, 3 place Victor Hugo, 13003 Marseille cedex 03, France; e-mail: alain.fridlender@univ-amu.fr
- E. Gubler, Via Johannes Badrutt 7, 7500 St. Moritz, Switzerland; e-mail: ernst-gubler@bluewin.ch
- M. Harásek, Department of Botany and Zoology of Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic; e-mail: harasek1993@gmail.com
- P. Hein, Botanischer Garten und Botanisches Museum Berlin, Freie Universität Berlin, Königin-Luise-Str. 6–8, 14195 Berlin, Germany; e-mail: p.hein@bgbm.org
- D. Iamónico, Department of Biology, Botany Unit, University of Pisa, Via Luca Ghini 13, 56126 Pisa, Italy; e-mail: d.iamonico@yahoo.it
- N. Jogan, Department of Biology, Biotechnical Faculty, University of Ljubljana, Večna pot 111, 1000 Ljubljana, Slovenia; e-mail: nejc.jogan@bf.uni-lj.si
- V. Kalníková, Department of Botany and Zoology of Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic & Beskydy Protected Landscape Area Administration, Nádražní 36, 756 61, Rožnov pod Radhoštěm, Czech Republic; e-mail: v.kalnikova@seznam.cz
- N. Korotkova, Botanischer Garten und Botanisches Museum Berlin, Freie Universität Berlin, Königin-Luise-Str. 6–8, 14195 Berlin, Germany; e-mail: n.korotkova@bgbm.org
- V. Kummer, Universität Potsdam, Institut für Biochemie und Biologie, Biodiversitätsforschung/Spezielle Botanik, Maulbeerallee 1, 14469 Potsdam, Germany; e-mail: kummer@uni-potsdam.de
- N. Kuzmanović, Institute of Botany and Botanical Garden, Faculty of Biology, University of Belgrade, 11000 Belgrade, Serbia; e-mail: nkuzmanovic@bio.bg.ac.rs
- V. Löki, Wetland Ecology Research Group, Department of Tisza Research, MTA Centre for Ecological Research, Bem tér 18/C, 4026 Debrecen, Hungary; e-mail: lokvi89@gmail.com
- S. Maslo, Primary School, Lundåkerskola, Gislaved, Sweden; e-mail: semmas@edu.gislaved.se
- V. Matevski, Faculty of Natural Sciences and Mathematics, Ss. Cyril and Methodius University of Skopje, Arhimedova 5, 1000 Skopje, North Macedonia; e-mail: vlado.matevski@manu.edu.mk
- S. Meyer, Georg-August Universität Göttingen, Albrecht-von-Haller Institut für Pflanzenwissenschaften, Ökologie und Ökologieforschung, Untere Karspüle 2, 37075 Göttingen, Germany; e-mail: smeyer1@gwdg.de
- A. Molnár V., Department of Botany, University of Debrecen, Egyetem tér 1, 4032 Debrecen, Hungary; e-mail: mva@science.unideb.hu
- R. A. Murtazaliev, Mountain Botanical Garden of the Dagestan Federal Research Center of the RAS, M. Gadjev str. 45, Makhachkala 367000, Russia; e-mail: murtazaliev.ra@yandex.ru
- M. Niketić, Natural History Museum Belgrade, Njegoševa 51, 11000 Beograd, Serbia; e-mail: mniketic@nhmbeo.rs
- P. Novák, Department of Botany and Zoology of Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic; e-mail: pavenow@seznam.cz
- G. Parolly, Botanischer Garten und Botanisches Museum Berlin, Freie Universität Berlin, Königin-Luise-

- Str. 6–8, 14195 Berlin, Germany; e-mail: g.parolly@bgbm.org
- A. V. Popovich, Environmental Commission, Krasnodar Regional Branch of the Russian Geographical Society, Lenina Str. 103/64, Krasnodar 350033, Russia; e-mail: popovitch.antonio220386@yandex.ru
- E. von Raab-Straube, Botanischer Garten und Botanisches Museum Berlin, Freie Universität Berlin, Königin-Luise-Str. 6–8, 14195 Berlin, Germany; e-mail: e.raab-straube@bgbm.org
- S. Rätzel, Georg-Friedrich-Händel-Straße 13, 15234 Frankfurt an der Oder, Germany; e-mail: stefan.raetzel@googlemail.com
- Th. Raus, Botanischer Garten und Botanisches Museum Berlin, Freie Universität Berlin, Königin-Luise-Str. 6–8, 14195 Berlin, Germany; e-mail: t.raus@bgbm.org
- M. Ristow, University of Potsdam, Plant Ecology and Nature Conservation, Am Mühlberg 3, 14476 Potsdam, Germany; e-mail: ristow@uni-potsdam.de
- L. E. Ryff, Flora and Vegetation Laboratory, Nikitsky Botanical Garden – National Scientific Centre, Yalta, Crimea; e-mail: ryffljub@ukr.net
- A. Saci, Conservation of the forests of the wilaya of Skikda, Bouabaz City-Skikda, 21000 Skikda, Algeria; e-mail: amarsaci21@gmail.com
- D. A. Samaras, Department of Forestry, Wood Science and Design, University of Thessaly, V. Griva 11, 43100 Karditsa, Greece; e-mail: dsamar@uth.gr
- M. Sequeira, Madeira Botany Group, University of Madeira, Campus Universitário da Penteada, 9020-105 Funchal, Madeira, Portugal; e-mail: sequeira@uma.pt
- D. Shilnikov, Komarov Botanical Institute, Russian Academy of Sciences, Eco-botanical station Pyatigorsk, Russia; e-mail: demons2002@yandex.ru
- J. Stephan, Lebanese University, Faculty of Sciences II, Fanar, Lebanon; e-mail: dr.jeanstephan@gmail.com
- D. Stešević, Faculty of Natural Sciences and Mathematics, University of Montenegro, Džordža Vašingtona bb, Podgorica 81 000, Montenegro; e-mail: danijela.stesevic@ucg.ac.me
- A. Stinca, Department of Environmental Biological and Pharmaceutical Sciences and Technologies, University of Campania Luigi Vanvitelli, via Vivaldi 43, 81100, Caserta, Italy; e-mail: adriano.stinca@unina.it
- S. Stoyanov, Department of Plant and Fungal Diversity and Resources, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Acad. G. Bonchev Str., bl. 23, 1113 Sofia, Bulgaria; e-mail: tjankata@abv.bg
- A. Strid, Bakkevej 6, 5853 Ørbæk, Denmark; e-mail: arne.strid@youmail.dk
- S. A. Svirin, City Development Institute, Sevastopol State University, Universitetskaya str. 33, Sevastopol 299053, Crimea; e-mail: sapsan7@mail.ru
- A. A. Taleb, Faculty of Agronomy, Lebanese University, P.O. Box 6573/14 Badaro, Museum, Beirut, Lebanon; e-mail: ali.talebakkar@gmail.com
- K. A. Taleb, Akkar Trail group, main road, 1<sup>st</sup> floor, Meshmesh Akkar, Lebanon; e-mail: akkartrail@gmail.com
- K. Theodoropoulos, Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Forestry and Natural Environment, Laboratory of Forest Botany/Geobotany, 54124 Thessaloniki, Greece; e-mail: ktheodor@for.auth.gr
- H. Uhlich, Gartenstraße 19, 56357 Welterod, Germany; e-mail: uhlich.holger@googlemail.com
- Y. Ur, 106 Moshav Amnoon, 1293500, Israel; e-mail: yairur@013.net
- F. Verloove, Meise Botanic Garden, Nieuwelaan 38, 1860 Meise, Belgium; e-mail: filip.verloove@botanicgardenmeise.be
- B. Wallnöfer, Naturhistorisches Museum, Botanische Abteilung, Burgring 7, 1010 Wien, Austria; e-mail: bruno.wallnoefer@nhm-wien.ac.at
- E. Zippel, Botanischer Garten und Botanisches Museum Berlin, Freie Universität Berlin, Königin-Luise-Str. 6–8, 14195 Berlin, Germany; e-mail: e.zippel@bgbm.org
- D. Zukal, Department of Botany and Zoology of Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic; e-mail: dominikzukal@gmail.com

*Asparagaceae* (incl. *Hyacinthaceae*)

*Asparagus aethiopicus* L. (≡ *Asparagopsis aethiopica* (L.) Kunth = *Asparagus sprengeri* Regel)

**A Ga(F):** France: Marseille, along Rue Caisserie, 43°17'49.82"N, 05°22'6.12"E, 14 m, between cracks, 25 Jul 2017, *Stinca* (PORUN-herb. *Stinca*). – *Asparagus aethiopicus* is a perennial herb or shrub native to South Africa that is frequently grown as outdoor ornamental plant in the Mediterranean region. In this area it sometimes escapes from gardens by seed dispersal. In the Euro+Med area it has been recorded from Mallorca (Sáez & al. 2016), Sardinia, Sicily and Italy (Galasso & al. 2018), often as an epiphytic plant (Stinca & al. 2013). Some individuals were observed in a ruderal environment in the urbanized area of Marseille, near the port. A. Stinca

*Bellevalia speciosa* Woronow ex Grossh. – Fig. 1.

**+ AE(G):** Greece: East Aegean Islands, Nomos of Lesvos, Eparchia of Mitilini, Lesvos island, above Vrisa in locality called Agia Anna, 39°02'43"N, 26°13'32"E, 250 m, clearings in *Pinus brutia* Ten. forest, olive groves and uncultivated land, 16 Apr 1995, *Bazos 2218* (ATHU); *ibid.*, between Agios Pavlos

and Skamioudi, 39°07'44"N, 26°13'23"E, 8 m, two individuals in a barley field with deep soil together with *Echinophora tenuifolia* L., *Leontice leontopetalum* L. and *Muscari comosum* (L.) Mill., 22 Apr 2019, Meyer (ATHU). – This is a new record for the East Aegean Islands and Greece as a whole. The currently known distribution of the species includes Transcaucasia and N Iran, the Pontic region (Romania, Ukraine, S Russia) and Turkey (Wendelbo 1984). The occurrence of the species on Lesvos is presumably an outpost of populations in the NW part of Turkey (Çanak-kale, Istanbul, Izmir; Wendelbo 1984; Özhatay & al. 1991). The species was already found on Lesvos and reported with uncertainty under its younger synonym *Bellevalia sarmatica* (Pall.) Misch. (Bazos 2005), but, because of the uncertainty, was not taken into account by Dimopoulos & al. (2013, 2016) and Strid (2016a, 2016b). An old record of *B. ciliata* (Cirillo) T. Nees by Candargy (1898) probably refers to *B. speciosa* as well, because, according to Wendelbo (1984: 270), the name *B. ciliata* has been misapplied to plants of *B. sarmatica* from NW Turkey. The two localities of *B. speciosa* recorded on Lesvos are approximately 10 km apart. *Bellevalia edirnenensis* Özhatay & B. Mathew, which was described from the Edirne area in European Turkey (Özhatay & al. 1991; Dayhan & al. 2013) and has subsequently been found also on the Greek side of the border (Bareka & al. 2008), is somewhat similar but has much shorter fruiting pedicels.

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#### Boraginaceae

*Buglossoides incrassata* subsp. *splitgerberi* (Guss.) E. Zippel & Selvi

+ **Al:** Albania: Nord-Albanien, Luma, buschige Hänge der Skoza-Schlucht bei Dzuri, 500 m, 29 May 1918, *Dörfler 548* (WU). – The taxon has not so far been reported with certainty from Albania. Previous literature records of *Lithosper-*



Fig. 1. *Bellevalia speciosa*, flowering plant in habitat. – Greece: Lesvos island, between Agios Pavlos and Skamioudi, 22 Apr 2019, photograph by S. Meyer.

*mum arvense* subsp. *gasparinii* (Guss.) Láinz from Albania (Qosja & Papparisto 1996: 85; Vangjeli 2015: 327; Pils 2016: 52, sub *Buglossoides incrassata* subsp. *sibthorpiana* nom. nud.) might potentially refer to *B. incrassata* subsp. *splitgerberi*, but they remain unidentifiable and therefore cannot be evaluated for mapping purposes.

+ **Ar:** Armenia: Talin district, 1620 m, 21 Jun 2002, *Fayvush & al.* (WU 2005-11451); *ibid.*, Lori province, 1390 m, 29 Jun 2003, *Fayvush & al.* (WU); *ibid.*, Sjunik province, 1900–2300 m, 22 Jun 2004, *Fayvush & al. 04-1194* (WU 2004-01200); *ibid.*, Sjunik province, 2539 m, 23 June 2004, *Fayvush & al. 04-1417* (WU 2006-05733); *ibid.*, Vayots Dzor province, 1630 m, 16 May 2006, *Fayvush & al. 06-0200* (WU 2006-08951); *ibid.*, Gegharkunik prov-

