

<b>Zeitschrift:</b>	Candollea : journal international de botanique systématique = international journal of systematic botany
<b>Herausgeber:</b>	Conservatoire et Jardin botaniques de la Ville de Genève
<b>Band:</b>	54 (1999)
<b>Heft:</b>	1
<b>Artikel:</b>	Orobanche sanguinea C. Presl or O. crinita Viv.? : The correct name for the widespread Mediterranean coastal plant
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<b>DOI:</b>	<a href="https://doi.org/10.5169/seals-879380">https://doi.org/10.5169/seals-879380</a>

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# Orobanche sanguinea C. Presl or O. crinita Viv.? the correct name for the widespread Mediterranean coastal plant

MICHAEL J. Y. FOLEY

## ABSTRACT

FOLEY, M. J. Y. (1999). *Orobanche sanguinea* C. Presl or *O. crinita* Viv.? the correct name for the widespread Mediterranean coastal plant. *Candollea* 54: 89-95. In English, English and French abstracts.

The names *Orobanche sanguinea* C. Presl and *O. crinita* Viv. have both been applied to the widespread coastal plant which mainly occurs in the Mediterranean area and is normally parasitic upon *Lotus cytisoides*. The earlier-described *O. sanguinea* has naturally gained more general acceptance but Presl's original description of his plant is rather imprecise and the type material is badly fragmented. Evidence is now presented which suggests that Presl was describing some other taxon when he used the name *O. sanguinea* and that *O. crinita* Viv. is the correct name. This latter name is also neotyphified.

## RÉSUMÉ

FOLEY, M. J. Y. (1999). *Orobanche sanguinea* C. Presl ou *O. crinita* Viv.? le nom correct pour une plante commune des côtes méditerranéennes. *Candollea* 54: 89-95. En anglais, résumés anglais et français.

Les noms *Orobanche sanguinea* C. Presl et *O. crinita* Viv. ont été donnés au taxon surtout commun sur les côtes méditerranéennes et qui parasite *Lotus cytisoides*. Le nom le plus ancien *O. sanguinea* s'est imposé peu à peu mais la description originale de Presl est très imprécise et le matériel typique très fragmenté. L'auteur présente ses arguments démontrant que Presl a décrit un autre taxon sous le nom *O. sanguinea* et que le nom correct pour la plante côtière méditerranéenne est *O. crinita* Viv. Ce dernier nom est néotyphifié.

**KEY-WORDS:** OROBANCHACEAE – *Orobanche sanguinea* – *Orobanche crinita* – Nomenclature.

## Introduction

*Orobanche sanguinea* was described by PRESL (1822) from plants collected in 1817 in the Nebrodi (Madonie) mountains of Sicily “*in collinis apricis*” (sunny hillsides) where they flowered in July. A single specimen from the original collection is in the Prague herbarium (PRC) but is in an advanced state of disintegration and is taxonomically almost worthless. Shortly after Presl's publication of *O. sanguinea*, VIVIANI (1824) described *Orobanche crinita* from near Bonifacio, Corsica. Unfortunately, however, although the greater part of his herbarium was kept at Genoa (GE), it is known to have been subsequently destroyed (VEGTER, 1988) and no other type specimen of *O. crinita* appears to exist.

Whilst both names have been used for the same widespread, coastal and mainly Mediterranean, plant, it was the earlier-described *O. sanguinea* C. Presl which gained general acceptance

(e.g. CHATER & WEBB, 1972; GUINOCHE & VILMORIN, 1975; PIGNATTI, 1982; GILLI, 1982; TURLAND & al., 1993), with *O. crinita* Viviani often being reduced to synonymy. However, recent work (FOLEY, 1998) has indicated that *O. sanguinea* C. Presl is not of the taxon to which that name is most frequently applied, the correct name of which is proposed to be *O. crinita* Viv.

### Discussion

The original descriptions of both *O. sanguinea* C. Presl and *O. crinita* Viv. are relatively brief and in neither case is the host plant indicated. PRESL (1822) described *O. sanguinea* as being approximately 30 cm tall with a simple, reddish, pubescent stem with scale-like leaves. The bracts were villous, of similar length to the flowers, the corollas red and odourless and the filaments and styles glabrous. Although he claimed his plant to have affinities to the western Mediterranean *O. foetida* Poir., he considered it to differ in its denser inflorescence, its smaller, glabrous corolla and its glabrous filament and style. However, this brief and relatively imprecise description could equally apply to another taxon known from the same geographical area (*O. variegata* Wallr.) as well as to that to which it is currently applied.

