

Euro+Med-Checklist Notulae, 15

Eckhard von Raab-Straube¹ & Thomas Raus¹ (ed.)

Version of record first published online on 30 September 2022 ahead of inclusion in August 2022 issue.

Abstract: This is the fifteenth of a series of miscellaneous contributions, by various authors, where hitherto unpublished data relevant to both the Med-Checklist and the Euro+Med (or Sisyphus) projects are presented.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 *Amaranthaceae*, *Amaryllidaceae*, *Cactaceae*, *Campanulaceae*, *Caprifoliaceae*, *Caryophyllaceae*, *Chenopodiaceae*, *Compositae*, *Cyperaceae*, *Dipsacaceae*, *Leguminosae*, *Lentibulariaceae*, *Molluginaceae*, *Montiaceae*, *Onagraceae*, *Orobanchaceae*, *Pinaceae*, *Plantaginaceae*, *Polygalaceae*, *Rosaceae*, *Rubiaceae*, *Umbelliferae* and *Violaceae*. It includes new country and area records and taxonomic and distributional considerations for taxa in *Acacia*, *Amaranthus*, *Bupleurum*, *Campanula*, *Carex*, *Claytonia*, *Dysphania*, *Epilobium*, *Erigeron*, *Galium*, *Gelasia*, *Hieracium*, *Lathyrus*, *Lomelosia*, *Lonicera*, *Mollugo*, *Nothoscordum*, *Opuntia*, *Orobanche*, *Picea*, *Plantago*, *Polycarpon*, *Polygala*, *Rubus*, *Scorzoneroideis*, *Utricularia*, *Veronica*, *Vicia* and *Viola*, and a correction to a previous notula for *Trifolium pachycalyx* in Greece.

Keywords: distribution, Euro+Med PlantBase, Europe, Med-Checklist, Mediterranean, new record, taxonomy, vascular plants

Article history: Contributions received 25 November 2021 to 23 August 2022; peer-review completed 25 August 2022; received in revised form 26 August 2022; accepted for publication 26 August 2022.

Citation

For the whole article:

Raab-Straube E. von & Raus Th. (ed.) 2022: Euro+Med-Checklist Notulae, 15. – Willdenowia 52: 273–299. <https://doi.org/10.3372/wi.52.52205>

For a single contribution (example):

Bartolucci F. & Galasso G. 2022: *Vicia lens* subsp. *lamottei* (Czeffr.) H. Schaef. & al. – Pp. 284–285 in: Raab-Straube E. von & Raus Th. (ed.), Euro+Med-Checklist Notulae, 15. – Willdenowia 52: 273–299. <https://doi.org/10.3372/wi.52.52205>

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 (2021).

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Amaranthaceae

Amaranthus caudatus L.

A Ly: Libya: Cyrenaica, El Hamrah, 15 Dec 1873, *Ascherson 2064* (M 0241385). – According to Iamónico (2015a+), *Amaranthus caudatus* occurs in N Africa in Morocco, Algeria and Egypt. The species was not cited for Libya in any of the national floras published from the first *Florae libycae prodromus* by Durand & Barratte (1910) to *The flora of Libya* by Boulos (1977). Further-

more, no citation of the species is reported for Libya by Alzerbi & al. (2020) in their list of introduced species for the country. Also, Dobignard & al. (2011) and POWO (2022b) did not cite any references to Libya for *A. caudatus*. The specimen found at M refers to a collection by P. Ascherson made in Cyrenaica as part of Rohlfs's *Expedition in die Lybische Wüste* as reported on the original label (see <https://plants.jstor.org/stable/10.5555/al.ap.specimen.m0241385>). Notably Pampanini (1931), who studied the flora of Cyrenaica, did not record *A. caudatus* for this Libyan region. All sources considered, the M specimen indicates the occurrence, at least in the 19th century, of *A. caudatus* in Libya. The species is native to South America (Bayón 2015) and can be considered a casual alien in Libya.

D. Iamónico

Amaranthus standleyanus Covas

– **Tu(E)**: Reported in error as a casual adventive in Tunisia (“A Tn”, Greuter & al. 1984: 47) and as naturalized in European Turkey (“nTu(E)”, Iamónico 2015a+, based on Greuter & al. 1981). In fact, Davis (1981) published the species as naturalized in Tunisia (correctly reported in Iamónico 2015a+), and its occurrence in Turkey-in-Europe is not at all mentioned in Greuter (1981) or other basic Turkish floristic sources (Webb 1966; Aellen 1967; Tan & Panitsa 2000).

Th. Raus

Amaranthus tricolor L.

– **Tu(E)**: Reported as naturalized in European Turkey (Iamónico 2015a+: “nTu(E)”, based on Roy & al. 2020), but certainly in error. A single 19th century record of *Amaranthus tricolor* is known from Turkey-in-Europe (coll. 29 Sep 1895, Aznavour, voucher seen by Aellen, with status “cultivated in gardens, and sometimes escapes”, Aellen 1967; Baytop & Demiriz 1981). This record was accepted without review by Tuğ (2012) for the Istranca division of Turkey-in-Europe, with no status specified. The species, native to Asia from Pakistan eastward to Japan and Indonesia (Bayón 2015), was never recollected in Turkey-in-Europe (Webb 1966; Tan & Panitsa 2000) and accordingly not counted as a member of the Turkish flora by Aellen (1967: 343).

Th. Raus

Amaryllidaceae (Allioideae)

Nothoscordum nudicaule (Lehm.) Guagl. (≡ *Allium nudicaule* Lehm.).

A Tn: Tunisia: Mahdia, Mahdia city near the market, 15 m, roadsides, many flowering individuals (c. 100 in 10 m²), 18 Mar 2022, *El Mokni* (herb. El Mokni); Monastir, Monastir city near “Palais des Sciences”, gardens and roadsides, many flowering and fruiting individuals (c. 60 in 10 m²), 22 Aug 2020, *El Mokni* (herb. El Mokni); *ibid.*, 29 Apr 2022, *El Mokni* (herb. El Mokni). – *Nothoscordum nudicaule*, a taxon morphologically and cytologically closely related to *N. gracile* (Aiton) Stearn (Souza & al. 2012) is reported here as a new casual alien for the flora of

Tunisia and N Africa. Prior to this, *N. xborbonicum* Kunth was found by E. Vela in October 2009 near Ariana and in April 2010 near Tunis (Le Floch'h & al. 2010: 333–334). The recent record of *N. gracile* in Tunisia (El Mokni & Hadj Khalifa 2020: 190–191) can be referred to *N. gracile* var. *macrostemon* (Kunth) Guagl. (Zuloaga & Morrone 1996: 236; Hurrell 2009: 39–41, based on Guaglione 1972: 208–209, as *N. inodorum* var. *macrostemon* (Kunth) Beauverd). Nuñez & al. (1974) advocated species rank for *N. macrostemon* Kunth. Native to South America (Argentina, Bolivia, S Brazil and Uruguay, according to Guaglione 1972: 211–212; Zuloaga & Morrone 1996: 237; GBIF 2022c), *N. nudicaule* has a cupuliform-subrotate perianth and lanceolate-subulate filaments joined at their bases (for a detailed description, see Guaglione 1972: 209–211). In the Mediterranean Basin, the taxon has been reported so far only from NW Spain (Catalonia: Barcelona, Girona; Pyke 2019, 2022). In Tunisia, it is becoming a common weed of gardens, footpaths and roadsides. The species reproduces by seeds and vegetatively by underground bulbs. The easily dispersed seeds and the ability of the plant to sprout from its numerous bulbs and bulblets will presumably facilitate its future naturalization in many areas. In areas where *N. nudicaule* grows together with *N. xborbonicum* Kunth (= *N. gracile* sensu Nuñez & al. 1974), many introgressive forms can be noticed (Pyke 2019). An attempt at an analytical key to the different taxa of *Nothoscordum* introduced in the Mediterranean basin is given here, derived and amalgamated from Guaglione (1972: 196), Cabrera & Zardini (1978: 193), Ravenna (1991: 486) and Pyke (2019: 14, 16).

Analytical key to introduced taxa of *Nothoscordum* in the Mediterranean area

1. Flowers opening in morning, wide open before noon, lasting until late evening and closing at night; filaments linear-oblong, abruptly contracted at apex *N. xborbonicum*
- Flowers opening in evening, well expanded at night and lasting until next morning; filaments narrowly lanceolate-acuminate, gradually narrowed toward apex 2
2. Perianth with patent segments; filaments erect, approximate, united at base for 1.6–4.6 mm; leaf lamina 3–10 mm wide *N. gracile* var. *macrostemon*
- Perianth cupuliform; filaments suberect, not approximate, united at base for c. 1 mm; leaf lamina 2–6 mm wide *N. nudicaule*

R. El Mokni & E. Laguna

Cactaceae

Opuntia bonaerensis Speg. (≡ *O. elata* subsp. *bonaerensis* (Speg.) Guiggi) – Fig. 1.

