

First record of *Gypsophila elegans* (Caryophyllaceae) in Tunisia and typification of the name *G. pilosa* published by Hudson on a plant cultivated in the Chelsea Garden (London, U.K.)

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Abstract

Gypsophila elegans, an ornamental plant native to Asia and Europe, is newly reported as casual alien new to the Tunisian flora, representing also the fifth record to African continent. A population including several scattered individuals was found growing on the edge of a public garden in central eastern Tunisia in 2020 and again in 2023. Description, distribution in Tunisia, phenology and original photographs are provided, as well as a diagnostic key of the Tunisian species. Moreover, the name *G. pilosa*, published by W. Hudson on the basis of plants cultivated in Chelsea Garden in 1767, is here lectotypified on a specimen housed at **BM**.

Keywords: Africa; lectotypification; nomenclature; William Hudson.

Introduction

Gypsophila L. (Caryophyllaceae Juss.) is a genus comprising 145–155 species native to Mediterranean area, Eurasia, South Australia and New Zealand, with its centre of diversity in the Irano-Turanian region. Various species are alien (often used as ornamental plants; see Ahroni *et al.*, 1997) in the Americas, central eastern and southern Africa, south Asia and Japan (Armağan, 2016; Barakudah, 1962; Davis, 1965; Williams, 1989; POWO, 2023a). Although no species of *Gypsophila* is native to Britain and Ireland, several taxa have been reported as garden escapes (Stace, 2019).

The Tunisian flora currently includes two *Gypsophila* species, i.e. *G. pilosa* Huds. and *G. vaccaria* (L.) Sm. (see Pottier-Alapétite, 1979, pp.135–136; Le Floc'h *et al.*, 2010, p.162; Dobignard & Chatelain, 2011, p.217; Marhold, 2011+; GBIF, 2023b; POWO, 2023b, 2023c). As a contribution to improving and updating knowledge of Caryophyllales in Tunisia and North Africa (see e.g., El Mokni & Iamónico, 2019; El Mokni & Debrulle, 2021; El Mokni & Verloove,

2021; El Mokni *et al.*, 2020, 2023; Iamónico & El Mokni, 2018, 2019, 2022), we here present a note dealing with the first report of *G. elegans* at national level and the fifth one to the whole African continent. A diagnostic key of the *Gypsophila* species occurring in Tunisia is also provided, as well as the typification of the Hudson name *Gypsophila pilosa*.

Material and methods

This research is based on field surveys, analysis of relevant literature, and examination of specimens preserved at the herbaria **BM**, **LE**, and **RO** (acronyms follow Thiers, 2023 [continuously updated]). Collected specimens are deposited at the personal herbarium of one of the authors (REM) housed in the Herbarium of Monastir University (not listed in *Index Herbariorum*), as well as in **RO**. The articles cited throughout the text follow the *Shenzhen Code* (Turland *et al.*, 2018).

Results and discussion

New finding of Gypsophila elegans in Tunisia

A population of about 10 individuals, covering an area of about 100 m², was found on the edge of roadsides in Monastir city (north-eastern Tunisia) in April 2020. Further field investigations allowed us to find this population again in March 2023. Associated species (ruderals) are: *Lepidium didymum* L., *Lysimachia arvensis* (L.) U.Manns & Anderb., *Sisymbrium irio* L., *Ochlopoa infirma* (Kunth) H. Scholz, *Spergularia bocconeii* (Scheele) Graebn., *Stellaria media* (L.) Cirillo subsp. *media*, *Stellaria neglecta* (Lej.) Weihe, *Stellaria pallida* (Dumort.) Piré, and *Urtica urens* L.

Gypsophila elegans is currently recorded in Africa in Morocco, Libya (Márquez-García 2009, p.70; Marhold, 2011+), Eritrea and Tanzania (Turrill, 1956; Edwards *et al.*, 2002; POWO, 2023b). As a consequence, our finding represents not only the first one for the Tunisian flora, but also the third one for north Africa and the fifth one for the whole of Africa. Based on the current concept (see e.g., Pyšek *et al.*, 2002; Richardson & Pyšek, 2006), we here consider *Gypsophila elegans* as a casual alien new to the allochthonous flora of Tunisia.

Typification of the name Gypsophila pilosa

Gypsophila pilosa was validly published by Hudson (1767, p.252) who provided a short diagnosis only ("Gypsophila pilosa, foliis lanceolatis trinervis amplexicaulibus, caule piloso, floribus solitariis, pedunculis filiformibus longissimis"). On the basis of the title of Hudson's work ("A catalogue of the fifty plants from Chelsea garden, presented to the Royal Society by the worshipful company of apothecaries, for the Year 1767, pursuant to the direction of Sir Hans Sloane, Bart. Med. Reg. et. Soc. Reg. nuper Præses"), it is clear that the author described *G. pilosa* using a plant cultivated in the Chelsea Garden (London, Great Britain). In fact, Hudson's herbarium and type are preserved at **BM** (HUH-Index of Botanists, 2013-onward).

