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## A new species of *Smyrniium* (*Apiaceae*) related to *S. perfoliatum*

### Abstract

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On the basis of plant collections recently carried out in Sicily as well as the study of the herbarium material kept in PAL and PAL-Gr, a new species of *Smyrniium* (*Apiaceae*) is described here. This new taxon, named *Smyrniium dimartinoi*, is related to *S. perfoliatum* and is presently known from Sicily, Crete and realistically elsewhere in the Mediterranean. In such range it occurs in open woods and clearings of the Mediterranean-temperate and submontane belt.

*Key words:* *Smyrniium*, taxonomy, vascular plants, Sicilian flora, European flora.

### Introduction

*Smyrniium* L., an Eurasian genus of the family *Apiaceae*, includes about 20 taxa of which, according to Gómez (2003), only 7 are accepted at specific rank, and, among these, 5 are native to Europe (Tutin 1968; Gomez 2003). In the Italian flora, the genus is represented by 3 taxa also occurring in Sicily (Pignatti 1982; Giardina & al. 2007). These are: *Smyrniium olusatrum* L., *S. perfoliatum* L. and *S. rotundifolium* Mill. The last one has also been treated at the rank of subspecies under *S. perfoliatum* [*S. perfoliatum* subsp. *rotundifolium* (Mill.) Hartvig] (Strid 1986; Conti & al. 2005) or as a mere variety (Fiori 1924). Unlike the other two, *S. olusatrum* occurs throughout most of the Sicily, often associated to nitrophilous habitats; *S. perfoliatum* occurs in the underwood of deciduous *Quercus* sp. pl. and *Fagus sylvatica* L. woods, in the submontane and montane belts of the Nebrodi mountains. *S. rotundifolium* is instead common in some less mesophylous environments like thermophylous open woodlands of central and western Sicily. In this part of the island, the populations related to *S. perfoliatum*, especially on the Mountains around Palermo, diverge for both morphological and ecological characteristics. In particular, plants corresponding to *S. perfoliatum* subsp. *perfoliatum* only in the underwood of *Quercus* and *Fagus* woods in the Nebrodi mountains occur, under mesophylous conditions. Dissimilar forms that are rather intermediate with respect to *S. rotundifolium* instead occur in C-W Sicily (Madonie and mountains south of Palermo). The study of the morphological characters – namely the leaf, stem and fruit – makes possible to clearly distinguish these pop-

ulations that, therefore, represent a taxonomically and perhaps even chorologically critical case, since similar plants of Greece were described as *S. rotundifolium* var. *ovatifolium* Halácsy (Halácsy 1901).

## Materials and methods

Specimens from Sicily doubtfully referred to *S. perfoliatum*, and several others from S-Italy and some other European countries kept in PAL and PAL-Gr, are examined from the morphological and chorological points of view. The original material and other studied specimens of the related taxa cited above are housed in BM, LINN, P and WU (Fig. 1).

According to the remarks explained in the introduction, the herbarium material referred to *S. perfoliatum* has been studied in deep, and it has been stated that it partly agrees with *S. rotundifolium* var. *ovatifolium* Halácsy. The same conclusion has been drawn with respect to the Sicilian material.

## Results

Taking into account the discriminant characters found with respect to both *S. rotundifolium* and *S. perfoliatum* – that apparently are quite distinct species – the critical populations studied are referred to a new specific taxon here named *Smyrniium dimartinoi*.

*Smyrniium dimartinoi* Raimondo, Mazzola & Spadaro, *sp. nov.* (Fig. 1a)

Incl. *S. perfoliatum* var. *ovatifolium* Halácsy

**Diagnosis:** Herba biennis, glabra, 60 (70) cm attingens; brevi radice napiforme praedita. Caulis cylindraceus, nudus. Folia basilaria laciniata, folia caulinarum ternata ad basim, simplicia ad apicem, ovata, marginibus crenulatis. Fructus minusculus (2-3 mm), nigricans.

**Typus:** Sicily: Val dei Conti, near Ficuzza (Palermo), 37° 53'48" N 13° 23' 07" E, 600 m a.s.l., undergrowth on nitrified sandstone soil, 20.6.2013, *F. M. Raimondo s.n.* (Holo: PAL!). Isotypi in PAL!, PAL-Gr! and FI!

**Description:** Biennial herb, up to 60 (70) cm high. Stem sub-cylindrical. Root turnip-shaped. Basal leaves lacinate; lower stem leaves ternate; middle and upper leaves simple, sessile, ovate, with crenulate margins, the lowest is three-lobed. Flowers yellowish; almost regular many-flowered umbel. Fruits 2-3 mm, roundish, blackish when ripe.