- ince, NE of lake Sevan, N of Tchambarak, road from Ttujur to Berd, between Ttujur and Miapor pass, 1890 m, 28 May 2006, *Vitek 06-0524* (WU 2010-09869); *ibid.*, Tavush province, 820 m, 31 May 2006, *Oganesian & al. 06-0939* (WU 2010-09291); *ibid.*, Aragatsotn province, area N of Aparan, beside road Melikyugh, 2090 m, 4 Jun 2006, *Vitek 06-1117* (WU); *ibid.*, Aragatsotn province, area N of Aparan, valley c. 2.5 km E of Melikyugh, 2240 m, 4 Jun 2006, *Vitek 06-1109* (WU 2010-09494); *ibid.*, Kotayk province, 1970 m, 6 Jun 2006, *Vitek 06-1238* (WU 2010-09438); *ibid.*, E of Yerevan, in Geghard village, 1920 m, 18 Jun 2007, *Tamanyan, Oganesian & Vitek 07-0784* (WU). – These are the first records of the taxon for Armenia.
- + **Bu**: Bulgaria: bei Radomir, 23 Mar 1905, *Urumoff* (WU 3879); *ibid.*, Slavjanka mt., Paril, Goce Delcev, dry meadow, 6 Jun 1980, *Kuzmanov BK-80474* (B); *ibid.*, Bulharsko, Sozopol, Akutino, 3 m, in arenosis supra mare, 9 May 1993, *Grulich & al.* (BRNU 534257); *ibid.*, ad Parlovo, 10 May 1912, *Urimov* (BRNU 147740). – The taxon has not previously been reported from Bulgaria.
- + **Ct**: Croatia: Spalato, nächst dem Fort Grippi, auf einer Weinbergsbrache, 25 Jun 1927, *Korb* (WU); *ibid.*, Draganički, Goljak, 26 Apr 1951, *Serjan* (ZA); *ibid.*, Zrmanja, Getreidefeld, 5 Apr 1890, *Rossi 6052* (ZA); *ibid.*, Istrien, Gebiet des Monte Maggiore, 130 m, Äcker und Brachen, 28 May 1909, *Ginzberger* (WU). – The taxon has not previously been reported from Croatia.
- + **Fe**: Finland: Prov. Tavastia australis, Pohjois-Pirkkala, ratapenger [railway bank], 2 Jul 1933, *Rydman* (TMP); *ibid.*, Kulovesi, radan varsi [railway side], 8 Jul 1935, *Haapanen* (TMP D673); *ibid.*, Tampere, Lielahden, kuiva rinne [dry slope], 27 May 1937, *Setälä* (TMP); *ibid.*, Åland, Sund, Kastelholm, linnan takana vallilla [behind castle on rampart], 24 May 1952, *Saransaari* (TMP D1054); *ibid.*, Nokia, Haavisto, rautatien varsi [railway side], 12 Jun 1952, *Helin* (TMP); *ibid.*, Nokia, SOK:n myllyalue [area of SOK company's mill], 23 Jul 1966, *Kääntönen* (TMP D670); *ibid.*, Tampere, Lielahden asema, ratapenger [Lielahden railway station, railway bank], 4 Aug 1968, *Kääntönen* (TMP); *ibid.*, Prov. Alandia, Maarianhamina, Espholm, pellon reuna [field margin], 5 Jul 1967, *Lyly* (TMP); *ibid.*, Saltvik, Ödkarby, Haga Kungsgårdin SW, puolella vehnäpellon laidalla, runsaasti [margin of wheat field, abundant], una cum [with] *Allium oleraceum* L., *Centaurea cyanus* L. [and] *Veronica arvensis* L., 25 Jul 1990, *Lahtonen 102* (TMP D963). – The taxon has not previously been reported with certainty from Finland. Literature records of *Lithospermum arvense* subsp. *coerulecens* DC., mapped by Mossberg & Stenberg (2018: 688) for Scandinavia including Finland, may refer to *B. incrassata* subsp. *splitgerberi*, but remain questionable unless substantiated by revised herbarium material.
- + **Gg(G)**: Georgia: Transcaucasia, Tiflis, in faucibus fl. Dabachanka, 18 Apr 1924, *Grossheim* (BRNU 94800). – First record of the taxon from Georgia.
- + **He**: Switzerland: Basel, zwischen Bottningen und Batterie, 7 May 1942, *Tschopp* (BASBG); *ibid.*, Graubünden, Puschlav, Resena, Mauerkrone, 1080 m, 27 Jun 1972, *Eckardt 2469* (B); *ibid.*, Wallis, Mattertal, Grächen, 1400–1600, Wegrand, 4 Jul 2001, *Ristow 262/01* (herb. Ristow); *ibid.*, Wallis, Visperterminen, Acker, 4 Aug 2001, *Zippel & Waldis 01-209.1* (BSB); *ibid.*, 4 Aug 2001, *Zippel & Waldis 01-209.2* (BSB). – The taxon has not previously been published for Switzerland. An old literature record of *Lithospermum arvense* subsp. *coerulecens* DC. from Wallis/Valais (Schmid & Gams 1927: 2159) refers possibly to *B. incrassata* subsp. *splitgerberi*, but remains questionable unless substantiated by revised herbarium material.
- + **Ho**: Netherlands: Siebengewald, 26 May 1997, *Reijerse 97063* (BSB). – The taxon has not previously been reported from the Netherlands.
- + **Hs(S)**: Spain: Sierra Nevada, 24 km N Granada, 1720 m, Weizen, 28 May 1936, *Huber-Morat 3335* (BASB); *ibid.*, Huesca, Puntón de Guara, Gottesacker, 1980 m, 11 Jul 1974, *Montserrat 3884/74* (BASBG); *ibid.*, zwischen Motril und Granada nördlich der Abzweigung nach Lanjaron, 23 May 1981, *Hübl & Holzner* (W). – The taxon has not previously been reported with certainty from Spain. Pastor (2012: 381), although commenting on *Buglossoides incrassata* subsp. *splitgerberi*, does not authenticate verified populations in the *Flora iberica* area; the pertinent drawing, captioned *B. incrassata* subsp. *incrassata* (Pastor 2012: 380), depicts in fact *B. arvensis*.
- + **Hu**: Hungary: Csepelinsel bei Budapest, 12 May 1906, *Janchen* (WU); *ibid.*, Comit[atus]. Pest, Ökuti völgy supra oppidum Szentendre, c. 200 m, in agris vallis, 29 Apr 1952, *Kárpáti & Baráth* (WHB 188633); *ibid.*, Umgebung von Budapest, Blockberg-Csepelinsel, May 1888, *Wettstein* (WU). – The taxon has not previously been reported from Hungary.

- + **Mk**: North Macedonia: Galicitz, Jul 1908, *Dimonie* (WHB 2007-02384). – This is the first record of the taxon from North Macedonia.
- + **Po**: Poland: Silesia, Biała Prudnicka, field, 30 Jun 1961, *Stojanowska* (B); *ibid.*, Grünberg (Zielona Góra), bei Nittritz, 16 May 1892, *Schroeder* (B). – No previous published records of the taxon are known from Poland.
- + **Rm**: Romania: Geoagin, Hunedoava, 9 May 1964, *Slanovschi* (IASI); *ibid.*, Adjud, Vrancea, posune, 13 May 1965, *Popanikai* (IASI); *ibid.*, Lebatiste Codresti (V Vasheretalui), 1 Jun 1968, *Zinasj* (IASI 80546); *ibid.*, Tg Oena, 27 May 1969, *Chifu & Stefan* (IASI 94358); *ibid.*, Vasliu, Ackerbrache, 16 May 1973, *Dobrescu* (IASI). – These are the first verified records of the taxon from Romania.
- + **Se**: Serbia: Pirot, mte Graiste, 21 May 1888, *Bornmüller* (B); *ibid.*, in arvis ad Vranja, May 1895, *Aderc* (WHB). – These are the first verified records of the taxon from Serbia.
- + **Sk**: Slovakia: Slovakia merid[ionalis], distr. Štúrovo, in declivibus silvatico-stepposis Skály dictis supra station[em] viae ferrat[ae]. Kamenica nad Hronom, 250 m, 19 May 1962, *Smejkal* (BRNU 410725); *ibid.*, distr. Lučenec, in declivib[us]. septentr[ionalis]. collis Hyalos (cota 317) prope pagum Fil'akovske Kl'ačany, 260 m, in pascuis, 1 Jun 1965, *Smejkal* (BRNU 421038); *ibid.*, Devinsaka, Kobyla, Devín, ruderal, 11 May 1994, *Ferráková* (B); *ibid.*, Senica, Moravský Ján, Borové, ostrůvek vátých písků v niveně Moravy 5 km jz obce, 15 May 1994, *Grulich* (BRNU 534983). – The taxon has not previously been reported from Slovakia.
- + **Su**: Sweden: Uppland, Danmark, 22 Jun 1905, *Svensson* (BSB); *ibid.*, Halland, Akrav, 5 Jun 1921, Acker, *Svensson* (BASBG); *ibid.*, Öland, Runsten, 24 May 1897, *Arescog* (B); *ibid.*, Falun, Upland, Vigelsbo, 5 Jul 1893, *Fröman* (WU). – The taxon has not previously been reported with certainty from Sweden. Literature records of *Lithospermum arvense* subsp. *coerulecens* DC. from Scandinavia (e.g. Hylander 1945: 261), later mapped by Mossberg & Stenberg (2018: 688) for the Nordic countries of Denmark, Norway, Sweden and Finland, might refer to *B. incrassata* subsp. *splitgerberi*, but remain questionable unless substantiated by revised herbarium material.
- + **Tu(A), Tu(E)**: Anatolia: Burdur, macchie, 17 Apr 1985, *Nydegger 40250* (BASBG); *ibid.*, Antalya, Campus University Akdeniz, ruderal, 7 Apr 1998, *Even 50.3* (B). – Turkey-in-Europe: Umgebung von Konstantinopel, San Stefano, 6 Apr 1895, *Nemetz* (WU 2001-12328). – No

previous published records of the taxon are known from Turkey.

- + **Uk**: Ukraine: Prov. Ternopil, Tornopolis, field, 9 May 1993, *Kagalo & Sytschak 04707* (B); *ibid.*, Prov. Kiev, in agris pr. urb. Uman, 30 May 1900, *Jenko-Darowsky* (WU); *ibid.*, Galizien, Umgebung von Lemberg, c. 1860, *collector unknown* (WU 2001-13501). – These are the first verified records of the taxon from Ukraine.

The distribution of this taxonomically and floristically largely neglected taxon, chiefly growing in seminatural xerothermous meadows and similar habitats as well as in grain fields like *Buglossoides arvensis* (L.) I. M. Johnst. (Zippel & Wilhalm 2003), is only very fragmentarily documented in the Euro+Med PlantBase, with area records merely for Germany, Italy, Sicily and Corsica (Valdés 2011+a). There are, however, published records of *Buglossoides incrassata* subsp. *splitgerberi*, partly under various synonyms, from additional parts of Europe and the Mediterranean such as continental France (Tison & de Fourcault 2014: 546), Austria (Fischer & al. 2008: 691, as *B. incrassata* subsp. *leithneri* (Heldr.) E. Zippel & A. Clermont, nom. inval.), the Czech Republic (Daníhelka & al. 2012: 682; Kaplan 2019: 808), continental Greece (Willing & Willing 2012: 69, Willing 2020: 67), and Cyprus (Hand & al. 2011+). Although its *locus classicus* is situated in Sicily (Alcamo, province of Trapani, according to Selvi & Cecchi 2009: 624), the taxon is neither endemic to Italy (as incorrectly stated by Bartolucci & al. 2018: 249) nor confined to the Euro+Med area (as actually indicated by Valdés 2011+a). Verified specimens of *B. incrassata* subsp. *splitgerberi* have been seen from Iran (Urumiak ad rivi Scher Tschai ripas, 2 Jul 1884, *Knapp*, WU), Kazakhstan (Semipalatinsk, 28 Mar 1905, *Kossinsky 352*, BRNU 95137), Pakistan (Islamabad, 28 Feb 1992, *Tahir*, WU) and Turkmenistan (Aschabad, in montibus supra pagum Nephon, 13 Apr 1900, *Sintenis 104*, WU). Further records, even though with unclear status, are from Japan (Matsushima, 30 Jul 1897, *Faurie 680*, WU) and as a neophyte from the U.S.A. (Illinois, 29 Apr 1978, *Mühlenbach & Boufford*, B). All specimens cited have been revised and determined by E. Zippel (Berlin). E. Zippel & Th. Raus

#### Cactaceae

*Opuntia dejecta* Salm-Dyck (≡ *Nopalea dejecta* (Salm-Dyck) Salm-Dyck) – Fig. 2.

- A Ag**: Algeria: Skikda, Beni Bechir, 36°46'38"N, 07°00'38"E, 230 m, close to a hedge of *Par-*



Fig. 2. *Opuntia dejecta* – A: habit of flowering plant; B: detail of flowers showing typical red tepals. – Algeria: Skikda, Beni Bechir, 26 Apr 2020, photographs by A. Saci.

*thenocissus quinquefolia* (L.) Planch., 26 Apr 2020, Saci (photos). – A xenophyte probably native to Panama, *Opuntia dejecta* is very common in cultivation in tropical America (Britton & Rose 1919). The species is new to Algeria, reported for the second time for N Africa (El Mokni & al. 2020; APD 2020) and for the fourth time for the Mediterranean area, where so far it has been reported as naturalized in Italy (Celesti-Grappo & al. 2009, as *Nopalea dejecta*) and Sicily (Korotkova & Raab-Straube 2017+) and as casual in Tunisia (El Mokni & al. 2020). In Algeria, *O. dejecta* is obviously a recent escape and can be classified only as casual. However, like other species within this genus, it certainly has the potential to spread to nearby regions.

R. El Mokni & A. Saci

#### Caryophyllaceae

*Silene lydia* Boiss. (≡ *Conosilene conica* subsp. *lydia* (Boiss.) Á. Löve & Kjellq. ≡ *Pleconax lydia* (Boiss.) Šourková). – According to Euro+Med PlantBase (Marhold 2011+a), *Silene lydia* (*S.* sect. *Conoimorpha* Otth) would currently occur in most of the Balkan countries, in European Turkey and in SW Asia (Asia Minor, Lebanon and Syria). The alleged occurrence in

Bosnia and Herzegovina, Croatia, Montenegro, North Macedonia, Serbia and Slovenia was given by Greuter & al. (1984) and Chater & al. (1993) and reported in Euro+Med PlantBase (2006+) as “Former Yugoslavia”, all based on misinterpretation of the imprecise “Ma” (for Macedonia) in Hayek (1924: 260). Jalas & Suominen (1988), however, correctly indicated *S. lydia* in Bulgaria, Greece, and European Turkey only. Hayek (1924: 259–260) recorded the species from “Macedonia, inclusa Chalcidice et insula Thaso” (abbreviated as “Ma”; see Hayek 1927: v), thus referring to the Chalkidiki peninsula and the island of Thasos which are now part of Greece and, respectively, the administrative regions of Central Macedonia and Eastern Macedonia-Thrace. Trinajstić & Pavletić (1979), in their treatment of *Silene* for *Analitička flora Jugoslavije*, recorded *S. lydia* only as doubtfully present for the Republic of North Macedonia.

As part of currently ongoing studies on *Caryophyllaceae* (see, e.g., Iamónico 2018) and specifically on *Silene* sect. *Conoimorpha*, neither herbarium specimens nor published sources of *S. lydia* could be verified from the countries listed below. Therefore, *S. lydia* has to be excluded from the following Balkan countries.