N It: Italy: Toscana, Figline (Prato), 43.922822°N, 11.088867°E, 137 m, edge of *Quercus ilex* L. wood, on



Fig. 1. *Opuntia bonaerensis* – A: habit; B: flower; C: pads showing areoles and spines; D: fruit, longitudinal section. – Italy, Toscana, Figline (Prato), 18 Mar 2020, photographs by G. Gestri.

jasper, 18 Mar 2020, *Gestri* (photo). – In light of the recent revision of *Opuntia* ser. *Armatae* K. Schum. (Font 2014), plants collected near Figline (Tuscany, Italy) and reported as *Opuntia elata* Salm-Dyck (Guiggi & Messina 2014) are to be referred to *O. bonaerensis* mostly due to the purplish fruit flesh, the light greenish stigma and the shape of spination (Font pers. comm.). We hypothesize that most, if not all, previous Italian findings of *O. elata* could be attributed to *O. bonaerensis*. Therefore, a revision of the specimens collected so far would be necessary. *Opuntia bonaerensis* should be considered as naturalized in Italy. G. Gestri & V. Lazzeri

***Opuntia puberula* Pfeiff. – Fig. 2.**

N It: Italy: Molise, Campobasso, municipality of Guglionesi, 41°52'22.61"N, 14°53'38"E, 53 m, on a chalky SE facing rock wall, 31 May 2022, *Palermo* (photo); Toscana,

Livorno, Grotti, municipality of Rosignano Marittimo, 43°23'49.75"N, 10°28'46.58"E, 44 m, subspontaneous along a wall, 15 Sep 2016, *Lazzeri* (photo). – *Opuntia puberula* can be considered an easily misidentified and therefore overlooked taxon, which closely resembles *O. microdasys* (Lehm.) Pfeiff. by the relatively small size of both the whole plant and the pads and by the areoles being situated close together. However, *O. puberula* can be distinguished from *O. microdasys* mainly by the presence of small and slender, reflexed and spreading spines on some areoles of both pads and hypanthia (Fig. 2C), the more oblong shape of the pads (vs usually elliptic-obovate in *O. microdasys*), the consistently yellow glochids (vs sometimes white or reddish glochids in *O. microdasys*) and the areoles being more distant from each other. The two taxa, despite their morphological similarities, seem to be phylogenetically distant, with *O. puberula* unexpect-



Fig. 2. *Opuntia puberula* – A: habit; B: flowering plant; C: pad showing areoles and spines. – A: Italy, Molise, Campobasso, municipality of Guglionesi, 31 May 2022, photograph by D. Palermo; B, C: Italy, Toscana, Livorno, Grotti, municipality of Rosignano Marittimo, 15 Sep 2016, photographs by V. Lazzeri.

edly placed among the species previously attributed to the genus *Nopalea* Salm-Dyck, while *O. microdasys* is nested in the “*Basilares* clade” (Majure & al. 2012). *Opuntia puberula* has long been considered a synonym of *O. decum-*

bens Salm-Dyck, following Britton & Rose (1919), who stated that the cultivated plants attributed to *O. puberula* were actually something distinct and that this latter species should be considered a synonym of *O. decumbens*. This

treatment was followed again in Galasso & al. (2018), in which *O. decumbens* was excluded from Italy. However, *O. puberula* and *O. decumbens* are clearly distinct, as was shown, e.g., by Bravo-Hollis (1978) and Sánchez & Villaseñor (1994) and was also accepted in the most recent checklist of *Cactaceae* (Korotkova & al. 2021). One of the differential characters is the extremely short and thin spination in *O. puberula* vs longer and stouter spination in *O. decumbens*, when present (Pineda & Oyuela 2020). *Opuntia puberula* has so far been reported only from Spain (Guillot 2008), while it cannot be excluded that it is more widespread in the Euro-Mediterranean area. On the basis of our observations in the field, *O. puberula* is to be considered as naturalized in Italy.

V. Lazzeri & D. Palermo

Campanulaceae

Campanula spatulata Sm. subsp. *spatulata*

+ Mk: North Macedonia: Southwestern region, Struga municipality, Mt Yablanitsa, 30 Jul 1947, Kitanov (SOM 165806), det. Dimitrov. – The species, a geophyte with a napiform taproot resembling *C. patula* L. in appearance (Borsch & al. 2009: 20), is widespread in the S Balkan countries (Hartvig 1991) but has not been reported in North Macedonia before. A second subspecies, *C. spatulata* subsp. *filicaulis* (Halácsy) Phitos, is confined to the Cretan area (Castroviejo & al. 2010+). D. S. Dimitrov

Caprifoliaceae

Lonicera nigra L.

+ Mk: North Macedonia: Polog region, Mavrovo i Rostuša municipality, Mt Dešat, near Bachilata N of the peak Karchin, 1780 m, in *Fagus sylvatica* L. forest, 8 Aug 1948, Kitanov (SOM 177127), det. Dimitrov. – This species is widespread in C and S Europe, from the Pyrenees to the Carpathians, extending to Bulgaria (Browicz 1976). The apparent distribution gaps in Albania and North Macedonia (Raab-Straube 2017+) are filled with the present collection and by Barina & al. (2015: Prokletije Mts in Albania). D. S. Dimitrov

Caryophyllaceae

Polycarpon tetraphyllum subsp. *diphyllum* (Cav.) O. Bolòs & Font Quer

+ Tu(A): Turkey: Samsun province, Atakum, Cumhuriyet district, roadside, 7 Jun 2021, Karaer 2021-01 (OMUB); *ibid.*, Karaer 2021-02 (OMUB); Samsun province, Ilkadım, Cumhuriyet Sarayı, roadside, 29 Mar 2022, Karaer 2022-15 (NGBB, OMUB). – Marhold (2011a+) reported *Polycarpon tetraphyllum* subsp. *diphyllum* only in the European part of Turkey, based on Greuter & al. (1984) and Chater & Akeroyd (1993), whereas both Jalas & Suominen (1983: 156) and POWO (2022g) did not record it in European Turkey. Concerning Asiatic Turkey

(Anatolia), no data about the occurrence of this taxon were found by us. Güner & al. (2012) refrained from mentioning infraspecific taxa of *P. tetraphyllum* (L.) L. for any Turkish area. Furthermore, our discovery seems to be the first one for Asia (see, e.g., POWO 2022g). The five populations found (four in Atakum district and another far from there in Ilkadım district) cover an area of 5–10 km² (each with 150–300 individuals) and are in good condition. *Polycarpon tetraphyllum* subsp. *diphyllum* is a roadside plant typically adapted to urban habitats. According to the current taxonomic concept (see, e.g., Kool & al. 2007; Iamonico & Domina 2015), the genus *Polycarpon* is monotypic including *P. tetraphyllum* with eleven subspecies, mostly native to the Mediterranean area and SW Asia; few taxa have a restricted distribution, e.g. *P. tetraphyllum* subsp. *depressum* (Nutt.) Iamonico from California (U.S.A.) and Baja California (Mexico) (see Iamonico 2015b) and *P. tetraphyllum* subsp. *apurense* (Kunth) Iamonico & Zanotti from a few places of Argentina, Colombia, Paraguay and Venezuela (see Iamonico & Zanotti 2022). The various subspecies differ from each other by both vegetative and sexual characters (a comprehensive taxonomic revision is in preparation by D.I.). Among the diagnostic characters is the arrangement of the leaves. The plants found in Samsun (C Black Sea region) have upper leaves in whorls of 4, whereas the lower leaves are opposite. Only three subspecies display this configuration, i.e. *P. tetraphyllum* subsp. *colomense* (Porta) Iamonico & Domina, *P. tetraphyllum* subsp. *herniarioides* (Ball.) Iamonico & Domina and *P. tetraphyllum* subsp. *diphyllum*. The latter taxon differs from the two former ones mainly by its habit (annual vs perennial), inflorescence (dense vs lax) and number of stamens (3 or 4 vs 5); *P. tetraphyllum* subsp. *herniarioides* also differs by the height of the plant (up to 6 cm vs 5–10 cm in *P. tetraphyllum* subsp. *diphyllum* and *P. tetraphyllum* subsp. *colomense*), the width of the leaves (1–2.5 mm vs 2–6 mm) and their thickness (fleshy vs not fleshy).

D. Iamonico, F. Karaer & M. Keskin

Chenopodiaceae

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

+ SI: Slovenia: Podravska statistična regija, Maribor, city centre, Gospoda ulica, 46°33'33"N, 15°38'48"E, 265 m, in joints of the cobblestones, 26 Jul 2022, Hohla (LI 3447604). – *Dysphania pumilio* is new for the flora of Slovenia (Jogan pers. comm.; no mention in Jogan 2007). A species native to Australia, *D. pumilio* is nowadays an alien in most European countries and seems to be still spreading (Bogosavljević & Zlatković 2017). It has also been discovered in the neighbouring states Italy (Iamonico 2011), Austria (Walter & al. 2002; Fischer & al. 2008), Croatia (Brandes 2010), Serbia (Bogosavljević & Zlatković 2017) and Hungary (Király 2009). *Dysphania pumilio* is quite common in the alleys

and squares of the centre of Maribor. It seems to have been introduced some years ago. M. Hohla

Compositae (Asteraceae)

Erigeron acris* subsp. *serotinus (Weihe) Greuter (= *E. muralis* Lapeyr.).

+ **Sl:** Slovenia: Drava, Selnica ob Dravi, Sveti Duh na Ostrem Vrhu, in the forecourt of the church, 46°36'55"N, 15°27'33"E, 886 m, 25 Jul 2022, Hohla (LI 3447598). – According to Jogan (pers. comm.), this is the first record of *Erigeron acris* subsp. *serotinus* in Slovenia. Wraber (2007) did not yet distinguish between *Erigeron acris* subsp. *acris* and *E. acris* subsp. *serotinus*. In many countries, these taxa have not been differentiated for long. *Erigeron acris* subsp. *serotinus* is already given, e.g., from Austria (Fischer & al. 2008) and Italy (Wilhelm & al. 2006), but records are still missing in other neighbouring states. Future records of *E. acris* subsp. *serotinus* in Slovenia are to be expected. Revisions in the Slovenian herbaria will probably bring more data. M. Hohla

Gelasia villosa (Scop.) Cass. (≡ *Scorzonera villosa* Scop.) – Fig. 3.