**Phenology:** flowering May-June, fruiting June-July.

**Distribution:** Sicily, Crete and realistically elsewhere in the Mediterranean area (Fig. 2).

**Ecology:** *Smyrniium dimartinoi* frequently occurs in cool and more or less shadowy places, on both siliceous or limestone nitrophilous substrata in the temperate and sub-montane belt.



Fig. 1. Comparison between the studied taxa: a) holotype of *Smyrniaceae dimartinoi* (PAL); b) Lectotype of *S. perfoliatum* (LINN); c) *S. rotundifolium* (P) d) original material of *S. rotundifolium* var. *ovatifolium* (WU).



Fig. 2. Distribution of *Smyrniium dimartinoi* from the studied herbarium specimens (circles) and likely distribution (?).

### Taxonomic and chorological remarks

The new species – as besides *S. perfoliatum* – is quite distinct from *S. rotundifolium*. It is often misidentified for the related to *S. perfoliatum*; but it clearly differs by the not winged stem, ovate leaves (not ovate-lanceolate), leaf margins crenulate, not serrate: fruit small roundish, usually 2-3 mm. From the ecological point of view, *S. dimartinoi* – at least in Sicily – appears more thermophilous than *S. perfoliatum*. With respect to the European and Middle Eastern species, like *S. orphanidis* Boiss., *S. cordifolium* Boiss., *S. apiifolium* Willd. and *S. creticum* Mill., the new taxon is distinct by several phenotypic characters and has a wider range, including Sicily, Crete and likely in other Mediterranean areas (Fig. 2).

### Other specimens examined

#### *Smyrniium dimartinoi*

**Sicily:** Bosco del Cappelliere, Ficuzza, 18/6/2015, *G. Scafidi & F. Scafidi s. n.* (PAL); Ficuzza, s. d., s. c. (PAL19975!)

**Crete:** Amalos, 12/6/[18]84, *E. Reverchon s. n.* [WU-Halácsy-Graecum 0076665! sub *S. rotundifolium* var. *ovatifolium*]; Amalos, bois humides, 12/6/1884, *E. Reverchon 249* [WU-Halácsy-Graecum 0076664! sub *S. rotundifolium*]

***Smyrniium perfoliatum***

**Portugal:** Montagne de S. Memede, Castelo de Vide (Portugal, Haut Alentejo), Atalaia, dans une ch âtaigneraie, aire d'anciennes forêts du *Quercus pyrenaica*, 30 mai 1975, J. Malato-Beliz & J. A. Guerra 12549 (PAL-Gr 23458!)

**Spain:** Poyotello: Sierra de Segura, gorge of river Segura. Prov. Jaen, altim. 1250, Hab. Rocks and steep screes, calcareous solis, 26/06/[19]88, B. Valdés & al. It2388/88 (PAL-Gr 65724!); Albacete: Sierra de Alcaraz; Chelets de la Sierra del Agua, 30S WH57, ad 1350m, in humidis ad rivulum, 28/5/1976, J. Fernández Piqueras & al. 1129 (PAL-Gr 26599!); Caceres: Valverde de la Vera, Garganta del Naval, 30TTK84, 400 m, 5/6/1987, comunidades nitrófilas ruderales, arction A. Amor s.n. (PAL-Gr 55516!)

**Sicily:** Nebrodi: Biviere di Cesarò, marsh, alt. 1250-1450 m, 37° 57'N, 14° 43'E, 10/06/1990, F. M. Raimondo & al. 1887 (PAL 69225!; PAL-Gr 56576!); Nebrodi: Monte Soro, brown woody soil on quartzarenite, 1700-1800 m a.s.l., 09/06/1990, F. M. Raimondo & al. 1820 (PAL 69226!); in humbrosis nemorum Valdemone, s.d., A. Todaro 682 (PAL79850!)

Slovenija: In graminosis ad viam inter Sežana et Dane, 360 m s.m., 2/5/1972, T. Wraber 32760 (Pal-Gr 7766!)

**Bulgaria:** distr. Burgas: in parte orientali collium Eminska planina ad austro-occidentem pagi Banja, alt. 350, in subumbrosis graminosis dumetorum caducifoliorum, 11/6/1973, W. Greuter 11123 (PAL-Gr 20143!)

**Ciscaucasia:** Krasnodar Territory, district Novorossiiskii, the Markhotkh range in the locality of v. Kabardinka, in forest, 400 m s.m., 31/05/1966, E.E. Gogina 32 (PAL-Gr 30375!)

**Caucasus:** Georgia orientalis, in reservato publico Zagodechi, 620 m s.m., silva frondosa, 11/6/1981, A. Doluchanov 1985 (PAL-Gr 39485!)

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