D. Iamónico & E. von Raab-Straube

– **BH**: No record of *Silene lydia* was reported by Beck (1907). D. Iamónico & S. Maslo



– **Cg:** No record of *Silene lydia* was reported by Rohlena (1942) and Stešević & Caković (2013).

D. Iamónico & D. Stešević

– **Ct:** No record of *Silene lydia* was reported by Nikolić (2019) and Nikolić (2020).

D. Iamónico & S. Bogdanović

– **Mk:** *Silene lydia* was recorded in North Macedonia in Bitola (Velenovský 1911) and Prilep-Dobrush-evo (Stojanoff 1928). According to Micevski (1993), as well as from recent field investigations, these data have not been confirmed, and we think that this species has probably been confused with *S. conica* L.

V. Matevski, D. Iamónico &

E. von Raab-Straube

– **Sl:** No record of *Silene lydia* was reported by Mayer (1952), Martinčič & Sušnik (1969), Martinčič & al. (1999) and Jogan & al. (2001).

D. Iamónico & N. Jogan

– **Sr:** No record of *Silene lydia* was reported by Slavnić (1970) and Niketić (2012).

D. Iamónico, M. Niketić & N. Kuzmanović

*Stellaria ruderalis* M. Lepšić & al.

+ **AE(G), Cr:** Greece, East Aegean Islands: Nomos of Lesvos, Eparchia of Mitilini, Lesvos island, Agia Marina village, along road to north, 39°04'N, 26°35'E, 100–200 m, olive grove and stone fences, 28 Mar 1994, *Nielsen & Skovgaard 9230* (B, under *Stellaria media*; det. A. Strid); *ibid.*, Nomos of Dodekanisos, Eparchia of Rodos, Rodos island, Stegna, 36°12'39.3"N, 28°08'27.6"E, 3 m, ruderal floodplain c. 200 m distant from the harbour, 18 Mar 2010, *Peter & Ristow RH3-26* (B, as *S. media*; det. A. Strid). Cretan area: Kriti island, Nomos of Chania, Eparchia of Kissamos, between Kambos and Keramoti, 35°23'01"N, 23°33'56"E, 370–380 m, ruderal places dominated by *Geranium molle* L., semi-shaded by *Platanus orientalis* L., slightly condensed acid soil on schistose substrate, 13 Mar 1998, *Böhling 7065* (B, as *S. media*; det. A. Strid); *ibid.*, Nomos of Lasithi, Eparchia of Ierapetra, Thripti, 35°04'54"N, 25°51'22"E, 700 m, weedy vineyard with *Oxalis pes-caprae* L., *Poa infirma* Kunth and *Urtica urens* L. on dolomitic substrate, 24 Mar 1998, *Böhling & Raus 7219* (B, as *S. media*; det. A. Strid); *ibid.*, 700 m, abandoned, formerly irrigated vegetable field under *Platanus* trees on dolomitic substrate, 24 Mar 1998, *Böhling & Raus 7220* (B, as *S. media*; det. A. Strid); *ibid.*, Eparchia of Lasithi, Lasithi plain SE of Kristallenia monastery, 35°10'44.6"N, 25°30'14.7"E, 840 m, fields and orchards with traditional agriculture, *Bareka & Turland sub Turland 1072* (B, as *S. media*; det.

A. Strid; duplicates, not examined, in BM, MO, UPA). – Only recently Lepšić & al. (2019) unveiled that the name *Stellaria media*, as traditionally in current use at species rank (i.e. excl. *S. apetala* Ucria, *S. cupaniana* (Jord. & Fourr.) Bég. and *S. neglecta* Weihe), covers in fact another two separate species, viz. *S. media* (L.) Vill. (s. str.) and *S. ruderalis* M. Lepšić & al., the latter presumably of hybridogenous origin between *S. apetala* (= *S. pallida* (Dumort.) Crép.; see IPNI 2012+; Dimopoulos & al. 2013: 248; Buttler & al. 2018) and *S. neglecta*; for morphological, karyological, molecular, ecological and chorological details see Lepšić & al. (loc. cit.). *Stellaria ruderalis* is probably a hitherto overlooked, widespread species, the distribution of which is not yet completely known, especially in S Europe. In its *terra typica*, the Czech Republic, it is currently spreading along roads, railways and rivers. Outside this country, Lepšić & al. (2019: 412, 418–420) identified herbarium material of *S. ruderalis* from Austria, Slovakia, Hungary, Slovenia, Croatia, Serbia, continental Greece (Thessaly) and Italy including Sardinia. The species also occurs in the East Aegean Islands and the Cretan area of Greece, substantiated by re-determined herbarium specimens hitherto stored at B under “*S. media*” (and mapped under that name in Strid 2016b: 330, map 1287). Only a fraction of the vast holdings of Greek specimens of the *Stellaria media* group at B have been critically examined. Ripe seeds are needed for positive identification. *Stellaria ruderalis* may well turn out to be at least as common as *S. media* s. str. The Greek holdings at LD have been examined by T. Tyler, who found that *S. ruderalis* is fairly widespread on the Aegean islands.

A. Strid & Th. Raus

#### Chenopodiaceae

*Dysphania pumilio* (R. Br.) Mosyakin & Clemants (≡ *Chenopodium pumilio* R. Br.)

**A Gg(G):** Georgia: Samegrelo-Zemo Svaneti, Matkhoji, 42°23'21.2"N, 42°26'35.54"E, c. 200 m, trampled site around church below Matkhoji nunnery, c. 100 plants, 23 Jul 2019, *Novák (photo)*; *ibid.*, Mestia, 43°02'38"N, 42°43'30.1"E, 1400 m, gaps between pavement stones of sidewalk around central town square, c. 20 plants, 19 Jul 2016, *Novák (photo)*; *ibid.*, trampled site with annual vegetation next to road close to Mulkhura bridge, 43°02'30.7"N, 42°43'40.7"E, c. 1390 m, dense monospecific patch covering c. 10 m<sup>2</sup>, 19 Jul 2019, *Novák (photo)*; *ibid.*, Racha-Lechkhumi and Kvemo Svaneti,

Achara, 42°33'34.5"N, 42°51'22.1"E, c. 490 m, c. 50 plants in trampled site with annual vegetation next to main road in centre of village, 8 Jul 2017, Novák (BRNU). – *Dysphania pumilio* is an annual or short-lived perennial plant. It usually inhabits various open annual vegetation, including sidewalks, road edges, etc. It originates from Australia and was introduced mainly with wool shipments across New Zealand, New Caledonia, North and South America and Europe (Lhotská & Hejný 1979). In the Euro+Med PlantBase (Uotila 2011+), it is reported mostly from W, C and S Europe, including the Balkan Peninsula. Nevertheless, it has not been recorded in Transcaucasia although it was reported from N Iran as well (Rahiminejad & al. 2004). Currently, it is spreading across Europe mainly by hemerchory. Epichory mediated by sheep or humans was also described (Lhotská & Hejný 1979). The finding of the large population in Mestia may indicate its future spreading across Transcaucasia. In Mestia, it was observed in a therophyte-rich trampled vegetation (*Polygono-Poetea annuae*). In Matkhoji, it occurred in an open vegetation dominated by a species of *Digitaria*, an annual C<sub>4</sub> grass (*Digitario sanguinalis-Eragrostietea minoris*). In Achara, it grew in a species-rich annual vegetation (*Sisymbrietea*) dominated by tall herbs (*Sisymbrium officinale* (L.) Scop. and *Xanthium spinosum* L.).

P. Novák & V. Kalníková

#### Compositae (Asteraceae)

*Andryala dentata* Sm. (≡ *A. rothia* subsp. *dentata* (Sm.) Pignatti ≡ *A. sinuata* subsp. *dentata* (Sm.) Arcang.)

**A Sy:** Northern Golan Heights: c. 3 km E of Merom Golan, 33°07'56.2"N, 35°48'44.4"E, 945 m, on grumusol (formed from weathering of limestone and volcanic tuff) mixed with allochthonous substrate from the construction of a reservoir and its surrounding dike, population of more than 70 individuals, 19 Apr 2018, Ur (HUJ, deposited on 20 Aug 2018). – *Andryala dentata* is a C & NE Mediterranean species, occurring in S Italy (comprising Sicily and Pantelleria), S & E Greece (including islands), W Turkey and Lebanon (Greuter 2006+). It is an annual herb; stems 8–28 cm; cauline leaves sessile, margin dentate; inflorescence corymbiform; capitula 8–14 mm in diam.; involucre slightly stellate tomentose with glandular trichomes, external involucre bracts involute, enfolding a floret, purplish at apex; receptacle with short setae 0.4–2 mm long; ligules pale yellow, external ones often reddish on outer

face, slightly exceeding involucre bracts. Arcangeli (1882: 447) recognized *A. dentata* Sm. as a subspecies of *A. sinuata* L. (i.e. *A. integrifolia* L.). Several other authors (e.g. Matthews 1975; Sell 1976; Mouterde 1983) have treated *A. dentata* as a plain synonym of the widespread *A. integrifolia*. However, recent taxonomic and phylogenetic studies supported the separation of these two taxa as distinct species (Ferreira & al. 2015). *Andryala dentata* is here reported for the first time from the Golan area with the status of a casual alien, possibly introduced through allochthonous soil material. The species has been known to occur in Lebanon and Syria since the late 19<sup>th</sup> century (Boissier 1875: 880; Post 1896: 484; followed by Mouterde 1983: 544; Tohmé & Tohmé 2007: 49, as *A. integrifolia*). Nonetheless, it is considered doubtfully native in that area (Greuter 2008: 19).

M. Z. Ferreira, M. Sequeira, Y. Ur,  
S. S. Cohen & Z. Baumwol

#### Crassulaceae

*Crassula alata* (Viv.) A. Berger

**N BI(M):** Spain, Balearic Islands, Mallorca: Santanyi, Mondragó Parque Natural, bank of Torrent de ses Coves del Rei near the mouth, 39°21'17.39"N, 03°11'18.72"E, 17 m, salt marsh area on brackish sand, 19 Apr 2017, De Beer (BR 0000027274743V). – *Crassula alata* is a poorly known species that was initially described from Egypt and was subsequently also found from the Middle East to India. In Europe it was discovered relatively recently, first from the Greek islands of Kriti and the Kyklades (Webb & Akeroyd 1993). In the Euro+Med area it has been reported so far from Egypt, Libya and Morocco, Israel-Jordan and Lebanon-Syria, Greece (incl. islands) and Cyprus (Marhold 2011+b). In the last two decades, however, it was reported from several additional regions in the Mediterranean region: Sicilia-Pantelleria (Bartolo & al. 2004), Corse (Gallo 2008), Tunisia (Lambinon 2000) and, since 2006, also from the Spanish mainland (Martínez Fort & Donat Torres 2006). Recently, it turned out that this species had been overlooked in the Balearic island of Menorca, as a result of confusion with *C. tillaea* Lest.-Garl. (Fraga-Arguimbau & al. 2018). In addition, it is also found as an introduced weed in Australia and New Zealand (Toelken 1981; Sykes 2005).

*Crassula alata* is a rather diminutive species that is easily overlooked or confused with similar species such as *C. tillaea*. It is easily separated from the latter based on its petals be-

ing only half as long as the sepals, the shortly pedicellate flowers, the mucronate leaf and sepal tips and the more or less winged stem (after desiccation).

It is here reported for the first time from the island of Mallorca. It occurs in a massive stand on the banks of a rivulet close to the sea, in a salt marsh area on brackish sand. It was accompanied by *Polypogon maritimus* Willd. and other species typical for that type of habitat.

It is sometimes thought that *Crassula alata* has been widely confused in the Mediterranean area and that it has been present for quite a long time. However, the recent record from Mallorca rather seems to point to a recent expansion; the species was certainly absent from that locality about 15 years ago (L. Sáez, pers. comm; also Sáez 2003).

D. De Beer & F. Verloove

### Euphorbiaceae

#### *Euphorbia davidii* Subils

**A Gg(G):** Georgia: Tbilisi, road and path margins around petrol station next to Kakheti Highway S5, 1.3 km NE from Airport Settlement train station, 41°41'33.9"N, 44°57'39.3"E, c. 550 m, c. 50 plants, 17 Jul 2017, Novák & Zukal (BRNU). – *Euphorbia davidii* is an annual species native to North America, ranging between the central U.S.A. and NW Mexico. As an alien species it has been reported from Australia, South America and Europe (Barina & al. 2013). In the Euro+Med PlantBase (Euro+Med 2006+) it is reported from Bulgaria only. However, Barina & al. (2013) summarized its European distribution and reported the species from 13 countries, including the N Caucasian foothills in Russia, but not in Transcaucasia. In Europe, it has mostly been found along railways and less frequently road surroundings and arable lands. The source of its seeds in the Georgian site was probably traffic, because it is situated next to the highway, and a railway is also nearby. In this new site it occurred in a sparse vegetation dominated by the annual C<sub>4</sub>

grass *Eragrostis minor* Host (*Digitario sanguinalis-Eragrostietea minoris*).

P. Novák, V. Kalníková & D. Zukal

### Gramineae (Poaceae)

*Aegilops peregrina* (Hack.) Maire & Weiller (≡ *Triticum peregrinum* Hack. ≡ *Aegilemma peregrina* (Hack.) Á. Löve ≡ *Aegilops variabilis* var. *peregrina* (Hack.) Eig & Feinbrun; = *Aegilops variabilis* Eig ≡ *Triticum variabile* (Eig) Markgr.; = *T. ovatum* subsp. *violaceum* Braun-Blanq. & Wilczek ≡ *Aegilops ovata* var. *violacea* (Braun-Blanq. & Wilczek) Maire) – Fig. 3, 4.

**D Cm:** Crimea: Sevastopol region, Balaclava vicinity, Vitmerova balka (Vitmer's ravine), 44°29'55.64"N, 33°37'45.45"E, 260 m, conglomerate hill, dry grasslands on the edge of woodlands of *Juniperus excelsa* M. Bieb. and *Quercus pubescens* Willd., 16 May 2017, Ryff (YALT); *ibid.*, 10 Jun 2019, Ryff (YALT); *ibid.*, Varnautskaya valley, Goncharnoye vicinity,



Fig. 3. *Aegilops peregrina*, habit of plant in habitat. – Crimea: Sevastopol region, Balaclava vicinity, Vitmerova balka, 10 Jun 2019, photograph by L. E. Ryff.