N Cm: Crimea: Sevastopol vicinity, near Balaclava, Mramornaya (marble) ravine, 44°30'27"N, 33°31'34"E, 230 m, dry grassland, 21 Jun 2010, Svirin (photo); *ibid.*, Karan (Qaran) plateau, rocky steppe, 31 May 2014, Dyakov (photo: <https://www.plantarium.ru/lang/en/page/image/id/243994.html>); *ibid.*, Gornaya height, 44°31'22.74"N, 33°32'58.06"E, 255 m, rocky steppe, 31 May 2020, Svirin (YALT; photo); *ibid.*, 44°31'22.45"N, 33°33'0.25"E, 270 m, trampled steppe on terra rossa, 31 May 2020, Yevseyenkov (photo); *ibid.*, 44°31'21.05"N, 33°33'06.01"E, 260 m, rocky steppe, 21 Jun 2020, Svirin (YALT; photo); *ibid.*, Mramornaya ravine, 44°30'27.32"N, 33°31'34.36"E, 230 m, wasteland, 26 Jun 2020, Svirin (YALT; photo). – *Gelasia* Cass. is new for the flora of Crimea, and *G. villosa* is a new species for E Europe. Three species are recorded for E Europe: *G. biebersteinii* (Lipsch.) Zaika & al., *G. ensifolia* (M. Bieb.) Zaika & al. and *G. tuberosa* (Pall.) Zaika & al. (Zaika & al. 2020). None of them is reported from Crimea. *Gelasia villosa* is native from Italy to the NW Balkan Peninsula. It includes two subspecies: *G. villosa* subsp. *villosa* and *G. villosa* subsp. *columnae* (Guss.) Bartolucci & al. The typical subspecies is widespread in SE and NE Italy and the NW Balkan Peninsula, while subsp. *columnae* is distributed in C and S Italy and Sicily (Greuter 2006+; Flora Italiana 2022; POWO 2022e). Naturalization or accidental introduction of *G. villosa* to other regions is unknown; it is not marked as a weed and is not characterized by invasive behaviour (Randall 2017). Therefore, its recent finding in Crimea was quite unexpected. For the first time, *G. villosa* was found and photographed by one of us (S.S.) in the Sevastopol region on the slopes of the Mramornaya ravine on 21 Jun 2010, but then the species was not identified. On 31 May 2014, Nikolai Dyakov pho-

tographed a similar plant nearby, on the Karan plateau, and posted the picture on the Plantarium (2007–2022) website. However, the diagnostic features of the plant were not visible on the photo, so its identification was impossible. Six years later, a new locality was found by two of us (S.S. and P.Y.) a few kilometres north of the two first ones, on the Gornaya height. The differences between the two subspecies of *G. villosa* are inconspicuous: *G. villosa* subsp. *villosa* has fully scabrid pappus bristles, while *G. villosa* subsp. *columnae* has plumose ones at least at the base (Lipschitz 1939; Tutin & al. 1976). Crimean plants are characterized by the following morphological features: leaves scarcely callose at apex; phyllaries, especially the outer ones, subulate pointed with outward-curved tips; achenes 10–11 mm long, with more or less smooth ribs in the lower 1/3–1/2, and spinulose-dentate to acutely lamellate ribs in the upper part with hairs near the apex; pappus bristles plumose at the base with lateral projections c. 1 mm long, distally scabrid with projections c. 0.1 mm long. It is not yet possible to attribute the Crimean specimens to one of the subspecies with certainty. This requires further research, in particular, a detailed comparison with plants from Italy and the Balkan Peninsula, primarily with the recently designated types of *G. villosa* subsp. *villosa* and subsp. *columnae* (Bartolucci & al. 2020). In Crimea, *G. villosa* is a dominant element of dry grassland, including the submediterranean variant of rocky *Festuco-Brometea* steppes on relict carbonate terra rossa soils. It grows in natural and seminatural habitats, and is perhaps a native plant in Crimea. However, the significant disjunction of the range indicates that the species is most likely an alien there. Presumably it was brought from Italy with forage during the Crimean War of 1853–1856, like some other species of the Sevastopol flora that are otherwise rare in E Europe. In the vicinity of Balaclava, *G. villosa* has become completely naturalized and is prone to invade moderately disturbed sites.

L. E. Ryff, S. A. Svirin & P. E. Yevseyenkov

Hieracium piliferum Hoppe

+ **Mk:** North Macedonia: Southwestern region, Struga municipality, Mt Yablanitsa, near Labuniško lake, 41°16'N, 20°31'10"E, 1900 m, 14 Aug 1947, Kitanov (SOM 177073), det. Dimitrov. – This taxon is known from Kosovo (Berisha & al. 2020) and Bulgaria according to Vladimirov (2021), who mentioned the possible occurrence in North Macedonia without giving locality data or citing herbarium material. D. S. Dimitrov

Scorzoneroideis montana subsp. *breviscapa* (DC.) Greuter

+ **Mk:** North Macedonia: Polog region, Tetovo municipality, Šar Planina, in saddle between summits Golyam and Malak Turcin, 2600 m, open ground along snow drift, 23 Aug 1948, Kitanov (SOM 166738), det. Dimitrov. – According to Greuter (2006+), this taxon, known to occur in neighbouring Serbia and Albania, is hitherto not published for the flora of North Macedonia. D. S. Dimitrov

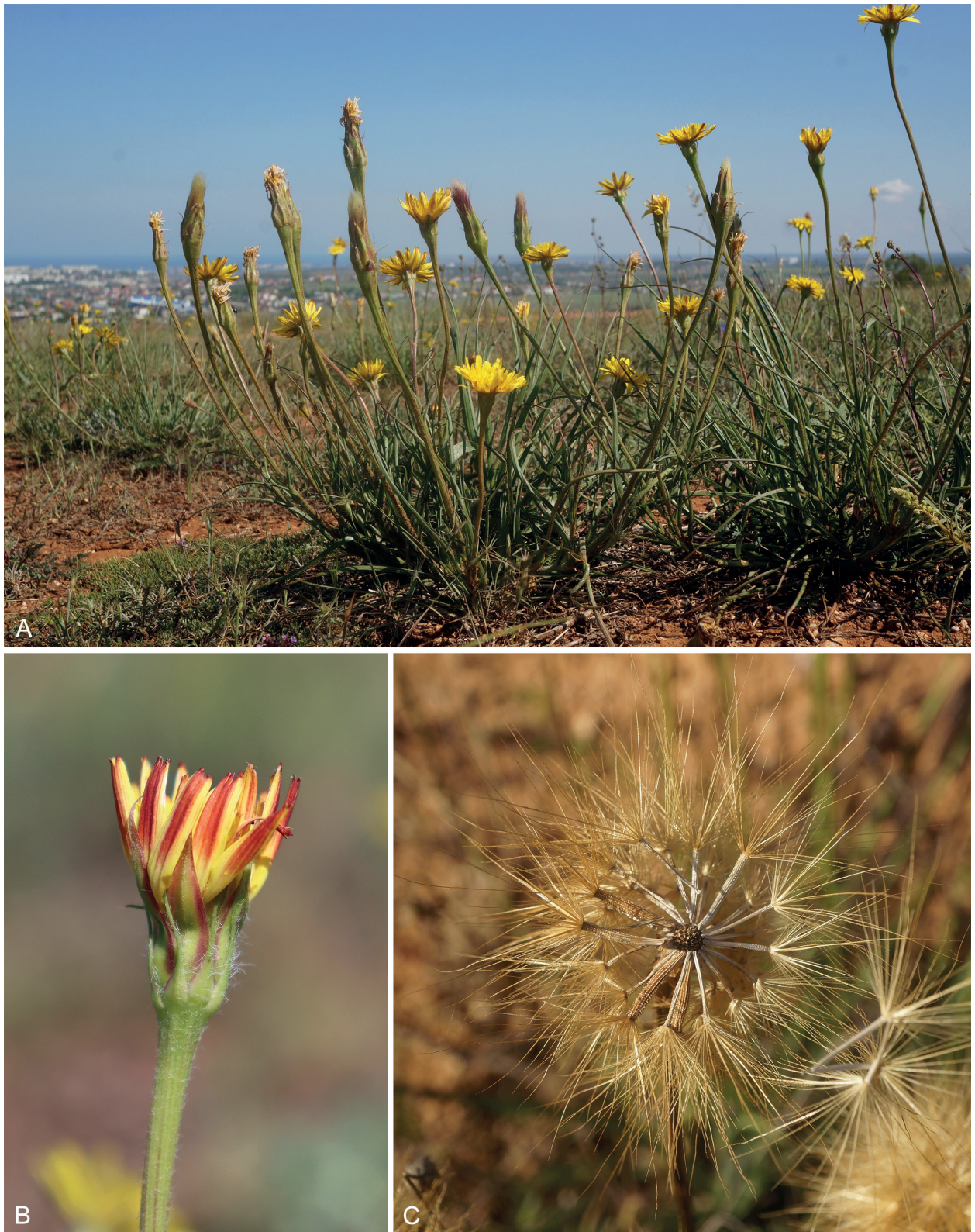


Fig. 3. *Gelasia villosa* – A: flowering plants; B: semi-closed inflorescence; C: infructescence. – A, B: Crimea, vicinity of Sevastopol, Gornaya height, 31 May 2020, photographs by P. E. Yevseyenkov; C: ibid., Mramornaya ravine, 26 Jun 2020, photograph by S. A. Svirin.

Cyperaceae

Carex acutiformis Ehrh.

+Mk: North Macedonia: Southwestern region, Struga municipality, Mt Yablanitsa, Podgoreško lake, 41°15'30"N, 20°31'15"E, 16 Jul 1948, *Kitanov* (SOM 177104), det. Dimitrov. – This cosmopolitan sedge is new for the flora of North Macedonia. The nearest populations are reported in the Prespa area of NW Greece (Strid & al. 2017).

D. S. Dimitrov

Dipsacaceae (Caprifoliaceae p.p.)

Lomelosia brachiata (Sm.) Greuter & Burdet (≡ *Knautia palaestina* L. ≡ *Scabiosa brachiata* Sm. ≡ *Tremastelma palaestinum* (L.) Janch. [non *S. palaestina* L. ≡ *L. palaestina* (L.) Raf.]) – Fig. 4A, B.