According to Viviani, his Corsican *O. crinita* had a simple stem with linear, elongate, and laxly imbricate basal leaves. The bracts were linear-acuminate and exceeded the corolla, the latter being sub-cylindrical and arched, and the filaments and ovaries glabrous. The inflorescence was dense, elongate-cylindrical with a comose apex of protruding bracts (hence the name: *crinita* = bearded).

A third, possibly relevant taxon, sometimes considered to be a later synonym or variant of both of the above, is *O. nebrodensis* Tineo. This was also described (TINEO, 1843) from the Madonie mountains. The author claimed that it showed some similarities to *O. crinita*, but in its short, lax, few-flowered inflorescence, it is very different from the Mediterranean coastal plant. The type specimen of *O. nebrodensis* (Isnello, 1830, *Tineo*, PAL) has been examined but is also in a poor state of preservation, all the corollas having been lost. A second collection (Madonie [Sicily], 1849, *Porcari* (PAL)) which was apparently seen and so named by Tineo (F. RAIMONDO, *pers. comm.*, 1994) was gathered in June 1849, six years after Tineo's diagnosis. There are three specimens on the sheet of which the central one appears almost certainly to be the morphologically-distinct *O. variegata*, whilst the others have narrower, more curved corollas and may be a variant of this, or even another taxon. No other material which has been referred to *O. nebrodensis* has been located and although a search of the type locality was made personally in mid-May, 1996 (by the stream above Isnello), no evidence was found of a plant complying with Tineo's description, although *O. variegata* was quite frequent within the general area, and this, or an atypical form of it, may have been the basis of Tineo's species.

LOJACONO (1904), in his *Flora Sicula*, retained both *O. sanguinea* and *O. crinita* at species level listing the latter from maritime sands where its host was *Lotus cytisoides* L. He described three varieties of *O. sanguinea*:- the type from an inland locality, growing on an unknown host (based on information given by Presl), var. *depauperata* Ces. & al. (= *O. nebrodensis* Tineo) from the mountains (above Isnello), and, most confusingly, var. *maritima* Lojac. from shaded, rocky localities close to the sea ".....ad radices *Loti cytisoidis*?". His separation of the two species is unclear and appears to depend only on minor characters. In his monograph, BECK (1930) treated *O. crinita* as a form of *O. sanguinea* var. *genuina*, and commented upon its acuminate, dense-flowered inflorescence, slightly glandular-pilose, comose bracts, and slightly curved corollas. Surprisingly, he attributed virtually identical characters to the type (f. *typica*), i.e. a dense-flowered inflorescence, glandular-pilose bracts which more or less equalled, or even exceeded the flowers, and a convex-shaped corolla.

Despite the confusion caused by these and other authors, the name *O. sanguinea* has most frequently been applied to the distinctive coastal Mediterranean taxon, parasitic upon *Lotus cytisoides*.

*soides* (= *L. creticus* L.). During the course of a study of taxa within this group (FOLEY, 1998), similar living plants from coastal localities in Sicily and Sardinia were morphologically examined together with several hundred relevant herbarium specimens. These latter were from a wide range of localities throughout the Mediterranean and, without exception, were apparently collected from coastal localities. Whenever the putative host was indicated it was stated to be *L. cytisoides*. All the plants were morphologically quite distinctive and uniform, being rather slender, with a dense-flowered, tapering inflorescence with comose bracts, and which bore tubular, often strongly curved, deep red corollas, with reddish stigma lobes and almost glabrous filaments. The flowering period was April to May. No similar specimens have been located which were collected from inland or elevated, montane localities, nor at a later date, all of which was indicated by Presl for his *O. sanguinea*.