Fig. 4. *Aegilops peregrina*, dried specimens. – A: whole plant; B, C: panicles. – Scale bars: A–C = 1 cm. – Source of material: Crimea, Sevastopol region, Balaclava vicinity, Vitmerova balka, 10 Jun 2019 (A, C), 16 May 2017 (B), Ryff (YALT). – Photographs by L. E. Ryff.

44°28'13"N, 33°42'08"E, 270 m, dry grassland on abandoned farmland, 26 May 2017, *Svirin* (YALT). – *Aegilops peregrina* differs from the widespread *A. triuncialis* L. by having glumes with veins equal in width, more or less parallel, protruding from the surface and equally spaced; it differs from the closely related *A. kotschyi* Boiss. (which has not yet been found in Crimea) by having a stout spike with an “irregular” appearance caused by wide variation in glume and lemma awn development, and by the glumes of the lowest fertile spikelets having 2 or 3 awns or teeth, non equally wide at the base (Slageren 1994).

This is the first record of *Aegilops peregrina* for E Europe. Its native range is the S & E Mediterranean and W Asia from Tunisia and Greece to Transcaucasia, Iran and Turkmenistan. In Cyprus this species has a doubtful status, but in Morocco, Algeria and Italy it is alien (Valdés & al. 2009+; WCSP 2020). As an adventive plant it is also given for Scotland (Slageren 1994). Despite the fact that plants of *A. peregrina* are found only in natural and semi-natural habitats in Crimea, we assume that this species is also alien there. It was prob-

ably accidentally or deliberately introduced by the Albanian-speaking emigrants from Greece (“Arnauts”) who resettled Crimea from the Aegean Islands in the late 18<sup>th</sup> century. Balaclava and the Varnautskaya valley were exactly the areas of their compact residence. Isolation from the main range, limited distribution and small population size, in our opinion, testify in favour of the alien status of *A. peregrina*, but new findings could refute this.

L. E. Ryff & S. A. Svirin

*Cortaderia selloana* (Schult. & Schult. f.) Asch. & Graebn. (≡ *Arundo selloana* Schult. & Schult. f.)

**N Tn:** Tunisia: Tunis, Sidi Thabet, 36°54'36"N, 10°06'39"E, 23 m, *Acacia* plantations, 27 Jan 2018, *El Mokni* (herb. Univ. Monastir); *ibid.*, Tunis city, 36°51'06"N, 10°07'27"E, 88 m, ruderal vegetation on roadsides, 3 Feb 2020, *El Mokni* (herb. Univ. Monastir); *ibid.*, Monastir, Monastir city, 35°45'57"N, 10°48'22"E, 29 m, olive plantations, 29 Nov 2019, *El Mokni* (herb. Univ. Monastir). – Native to temperate South America (Argentina, Brazil, Chile and Uruguay; Zuloaga & al. 2008). In Europe, according to Başnou (2009), this spe-

cies is mainly present in Ireland, Britain, France, Portugal, Spain and Italy. It also occurs in South Africa, Australia, New Zealand, many Micronesian islands, the Hawaiian Islands and the Pacific coast of the U.S.A. For N Africa this species is currently listed as merely “cultivated” in the Canary Islands, Morocco and Algeria, although this status needs to be updated in at least some of these regions. In Tenerife in the Canary Islands, for instance, it has become an invasive species in a short period of time (Rodríguez Navarro & Fariña Trujillo 2019). In Tunisia and Libya it was considered to be “introduced” (alien with unknown status; Valdés & al. 2009+). However, for Tunisia it has not yet been cited or given as naturalized, neither by Le Floch & al. (2010), Dobignard & Chatelain (2010) nor in the continuously updated APD (2020). The actual alien status of *C. selloana* in Tunisia is here defined.

R. El Mokni & F. Verloove

#### Haloragaceae

*Myriophyllum aquaticum* (Vell.) Verdc. – Fig. 5.

**A Ca(P):** Spain, Canary Islands, La Palma: SE of Barlovento, channel NE-ESE of pond in Área Recreativa y Acampada (area designated for recreation and camping) near Laguna de Barlovento (large artificial basin for storage of drinking water), 28°48'32.1"N, 17°48'7.8"W, 735 m, 31 May 2019, Wallnöfer (photo). – A very large population of this plant grows at the bottom of the channel, which was very muddy and wet but without superficial water at the time of the observation. This species is native to South America and has been reported as an invasive neophyte from all continents except Antarctica (see map in CABI 2020). According to CABI (2020), it is now regarded as a major international aquatic weed, having been introduced to much of the warm-temperate to subtropical regions of the world. Cirujano (1997) reported it also from the Spanish mainland and from Portugal, and Hansen & Sunding (1993) from the nearby island of Madeira.



Fig. 5. *Myriophyllum aquaticum*, flowering plant. – Spain: Canary Islands, La Palma, “Área Recreativa y Acampada” SE of Barlovento, 31 May 2019, photograph by B. Wallnöfer.

It was not reported from the Canary Islands by Hohenester & Weiß (1993), Uotila (2009+), Arechavaleta & al. (2010), Muer & al. (2016), Anthos (2020), Gil González (2020) and CABI (2020). The only species of *Myriophyllum* so far known to occur there (on El Hierro, La Palma, Tenerife and Gran Canaria) is *M. spicatum* L. B. Wallnöfer

#### Iridaceae

*Iris basaltica* Dinsm. – Fig. 6, 7.

**+ Le:** Lebanon: Michmich, 34°26'49"N, 36°12'38"E, c. 1650 m, 20 May 2020, Taleb (photos). – Hundreds of *Oncocycclus* irises flowering on basaltic ground in an open landscape along with *Acer hyrcanum* subsp. *tauricola* (Boiss. & Balansa) Yalt., *Astragalus gummifer* Labill., *Berberis libanotica* Ehrenb. and *Juniperus excelsa* M. Bieb. were observed during a visit to

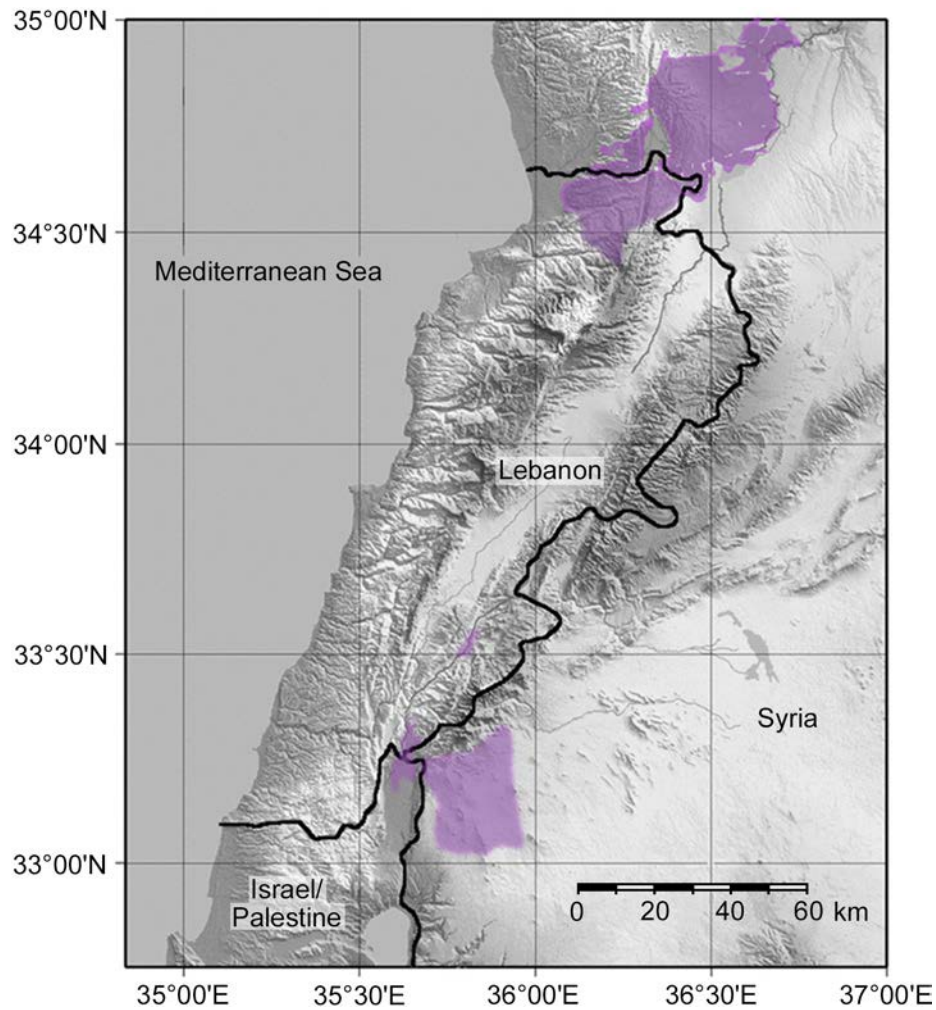


Fig. 6. Map showing areas of basaltic substratum in Syria, Lebanon and Israel/Palestine (purple shading), after Dubertret (1955) and Walley (1998).



Fig. 7. *Iris basaltica* – A: basaltic landscape showing clumps of flowering *Iris basaltica* in foreground and tree of *Juniperus excelsa* in background; B: flowering plant. – Lebanon: Michmich, c. 1650 m, 20 May 2020, photographs by K. Taleb.

Michmich. The irises were found in five sites with basaltic outcrop soil located a few kilometres apart from one another.

*Iris basaltica* grows only on basalt (Fig. 6; Post 1933; West 1963). It was given by Mouterde (1966) as endemic to the S part of the coastal mountains of Talkalakh and Qala'at-el-Hosn basalt desert and hillsides in W Syria, in close proximity to the Lebanese border (Al-Abdul Wahab & al. 2004). Herbarium specimens are preserved in Paris (P). *Iris basaltica* is a perennial with short, knobby rhizomes, a long stem, many long, falcate leaves, a single spherical flower, sepals with a prominent signal spot that is distal to a relatively sparse and non-linear beard that does not extend to the midpoint of the sepal, and a conspicuous aril on the seed. Plants with different heights and different colour tones were observed. Irises of different ages highlight the very active natural regeneration at the newly discovered sites.

*Iris* sect. *Oncocyclus* (Siemssen) Dykes includes about 65 described taxa. They are restricted to SW Asia and are mainly found in the E Mediterranean region and the Caucasus. These irises have remarkable flower sizes and pollination biology. Induced hybridization among various species showed that interspecific hybrids between taxa are fully fertile (Avishai & Zohary 1977). It is therefore believed that speciation in this group did not involve the build-up of internal reproductive isolation barriers. The various species of the highly specialized, insect-pollinated *Oncocyclus* irises are isolated from one another by geographic, ecological, and temporal mechanisms and by preferences of their pollinators (Sapir & Shmida 2002; Saad & al. 2009). They are also likely adapted to an environmental aridity gradient, which is indicative of ongoing species formation.

In Lebanon, seven *Oncocyclus* iris taxa exist at different altitudes (Abdel Samad & al. 2016) and are isolated geographically from one another: *Iris antilibanotica* Dinsm., *I. bismarckiana* Damman & Sprenger, *I. cedreti* Dinsm. ex Chaudhary, *I. lortetii* Barbey ex Boiss., *I. sofarana* f. *kasruwana* (Dinsm.) Mouterde, *I. sofarana* f. *westii* (Dinsm.) Mouterde and *I. sofarana* Foster s.str.

*Iris basaltica* is considered as Data Deficient according to IUCN standards (Lansdown 2016). There is no information on population trends in this species. This *Iris* was thought to be extinct until a few individuals were found in 2008 near Homs (Houlani 2008). Fortunately, its area of occupancy in Lebanon is relatively

large. While the newly discovered *I. basaltica* populations in Lebanon are healthy and abundant, they happen to be all present on private lands, hence their entire habitats are threatened. Conservation measures should be taken promptly to preserve them.

K. A. Taleb, A. A. Taleb & M. Bou Dagher Kharrat

*Iris variegata* L. – Fig. 8.

+ **Gr:** Greece: C Makedonia, Nomos of Pella, Eparchia of Almopia, Mt Tzena, 41.158144°N, 22.257800°E, 1510 m, grassland, parent rock mixed gneiss and marble, 19 May 2013, *Chasapis* 2243 (TAUF); *ibid.*, 14 Jun 2019, *Chasapis* 2467 (TAUF). – This is a C & SE European species with a wide distribution from SC Germany and W Ukraine to Bulgaria and North Macedonia (Barker & Govaerts 2019; Tutin & al. 1980). Not mentioned for Greece by Dimopoulos & al. (2013, 2016), its occurrence in that country was first substantiated by herbarium material in 2013. A few individuals (c. 10) were found on a steep, stony and grassy slope of Mt Tzena at an altitude of 1510 m, just below the treeline formed by beech (*Fagus sylvatica* L.). In 2019, a larger population of c. 100 individuals was found in the same locality.

M. Chasapis, D. A. Samaras, K. Theodoropoulos & E. Eleftheriadou

*Labiatae* (*Lamiaceae*)

*Salvia reflexa* Hornem.

A **Gg(G):** Georgia: Racha-Lekhumi and Kvemo Svaneti, Achara, 42°33'34.5"N, 42°51'22.1"E, c. 490 m, c. 50 plants in ruderal site in village, next to main road, 8 Jul 2017, *Novák* (BRNU); *ibid.*, Mstskheta-Tianeti, Ananuri, 42°10'22.7"N, 44°41'38.3"E, c. 840 m, four plants in open grassland in front of house below Georgian Military Highway, 10 Aug 2018, *Novák & Harásek* (photo). – *Salvia reflexa* is an annual herb of North American origin (central U.S.A. and Mexico). In both its native and non-native ranges, it occurs on trampled sites and as a weed of crops (Lovett & Lynch 1979; Shao & al. 2019). It is occasionally cultivated as an ornamental plant in the warmer parts of the world, including S Europe. As it has prolific seed production, it is spreading by escaping from cultivation and by seeds contained in foodstuffs (grain and bird seed). In newly reached regions, it can rapidly colonize suitable habitats and affect the vegetation, where it can be a dangerous weed in crop fields because it contains substances toxic to cattle (Shao & al.