+ Cm: Crimea: Sevastopol, N slope of Mount Sapun, 10 Jun 1981, *Usacheva & Kosykh* (YALT, as *Scabiosa micrantha* Desf.); *ibid.*, near Flotskoye (Qaran) village, 44°31'01.85"N, 33°33'28.73"E, 200 m, rocky slope, 21 Jun 2013, *Svirin* (photo); *ibid.*, antique ruins on the way from the 5th km to Berman ravine, 44°31'35.79"N, 33°31'04.01"E, 187 m, wasteland above the spring, 31 May 2017, *Svirin* (MW 0632716); *ibid.*, surroundings of Balacclava, above the road to Flotskoye village, 44°30'54.18"N, 33°33'20.07"E, 185 m, 2 Jun 2017, *Svirin* (MW 0632717); *ibid.*, surroundings of Flotskoye, Gornaya height, 44°30'54"N, 33°33'20"E, 200 m, rocky steppe slope, 15 Jun 2017, *Ryff & Svirin* (YALT); *ibid.*, near Berman ravine, 44°31'22.4"N, 33°31'14"E, 185 m, dry grasslands in *Pinus nigra* subsp. *pallasiana* (D. Don) Holmboe plantation, 15 Jun 2017, *Ryff & Svirin* (YALT). – This is a first record for E Europe. *Lomelosia brachiata* is common in Greece, it is also found in other areas of the Balkan Peninsula, S Italy, Cyprus and W Turkey (GBIF 2021d; POWO 2022f). For N Italy it is given as alien (Portale della Flora d'Italia 2022). Information about records in other regions needs to be verified. Based on results of phylogenetic studies (Avino & al. 2009; Carlson & al. 2009), this species can be accommodated in a separate genus, *Tremastelma* Raf. This taxonomic solution has been adopted by some researchers (Tutin & al. 1976; Verlaque 1977, 1986; Plantarium 2007–2022), but was superseded by Greuter & al. (1986), Mayer & Ehrendorfer (2013), Domina (2017+) and POWO (2022f). The first known herbarium collections of *L. brachiata* from the surroundings of Sevastopol date back to 1981, but initially they were misidentified as *Scabiosa micrantha* and kept in YALT under this name. In 2013, one of us (S.S.) found a new locality of *L. brachiata* near Flotskoye village, but only after the photos were posted on the Plantarium (2007–2022) website in 2017 was the taxon correctly identified by Andriy Kovalchuk. In Crimea, it grows mainly in calciphilous Mediterranean steppes of the class *Stipo-Trachynietea distachyae* S. Brullo (see Mucina & al. 2016, Appendix 1: 112). These communities are dominated by *Aegilops*

biuncialis Vis., *Brachypodium distachyon* (L.) P. Beauv., *Helianthemum salicifolium* (L.) Mill. and other annuals, as well as some steppe perennials including *Agropyron cristatum* (L.) Gaertn., *Convolvulus cantabrica* L. and *C. holosericeus* M. Bieb. In SW Crimea, *L. brachiata* occurs exclusively in natural and seminatural habitats similar to natural dry grasslands of the E Mediterranean. However, in Crimea, this species is most likely an archaeophyte, introduced to the vicinity of the ancient Greek colony of Chersonesus, near present-day Sevastopol, by the Greeks either already in antiquity or during the medieval Byzantine Empire.

L. E. Ryff & S. A. Svirin

Lomelosia divaricata (Jacq.) Greuter & Burdet (≡ *Scabiosa divaricata* Jacq.; = *S. sicula* L.) – Fig. 4C, D.

+ Cm: Crimea: Sevastopol, N slope of Mount Sapun, 10 Jun 1981, *Usacheva & Kosykh* (YALT, as *Pteroccephalus plumosus* (L.) Coult.); Yukharin ravine, 44°32'52.54"N, 33°28'05.08"E, 50 m, wasteland along ravine, 31 May 2017, *Svirin* (MW 0632721); sports airfield, 44°33'08.78"N, 33°29'30.53"E, 100 m, 11 Jun 2017, *Svirin* (MW 0632718); lower Yukharin ravine, 44°32'52.78"N, 33°28'04.84"E, 50 m, 11 Jun 2017, *Svirin* (MW 0632719); ravine between Yukharin ravine and sports airfield, 44°33'10.84"N, 33°28'15.81"E, 90 m, 11 Jun 2017, *Svirin* (MW 0632720); Yukharin ravine, 44°32'52.2"N, 33°28'05.1"E, 50 m, calcareous rock steppe, 15 Jun 2017, *Ryff, Bondareva, Svirin & Yevseyenkov* (YALT). – This is a new record for E Europe. The native range of *L. divaricata* is Spain, Sardinia, the Balkan Peninsula and SW Asia to the Levant and Iran (Domina 2017+; Bartolucci & al. 2018; GBIF 2021e; POWO 2022f). According to herbarium material at YALT, *L. divaricata* was first collected in the Crimean Peninsula near Sevastopol in 1981, on the same day and in the same area as *L. brachiata*, and just like the latter species it was not correctly identified. Also, on the same day as *L. brachiata*, 31 May 2017, the species was rediscovered for Crimea by one of us (S.S.). The new location was found about ten kilometres southwest of the former one and includes several microlocalities. The species is one of the dominant elements of the Mediterranean steppes along with *Aegilops biuncialis* Vis., *Agropyron cristatum* (L.) Gaertn., *Asphodeline taurica* (Pall.) Endl., *Bromopsis sclerophylla* (Boiss.) Holub, *Convolvulus holosericeus* M. Bieb., *Helianthemum salicifolium* (L.) Mill. and *Stipa lessingiana* Trin. & Rupr. The distribution area of *L. divaricata* in the vicinity of Sevastopol is located within the polis (chora) of the ancient Greek colony of Chersonesus. It is probably an archaeophyte introduced from Greece or Asia Minor, like *L. brachiata*.

L. E. Ryff & S. A. Svirin

Leguminosae (Fabaceae)

Acacia mearnsii De Wild.

N Tn: Tunisia: Jendouba, Tabarka, Sidi Badr and surroundings, 36°56'14"N, 08°49'04"E, 110 m, cork oak



Fig. 4. A, B: *Lomelosia brachiata* – A: upper part of fruiting plant; B: inflorescence. – C, D: *Lomelosia divaricata* – C: flowering plants; D: inflorescence. – A: Crimea, Sevastopol, steppe near Berman ravine, 2 Jun 2017, photograph by P. E. Yevseyenkov; B: ibid., vicinity of Sevastopol, 2 Jun 2017, photograph by S. A. Svirin; C, D: ibid., Yuhkarin ravine, 31 May 2017, photographs by S. A. Svirin.

forests, 4 Mar 2012, *El Mokni* (Herb. Univ. Monastir); Ain Draham-Tebeynia, 36°46'55"N, 08°49'09"E, 590 m, mixed oak forests, 21 Mar 2013; ibid., 21 Mar 2019, *El Mokni* (Herb. Univ. Monastir); ibid., 23 Mar 2022, *El Mokni* (Herb. Univ. Monastir). – *Acacia mearnsii* is a fast-growing, unarmed, evergreen tree up to 20 m tall, native to Australia. The plant has been introduced to North and South America, Africa, Asia, the Pacific region and

Europe (see, e.g., Franco 1971; Tutin & al. 1968; Paiva 1999; Adair & al. 2000; GISD 2022a). In the Mediterranean region and according to Euro+Med (2006+), the taxon is reported in Europe as an alien only in Italy, Corsica and the Iberian Peninsula. In N Africa, the taxon is recorded as “introduced” in Morocco (Euro+Med 2006+) and “naturalized and invasive” in Algeria (Boudiaf & al. 2014). The African Plant Database (APD 2022) reports



Fig. 5. *Lathyrus sphaericus* – Ukraine, Odesa region, Bilhorod-Dnistrovs'kyi district, near Popazdra village, slope to Budatskyi estuary, 22 May 2021, photograph by D. Shyriaieva.

the taxon as “naturalized-introduced” only for Algeria and the Canary Islands. In Tunisia, very extended populations of thousands of individuals of *A. mearnsii* have been observed growing and occupying increasingly large areas mainly in the Kroumiria region (NW Tunisia) since 2004; therefore, this species can be considered a dangerous invasive for the north of Tunisia.

R. El Mokni & G. Domina

Acacia retinodes Schldtl.

N Tn: Tunisia: Kairouan, Ain Echrichira, within and on both sides of Oued Echrichira, 35°38'04.18"N, 09°49'11.44"E, 255 m, 27 Apr 2019, *El Mokni & Domina* (Herb. Univ. Monastir, PAL); Monastir, Monastir toward Sousse, 35°46'47"N, 10°48'05"E, 20 m, 11 Apr 2022, *El Mokni* (Herb. Univ. Monastir). – *Acacia retinodes*, a small tree native to Australia, is cultivated as an ornamental in warmer parts of the world. It is known to have naturalized in California, where it has spread from its initial plantings (GISD 2022b). In the Mediterranean area and according to Euro+Med (2006+), the taxon is reported as introduced mainly in the Iberian Peninsula, France, Great

Britain, Italy, Romania and Russia, with no report for N Africa. In the African Plant Database (APD 2022), the species is cited as “present” only in Morocco and on Madeira island without any clear status. In Tunisia, an extended population of *A. retinodes*, with numerous individuals of different heights used for reforestation, was observed growing along the Echrichira stream in 2019, and a few individuals also in Monastir (EC Tunisia). Therefore, the species can be considered as naturalized in Tunisia.

R. El Mokni & G. Domina

Acacia salicina Lindl.