We traced one specimen at **BM** (barcode BM000572719) bearing a terminal part of a plant with leaves and flowers collected in 1765 at the Chelsea

Physick Garden. This specimen is part of the original material for the name *G. pilosa*, morphologically matches Hudson's diagnosis, and it is here designated as the lectotype.

Taxonomic treatment of the *Gypsophila* species occurring in Africa

Gypsophila elegans M.Bieb., Fl. Taur.-Caucas. 1: 319. 1808 var. *elegans*. – TYPE (neotype designated by Iamonico, 2020: 298, Fig. 1): Caucasus, Terek ad Kafbek, *s.d.*, *Bieberstein s.n.* (**LE01042983!**). — An image of the lectotype is available at https://en.herbariumle.ru/?t=occ&id=42625&rid=image_0276496



Figure 1. *Gypsophila elegans* in Tunisia. A. Habit in habitat during blooming period; B. inflorescence; C. flower. Photographs by R. El Mokni (A & C in 28.04.2020; B in 8.03.2023).

Description.

Plants annual, glabrous; stems erect up to 60 cm, simple or few-branched proximally; leaves cauline, proximal leaves with clasping bases, gradually transitional to distal leaves with \pm rounded bases; blade linear-lanceolate to narrowly oblong, 1.5–7.0 cm \times (1–)3–16 mm, apex obtuse to acute in proximal leaves, acute in distal leaves, glaucous, with 1–3 dark veins; inflorescence in combiriform cymes, lax; flowers with lanceolate, obtuse or mucronate lobes, pedicels (10–)12–30(–35) mm, glabrous: calyx 3.0–3.7(–5.0) mm, cleft up to 2/5–1/2 of its length with lanceolate, obtuse or mucronate lobes, petals 2 to 5 times longer than the calyx (i.e. 6.0–15.0 mm long), white, occasionally with pinkish or with purple veins (rarely pink), slightly emarginate; capsules globose; seed coats coarsely tuberculate.

Notes

Barkoudah (1962, pp.134-135) recognized two varieties under *Gypsophila elegans*, i.e. var. *elegans* and var. *latipetala* Barkoudah which differ from each other by habit [biennial (var. *latipetala*) vs. annual (var. *elegans*)], height (50-60 cm vs. 10-40 cm), and ratio petals/sepals (up to 2 vs. 2–3). Tunisian plants are identifiable as the var. *elegans*.

Iconography

Fiori (1921, p. 149), image available at <https://www.biodiversitylibrary.org/item/202245#page/165/mode/1up>).

Phenology in Tunisia

Flowering and fruiting times March to April (sometimes up to May).

Chromosome number

2n = 34 (Gagnidze *et al.*, 2006).

Distribution and habitat

Gypsophila elegans is native to an area ranging from south Ukraine to western and north Iran, whereas it is alien (used as an ornamental plant) in most European countries, north Africa (Morocco, Tunisia, and Lybia), central-western Africa (Eritrea and Tanzania), Asia (Pakistan and western China), and the Americas (mainly in the north) (see e.g., Barkoudah & Chater 1964; Sánchez, 2000; Dequan & Turland 2001; Vizgirdas & King-Vizgirdas 2005; GBIF 2023a; POWO 2023a).

Selected specimen examined

Tunisia. Monastir, Monastir-city, 28 April 2020, *El Mokni s.n.* (Herb. El Mokni!, RO!), *ibidem*, 02-08 March 2023, *El Mokni s.n.* (Herb. El Mokni!).

Gypsophila pilosa Huds., Philos. Trans. 56: 252. 1767. – TYPE (lectotype designated here): United Kingdom, England, Chelsea Garden, 1765, s.c. 2160 (**BM000572719!**, Fig. 2).

Distribution and habitat

Native to north Africa (Tunisia and Libya), eastern and central Asia and western Himalaya; alien in Morocco, Spain, and north-eastern U.S.A. (POWO, 2023d).