	<i>O. sanguinea</i> C. Presl (1822)	<i>O. crinita</i> Viv. (1824)
<i>Stem</i>	simple [30 cm tall], red, pubescent	simple, with linear, elongate and laxly imbricate basal leaves
<i>Inflorescence</i>	dense	dense and elongated cylindrical with comose apical bracts
<i>Corolla</i>	red, odourless	subcylindrical, arched
<i>Bracts</i>	villous, ± equalling the corollas	linear-acuminate, longer than the corollas
<i>Filaments</i>	glabrous	glabrous
<i>Habitat</i>	sunny hill slopes in the mountains	[low altitude by inference]
<i>Locality</i>	Nebrodum (Madonie) mountains, Sicily	near Bonifacio, Corsica
<i>Flowering</i>	July	not given

Table 1. – A comparison of the principal characters of *O. sanguinea* and *O. crinita* based upon the authors' original descriptions.

A comparison of the characters of *O. sanguinea* and *O. crinita* given by the two authors (Presl and Viviani) is summarised in Table 1 and, in part, each could equally apply to the Mediterranean coastal plant. Significantly, however, Viviani's description emphasises three character states which are not indicated by Presl but which are very evident in both the living and in the preserved specimens studied. These are (a) the arched, more or less tubular shape of the corolla – “*subcylindrica, incurva*” (Presl does not comment on corolla shape at all), (b) the fact that the bracts exceed the corollas in length – “*bracteis....florem superantibus*” (whereas Presl states they are of similar length to the corollas “*bractea....florem subaequans*”) and, (c) the prominent, comose appearance of the apical bracts of the inflorescence. It is very surprising that Presl did not emphasise these three very obvious characters if his plants were conspecific with those from the coast.

The Prague herbaria (PR and PRC), where most of Presl's material is housed, have been searched for specimens of *O. sanguinea* seen or annotated by him, but, other than the single poorly preserved type described above, there are none (J. ZÁZVORKA, *pers comm.*, 1996). Of other institutions said to hold Presl's material (VEGTER, 1983), i.e. B, BM, GOET, H, HAL, KIEL and W, as well as many others, none have any Presl specimens of this plant. Similarly, a search for potential type material of Viviani's *O. crinita* in herbaria where his collections are thought to reside (VEGTER, 1988) (i.e. GE, CGE, M, O, PAD, REG as well as many others), has also been unsuccessful and no specimen likely to have been seen or annotated by him has been traced.

Presl's original description states that the plant flowered in July. This is a distinctly late date for this genus in the southern Mediterranean – unless the plant was collected at an appreciable altitude. *O. crinita*, on the other hand, was described from near Bonifacio, Corsica, which sug-

gests a low altitude locality and very likely a coastal one, since there are several subsequent collections of plants from coastal localities near Bonifacio which exhibit the characters he emphasised, and which must be conspecific with his. Such examples include: as *O. crinita* Viv., "in sabulosis maritimis", s. d., Requier (MA, B); as *O. crinita* Viv., "sur la plage", 8.v.1876, Réveilé (BM); as *O. sanguinea* Presl, "Schutt am Fusse der Kustenfelswände" on *Lotus cytisoides*, 30.v.1973, Bocquet & al. 15368 (BM). In their original descriptions, neither Presl nor Viviani indicate the host which, where recorded on herbarium specimens, in Floras and in personal observations (FOLEY, 1998), is invariably found to be *Lotus cytisoides*. It is very unlikely, however, that this essentially maritime plant (PIGNATTI, 1982) would occur at an appreciable altitude in the Sicilian mountains. The host for Presl's *O. sanguinea* would therefore appear to be some other plant. *O. variegata*, is widespread in Sicily, reaching altitudes of over 1000 metres in the Madonie mountains. As suggested above, it is possible that this, or some variant of it, was the plant which Presl described as *O. sanguinea*, and his relatively brief diagnosis could equally encompass this, or even other taxa. This is also supported by examination of the remaining fragment of Presl's type specimen (for illustration, see FOLEY (1998)) which exhibits a corolla shape more consistent with *O. variegata* than with the coastal plant, i.e. broader and less tubular than that found in the latter.

### ***Summary and Conclusion***

It is clear that there is much evidence against Presl's *O. sanguinea* being conspecific with the widespread, mainly Mediterranean, coastal plant normally parasitic upon *Lotus cytisoides*. It is very significant that the examination of a large number of specimens revealed no correctly identified material which had been collected from other than coastal habitats (and to which its host is similarly restricted), i.e. none from inland, or in the mountains. The flowering period of this distinctive coastal plant is April/May, not July as given by Presl for *O. sanguinea*. In contrast to Viviani's description of *O. crinita*, that of Presl for *O. sanguinea* omitted several important and readily apparent character states outlined earlier. Also, despite Presl's type specimen of *O. sanguinea* being badly fragmented, an individual corolla is still intact and from its general morphology it is clear that it is not of the coastal plant but is of another taxon, possibly that currently known as *O. variegata* Wallr. which is widespread in the Madonie mountains of Sicily. If that is the case, it predates the latter name.