N Tn: Tunisia: Monastir, Monastir city, 35°45'49"N, 10°49'50"E, 10 m, within a plantation of *Casuarina* L. on abandoned land, 10 Apr 2018, *R. El Mokni* (Herb. Univ. Monastir); Mahdia, Borj Arif, on both sides of the sahel metro railways, 35°30'33"N, 11°01'47"E, 20 m, 7 May 2019, *R. El Mokni* (Herb. Univ. Monastir). – *Acacia salicina* is a thornless, tall shrub or tree up to 6 m, highly distinctive by its long, drooping branchlets and by its pendulous, willow-like habit, native to C and E Australia (POWO 2022a). It was also reported in the SW United States (GBIF 2022a; POWO 2022a). In the Mediterranean region and according to Euro+Med (2006+), the taxon does not appear to have been reported yet. Also, the African Plant Database (APD 2022) does not report any occurrence of this taxon on the African continent. Only the Global Biodiversity Information Facility (GBIF 2022a) points at the presence of this taxon in the Canary Islands, the Iberian Peninsula, France, Cyprus and Palestine. Therefore, our record as naturalized is the first of this taxon for both the Tunisian and continental N African floras. More than 30 individuals of different ages were found flowering and fruiting within the two cited areas in EC Tunisia.

R. El Mokni & G. Domina

Lathyrus sphaericus Retz. (≡ *Orobis sphaericus* (Retz.) Philippe) – Fig. 5.

A Uk: Ukraine: Odesa region, Bilhorod-Dnistrovs'kyi district, near Popazdra village, slope to Budatskyi estuary (N Black Sea coast), 45.9863°N, 30.3124°E, 22 May 2021, *Shyriaieva & Vynokurov* (KW photo: <https://www.inaturalist.org/observations/79794314>). – *Lathyrus sphaericus* is a submediterranean annual species, distributed mainly across S Europe, N Africa and Anatolia (Ball 1968; Euro+Med 2006+; GBIF 2021c). In Ukraine, it is considered native to the S coast of the Crimean Peninsula, namely the Crimean submediterranean area (Krytska 1987). In 2021, we discovered a

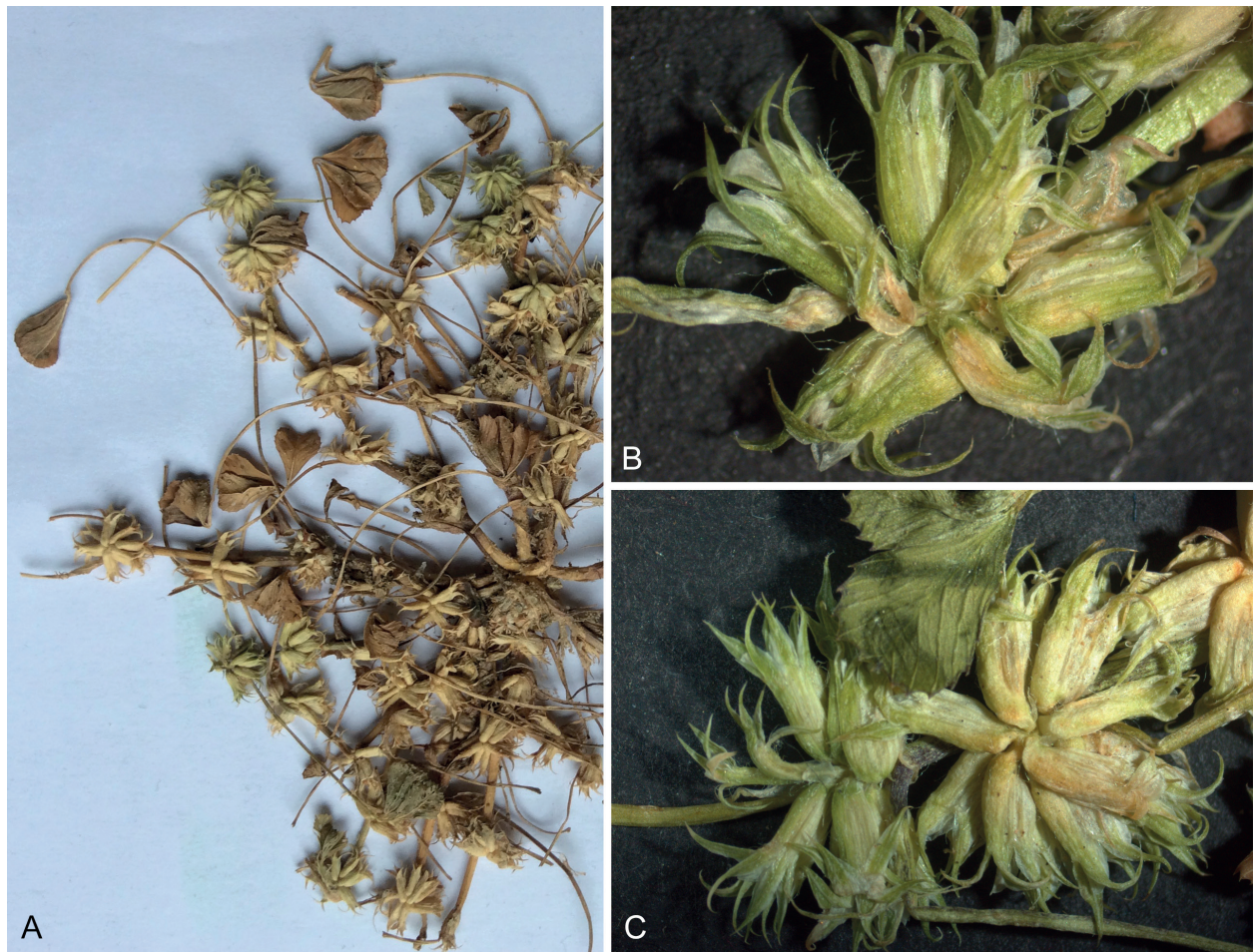


Fig. 6. *Trifolium pachycalyx* – A: habit, about half of a procumbent plant, Krause & Ristow 341/18 (herb. Ristow), photograph by M. Ristow; B: inflorescence partly in flowering stage; C: axillary inflorescences with calyces in early fruiting stage; B, C: Bergmeier 21-202 (herb. Bergmeier), photographs by B. Siegesmund.

population of this species also in the continental part of Ukraine on the Black Sea coast SW of the city of Odesa. *Lathyrus sphaericus* occurred there on loess slopes in ruderalized dry steppe (in phytosociological terms a stand transitory between the classes of *Festuco-Brometea* and *Artemisietea vulgaris*). Since the population consisted of a small number of individuals (about a dozen plants) and no other occurrences have been recorded yet in the region, we suggest that this species be classified as a casual alien in continental Ukraine.

D. Shyriaieva & D. Vynokurov

Trifolium pachycalyx Zohary (corrigendum) – Fig. 6.

In the previous instalment of the Euro+Med-Checklist Notulae, we published *Trifolium pachycalyx* as a new country record for Greece (Bergmeier & al. 2021). While the record and the two locations given on the North Aegean island of Limnos were correct, the accompanying photo taken in the field did not show *T. pachycalyx* but *T. glomeratum* L. The two species are superficially similar, especially in their small, sessile inflorescences, and they co-occur in both localities. The inflorescences of *T. glomeratum* are globular, with nu-

merous densely packed flowers, glabrous calyces and pale-pinkish corollas. The inflorescences of *T. pachycalyx* are rather loose, consisting of 6–12(–15) flowers with sparsely pilose calyces and whitish corollas. While the corollas of *T. glomeratum* are usually 5–6 mm long and exerted from the calyx, those of *T. pachycalyx* are much smaller and do not exceed the calyx teeth. *Trifolium pachycalyx* is morphologically similar to *T. suffocatum* L., but the latter is acaulescent. With this corrigendum we supply photos taken from our herbarium specimens of *T. pachycalyx* from Limnos (Fig. 6), which show the general habit and details of inflorescences, especially the short, whitish corollas and the sparsely pilose calyces, which become somewhat gibbous in the fruiting stage and have broadly membranaceous, narrowly lanceolate teeth (vs broadly lanceolate-acuminate teeth in *T. glomeratum*). We confirm the occurrence of the species in Limnos, Greece.

E. Bergmeier, J. Krause & M. Ristow

Vicia lens subsp. ***lamottei*** (Czeffr.) H. Schaeff. & al. (≡ *Lens lamottei* Czeffr.).

– **It:** Wrongly mentioned for Italy in the *Med-Checklist*



Fig. 7. *Utricularia australis* – Crimea, Alushta, vicinity of Luchistoye, 9 Sep 2021, photograph by S. A. Svirin.

(Greuter & al. 1989: 126), based on the alleged synonym *Vicia lentoides* (Ten.) Coss. & Germ. (in Fiori 1925: 935, as *V. lens* var. *lentoides* (Ten.) Fiori). *Lens lamottei* was later recorded for Italy (based on the *Med-Checklist*) and Sardinia by Pignatti & al. (2017). Recently, the species was reported for Italy, without a regional distribution, by Bartolucci & al. (2018), again based on the *Med-Checklist*. No other records from Italy and Sardinia are known. The name *Vicia lentoides* (\equiv *Ervum lentoides* Ten.) was recently typified by Coulot & al. (2022) and should be regarded as having priority for the species hitherto known as *V. nigricans* (M. Bieb.) Coss. & Germ. (\equiv *Ervum nigricans* M. Bieb.). Consequently, *V. lens* subsp. *lamottei* is to be excluded from the Italian flora. F. Bartolucci & G. Galasso

Lentibulariaceae

Utricularia australis R. Br. – Fig. 7.