Fig. 8. *Iris variegata*, flowering plant in habitat. – Greece: Central Makedonia, Mt Tzena, 19 May 2013, photograph by M. Chasapis.

2019). In the Euro+Med PlantBase (Euro+Med 2006+), it has so far been reported only in Ukraine, although it was also mentioned as a casual alien in the United Kingdom (Clement & Foster 1994). In Achara, it inhabited species-rich annual vegetation (*Sisymbrietea*) dominated by tall herbs (*Sisymbrium officinale* (L.) Scop. and *Xanthium spinosum* L.). In Ananuri, the trampled grassland (*Molinio-Arrhenatheretea*) was dominated by *Cichorium intybus* L. and *Trifolium repens* L.

P. Novák, V. Kalníková & M. Harásek

#### Leguminosae (Fabaceae)

##### *Onobrychis altissima* Grossh.

+ **Rf(CS)**: Russia: Dagestan, Dakhadaevsky district, NE slope in area of N Kaba, N of Urkarakh villages, 42°11'N, 47°37'E, c. 1700 m, grass meadow, 5 Jul 1947, *Chilikina* (LENUD); *ibid.*, terrace at Shchirbachi site near Urkarakh villages, 42°07'N, 47°37'E, grassy slope,

6 Jul 1947, *Chilikina* (LENUD); *ibid.*, W slope of Ainurbalakat site near Urkarakh villages, 42°09'N, 47°34'E, 21 Jul 1947, *Chilikina* (LENUD); *ibid.*, Buinaksky district, above Karamakhi village, NE slope, 42°36'42.6"N, 47°13'50.3"E, 1280 m, 26 Aug 2016, *Murtazaliev* (DAG). – *Onobrychis altissima* grows in Transcaucasia, as well as in Turkey and Iran (Yakovlev & al. 1996; Menitsky 2001). The species is recorded here for the first time for the Russian part of the Caucasus. It was recently collected by us in Dagestan, and several sheets were found in the herbarium of the Dagestan University (LENUD), collected in the mid-20<sup>th</sup> century and correctly identified by L. Chilikina. *Onobrychis altissima* is closest to *O. inermis* Steven, from which it differs in the larger size of the plant, including larger fruits and flowers. *Onobrychis altissima* grows in dry meadows in the middle mountain belt, whereas *O. inermis* grows on steppe slopes in the lowlands and in the lower mountain zone.

R. A. Murtazaliev

##### *Wisteria sinensis* (Sims) Sweet

**A Tn**: Tunisia: Bizerte, Bizerta city, Bab-Mateur, 37°16'12"N, 09°52'01"E, 10 m, roadsides, 23 Feb 2011, *El Mokni* (herb. El Mokni); *ibid.*, Jendouba, Tabarka, El Houemdeya, 36°55'33"N, 08°47'22"E, 30 m, abandoned field, 4 Mar 2015, *El Mokni* (herb. El Mokni); *ibid.*, Aïn Draham, 36°46'54"N, 08°41'12"E, 720 m, pedestrian paths, roadsides, 11 May 2016, *El Mokni* (herb. El Mokni).

**C Ag**: Algeria: Annaba, Annaba city, quartier Gas-siot, 36°55'06"N, 07°45'21"E, 70 m, private gardens, 23 Mar 2020, *De Bélair* (herb. De Bélair).

*Wisteria sinensis* is a perennial, woody species native to China, where it is widespread (Wei & Pedley 2010). This species is cultivated in temperate regions of Europe, Asia, Africa, Australasia and North and South America (Wei & Pedley 2010; GBIF 2013; Kartesz 2015; ILDIS 2020). In the U.S.A., it is listed as naturalized from Vermont and Massachusetts south to Florida and west into Illinois and Texas (Kartesz 2015); it is also noted as occurring in Hawaii (PIER 2018). Other countries list occasional, naturalized populations of *W. sinensis*, including New Zealand (Webb & al. 1988) and Argentina (Hurrell & al. 2011). In Europe, the taxon is reported as alien with “status unknown” in France (see, e.g., Hey-



wood & Ball 1968; Greuter & al. 1989; ILDIS 2020), as occasionally naturalized in Spain (Campos & Herrera 2008) and as naturalized in Italy (Galasso & al. 2018). For N Africa, the status needs to be defined (see Dobignard & Chatelain 2012; CABI 2020), even though the species was reported from Algeria in 1913 as an introduced and well-acclimatized taxon (Gubb 1913). Here we assign to *W. sinensis* the status of “alien” in Tunisia and “cultivated in large scale” in Algeria.

R. El Mokni & G. De Bélair

### Malvaceae

#### *Abutilon grandifolium* (Willd.) Sweet

**N Tn:** Tunisia: Nabeul, Bir Bouragba, 36°25'41"N, 10°34'12"E, 20 m, roadsides, 25 Jun 2017, *El Mokni* (herb. Univ. Monastir); *ibid.*, Monastir, Jemmel toward Bir Taeib, 35°37'45"N, 10°44'39"E, 20 m, 23 Sep 2018, *El Mokni* (herb. Univ. Monastir). – *Abutilon grandifolium*, a shrubby tree 1–3 m tall originating from South America, is a naturalized weed in tropical Africa, South Africa (mainly in KwaZulu-Natal and Eastern Cape provinces), Australia, New Zealand and the Pacific Islands (see, e.g., Hutchinson & Dalziel 1958; Burkill 1997; Bredenkamp & Leistner 2003; Jaca & al. 2015; Von Staden 2016; Badry & al. 2018). In the Mediterranean region, this species has not yet been recorded according to Valdés (2011+b). However, more recently it was reported from Portugal and Spain (Domingues de Almeida & Freitas 2012; GBIF 2015a; CABI 2020; Verloove & al. 2020). For N Africa, the species is cited as alien with unknown status only in the Canary Islands. In fact, *A. grandifolium* is considered invasive there (Acebes Ginovés & al. 2010). The African Plant Database (APD 2020) listed the occurrence of the species as present with “naturalised-introduced” status for the Canary Islands, Morocco and Egypt. *A. grandifolium* is reported here for the first time from Tunisia. Sporadic subpopulations of a few perennial individuals have been observed growing mainly in the Cap Bono region since 2018; therefore, the species can be considered as locally naturalized in Tunisia.

R. El Mokni & F. Verloove

### Orchidaceae

*Ophrys helenae* Renz (≡ *O. sphegodes* subsp. *helenae* (Renz) Soó) – Fig. 9.

**D AE(G):** Greece, East Aegean Islands: Nomos of Lesvos, Island of Lesvos, near Eresos, 39.15388°N,

25.95917°E, 120 m, on verge of road between Kalloni and Eresos, two flowering individuals, 9 Apr 2018, *Löki & al. (photo)*. – The new record is located on a roadside verge, and its indigenous status is doubtful. On the one hand, roadsides often host viable orchid populations (Fekete & al. 2017; Rewicz & al. 2017), and these habitats can serve as ecological corridors for plant dispersal, linking distant habitat patches (Tikka & al. 2001). Therefore, the natural long-distance spread of the species is easily conceivable. Moreover, in the genus *Ophrys*, a significant long-distance dispersal event is also known (Molnár V. & al. 2011). However, the dispersal of small seeds can be facilitated by the air-turbulence of cars (Ross 1986) or by mud attached to vehicles, which often contains large numbers of various seeds (Clifford 1959). Therefore, the human-induced colonization of the plant cannot be excluded.

*Ophrys helenae* was described from the island of Kerkira (Corfu) based on a single specimen observed in two consecutive years (Renz 1928: 251). The species is distributed in Greece from Kerkira and Kefalonia east to Thessalia, south to the Gulf of Korinthos and north to Kastoria (Delforge 2006); furthermore, it also occurs in S Albania (Barina 2017). Its centre of distribution is in Ipiros (Delforge 2006), but only a single location (Ilia) is known in Peloponnisos (Papadopoulos & al. 2011). Occurrence of the species on the Aegean islands was previously unknown. The new record of *O. helenae* is located 450 km distant from the closest known population. The plant grows in full light to partial shade in xerotherm or mesophilous habitats on alkaline substrates, scrublands, open woodlands and dry grasslands, up to 1000 m above sea level (Delforge 2006). *Ophrys helenae* is a morphologically very stable and distinct species within the genus. Its most remarkable characteristic is the entire, orbicular to broadly oboval, cherry-red to red-wine-coloured lip without a speculum (Renz 1928; Delforge 2006).

V. Löki, R. Fekete & A. Molnár V.

### Orobanchaceae

*Orobanche baumanniorum* Greuter – Fig. 10.

**+ It:** Italy: Apulia, Gargano, region Mattinata, 10 May 2006, *Gubler (photos, host unclear, det./rev. Uhlich & Rätzel 21 Jan 2020)*. – New for Italy and the C Mediterranean (cf. Pignatti 2018). *Orobanche baumanniorum* was described from Greece (Greuter 1987: 448; holotype: Sterea



Fig. 9. *Ophrys helenae* – A: flowering plant in habitat; B: inflorescence. – Greece: Lesvos, near Eresos, 9 Apr 2018, photographs by A. Molnár V.

Ellas, Attika, Mt Parnis, May 1974, *Baumann & Baumann*, herb. Greuter; isotype: B 10 0294598!, host *Pterocephalus perennis* Coult.) and has a restricted distribution in the E Mediterranean. In Greece, the species is given for the regions Ionian Islands, North East, North Central, East Central, Sterea Ellas and Peloponnisos (Dimopoulos & al. 2013). It has also been recorded from the Taurus mountains of Turkey, as follows: *Flora of Turkey* grid square C3: Antalya, 2019, *Gül* (photo, <https://turkiyebitkileri.com/en/photo-gallery/view-album/4521.html>, accessed 22 Feb 2020); Kemer, Kesme boğazı (Zare & al. 2017); Manavgat, Oymapınar-dam (Zare & al. 2017); C4: Gündoğmuş, 2018, *Gül* (photo, <https://turkiyebitkileri.com/en/photo-gallery/view-album/4521.html>, accessed 22 Feb 2020); Gündoğmuş, Alıkbazı (Zare & al. 2017); Basyayla NW of Ermenek (Hahn & al. pers. comm. 2001); Gazipaşa, Sugözü (Zare & al. 2017); Demirtaş, between Beydibi/Beldibi and Çiğdem Dağı, Inhisar (Zare & al. 2017); C5: between Işıktepe/Sedichig and Çukurkeşlik, Efrenk valley/Güzeldere (Zare & al. 2017).

*Orobanche baumanniorum* shows a characteristic habit and is morphologically relatively isolated from all other *Orobanche* species in the Eurasian area except *O. cypria* Reut., probably endemic to Cyprus. Its position in *O.* subsect. *Glandulosae* (Beck) Teryokhin by Teryokhin & al. (1993) is provisional.

All verified host plants belong to *Caprifoliaceae*, mostly *Pterocephalus perennis*, rarely various species from *Cephalaria*, *Lonicera* and *Scabiosa* (see also Rätzel & al. 2018b).

H. Uhlich, E. Gubler & S. Rätzel

***Orobanche lucorum*** A. Braun ex F. W. Schultz (= *O. rubi* Duby, nom. utique rej. prop.) – Fig. 11.

+ **Rf(CS)**: Russia: North Caucasus, Kabardino-Balkariya, El'bruskiy rayon, Adyr-Su valley (S tributary of Baksan river), above vehicle lift c. 1 km S of Verkhniy Baksan, 43°18'N, 42°45'31"E, 1655 m, pine forest, grazed, presumably on *Berberis*, 19 Jul 2019, *Parolly & al.* 15740 (B 10 1118201, MW, W; det. Rätzel & Uhlich Mar 2020). – New for Russia and the first verified record for the entire Caucasus region. *Orobanche lucorum*, described from Germany



Fig. 10. *Orobanche baumanniorum* – A, B: habit of flowering plant; B: detail of inflorescences. – Italy: Apulia, Gargano, region Matinata, 10 May 2006, photographs by E. Gubler.

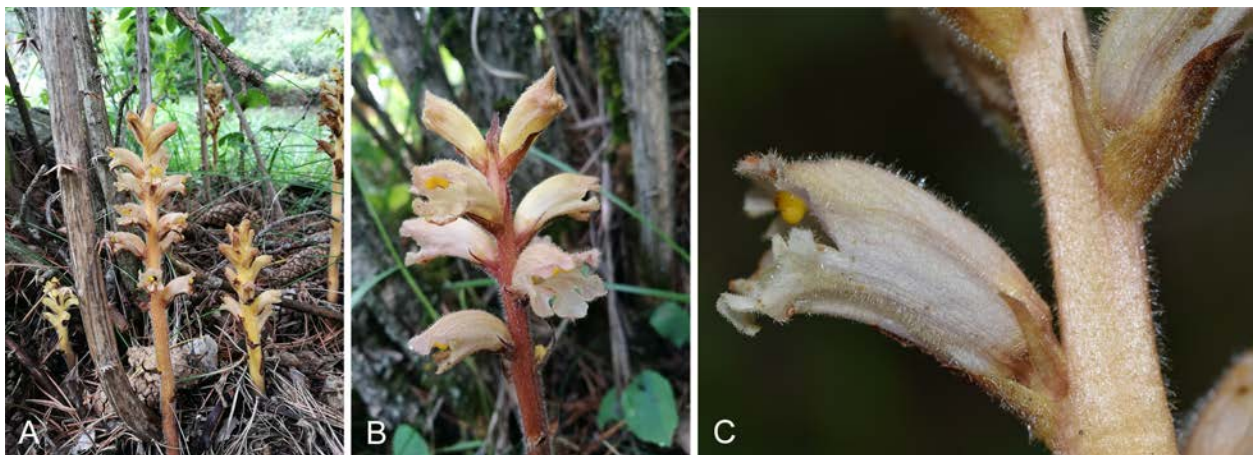


Fig. 11. *Orobanche lucorum* – A, B: habit of flowering plants with probable host *Berberis*; C: detail of flower. – Russia: Greater Caucasus, Kabardino-Balkaria, Adyr-Su (Baksan river) valley, 19 Jul 2019, photographs by E. von Raab-Straube (A, B) and G. Parolly (C).