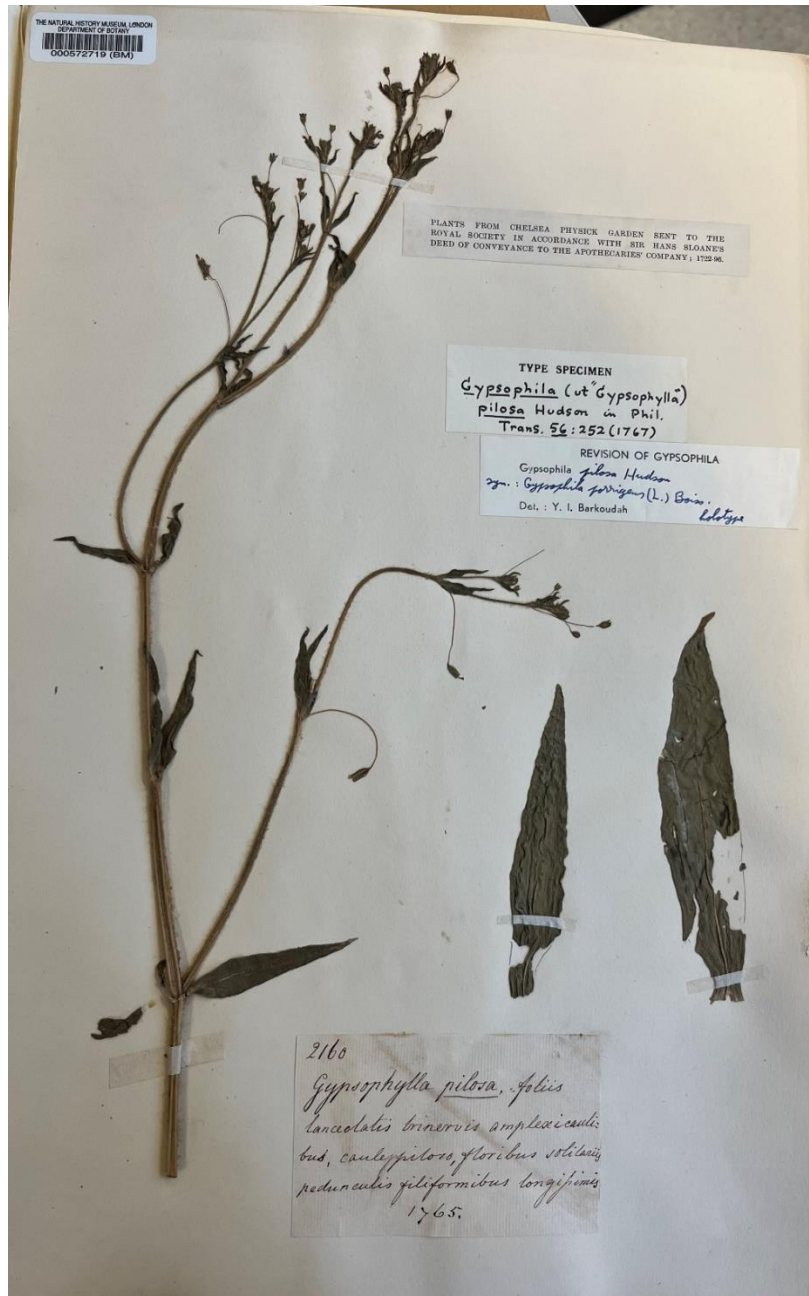


Figure 2. Lectotype of the name *Gypsophila pilosa* (BM000572719!)

Gypsophila vaccaria (L.) Sm., Fl. Graec. Prodr. 1(2), 279. 1809 \equiv *Saponaria vaccaria* L., Sp. Pl. 1: 409. 175. – TYPE (lectotype designated by Burtt & P.

Lewis 1952: 342): Herb. Clifford: 166, Saponaria 2 (**BM000628472!**). — An image of the lectotype is available at <https://data.nhm.ac.uk/object/3c12a626-ae92-42f5-8368-4357472d936b/1678924800000>

= *Saponaria hispanica* Mill., Gard. Dict. ed. 8, Errat. 1768 ≡ *Vaccaria hispanica* (Mill.) Rauschert, Wiss. Z. Martin-Luther-Univ. Halle-Wittenberg, Math.-Naturwiss. Reihe 14: 496. 1965. TYPE (neotype designated by Iamónico, 2022: 128, Fig. 7): Italy, Lazio region, Rome Province, Isola Farnese, Vaccarella, medicaio, 01-VI-2004, *Lattanzi s.n.* (RO! [two sheets bearing parts of a single individual]).

Distribution and habitat

Native to Macaronesia, central and eastern Europe, Mediterranean area and central Himalaya; alien in north Europe, Americas, central-eastern and southern Africa, and central to eastern Asia (POWO, 2023c).

Diagnostic key to taxa of the genus *Gypsophila* in Tunisia

1. Plant hairy *G. pilosa* Huds. var. *pilosa*
- Plant glabrous 2
2. Calyx 2.5–5 mm, campanulate, incised to the middle; lobes glabrous, ovate, rotundate; scarious intervals twice broader than the green bands; apex obtuse or mucronate; petals white (rarely pink), occasionally with (pinkish) purple veins, 6–15 mm long *G. elegans* var. *elegans*
- Calyx 9–17 mm, with 5 prominent, usually green, winged angles or ridges, each ridge with strong, cordlike marginal vein; petals usually pink, 14–23 (–25) mm long *G. vaccaria*

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