+ **Cm:** Crimea: Alushta City District, vicinity of Luchistoye village, 44°43'53.51"N, 34°25'03.43"E, in a small pond, 9 Sep 2021, Svirin & Yevseyenkov (CSAU). – This rootless submerged aquatic carnivorous herb has not been recorded for Crimea before. It was found in abundance by one of us (S.A.B.) close to Luchistoye in October 2020, but the absence of flowers did not allow species identification. In August–September 2021, the plants were found there in five small ponds in full

bloom. The species was observed in vegetation dominated by *Phragmites australis* (Cav.) Steud., *Sparganium erectum* L., *Alisma plantago-aquatica* L. and by the submerged herbs *Myriophyllum spicatum* L., *Potamogeton natans* L., *P. crispus* L., *P. berchtoldii* Fieber and *Chara* spp. Among specimens in CSAU collected in Crimea 20 years ago, at least one specimen undoubtedly belongs to *U. australis* (Crimea, Nizhnegorskiy Rayon, 3 km NE from Lyubimovka village, in a pond, 31 Aug 2001, Smyk, as *U. vulgaris* L.). Hence, we suppose that this species was present in the region already decades before its proper identification. *Utricularia australis* can easily be confused with *U. vulgaris*, which is known as a member of the Crimean flora (Yena 2012) but is distinguished from the latter species by its pedicel being 4–5 times (not 2–3 times) longer than the floral bracts and never incurved (as in *U. vulgaris*) after flowering; furthermore, *U. australis* is sterile in the majority of European localities (Taylor 1989). These characters are well discernible in living as well as in dried plants; in the field, the two species differ clearly with the shape of the lower lip margin—flat in *U. australis* and deflexed in *U. vulgaris*. *Utricularia australis* is reported as native nearly throughout Europe and the Mediterranean region, but it is absent from Iceland, Sardinia, some of the W Balkan countries, N Africa E of Tunisia and from the S part of the Russian Federation and the countries of S Caucasus (Uotila 2013+). Chorologically, *U. australis*

should be recognized as native to Crimea, spreading there by ornithochory of its vegetative diaspores.

S. A. Bogdanovich, A. P. Seregin, S. A. Svirin,
P. E. Yevseyenkov & A. V. Yena

Molluginaceae

Mollugo verticillata L. – Fig. 8.

A Gr: Greece: Central Macedonia, Nomos of Serres: Strymonas river, S of the village of Vyronia, 41°15'12.87"N, 23°14'09.74"E, 37 m, on sandy temporary islets in the riverbed created by the water-level drop in summer, 12 Sep 2020, *Giannakis* (TAUF); *ibid.*, 2 Oct 2020, *Giannakis* (TAUF); *ibid.*, 21 Aug 2021, *Giannakis* (TAUF). – *Mollugo verticillata* is an annual species, considered native to the American tropics, from where it spread as naturalized to the temperate regions of North America, although there is evidence supporting its presence in temperate E North America 2500–3000 years ago (Boetsch 2002; Chapman & al. 1974). Nowadays, its global distribution also includes SW Europe, tropical W Africa, E Asia (China, Korea, Japan and Taiwan) and E Australia (Vincent 2003; Uotila 2011+; Hassler 2018), as well as Bulgaria, where only two specimens were found (Kunev 2019). It has not previously been recorded from Greece (Dimopoulos & al. 2013, 2016, 2020). The small population in Greece, numbering 500+ individuals, was found c. 20 km south of the nearest Bulgarian locality. Th. Giannakis, S. Tsiftsis, E. Eleftheriadou & K. Theodoropoulos

Montiaceae

Claytonia perfoliata Willd.

A UK: Ukraine: Cherkasy Oblast, Uman City, 48.75574°N, 30.23643°E, the new territory of the National Dendrological Park Sofiyivka, a few weedy plants in a flower bed, 8 Jun 2021, *Chorna & Kostruba* (UPU; photo: <https://www.inaturalist.org/observations/131253813>). – *Claytonia perfoliata* is an annual plant native to the Pacific part of North America, extending to Guatemala in Central America (Miller 2004; POWO 2022d). Its secondary range as an introduced horticultural weed covers countries and areas with a temperate humid climate in southernmost South America, W and C Europe, Japan, SE Australia and New Zealand (Walters & Akeroyd 1993; Raab-Straube 2018a+; GBIF 2022b). As an escape from botanic gardens it is judged as naturalized and potentially invasive in France, Germany and the Netherlands (European Botanic Gardens Consortium 2018). In 2021, we discovered *C. perfoliata* as a weed in a newly planted flower bed in the National Dendrological Park Sofiyivka. The species was probably unintentionally introduced with material of ornamental plants. This is the first find of it in Ukraine. In 2022 we continued to monitor this habitat, but no new plants were recorded. Therefore, we consider the status of *C. perfoliata* in Ukraine as a casual alien.

G. Chorna, O. Shnyder & T. Kostruba



Fig. 8. *Mollugo verticillata*, inflorescence. – Greece, Central Macedonia, Nomos of Serres, Strymonas river, S of Vyronia village, 12 Sep 2020, photograph by Th. Giannakis.

Onagraceae

Epilobium dodonaei Vill. – Fig. 9.

+ Cr: Crete (Kriti), regional unit Chania, municipality Apokoronas, 6.33 km SSW of Melidoni village, above church of Agio Pnevma Pemonion, 35°20'11.7"N 24°05'10.4"E, c. 1400 m, crevices of limestone cliff facing west, 14 Aug 2022, *Palimetakis* (photos); *ibid.*, 21 Aug 2022, *Avramakis* (NHMC 42-13398). – *Epilobium dodonaei* is easily recognized by its alternate, narrowly linear, strigulose leaves, (1.5–)2–5(–8) cm long and only 1–4(–5) mm wide, and by its slightly zygomorphic flowers with a style 7–17 mm long, which is at first deflexed but later becomes erect (Fig. 9C) after the anthers have dehisced (Raven 1968; and examination of 88 Greek specimens of *E. dodonaei* at B). The species is widely distributed in C and S Europe, except the Iberian Peninsula, extending east to Turkey and the S Caucasus (Raab-Straube 2018b+). In Greece, it is distributed in all the mainland floristic regions except East Central and extends to N Peloponnisos and Mt Dirfys in Evvia (Strid 2016a: 402; 2016b: map 2373; Dimopoulos & al. 2020), but until now it had never been recorded from the Cretan area. On 14 August 2022, G.P. found 12–15 mature individuals growing on a single cliff in a remote valley on the N side of the Lefka Ori of W Crete. On 21 August 2022, M. Avramakis (Natural History Museum of Crete, University of Crete) collected a herbarium specimen. The limestone of the cliff is extremely eroded and full of holes, the *Epilobium* growing with only a few other vascular plant species, including *Aubrieta deltoidea* (L.) DC., *Cotoneaster creticus* J. Fryer & B. Hylmö, a *Galium* species of the “*G. mollugo* group” sensu Strid (2016a), *Hypericum empetrifolium* subsp. *oliganthum* (Rech. f.) I. Hagemann and an as yet unidentified species of *Umbelliferae* (based on photos taken by M. Avramakis, J. Bienvenu and G.P.). This small population in Crete represents the S limit of the currently known distribution of *E. dodonaei*.

G. Palimetakis & N. J. Turland



Fig. 9. *Epilobium dodonaei* – A, B: flowering plants in limestone cliff habitat; C: detail of inflorescence, with flower showing erect style after anthers have dehisced and unripe fruits. – Greece, Crete, Chania, above church of Agio Pnevma Pemonion, 14 Aug 2022, photographs by G. Palimetakis.

Orobanchaceae

Orobanche beauverdii Uhlich & Rätzel
(= *O. gallica* Beauverd, nom. illeg. [non *O. gallica* Gren.]).

+ **Sr:** Serbia: [Nišava], Suva Planina bei Nisch [Niš], Nordseite des “Grob” [Devojakci], 28 Jul 1887, *Bornmüller* (B 10 1201990, as *Orobanche laserpitii-sileris* Reut., conf. Beck), rev. Rätzel & Uhlich 7 Feb 2022. – This is the first verified record outside the Alps. We recently gave this taxon (which had been “forgotten” for almost 80 years) a legitimate name (Uhlich & Rätzel 2021). In that publication, we already listed the herbarium specimen cited above as possibly belonging to *O. beauverdii*, on the basis of external morphological characters. We confirm our provisional determination by measuring features of the inner corolla: insertion of the stamens 2–3 mm from the base of the corolla (vs 5–7 mm in *O. laserpitii-sileris*); hairs on the stamens dense and long up to beneath the anthers, up to 1.4 mm long (weaker and up to a maximum of 0.7 mm long in *O. laserpitii-sileris*).

S. Rätzel & H. Uhlich

Orobanche centaurina Bertol. (= *O. kochii* F. W. Schultz; = *O. echinopsis* Pančić; = *O. elatior* auct., non Sutt.).

+ **Gr:** Greece: Xanthi, NW Galani, 20 m, Laubgebüsch, Sandflächen am Fluss, Felswand, 9 May 2015, *R. Willing & E. Willing* 259313 (B 10 0694526, as *Orobanche* sp.), det. Uhlich & Rätzel 10 Feb 2022. – This is the first record for Greece. Zázvorka (2010) restored *O. kochii* from the synonymy of *O. elatior* Sutt. and accepted the taxon as a distinct species, additionally giving data on its distribution. He gave a broad overview of taxa and names related to *O. elatior* and *O. kochii* and lectotypified the names *O. echinopsis* and *O. kochii*. A few years later, Zázvorka & al. (2019) found that the name *O. kochii* had to be replaced by *O. centaurina*, a name older by one year, which was lectotypified by Domina & Mazzola (2011). For Greece, however, Zázvorka (2010) and Zázvorka & al. (2019) as well as Dimopoulos & al. (2013, 2016), Strid (2016a, 2016b) and the Flora Ionica Working Group (2016+) provided no information for this species.

H. Uhlich & S. Rätzel



Fig. 10. *Picea pungens*, seedling. – Georgia, Kakheti Region, Signnaghi, Kostava Street, stairs below the city museum, 23 Apr 2022, photograph by P. Novák.