(lectotype designated by Fleischmann & al. 2019: 599) was believed to have a restricted distribution in the European Alps. Its hosts include deciduous *Berberis* species, in nature especially *B. vulgaris* L. Native populations of the plant were so far known from Germany, Switzerland, Liechtenstein Austria and Italy

(Beck 1890: 187, Karte I; Beck 1930: 264; Kreutz 1995: 112; Uhlich & al. 1995: 149, 232, map 13; Aeschmann & al. 2004: 294; Pusch 2009: 87; Sánchez Pedraja & al. 2016+).

Some older records of this taxon from France (as *Orobanche rubi*), Slovenia, Croatia and Romania could not be confirmed (Grecescu

1898: 450; Beck 1930: 264f; Buia 1961: 70; Gilli 1975: 501; Kreutz 1995: 112; Uhlich & al. 1995: 149; Sánchez Pedraja & al. 2016+). Indications concerning the occurrence in Slovenia by Pusch (2009: 87) are doubtful, and Wraber & Skoberne (1989) did not list the species for that country. *Orobanche lucorum* has sometimes been confused with *O. lycoctoni* Rhiner, mainly in the Balkan Peninsula, but also in the Alps (Sánchez Pedraja & al. 2016+; unpublished records from herbaria). Records from Croatia (Sánchez Pedraja & al. 2016+, citing Kreutz 2001: 431) are due to confusion with *O. minor* Sm. Records from Spain are erroneous and refer to other taxa (e.g. Foley 2001a: 60; Foley 2001b: 228; Sánchez Pedraja & al. 2016+). However, adventive occurrences are known from many European countries, which mostly originate from botanical institutions and gardens and can apparently be persistent for a long time (cf. Beck 1930: 265; Uhlich & al. 1995: 149; Sánchez Pedraja & al. 2016+).

The only previous indication for the Caucasus (Koch 1849: 667, “wächst nur auf holzigen Wurzeln verschiedener Sträucher ... im südlichen Dagestan sehr häufig, 500–800' hoch”; record not mentioned by Beck 1930) is uncertain and could well refer to other species, especially to the widely distributed *Orobanche laxissima* Uhlich & Rätzel (Rätzel & Uhlich 2004: 194). *Orobanche lucorum* is not mentioned in floristic literature for Russia or the Caucasus region (e.g. Novopokrovsky & Tzvelev 1958; Tzvelev 2015), and no specimens have been found in comprehensive herbarium revisions, mainly in LE, during the last two decades by the second author. The present population was found in a pastured clearing in *Pinus sylvestris* var. *hamata* Steven forest supporting scattered shrubs of *Berberis* cf. *vulgaris*. Associated herbaceous species include *Alchemilla* spp., *Campanula collina* Sims, *C. grossheimii* Charadze, *Gentianella caucasea* (Sims) Holub, *Scabiosa ochroleuca* L., *Trifolium canescens* Willd. and *T. repens* L.

*Orobanche lucorum* belongs to the group of *O. flava* F. W. Schultz and differs from related species by its erect, barely reflexed upper calyx lobes, and from some of the related taxa (e.g. *O. flava* and *O. salviae* W. D. J. Koch) by deeply inserted (2–3 mm) filaments. It is further characterized by the usually very lax inflorescence, at least in the basal part, and by very tender and relatively short calyx parts barely reaching ½ of the corolla length. In all those characters, the material from the Elbrus region is similar to plants from the Alps and to the type speci-

men. *Orobanche inulae* Novopokr. & Abramov from the same group, locally frequent in the W part of the Great Caucasus, differs in ecology (hosts: *Inula* sp.), colour (whole plant yellowish to whitish without red or brown tinge), habit (inflorescence remaining compact) and morphology (e.g. much denser, eglandular pilose indumentum on filaments, almost reaching anthers).

The gathering from the Elbrus area, however, stands out by having flowers significantly larger than the size given in the literature for *Orobanche lucorum* from the Alps (17–25 mm vs 12–20[–21] mm; cf. Beck 1930: 263; Gilli 1975: 500; Kreutz 1995: 112; Uhlich & al. 1995: 148; Pusch 2009: 86). The original descriptions (Schultz 1830: 504; Braun in Koch 1833: 456) do not indicate the flower size. However, further examination of specimens of *O. lucorum* in B by the first author revealed that material from the European Alps can also have larger flowers up to 25 mm long, e.g.: Austria, Innsbruck, 1 Aug 1894, *Bornmüller* (B 10 1113779); Italy, Bozen [Bolzano], in alpinis Rosengarten, pr. Welschnofen, *Berberidi* parasitica, 27 Jul 1903, *Bornmüller* (B 10 1113778); Italy, Südalpen, Vintschgau, 15 Jul 1966, *Poelt* (B 10 1113780, as *O. cf. lucorum*). Therefore, indication of flower size has to be emended, i.e. enlarged, for the species throughout its distribution range, and the larger flower size does not constitute a special trait for the apparently disjunct population in the Elbrus region.

S. Rätzel, H. Uhlich, D. Shilnikov,  
N. Korotkova, G. Parolly &  
E. von Raab-Straube

#### *Orobanche lutea* Baumg.

+ **By:** Belarus: [label translated into English] Vitebsk region and district, railway territory, station Lëtsy c. 2 km toward Vitebsk, right side, c. 300 m from bridge over Uzhniza river (direction Vitebsk), 140 m, steppic grassy meadow in strip separated by railway, more than 40 plants in 200 × 5 m area, 17 Jul 1999, *Dschus* [*Dzhus*] 1174 (LE, with fragments of presumed host *Medicago falcata* L., conf. Uhlich Feb 2020). – New for Belarus. Not mentioned in Uhlich & al. (1995), Tretyakov & Dzhus (1999), Domina & Raab-Straube (2010+) and Sánchez Pedraja & al. (2016+). H. Uhlich & S. Rätzel

*Phelipanche gussoneana* (Lojac.) Domina & al. (≡ *Phelipanche gussoneana* Lojac.; = *Phelipanche schultzioides* M. J. Y. Foley ≡ *Orobanche schultzioides* (M. J. Y. Foley) Domina; – *O. ramosa* var. *brevispicata* sensu Meikle 1985, non (Ledeb.) R. A. Graham) – Fig. 12.



Fig. 12. *Phelipanche gussoneana* var. *zosimae* – A: habit of flowering plant parasitizing *Seseli ponticum*; B: habit of flowering plant parasitizing *Fibigia clypeata* subsp. *eriocarpa*; C, D: habit of flowering plants parasitizing *Origanum onites*; C: left and middle plants with form of corolla lobes transitional to var. *gussoneana*; D: plant with form of corolla lobes typical for var. *zosimae*. – A: Russia, Krasnodar territory, Anapa district, vicinity of Bolshoy Utrish, 9 Jun 2017, photograph by A. V. Fateryga; B: *ibid.*, 4 May 2018, photograph by A. V. Popovich; C, D: Greece, Rodos, Tsambika near Stegna, 2 Apr 2019, photographs by S. Rätzel. – Scale bar: A = 1 cm.

+ AE(G): Greece, East Aegean Islands: Rodos, c. 3.5 km NNE of Stegna (near Archangelos), Tsambika, in shrubs of *Origanum onites* L. (*Lamiaceae*), 14 Mar 2018, *Kummer* (photo; herb. Rätzel);

*ibid.*, Tsambika, 36°14'02.2"N, 28°09'17.9"E (WGS 84), c. 80 m, phrygana in S exposition, limestone, exclusively parasitic on *O. onites* (verified, matrix nova), at least 150 shoots, most

sprouting, 2 Apr 2019, *Ristow & Rätzel* (herb. Rätzel, var. *zosimae* (M. J. Y. Foley) Rätzel & Uhlich, Fig. 12D, and rarely transitional forms to var. *gussoneana*, Fig. 12C); *ibid.*, Chalki, c. 2.2 km W of Imborios, Chorio/Chorio castle, 36°13'12.4"N, 27°35'08.5"E, c. 290 m, phrygana in N exposition, limestone, parasitic on *O. onites* (verified), small population, 31 May 2014, *Rätzel* (herb. Rätzel, var. *zosimae*).

- + **Cy:** Cyprus: Division 1 (sensu Meikle 1977/1985), Tala, slope opposite entrance to Agios Neofytos monastery, c. 400 m, macchia, 1 May 1997, *Hand 1216* (B 10 0274917, as *Orobancha ramosa* var. *brevispicata* (Ledeb.) R. A. Graham, rev. Rätzel 24 Jul 2019, *Phelipanche gussoneana* var. *gussoneana*, left-hand, large plant in mixed collection with *P. mutellii* (F. W. Schultz) Pomel); *ibid.*, Division 2 (sensu Meikle 1977/1985), Pano Panagia, Vryssia valley c. 5 km NNE, c. 750 m, “on *Compositae*?”, 26 Apr 1998, *Hand 2325* (B 10 0274915, as *O. ramosa* var. *brevispicata*, rev. Rätzel 24 Jul 2019, *P. gussoneana* var. *gussoneana*); *ibid.*, Cyprus, Agia, station forestière (Paphos), 600 m, milieu anthropisé, humide, sous-bois de platane, sur *Smyrniium*, 23 Apr 1991, *Alziar & al.*, No. Rec. It. 1288 (B without number, as *O. aegyptiaca* Pers., rev. Rätzel 24 Jul 2019, *P. gussoneana* var. *gussoneana*).
- + **Le:** Lebanon: Wadi Ramayah bei Nabay, 17 Apr 2003, *Böcker*, Nr. LIBA 4 (B 10 0626295, as *Orobancha ramosa* L., rev. Rätzel 24 Jul 2019, *Phelipanche gussoneana* var. *gussoneana*).

In addition to Foley (2008) and Rätzel & al. (2017a, 2017b, 2018a), we can add the occurrence of this obviously widespread species to several regions. It has a wide spectrum of host species. In comparison, *Phelipanche aegyptiaca* (Pers.) Pomel (see record from Agia, Cyprus) is characterized by a lax spike with relatively few flowers, short, rather blunt bracts and a large corolla with an inflated throat. The calyx, with short teeth, is strikingly very delicate compared to the corolla. *Phelipanche aegyptiaca* is mostly a species of agricultural fields. Good pictures of this historically often misunderstood species were provided in Hand & al. (2011+). For pictures and photographs of *P. gussoneana*, see Foley (2008) and Rätzel & al. (2017a, 2017b, 2018a), the last-cited publication has photographs from the *locus classicus* of *P. gussoneana* in Sicily.

In this context, we have to mention *Orobancha hirtiflora* subsp. *zosimae* M. J. Y. Foley, described from Cyprus. We believe it to be conspecific with *Phelipanche gussoneana*, under which we recombine it at varietal rank.

***Phelipanche gussoneana* var. *zosimae*** (M. J. Y. Foley) Rätzel & Uhlich, **comb. & stat. nov.** ≡ *Orobancha hirtiflora* subsp. *zosimae* M. J. Y. Foley in *Candollea* 58: 94. 2003 [‘*zosimii*’] ≡ *Phelipanche zosimae* (M. J. Y. Foley) M. J. Y. Foley in *Edinburgh J. Bot.* 64: 210. 2007 [‘*zosimii*’] ≡ *Orobancha zosimae* (M. J. Y. Foley) Domina in *Inform. Bot. Ital.* 42: 383. 2010 [‘*zosimi*’]. [Editors’ note: In the protologue by Foley (2003), no indication was given as to the etymology of the epithet “*zosimii*”. Following a hint by Luis Carlón, we assume that Foley intended to name the new taxon after its host plant, *Zosima absinthifolia* (Vent.) Link, not to an unidentifiable person named Zosim, Zosimius or Zosimus. The genus *Zosima* Hoffm. (1814) was dedicated to three brothers Zosimas. It is not convincing to assume that Foley wished to dedicate the new taxon to one or more of those brothers.]

This taxon was known only from the *locus classicus* in Cyprus (2 km S of Trimiklini, just E of road, phrygana, 16 May 1992, *Foley 162*, E00180154; *Foley 2003*: 94). It could not be confirmed there in recent years, probably because the place was burnt some time ago (*Hand pers. com.* Feb 2020). The host was *Zosima absinthifolia* (Vent.) Link (*Apiaceae*; *Foley 2003*). According to the original description with photographs (*Foley 2003*: 94) and additional notes on the label of the holotype, the plants are pale with yellowish shoots, scales, bracts and calyces. The corollas were said to be whitish to pale blue-whitish.

The holotype also shows peculiar, apically contorted to curled calyx lobes and rhombic to rectangular, strongly apically elongate-acuminate corolla lobes. We have seen plants of identical coloration and morphology from Chalki and Rodos (see above) and also from the Russian coast of the Black Sea at Bolshoy Utrish near Anapa in Rf(CS) (2017 & 2018, leg. & photos Fateryga & Popovich), where they are confirmed from the following hosts: *Seseli ponticum* Lipsky (Fig. 12A; *Apiaceae*), *Odontarrhena obtusifolia* (Steven ex DC.) C. A. Mey. (*Brassicaceae*) and *Fibigia clypeata* subsp. *eriocarpa* (DC.) Greuter (Fig. 12B; *Brassicaceae*). The plants from Bolshoy Utrish differ slightly from those of the East Aegean Islands by the slightly smaller extreme values of the multicellular hairs (0.1–0.3 mm vs 0.1–0.5 mm) at the margins and in the inner part of the corolla (especially of the lobes). Other differences have not been noticed, so we consider the plants to fit into the range of this variety.