It seems better, however, to leave the resolution of the true identity of *O. sanguinea* until such a time as further original or authentic material, which is certain to have been examined by Presl, is located, or plants are rediscovered at the type locality which can unequivocally be equated with this. It is concluded, therefore, that *Orobanche crinita* Viv. is the correct name for the widespread coastal plant, parasitic upon *Lotus cytisoides* and which occurs throughout much of the Mediterranean area.

A specimen collected from near Bonifacio, Corsica by Requier is here designated as the neotype of *O. crinita* Viv.

### ***Description***

***Orobanche crinita* Viv., Fl. Cors. Prodr.: 11. 1824.**

(syn.: *O. sanguinea* mult. auct., non C. Presl)

Described from near Bonifacio, Corsica. Type material apparently destroyed; no suitable lectotype located.

**Neotype** (here designated): "in sabulosis maritimis, pr. Bonifacio. Corsica, Majo", s. d., Requier s. n. (MA: 115181) (Fig. 1).

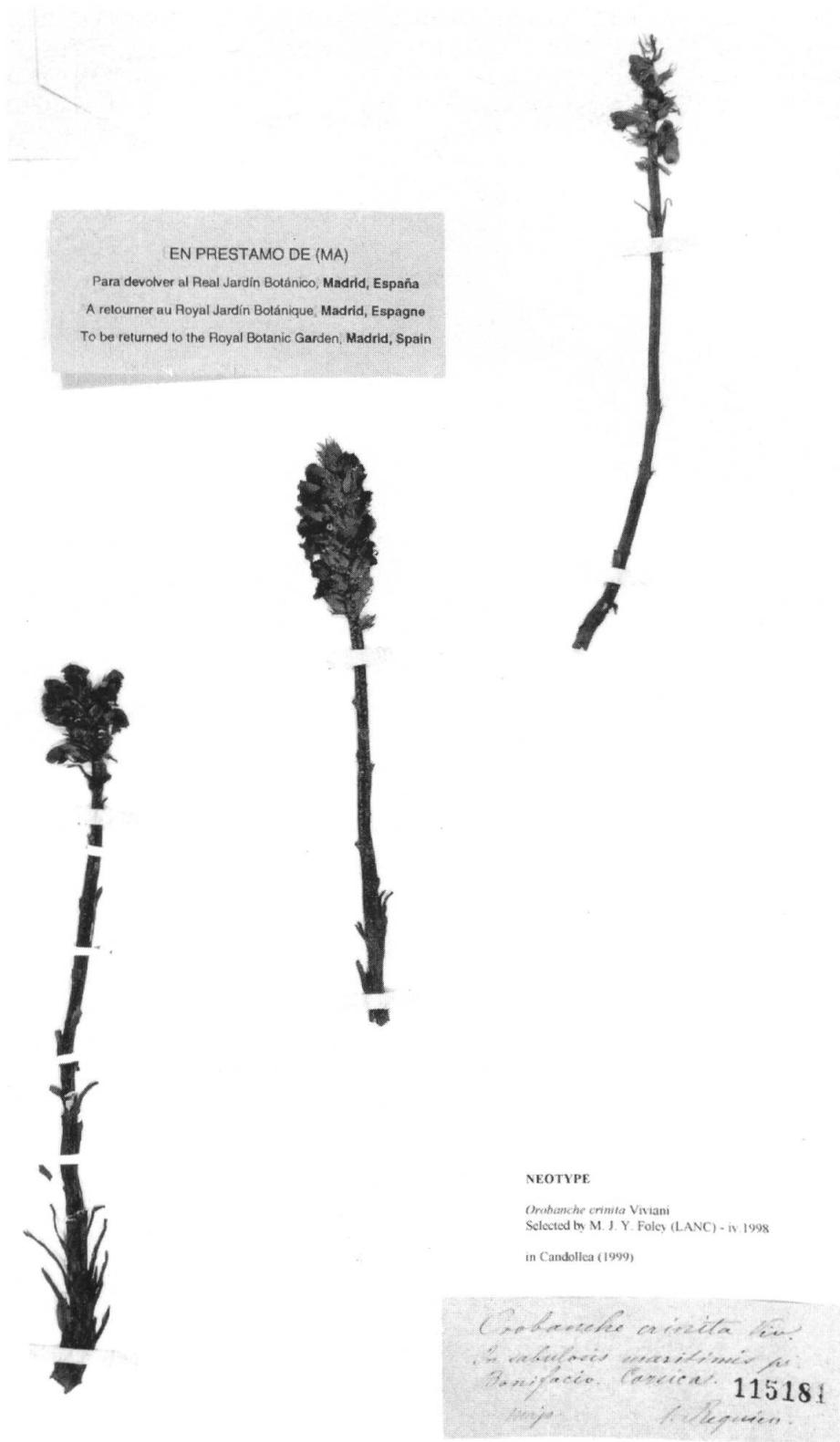


Fig. 1. – Neotype of *Orobanche crinita* Viv. (MA 115181)

Typically 200-250 mm tall, slender, glandular-pilose, with an elongated, fairly dense, and relatively many-flowered inflorescence, usually with prominent apical (comose) bracts. Stem 4.5-6.5 mm wide measured immediately below the inflorescence, glandular-pubescent, deep pink-red. Leaves to 3.5 mm wide, linear-lanceolate, deep pink-red. Bracts linear-lanceolate, exceeding the corolla in length, dark red-brown. Calyx 8-10 mm long, segments variably divided, narrow, tapering, deep pink-red. Corolla 13-14 mm long, suberect, tubular, usually strongly curved, red-maroon outside, paler towards the base, red inside. Upper lip of corolla notched, lobes of lower lip denticulate, rounded, subequal. Filaments inserted c.2 mm above the corolla base, glabrous throughout. Stigma lobes red-maroon, well separated. Plant moderately glandular-pilose. Parasitic upon *Lotus cytisoides*. Flowers April-May.