***Orobanche laserpitii-sileris* Jord.**

+ **Mk:** North Macedonia: Polog region, Mavrovo i Rostuča municipality, village of Bituše, Mt Dešat, grassy places in alpine belt, 8 Aug 1948, *Kitanov* (SOM 177122), det. Dimitrov. – According to Stevanović & al. (1993), this species is reported from a small number of localities in Croatia, Bosnia and Herzegovina and Serbia, whereas data for North Macedonia were not available.

D. S. Dimitrov

Pinaceae

***Picea pungens* Engelm. – Fig. 10.**

A Gg(G): Georgia: Kakheti Region, Signnaghi, Kostava Street, stairs below the city museum, 41.61939°N, 45.92311°E, 770 m, c. 40 seedlings, 23 Apr 2022, *Novák*, *Hubatka* & *Sedláček* (photo). – *Picea pungens* is an ornamental tree of North American origin that is commonly cultivated in city parks across Georgia. We recorded tens of seedlings germinated in stairs below the Signnaghi city museum; an adult mother tree was in the park above the stairs. The seedlings grew in thermophilous trampled vegetation (class *Digitario sanguinalis-Eragrostietea minoris*). Due to the specific site conditions, it is not probable that the species will start spreading from the observed population. *Picea pungens* is reported as a casual alien for the whole of Transcaucasia for the first time (cf. Raab-Straube 2014); however, it is listed among potentially invasive species in the N Caucasus (Chadaeva & al. 2019) and Armenia (Fayvush & al. 2018).

P. Novák & P. Hubatka

Plantaginaceae

Plantago bellardii* All. subsp. *bellardii

+ **Tn:** Tunisia: Bizerta, Bizerta North, Cap-Blanc, 37°19'57"N, 09°51'42"E, 10 m, *Quercus coccifera* L. shrublands, 5 May 2022, *El Mokni* (Herb. Univ. Monas-

tir). – *Plantago bellardii* s.l. is native to many countries of the Mediterranean area, with two subspecies (Marhold 2011b+): *P. bellardii* subsp. *bellardii*, with scapes up to 15 cm long, equalling or exceeding the leaves, remaining erect or ascending in fruit; and *P. bellardii* subsp. *deflexa* (Pilg.) Rech. f., with scapes only up to 5 cm long, shorter than the leaves, becoming arcuate-recurved in fruit (Tutin & al. 1976: 43). For N Africa, allocation to subsp. *bellardii* was mentioned only for Morocco (Mathez 1984), but neither for Algeria nor for Tunisia (Pottier-Alapetite 1981: 883; Marhold 2011b+; Le Floc'h & al. 2010: 278; Dobignard & Chatelain 2013: 103; APD 2022). Therefore, the present determination of subsp. *bellardii* constitutes its first record for the Tunisian flora.

R. El Mokni

***Veronica rhodopea* (Velen.) Stoj. & Stef.**

+**Mk:** North Macedonia: Southwestern region, Struga municipality, Mt Yablanitsa, over Labuniško lake, 41°16'N, 20°31'10"E, 1900 m, 30 Jul 1948, *Kitanov* (SOM 177086), det. Dimitrov. – This Balkan element occurs in Albania (*Kitanov* 1948; Barina & al. 2018: 236) and Bulgaria (Petrova & Vladimirov 2010). The collection from North Macedonia fills the floristic gap between the two areas.

D. S. Dimitrov

Polygalaceae

***Polygala myrtifolia* L. – Fig. 11.**

A Tn: Tunisia: Bizerta, Bizerta city, ruderal vegetation, one flowering individual, 9 Feb 2020, *El Mokni* (photo); Mahdia, Rejiche, roadside close to cultivated specimens as ornamentals, five juvenile individuals, 27 Feb 2022, *El Mokni* (photo); Monastir, Monastir city, roadside, three flowering individuals, 22 Aug 2019, *El Mokni* (photo). – *Polygala myrtifolia*, native to South Africa, is an evergreen shrub easily recognizable by its bright pink or pale purple flowers arranged in terminal racemes, flowering almost throughout the year. This taxon was introduced to California, France, Algeria, Corsica, Sicily, St Helena and Norfolk Island (POWO 2022h) and has become locally to widely naturalized in the W Mediterranean region, mainly in France, Corsica and Italy (Krüssmann 1977: 442–443; Raab-Straube 2018c+), New Zealand, the SW United States and S Australia (GBIF 2022d). For continental N Africa, the taxon was reported only from Algeria as introduced with an uncertain degree of naturalization (see, e.g., Dobignard & Chatelain 2013; Raab-Straube 2018c+; APD 2022) and Morocco (GBIF 2022d). This is the first record from Tunisia, a casual escape from cultivated individuals.

R. El Mokni

Rosaceae

***Rubus styriacus* Halácsy**

+ **It:** Italy: Friuli-Venezia Giulia, Provincia di Udine, Coccau Valico, along a forest road, close to the Austrian



Fig. 11. *Polygala myrtifolia*, inflorescence. – Tunisia, Mahdia, Rejiche, 27 Feb 2022, photograph by R. El Mokni.

border, 46°32'02"N, 13°38'17"E, 694 m, mixed forest, 22 Sep 2018, *Hohla* (LI 3453773, LI 3453780). – *Rubus styriacus* is new to Italy. This species of *Rubus* ser. *Micanthes* Sudre occurs in the S and E parts of Austria, in W Hungary, Slovenia and N Croatia (Maurer 1979; Kurtto & al. 2010; Király 2017; Király pers. comm.). The few Italian plants are in contact with a slightly larger population on the Austrian side of the border. M. Hohla

Rubiaceae

Galium asparagifolium Boiss. & Heldr.

+ **Mk**: North Macedonia: Polog region, Mavrovo I Rostuča municipality, village of Bitušë, Mt Dešat, 1200 m, in bush of *Fagus sylvatica* L., 7 Aug 1948, *Kitanov* (SOM 177113, as *Galium firmum* Tausch), det. Dimitrov. – This Balkan-Anatolian element is present in adjacent SW Bulgaria in Mts Slavyanka (Ali Botuš) and Pirin (Mitova & al. 2002; Ančev & Krendl 2011), in mainland Greece from the mountains of Peloponnisos in the south to the Prespa area and Mt Tzena along the Greek-North Macedonian border in the north (Chasapis & al. 2020) and to Mts Athos, Pangeon and Orvilos in the northeast, extending via the East Aegean island of Lesvos to SW Anatolia (Krendl 1988; Strid 2016b: map 2366). Its occurrence farther north was expected (Strid & al. 2020: 374) and is therefore not surprising.

D. S. Dimitrov

Umbelliferae (Apiaceae)

Bupleurum baldense Turra – Fig. 12A, B.

N Cm: Crimea: Sevastopol, Yukharin ravine, steppe, 12 Jun 2001, *Bondareva* (YALT); *ibid.*, on railway along Kamyshovoye highway, 44°33'15.47"N, 33°30'38.03"E, 130 m, 11 Jun 2008, *Svirin* (photo); Yukharin ravine, 44°33'06.85"N, 33°27'57.11"E, 50 m, ancient ruins, 21 Jun 2013, *Svirin* (as *Bupleurum veronense* Turra) (YALT); *ibid.*, vicinity of Maksimova dacha, 44°33'16"N, 33°32'26"E, 160 m, planting of *Cercis siliquastrum* L., abundant, 8 Jun 2014, *Svirin* (as *B. veronense*; det. Stoyanov as *B. baldense*, 26 Sep 2017) (MW 0620922, MW 0620923; YALT); *ibid.*, near Maksimova dacha, 44°33'34.7"N, 33°32'26.9"E, 150 m, steppe slope, 17 Jun 2014, *Yevseyenkov & Ryff* (YALT); *ibid.*, N edge of Maksimova dacha, 44°33'45"N, 33°32'25"E, 130 m, upper part of steppe slope of Maksimov ravine, 28 Jul 2014, *Seregin & Yevseyenkov* (as *B. veronense*; det. Stoyanov as *B. baldense*, 26 Sep 2017) (MW 0620920); *ibid.*, between 5th km and Maksimova dacha, 44°33'10"N, 33°32'30"E, 160 m, steppe area on plateau, 28 Jul 2014, *Seregin & Yevseyenkov* (as *B. veronense*; det. Stoyanov as *B. baldense*, 26 Sep 2017) (MW 0620921); *ibid.*, Berman ravine area, 44°31'35.79"N, 33°31'4.01"E, 180 m, above spring, 31 May 2017, *Svirin* (MW 0632672); *ibid.*, sports airfield, 44°32'57.27"N, 33°29'2.46"E, 180 m, 11 Jun 2017, *Svirin* (MW 0632673); *ibid.*, Yukharin ravine, 44°33'01.6"N, 33°27'38"E, 50 m, rocky *Stipa-Festuca* steppe, 15 Jun 2017, *Ryff & al.* (YALT); *ibid.*, Balaclava area, near Gornaya height, 44°30'48.8"N, 33°32'29.1"E, 255 m, 11 Jul 2020, *Svirin* (photo: <https://www.gbif.org/occurrence/3343960399>). – This species is common in W and S Europe, extending eastward to Italy (Snogerup & Snogerup 2001; POWO 2022c). Information on the occurrence of *Bupleurum baldense* in the W Balkan Peninsula (Hand 2011+; GBIF 2021a) needs to be confirmed and probably refers to *B. veronense* or other taxa. In Crimea, *B. baldense* was collected for the first time by L. V. Bondareva in the spring of 2000 on the N slope of Mount Sapun and in 2001 in the Yukharin ravine. However, the specimens were incorrectly identified by her as *B. odontites* L. (Bondareva 2013; <https://www.gbif.org/occurrence/3464982509>; <https://www.gbif.org/occurrence/3464983447>), because exactly this similar species was previously indicated for the surroundings of Sevastopol (Vinogradova 1979). Later, these findings were confirmed by photographs by P. E. Yevseyenkov and S. A. Svirin on the Plantarium (2007–2022) website, but these photos were also misidentified, this time as *B. veronense*. Under the latter name, the species was included in the flora of the Sevastopol region and Crimea as a native plant (Seregin & al. 2015; POWO 2022c). One of the photos was correctly identified by S. Stoyanov as *B. baldense*. On this basis, Seregin & al. (2015) adduced the only location of *B. baldense* in Sevastopol, and the status of the species was designated as alien, probably naturalized. Further study showed that all plants