Even if typical plants of *Phelipanche gussoneana* var. *zosimae* seem to be very distinct, the study of the large population on Rodos showed a number of morphologically transitional plants to *P. gussoneana* s. str., especially in the form of the corolla lobes (Fig. 12C). This holds likewise for other characters. The point of insertion of the stamens is said to be (4–)5–6 mm above the corolla base in *P. gussoneana* var. *zosimae* vs 2–4 mm in *P. gussoneana* var. *gussoneana* (see descriptions of *P. zosimae* and *P. schultzioides* in *Foley 2003, 2008*). Again, the study of larger populations shows the variability of this character:

(3–)4–6 mm for *P. gussoneana* var. *zosimae* (plants from Chalki and Rodos) and 2–5 mm in *P. gussoneana* s. str. (e.g. plants from Azerbaijan and Crimea), as well as a much greater variability in a number of characters compared to Foley's descriptions, including the amount of hairs and glands on the stamens, ovary and style. Finally it is worth mentioning a new finding of *Phelipanche* parasitizing *Zosima absinthiifolia* in a new location in Cyprus: Agios Ilarionas castle, 26 Apr 2019, *Hadjikyriakou* (photo, [http://www.flora-of-cyprus.eu/cdm\\_dataportal/taxon/d2f7dce2-c76a-44dd-8bf0-7351e0c21486/images](http://www.flora-of-cyprus.eu/cdm_dataportal/taxon/d2f7dce2-c76a-44dd-8bf0-7351e0c21486/images), accessed 12 May 2020). According to the photograph, these plants morphologically and in colour match *P. gussoneana* s. str. (see Hand & al. 2011+). So it can be stated that *Zosima* is not parasitized exclusively by *P. gussoneana* var. *zosimae*.

S. Rätzel, R. Böcker, A. V. Fateryga, V. Kummer, A. V. Popovich, M. Ristow & H. Uhlich

***Phelipanche hedypnoidis*** Rätzel & al. (≡ *Orobancha hedypnoidis* (Rätzel & al.) Hand)

+ **Tn**: Tunisia: Hammamet, Feldrain, May 1968, *Geißler* (B 10 1104518, as *Orobancha ramosa* L.; rev. & det. Rätzel & Ristow 11 Mar 2020). – New for Tunisia. This is the second finding for N Africa of this recently described, mainly Mediterranean species. In N Africa it was hitherto known only from Morocco (Rätzel & al. 2017b). The species was found restricted to a coastal strip a few kilometres distant from the sea. Hammamet as a seaside town fits well into this distributional range. For identification and chorology, see Rätzel & al. (2017b), Hand (2019) and Uhlich & Rätzel (2019).

S. Rätzel & M. Ristow

***Phelipanche olbiensis*** (Coss.) Carlón & al. (≡ *Orobancha olbiensis* (Coss.) Nyman)

+ **Tu(A)**: Turkey: Bolkar Daghlari, Karagöl-Kar, Hänge westlich Meydan, 37°25'N, 34°37'E, 2450 m, Zwergstrauchflur, karbonatisches Substrat, 7 Aug 1992, *Hein 89-7a* (B 10 0666639, det. Parolly 1996 as *Orobancha mutelii* F. Schultz, rev. Rätzel 11 Mar 2020). – New for Turkey. Not mentioned in Gilli (1971), Gilli (1982), Pils (2006) and Güner & al. (2012). For identification, more details and distribution see Carlón & al. (2008: 79), Domina & Raab-Straube (2010+), Flora Ionica Working group (2016+), Rätzel & al. (2016) and Sánchez Pedraja & al. (2016+). S. Rätzel, P. Hein & H. Uhlich

#### Plumbaginaceae

***Plumbago auriculata*** Lam. (= *P. capensis* Thunb.)

**A Tn**: Tunisia: Bizerta, Jarzouna, 37°15'54"N, 09°53'07"E, 1 m, young individuals devel-

oped among and near parental plants not far from a public garden, 27 Jan 2020, *El Mokni* (herb. Univ. Monastir). – A casual alien species new for the flora of Tunisia. Native of South Africa, *Plumbago auriculata* is distributed in other tropical and subtropical regions (Foden & Potter 2005). In Europe, the species seems to be introduced/cultivated as an ornamental in a large scale mainly in Italy and Portugal, whereas it is considered a casual alien in the Balearic Islands (Domina 2011+; Sáez & al. 2016). In N Africa, the species is reported only as alien with “status unknown” in the Canary Islands and as “cultivated doubtfully escaping” in Libya (Domina 2011+; APD 2020).

R. El Mokni

#### Polygonaceae

***Fallopia baldschuanica*** (Regel) Holub (≡ *Polygonum baldschuanicum* Regel) – Fig. 13.

**A Tn**: Tunisia: Monastir, left side of road toward Kairouan, 35°46'04"N, 10°48'59"E, 26 m, an escape in ornamental plantations, 8 Dec 2019, *El Mokni* (herb. Univ. Monastir). – A casual alien species new for the flora of Tunisia and N Africa (Uotila 2017+; APD 2020). *Fallopia baldschuanica* is native to Asia (China, Kazakhstan, Russia, etc.) and can be found growing wild in parts of Europe (see, e.g., Domingues de Almeida & Freitas 2006; Bazan & Castellano 2007; Brunel & al. 2010; Verloove 2020) and North and Central America as an introduced species (see, e.g., CABI 2020; Flora of North America 2020).

R. El Mokni & F. Verloove

#### Rosaceae

***Amelanchier ovalis*** Medik. subsp. *ovalis*

– **Le**: Absent from the Levant. Previous literature records under this name (Meusel & al. 1965: 210; Browicz 1971: 10; Browicz 1984: 5, 29; Scholz 1995: 395) or its synonym *Amelanchier rotundifolia* (Lam.) Dum.-Cours. subsp. *rotundifolia* (Browicz 1972: 170) from Lebanon refer to *A. parviflora* var. *libanotica*; see the following entry.

***Amelanchier parviflora*** var. *libanotica* (Browicz) Fridlender, **comb. nov.** ≡ *Amelanchier ovalis* var. *libanotica* Browicz in Arbor. Kórnickie 16: 10. 1971; – *A. ovalis* sensu Mouterde (1970), Tohmé & Tohmé (2007) et Tohmé & Tohmé (2014), non Medik.

+ **Le**: Lebanon: Governorate of Akkar, Fnaydek, Qalaat Aarouba mountain, 34.454°N, 36.234°E, 1930 m, individuals on mountain slope with *Berberis libanotica* C. K. Schneid., *Cotoneaster* sp., *Daphne oleoides* Schreb., *Juniperus excelsa* M. Bieb., *Rhamnus libanotica* Boiss.,



Fig. 13. *Fallopia baldschuanica* – A: detail of fruiting plant; B: detail of flowering and fruiting plant showing typical white inflorescence. – Tunisia: Monastir, Monastir city, road toward Kairouan, 8 Dec 2019, photographs by R. El Mokni.

*Ribes orientale* Desf., *Rosa* cf. *spinosissima* L., *Rosa* sp., *Rubus* sp. and *Sorbus flabellifolia* (Spach) S. Schauer, 20 May 2019, Fridlender (*obs.*); Governorate of North-Lebanon, Ehden, escarpment above Horsh Ehden Nature Reserve, 34.295°N, 35.972°E, 1650–1700 m, few individuals at early anthesis, 27 May 2019, Fridlender (CLF 121192); *ibid.*, Bcharré, road to the cedars, on trail to Qadisha grotto, 34.247455°N, 36.030733°E, 1700 m, a single individual, 4 Oct 2014, Stephan (*obs.*); *ibid.*, Diman, on sandstone above village, c. 1400 m, Aug 2012, Stephan (*obs.*); *ibid.*, Governorate of Mount-Lebanon, Mt Sannine, on escarpment near “grande coulée”, 33.954726°N, 35.846503°E, 2084 m, with individuals of *Cotoneaster nummularius* Fisch. & C. A. Mey. and *Sorbus flabellifolia*, 22 Aug 2019, Stephan (*obs.*); *ibid.*, Baskinta, in Wadi Aassi separating the village

from Bqaatouta, 33.965220°N, 35.785034°E, 1200 m, sandstone escarpments along a valley, several individuals mixed with *Fraxinus ornus* L., *Juniperus oxycedrus* L., *Ostrya carpinifolia* Scop., *Pinus pinea* L. and *Rhododendron ponticum* var. *brachycarpum* Boiss., 29 May 2019, Stephan (*obs.*). – The general aspect of young flowering shoots from the Ehden population (*leg. A. Fridlender*), in particular the very hairy leaves and calyces; compact inflorescences (due to short pedicels); short petals (c. 7 mm); and relatively large fruits (c. 1 cm) of a bright colour on short pedicels confirm that the Lebanese plants are morphologically distant from the two subspecies of *Amelanchier ovalis* Medik. from southern France and their adjacent *loci classici* (petals 14–19 mm; Favarger & Stearn 1983; Pignatti 2019). Anthers from the Ehden plants contain few pollen grains and some are aborted.



The Lebanese plants are more closely related to plants from Anatolia and rather belong to *A. parviflora* Boiss. (“*petalis ovato-oblongis extus tomentosus calyce duplo longioribus*”, Boissier 1872: 668) than to *A. ovalis* (“*petalis oblongo-lanceolatis calyce 3–4plo longioribus*”, Boissier loc. cit.). Therefore, *A. ovalis* var. *libanotica* Browicz, which was established on the basis of leaf characters (“*folia acuminata, margine argute serrata*”, Browicz 1971: 10), has to be considered a variety of *A. parviflora* (“*floribus eis A. vulgaris dimidio minoribus niveis, pyridiis pisi magnitudine*”, Boissier 1843: 9).

Given that polyploidy and apomixis produce numerous micromorphs and complicate species delimitation in the genus (Burgess & al. 2014), *Amelanchier* seems to be represented in the Mediterranean area by two main groups: (1) the western group, with *A. ovalis* subsp. *ovalis* and *A. ovalis* subsp. *embergeri* Favarger & Stearn in continental Europe and North Africa, with several local variants in isolated areas or islands: *A. ovalis* var. *balearica* Briq. in E Catalunya; *A. ovalis* subvar. *comafredensis* Bolos & Vigo in Mallorca; *A. ovalis* var. *rhamnoides* (Litard.) Briq. in Corsica; and *A. ovalis* var. *djurdjurae* Chabert in E Algeria (Chabert 1889: 22; Chabert 1906: 314; Maire 1980: 129); and (2) the eastern group, with *A. parviflora* in SW Anatolia and various related microtaxa in Lebanon and the southern Balkan peninsula (*A. parviflora* subsp. *chelmea* (Halácsy) Ziel.; *A. cretica* (Willd.) DC. s.l., see Blečić & Pulević 1983; Scholz 1995: 395). The record of *A. cretica* from Sicily seems doubtful because it is based on plants from Quacella that have “petali di misure maggiori rispetto a *A. ovalis* subsp. *embergeri*” (Pignatti 2019: 180) and are therefore hardly compatible with plants of the eastern “*parviflora*” group.

Even the distinction between these two groups is perhaps not as clear as it seems: in Lebanon, there is obviously a significant variability in the relative length of the petals and the calyx between the populations. Likewise, the leaves and calyces, hairy or even sublanate, can become completely hairless in less than two weeks when growing. In this context it is not easy to find plants of the same phenological stage for comparison. The morphological criteria used in the classification of the genus in the Mediterranean (Favarger & Stearn 1983; Strid 1986; Zieliński 2000) require a more in-depth study and above all a comparison with the genetic and cytological data.

Nevertheless, the habitat preference of all *Amelanchier* taxa is similar throughout Mediterranean ecosystems. *Amelanchier ovalis* is

relatively abundant in the NW Mediterranean basin, where it is a pioneer shrub in rocky places. Cattle (goats, donkeys, etc.) appreciate this shrub and graze all accessible branches. This is why *Amelanchier* took refuge in inaccessible escarpments. When pastoral pressure decreases, *A. ovalis* recolonizes mountain slopes and even underwood in the forest belt below the timberline. In the E Mediterranean basin and in southernmost European areas like Spain that are still subject to overgrazing, *Amelanchier* appears to be rare and endangered according to the IUCN red list at current national levels.

Unknown in Lebanon prior to 1930 (Boulomoy 1930), *Amelanchier parviflora* var. *libanotica* was first reported in 1933 exclusively in the relatively preserved mountain range of North-Lebanon, i.e. in the vicinity of Bcharré and Ehden (Samuelsson 1935: 386, as *A. ovalis*; Browicz 1971: 8); near Ehden, between Bcharré and the cedars (Mouterde 1970: 206); and among the cedars (Zohary 1973: 374). It was not observed since then (“not found recently”, Tohmé & Tohmé 2007: 529), but was found again in Beqaa Kafra, not far from the cedars of Bcharré (Tohmé & Tohmé 2014). All those populations are located near 1700 m in altitude. We can now add three North-Lebanon localities to the one recently found by Tohmé & Tohmé (2014), and our two new Mount-Lebanon localities corroborate the presence of this rare taxon scattered throughout the country. The great dispersion of the few extant populations shows that *Amelanchier*, which we have now observed from 1200 m up to 2200 m, is probably a constituent of a formerly more widespread woody vegetation formation. Its discovery in Qalaat Aarouba (Akkar) largely expands its known northward distribution in Lebanon, rendering possible contact with populations in Mt Amanus and Anatolia.

In all the mentioned localities, only a few individuals of *Amelanchier* could be traced. Those at higher altitudes, as in Bcharré, Ehden, Qalaat Aarouba and Sannine, are confined to escarpments far from animals’ teeth and are associated with typical “mountain étage” shrub formations composed of *Rhamnus*, *Sorbus*, etc. In Ehden, *Amelanchier* grows with representative trees and shrubs of mesophilous Mediterranean mountain woods (Stephan & al. 2016), such as *Arbutus andrachne* L., *Daphne oleoides*, *Ostrya carpinifolia*, *Q. cerris* L., *Quercus infectoria* Oliv. and *Q. kotschyana* O. Schwarz. In the Mount Arouba locality, mixed *Abies cilicica* (Antoine & Kotschy) Carrière and *Cedrus libani* A. Rich. are still well represented at an elevation

of 1700 m, whereas dense forest is completely destroyed above 1850 m and *Juniperus excelsa* is represented only by old, isolated individuals sacked by shepherds. Increasing observations of recently introduced mouflons (*Ovis cf. gmelini*) in Ehden (fide Bouchra Douaihy, Lebanese University, pers. comm.) could compromise the survival of these shrub communities. In Baskinta, *A. parviflora* var. *libanotica* is found on sandstone, mixed with additional species such as *Pinus pinea*, *Rhododendron ponticum* L., *Fraxinus ornus* and *Juniperus oxycedrus*. Anyway, the Lebanese *Amelanchier* taxon is rare and threatened at the southernmost distribution limit of *A. parviflora*, because most of the subpopulations comprise only one to three individuals (more only in Aruba), and the genus *Amelanchier* is not known to occur in Israel (Zohary 1972; Danin 2004).