A plant of essentially coastal habitats, especially maritime sands where it prefers the lightly vegetated areas rather than loose, unfixed sand. It is also found on coastal rocks and on small offshore islands. This is especially the case in the eastern Mediterranean and the Aegean where it has gained a reputation as something of an "islet specialist", also occurring in the halophyte zone (GREUTER & RECHINGER, 1967; HÖNER & GREUTER, 1988; RAUS, 1989; W. STRASSER, *pers. comm.*, 1994).

It is widespread in suitable habitats in the Mediterranean and is known from Algeria, Balea-rics, Corsica, Crete, Greece and some of the Aegean islands, Italy, Jugoslavia, Morocco, Sardinia, Sicily, Spain, and probably elsewhere in this general area.

*Selected specimens:* ALGERIA: Bou-Ismäel, 18.4.1859, *Clauson*, herb. Martelli (FI; BM); BALEARIC ISLANDS: Isla del Rey, Mahon, Menorca, 4.5.1913, *Font Quer* (MA) 115174; CORSICA: "in sabulosis maritimis", Bonifacio, s.d., *Requier* (B); Bonifacio à La Manza, 1876, *Revelève* (BM); Bonifacio, 1973, *Bocquet & al.* 15368 (BM); GREECE: Kos, 30.4.1974, *Hansen* 266 (herb. Greuter, B); Potamos, Antikythera, 8.5.1964, *Rechinger* 24404 (B); ITALY: am Badeplatz, Capo di Sorrento, 5.1937, *Bornmüller* (B); SARDINIA: Santa Teresa Gallura, near Tempio, 10.5.1881, *Reverchon* 139 (MANCH); Sassari, s.d., *Nicotra* (FI); SICILY: Sferracavallo, s.d., *Lojacono* (MANCH); Porto Palo, Agrigento, 20.5.1979, *Davis & al.* 63411 (BM); Mondello [near Palermo], 5.1884, *Lojacono* 54 (var. *straminea*) (FI; E); Palermo, s.d., *Todaro* 1154 (FI); Plage Spiaggia, west of Cefalù, in maritime sands on *Lotus cytisoides*, 13.5.1996, *Foley* 1031 (E).

#### ACKNOWLEDGMENTS

I am very grateful to Drs F. J. Rumsey and N. K. B. Robson for useful discussion in regard to the above subject.

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