Fig. 12. A, B: *Bupleurum baldense* – A: flowering plants; B: upper part of flowering plant; C, D: *Bupleurum odontites* – C: flowering plants, D upper part of flowering plant. – A: Crimea, Sevastopol, Yuhkarin ravine, 11 Jun 2017, photograph by S. A. Svirin; B: ibid., 25 Jun 2015, photograph by P. E. Yevseyenkov; C, D: Crimea, Sevastopol, 5 Jul 2020, photographs by P. E. Yevseyenkov.

from the vicinity of Sevastopol, previously identified as *B. veronense*, actually belong to *B. baldense*. At least four local populations of this species are now known in the region (GBIF 2021a), with numbers ranging from several hundred to several thousand individuals each. Given the significant disjunction of the range and the distribution pattern of *B. baldense* in the vicinity of Sevastopol, it can be assumed that this species is not a native plant there, but was introduced from the Mediterranean with forage during the Crimean War of 1853–1856. Now *B. baldense* has become one of the dominant elements of the rocky, calciphilous steppes of the Heracleian peninsula of SW Crimea

and is completely naturalized there.

L. E. Ryff, L. V. Bondareva,
S. A. Svirin & P. E. Yevseyenkov

Bupleurum odontites L. – Fig. 12C, D.

P Cm: Crimea: vicinity of Sevastopol, SE of Nikolayevka and W of Zolotaya Balka valley, *Koeleria*-herb-*Festuca* steppe, 3 Jul 1962, *Makhayeva* (YALT), det. Vinogradova; ibid., N slope of Mount Sapun, eastward of Khomutov ravine, 44°33'22.8"N, 33°33'42.5"E, 170 m, near highway, 5 Jul 2020, *Yevseyenkov & Svirin* (photos: <https://www.plantarium.ru/page/image/id/663255.html>;



Fig. 13. *Viola phitosiana* – A: flowering plants showing flowers in lateral and front view; note slender spur much longer than calyx appendages; B: flowering plant showing flower in front view. – Greece, Crete, Chania, near Omalos, 21 Apr 2022, photographs by N. J. Turland.

<https://www.gbif.org/occurrence/3359192458>); *ibid.*, disturbed habitat on side of road, 19 Jul 2020, *Yevseyenkov & Ryff* (YALT). – This species is native in the Mediterranean and an alien in W and N Europe (Hand 2011+; POWO 2022c). In 1962, L. V. Makhayeva collected it in Sevastopol, but only in 1978 did V. M. Vinogradova correctly identify it as *Bupleurum odontites*, a new species for E Europe (Vinogradova 1979); however, *B. odontites* was not reported for Crimea in Prokudin (1987), Snogerup & Snogerup (2001), Seregin (2008) and POWO (2022c). *Bupleurum odontites* is listed as a native plant in Crimea (Golubev 1996; Mosyakin & Fedoronchuk 1999; Vinogradova & al. 2004; Hand 2011+; Yena 2012; Seregin & al. 2015), although Vinogradova (1979) suggested that it is an alien there. For many years, *B. odontites* was known for

Crimea only from a single herbarium collection; thorough searches for it in the field did not give any results. Then L. V. Bondareva reported two new findings in the vicinity of Sevastopol, on Mount Sapun and in the Yukharin ravine (Bondareva 2013), which were also included in GBIF (2021b). However, the study of herbarium specimens showed that they refer to *B. baldense* Turra. Only in 2020 was true *B. odontites* found again by two of us (P.Y. and S.S.), 3.5 km NE of the original locality, on the N slope of Mt Sapun E of the Khomutov ravine in a ruderal habitat. Few findings of *B. odontites*, the instability of its populations and limitation to disturbed areas indicate that this species is not a native in the vicinity of Sevastopol and in Crimea. Obviously, like *B. baldense*, it was introduced during the Crimean War, but, unlike the latter species, did not fully naturalize there.

L. E. Ryff, P. E. Yevseyenkov
& S. A. Svirin

***Bupleurum veronense* Turra**
– **Cr:** All records for the vicinity of Sevastopol (Seregin & al. 2015; POWO 2022c) are erroneous and refer to the closely related species *B. baldense* Turra (see previous entries). The samples were correctly identified by S. Stoyanov.

L. E. Ryff

Violaceae

***Viola kitaibeliana* Schult.**

– **Cr:** *Viola kitaibeliana* was recorded from “Cr” in *Flora europaea* (Valentine & al. 1968: 281), followed by Raab-Straube & Henning (2018+) and Dimopoulos & al. (2020). However, Greuter (1974: 139) had already stated that the record of *V. kitaibeliana* in *Flora europaea* was incorrect and that the species had never been recorded from the Cretan area. Accordingly, it was not recorded from the Greek floristic region of Kriti and Karpathos (KK) by Dimopoulos & al. (2013: 146) and was not mapped for the Cretan area by Strid (2016b: map 3343).

N. J. Turland

Viola phitosiana Erben – Fig. 13.

+ Cr: Greece: Crete (Kriti), regional unit Chania, municipality Platania, municipal unit Mousouroi, 650 m E of Omalos tavernas/restaurants, 35°20'37.0"N, 23°54'43.4"E, 1060 m, among open tussock-grass in shade of *Crataegus monogyna* Jacq. trees on flat bottom of large doline, limestone substrate, 21 Apr 2022, Turland 1959 with G. Palimetakis, J. Bienvenu & C. J. Turland (UPA), det. Th. Raus, Berlin, 31 May 2022. – *Viola phitosiana* is similar to *V. arvensis* Murray, *V. hymettia* Boiss. & Heldr. and *V. kitaibeliana* Schult. *Viola arvensis* is clearly recognizable by its large calyx appendages, 1/4–2/5 as long as the total length of the calyx and concealing the spur of the lower petal (vs 1/6–1/4 as long as the calyx in the other three species). *Viola hymettia* is distinguished by having the corolla at least 1.5 times as long as the calyx (vs shorter than to slightly longer than the calyx in the other three species) and calyx appendages not concealing the stout spur. *Viola kitaibeliana* and *V. phitosiana* are similar to each other, but *V. kitaibeliana* has the lower petal 5.5–9 mm long including the slender spur 2–3 mm long, slightly longer than the calyx appendages, whereas *V. phitosiana* has the lower petal 9–13 mm long including the slender spur 3–5 mm long, much longer than the calyx appendages (Erben 1985). On 21 April 2022, G.P. was the first to find *V. phitosiana* at the locality near Omalos. On 4 May 2022, F.S. visited the locality and counted 122 flowering individuals under and around a tree of *Crataegus monogyna*. On 11 May 2022, F.S. revisited the locality and found further plants, always associated with *Crataegus* trees, never under *Acer sempervirens* L. or *Quercus coccifera* L. Photographs by F.S. have been published through iNaturalist (<https://www.inaturalist.org/observations/115439384>). The plant from Crete photographed by Y. Zacharakis and currently published online as *Viola hymettia* (see http://www.cretanflora.com/viola_hymettia.html, accessed 22 Jun 2022) is probably also *V. phitosiana*. Its identity cannot be definitely confirmed from the two photographs shown because the spur is not visible, but *V. hymettia* is unlikely because the corolla is scarcely longer than the calyx. The two photographs were taken at 600 m altitude at Dimitriana, near Agia Irini, c. 7.5 km W of the Omalos locality, in 2016 (Y. Zacharakis pers. comm. 2016). *Viola phitosiana* is endemic to Greece and is now recorded from all Greek floristic regions except the North Aegean Islands, the East Aegean Islands and the Kyklades (Dimopoulos & al. 2020; Flora Ionica Working Group 2016+).

G. Palimetakis, N. J. Turland & F. Samaritakis

Acknowledgements

E. Bergmeier, J. Krause and M. Ristow appreciate the observation by Mustafa Keskin, Marmara University, Istanbul, Turkey, who noticed the wrong *Trifolium* photograph in Euro+Med-Checklist Notulae, 14, page 362. L. E. Ryff, S. A. Svirin & P. E. Yevseyenkov would like to

thank Fabrizio Bartolucci and Nicholas Turland, for valuable comments and advice during the preparation of the contribution on *Gelasia villosa*, Andriy Kovalchuk and Stoyan Stoyanov, for their help in identifying species, and other members of the Plantarium (2007–2022) community for providing photos and fruitful discussions. A. P. Seregin acknowledges support by the Russian Science Foundation, grant no. 21-77-20042. N. J. Turland thanks Thomas Raus for his determination of *Viola phitosiana* and Jean Bienvenu and Manolis Avramakis for sharing photos and collecting a specimen of *Epilobium dodonaei*. D. Shyriaieva thanks J. Danihelka and D. Davydov, for their advice, and the Masaryk University (Brno, Czech Republic) for supporting Ukrainian scientists in danger due to the ongoing war. Three anonymous reviewers are thanked for their comments on earlier versions of these Notulae.

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Willdenowia

Open-access online edition bioone.org/journals/willdenowia



Online ISSN 1868-6397 · Print ISSN 0511-9618 · 2021 Journal Impact Factor 1.460

Published by the Botanic Garden and Botanical Museum Berlin, Freie Universität Berlin

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