Up to now, naturalized, partly invasive, exotic *Amelanchier* species have been reported only from temperate European ecosystems (Schroeder 1970), and the plants on sale have always belonged to the same “Nordic group species” for a century (Bean 1950; Soupe 2016; Vannucci 2016). But landscaping development around Mediterranean conurbations (i.e. most lowland parts of Lebanon!) and increasing tourism (Ehden and Bcharré hold massive tourism activities including hotel development and ski resorts) could lead to ecological and genetic disturbances through hybridization of imported woody ornamentals with native taxa (see *Pyrus calleryana* Decne., Culley & Hardiman 2007) and probably to an inexorable expansion of the noxious phytopathogenic bacterium *Xylella fastidiosa* Wells & al.

A. Fridlender & J. Stephan

***Aruncus dioicus* (Walter) Fernald**

+ **Gr:** Greece: C Makedonia, Nomos of Pella, Eparchia of Almopia, Mt Pinovo, 41°07'28.04"N, 22°04'10.74"E, 1250 m, stream bank and damp roadside in beech forest, parent rock trachyte and andesite, 3 Jul 2018, *Chasapis* 2466 (TAUF); *ibid.*, Mt Garefiou Almopias, 41°03'54"N, 22°00'30.13"E, 1120 m, damp roadside in beech forest, parent

rock schist, 7 Jul 2019, *Chasapis* 2468 (TAUF). – A circumboreal perennial tall herb, not mentioned for Greece in either Euro+Med (2006+) or Dimopoulos & al. (2013, 2016). Its southern distribution limit in the Balkan Peninsula was supposed to be located in N Albania (Tutin & al. 1968: 6) and North Macedonia (Micevski 1998). Its occurrence in Greece was first recorded in 2018 on Mt Pinovo, where a population of approximately 300 individuals was found along a streambank and damp roadsides in a beech forest, at an altitude of 1250 m, on volcanic substratum.

M. Chasapis, D. A. Samaras,  
K. Theodoropoulos & E. Eleftheriadou

*Scrophulariaceae* (incl. *Buddlejaceae*)

***Nicodemia madagascariensis* (Lam.) R. Parker** ( $\equiv$  *Buddleja madagascariensis* Lam.  $\equiv$  *Adenoplea madagascariensis* (Lam.) Eastw.) – Fig. 14.



Fig. 14. *Nicodemia madagascariensis*, detail of flowering plant. – Tunisia: Monastir, Monastir city, near post office la Republique-Rue Hédi Khefacha, 29 Feb 2020, photograph by R. El Mokni.

**A Tn:** Tunisia: Bizerta, Bizerta city, 37°16'11"N, 09°52'27"E, 5 m, few individuals near a public garden, 3 Mar 2015, *El Mokni* (herb. Univ. Monastir); *ibid.*, Monastir, Monastir city, 35°46'25"N, 10°49'05"E, 22 m, very tough population in an old building, 29 Feb 2020, *El Mokni* (herb. Univ. Monastir); *ibid.*, Frina, toward Monastir city, 35°44'25"N, 10°49'19"E, 3 m, 2 or 3 individuals near roadside, 21 Feb 2019, *El Mokni* (herb. Univ. Monastir); *ibid.*, Menzel Nour, 35°40'31"N, 10°46'58"E, 41 m, a single vigorous individual, 21 Feb 2019, *El Mokni* (herb. Univ. Monastir). – *Nicotiana madagascariensis*, a scandent shrub with branches 6–7 m long, is a native taxon of Madagascar (Madagascar Catalogue 2016) that has been introduced as an ornamental plant and is naturalized in the U.S.A. (Florida), Mexico, the West Indies, South America (Argentina, Uruguay), Africa, India, Australia, New Zealand, New Caledonia, Fiji and Hawaii (Acevedo-Rodríguez & Strong 2012; Norman 2012; PROTA 2016; USDA-ARS 2016; PIER 2018). The taxon has been reported in the Mediterranean region as a casual alien in Sicily (Pasta & al. 2016) and Greece (Dimopoulos 2013: 151, 265; Vladimirov & al. 2019). Moreover, the species is reported as cultivated in Cyprus (Valdés 2012+a) and in Libya (El-Gadi 1987), even though the African Plant Database (APD 2020) does not report its occurrence in N Africa. Therefore, its citation here as a casual alien constitutes the first report of this taxon for the flora of Tunisia and N Africa. The easily dispersed seeds and the ability of the plant to regenerate from stem fragments facilitates its naturalization in many areas of the world (GISD 2015).

R. El Mokni

#### *Solanaceae*

***Brugmansia suaveolens*** (Willd.) Sweet (≡ *Datura suaveolens* Willd.)

**A Tn:** Tunisia: Bizerta, Bizerta city, 37°18'03"N, 09°51'54"E, 10 m, among ornamental plants on roadsides, 21 May 2019, *El Mokni* (herb. Univ. Monastir). – A casual alien species new for the flora of Tunisia. *Brugmansia suaveolens* is a shrubby tree native to South America that has escaped cultivation to invade residential areas throughout much of South and Central America, Mexico, the U.S.A.

(parts of SC Florida and further north) and Australia (GBIF 2015b; USDA-ARS 2016; USDA-NRCS 2016). In Europe, the species is considered only as naturalized in the Azores, on São Miguel, Santa Maria and Faial Islands (Valdés 2012+b; GBIF 2015b). For N Africa, it is reported only as introduced (alien with unknown status) in the Canary Islands and Morocco (Valdés 2012+b; APD 2020).

R. El Mokni & G. Domina

#### ***Datura wrightii*** Regel – Fig. 15.

**A BH:** Bosnia-Herzegovina: Mostar, quarter Pasjak, 43°21'00"N, 17°48'50"E, 76 m, rubbish tips, three individuals, two of which were large and well developed with ripening fruits, 29 Jul 2019, *Maslo* (SARA 51983).

**A Ct:** Croatia: Dalmatia, Split, Omiš, 43°26'26"N, 16°39'23"E, 1 m, sandy beach along Adriatic coast, six well-developed individuals with ripening fruits, 28 Jul 2013, *Maslo* (photo); *ibid.*, Korčula, Vela Luka, 42°57'21"N, 16°42'35"E, 19 m, ruderal sites along Greben shipyard, four well-developed individuals, 19 Jul 2019, *Maslo* (obs.). – *Datura wrightii* is a native species of the SW United States and Mexico, but is widely cultivated as an ornamental in warm-temperate regions around the world. It is much reminiscent of *D. inoxia* Mill., and both have been confused for quite a long time, especially in the Mediterranean area (Verloove 2008). It was shown that in some areas, e.g. in France or Corsica (Lambinon 2006; Tison & Foucault 2014), only *D. wrightii* is present, whereas in other areas both are found, e.g. in Spain and Italy



Fig. 15. *Datura wrightii*, detail of fruiting plant. – Croatia: Dalmatia, Split, Omiš, sandy beach along Adriatic coast, 28 Jul 2013, photograph by S. Maslo.

Table 1. Selected discriminating characters of *Bupleurum aequiradiatum*, *B. commutatum* and *B. gerardi*.

	<i>B. aequiradiatum</i>	<i>B. commutatum</i>	<i>B. gerardi</i>
Umbel rays	almost equal, longest to 2 cm long, clearly divergent after anthesis	very unequal, longest 4–5 cm long, non-divergent after anthesis	very unequal, longest 3–4 cm long, non-divergent after anthesis
Bracts and bracteoles	with finely serrulate margins	with entire margins or serrulate near apex	with finely serrulate margins
Petals	limb 0.4–0.5 mm wide, inflexed lobe at apex almost as wide as limb	limb 0.8–0.9 mm wide, inflexed lobe at apex c. ½ as wide as limb	limb 0.4–0.5 mm wide, inflexed lobe at apex c. ½ as wide as limb
Fruits	1–1.5 mm long, styles 0.3–0.4 mm, equal to mericarp width, vallecular vitta 1	2–2.5 mm long, styles 0.4–0.5 mm, equal to mericarp width, vallecular vitta 1	2–2.5 mm long, styles 0.1–0.2 mm, shorter than mericarp width, vallecular vittae 3

(Galasso & al. 2018; Verloove & al. 2019), *D. wrightii* often being the predominant species. Conversely, in the Canary Islands only *D. inoxia* has been reliably recorded so far (pers. obs. of first author).

*Datura inoxia* was recently reported for the first time from the area of former Yugoslavia (Maslo & Šarić 2019). The plant depicted, however, clearly refers to *D. wrightii*. On closer examination (herbarium and photo material) it turned out that *D. wrightii* has been recorded at least three times from this area, once from Bosnia-Herzegovina and twice from Croatia. Like elsewhere in the Mediterranean region, it is probably locally naturalized and increasing.

*Datura wrightii* and *D. inoxia* are easily distinguished. The very short, incurved and eglandular hairs of *D. wrightii* give it a downy appearance, especially on new growth. Plants may even appear virtually glabrous. This contrasts with the very distinct, long, erect glandular hairs of *D. inoxia*. In addition, *D. wrightii* has markedly larger corollas (14–26 cm vs 12–16 cm) and, as a result, has more ornamental value than *D. inoxia*.

S. Maslo & F. Verloove

***Lycianthes rantonnei*** (Carrière) Bitter (≡ *Solanum rantonnei* Carrière)

**A Tu:** Tunisia: Monastir-Sousse, 35°46'08"N, 10°45'58"E, 5 m, among ornamental plants on roadsides, 26 Feb 2020, *El Mokni* (herb. Univ. Monastir). – A casual alien species new for the flora of Tunisia and N Africa. *Lycianthes rantonnei* is native to South America (Argentina, Paraguay, Bolivia and Brazil; Gallego 2012) and is widely cultivated in many regions of the world as an ornamental shrub, mainly in warm-temperate and subtropical areas. In Europe, the species is reported from Spain, as naturalized in Málaga province and Catalunya (Sáez & al. 2016; Verloove & al. 2019) and as spontaneous in Madrid (Gallego 2012).

R. El Mokni & G. Domina

*Umbelliferae* (*Apiaceae*)

***Bupleurum aequiradiatum*** (H. Wolff) Snogerup & B. Snogerup

+ **Tu(A):** Turkey: Bithyn[ia], prope Brussam, in fruticetis, Jul 1874, *Pichler* (BP 274226, as *Bupleurum gerardi* Jacq. [non All.]). – Wolff (1910), in the protologue of his *B. commutatum* var. *aequiradiatum* H. Wolff, indicated that the taxon occurs in Bithynia (NW Anatolia), Crimea and the Balkan Peninsula. Snogerup & Snogerup (2001) accepted it at species rank and indicated only the Balkan Peninsula for the distribution, because no specimens were seen from Bithynia and Crimea. Stoyanov (2019) revisited the distribution of the species and also concluded that it is a Balkan endemic. The present record is the first confirming the distribution of *B. aequiradiatum* in Bithynia in support of Wolff's earlier statement. *Bupleurum aequiradiatum* and *B. commutatum* Boiss. & Balansa are similar to some extent, in habit and in having 5–8 rays in the top umbels, but are quite different in a number of other characters (Table 1).

S. Stoyanov

***Bupleurum commutatum*** Boiss. & Balansa

– **Cm:** The occurrence of *Bupleurum commutatum* in the Crimean Peninsula was based on two records of A. S. Callier (Sudak, Abhänge des Sokoll, *Callier* 56; Steingeröll des Sokoll bei Sudak, *Callier* 97). Wolff (1910) assigned them to *B. commutatum* [var. *typicum*] f. *tauricum*. Snogerup & Snogerup (2001) accepted Callier's records as belonging to *B. commutatum*. In the same work, they simultaneously referred *Callier* 97 to *B. gerardi* All. *Callier* 97 (BP 415151, 641156) was examined carefully in the herbarium of the Hungarian Natural History Museum and it was found that two specimens belong to *B. gerardi* on account of their small petals, 0.4–0.5 mm wide (vs petals 0.8–0.9 mm wide in *B. commutatum*). In addition, *Callier* 56 (JE 00022384) was examined via Virtual

Herbaria JACQ (<https://herbarium.univie.ac.at/database/>). The individuals of that specimen are in the fruiting stage and it was found that the styles are only 0.1–0.2 mm long, shorter than the mericarp width, a character that corresponds to *B. gerardi* (vs styles 0.4–0.5 mm long in *B. commutatum*). The errors in the determination can be explained by the most important diagnostic characters in *Bupleurum* being flower and fruit details, which often are less than 1 mm in size. Finally, it should be emphasized that 20 correctly determined specimens of *B. gerardi* from SE and S parts of the Crimean Peninsula were seen in the Moscow Digital Herbarium (<https://plant.depo.msu.ru/>), most of which were collected in the same area of Callier's records cited above, whereas materials of *B. commutatum* from Crimea are absent. Therefore, it is necessary to exclude *B. commutatum* from the Crimean flora, because all known records in fact are referable to *B. gerardi*. *Bupleurum commutatum* and *B. gerardi* are similar in having 5–8 very unequal rays in the top umbels, but are quite different in a number of other characters (Table 1).

S. Stoyanov

### *Bupleurum gerardi* All.

**A Se:** Serbia: Toplac, distr. Vranja, in vinetis, July, Ilić (BP 274073, as *Bupleurum commutatum* Boiss. & Balansa). – According to Snogerup & Snogerup (2001), all or some of the European occurrences of *B. gerardi* may represent old introductions. In fact, *B. gerardi* was first described from France in 1774, in an area where it is not native (where it had been introduced earlier from the E Mediterranean, perhaps by shipping). Its natural range comprises Crimea, Transcaucasia, Anatolia and the Middle East. Outside that area, mostly in S Europe, *B. gerardi* appears as a ruderal and casual. Recently, Stoyanov (2019) revisited its Balkan distribution and found that all records from Bulgaria are referable to *B. commutatum*. The only certain Balkan records of *B. gerardi* in the are those from the mid-19<sup>th</sup> century from the Croatian islands of Torzola and Lesina (Snogerup & Snogerup 2001). The present record is the first of this species for the Balkan mainland, as well as for Serbia, and most likely it is a casual alien.

S. Stoyanov

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