Typification of the name *Cistus* × *skanbergii* Lojac., a rare rockrose extinct in its type locality

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Abstract - In 1885 Lojacono-Pojero described *Cistus skanbergi*, also known as the dwarf pink rockrose, from the Island of Lampedusa (Sicily, Italy). Despite becoming extinct in its type locality and being very rare in the Mediterranean Basin, during the last decades the plant corresponding to this name, a natural hybrid between *C. parviflorus* Lam. and *C. monspeliensis* L., has been successfully cultivated and introduced worldwide for ornamental purposes. The search carried out in several European herbaria allowed to select as lectotype a specimen collected by Lojacono-Pojero and kept at the herbarium of Kew, to detect other isolectotypes, kept in the herbaria of Geneva and Palermo, and to detect another syntype corresponding to a specimen collected by Gussone and currently kept at the herbarium of Palermo.

Key words: herbaria, history of botany, Mediterranean islands, typification.

Riassunto - Tipificazione del nome *Cistus* × *skanbergii* Lojac, un raro cisto estinto nella sua località tipica.

Nel 1885 Lojacono-Pojero descrisse *Cistus skanbergi*, noto anche come cisto rosa nano, dall'isola di Lampedusa (Sicilia, Italia). Estinto nel suo *locus classicus* ed estremamente raro in tutto in Bacino del Mediterraneo, durante gli ultimi decenni la pianta con questo nome, un ibrido naturale fra *C. parviflorus* Lam. e *C. monspeliensis* L., è stata coltivata e introdotta a scopi ornamentali in tutto il mondo. Le ricerche condotte in diversi erbari europei hanno permesso di scegliere come lectotipo un campione raccolto da Lojacono-Pojero e conservato presso l'erbario di Kew, di individuare altri isolectotipi derivanti dalla stessa raccolta, custoditi presso gli erbari di Ginevra e Palermo, e di individuare un altro sintipo corrispondente ad un campione raccolto da Gussone e attualmente conservato nell'erbario di Palermo.

Parole chiave: erbari, isole del Mediterraneo, storia della botanica, tipificazione.

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Received for publication: 15 November 2022
Accepted for publication: 1 March 2024
Online publication: 10 April 2024

INTRODUCTION

Discovery and fading of the dwarf pink rockrose: a historical sketch

Lojacono-Pojero (1885) dedicated to a friend of him, the Swedish botanist Alexander Skånberg (1840-1912), "*Cistus skanbergi*", also known as the dwarf pink rockrose, growing in the southernmost land of Italy, the Island of Lampedusa (Sicily), a portion of the African continent (Latitude 35°30' N, Longitude 12°30' E, Fig. 1A).

Although he described *C. skanbergii* at species rank, Lojacono-Pojero was totally aware that this rockrose probably resulted from breeding between *C. parviflorus* Lam. and *C. monspeliensis* L. Based on the plant's morphological traits, the thesis of its hybrid origin was later adopted by Turrill (1938), whose opinion was subsequently shared by the most authoritative specialists of the genus and supported by crossing experiments (e.g., Dansereau, 1940; Demoly, 1996), so that the taxon is currently considered as a nothotaxon, i.e., the hybrid between the two mentioned species (Dansereau, 1939; Rizzotto, 1979; Brullo *et al*., 1995; Demoly, 1996).

The dramatically fast and intense disruption of local habitats, due to land overexploitation during the second half of the 19th century (Pasta & La Mantia, 2003), triggered the fast shrinkage of the local populations of both parent species and of the hybrid itself, originally reported to be extremely common on the island. In fact, just 23 years after its discovery, Sommier (1908) reported that *C.* × *skanbergii* had already become extinct.

Short description of the taxon

According to Lojacono-Pojero's (1885) protologue, *C.* × *skanbergii* is a small, extremely ramified 60-80 cm-tall shrub; its old branches are glabrous, covered with a reddish bark, the young twigs densely hairy, the leaves linear-lanceolate (4-6 × 0.7-1 cm). Its overall habitus, the symmetry of the inflorescence (subcorymbose, mostly bipartite) bearing 2 to 5 flowers recall *C. monspeliensis*, as well as the shape of the leaves, but they totally lack glandular hairs and are not sticky at all. The remaining characters (e.g., overall hairiness; intricate reticulation of the leaf veins; presence of thick, revolute margins provided

with long curls; flower shape; dense, largely ovate and acuminate epicalyx; floral axe and sepals with very long and patent hairs; ovary; pink-coloured corolla) suggest its close affinity with *C. parviflorus*, the other parent species, with which it used to mingle, being 'very common', specially in the shrublands of eastern part of the island ("In fruticetis partis orientalis Insulae Lampedusae praesertim, communissimus, Aprili 1884").

Aims of the paper

This paper aims at selecting a lectotype for the name *C.* × *skanbergii* and at identifying the available syntypes and any further original material.

MATERIALS AND METHODS

The specimens from the original collection carried out by Lojacono-Pojero on Lampedusa Island and suitable to be selected as type material of *C.* × *skanbergii* were searched in several European herbaria (codes after Thiers & Ramirez, 2021), especially at PAL and G, where most of Lojacono-Pojero's specimens are kept (Aghababyan *et al*., 2012; Domina *et al*., 2014a, 2014b).

To verify if some specimens collected by Gussone might possibly be suitable for typification purposes, we also carried out a search at NAP, where most of Gussone's exsiccata are kept (La Valva, 1993).

RESULTS AND DISCUSSION

The protologue

The original description of *C.* × *skanbergii* provided by Lojacono-Pojero (1885) has been analysed in order to better address and justify the choice of the lectotype. More in detail, Lojacono-Pojero (1885) mentioned his own collection in Lampedusa in April 1884 as the one on which the new species is based. In addition, in a separate note, he also mentioned a specimen, labelled as "*Cistus incanus* var. b. DC.", collected before him by Gussone in Lampedusa and preserved in the "Erbario Siciliano", i.e. the core historical collection of PAL (Mazzola *et al*., 1997). Indeed, Gussone was one of the first botanists who visited that island, but he was there in midsummer, i.e. between mid July and mid August 1828, so he could not have observed any flowering rockrose, nor realised that the samples he referred to "*Cistus incanus* var. b. DC." (Gussone, 1834, 1844) actually belonged to *C.* × *skanbergii*. Although Gussone was the first to collect the plant, Lojacono-Pojero was the first to observe it in full bloom, and this opportunity allowed him to describe it as a separate taxon.

Lojacono-Pojero (1885) wrote "*Cistus Skanbergi*" and cited his friend as "Skanberg", without any diacritical sign ("å"), occurring in the Swedish spelling of the surname and with no clear intention to latinize it. Hence, in compliance with art. 60 (especially art. 60.8 (b)) of the International Code of Nomenclature (Turland *et al*., 2018, henceforth cited as ICBN), the correct spelling of the epithet is *skanbergii*.

Lojacono-Pojero's collections

A sample belonging to the "Plantae Italicae Selectae – Centuria I", quoted by Lojacono-Pojero (1889) himself, is kept at the herbarium of Geneva (G00421289) and currently is mounted on two different herbarium sheets stapled together. This material was originally sent by Lojacono-Pojero to W. Barbey on January 1885 (Aghababyan *et al*., 2012), subsequently acquired by the Herbarium of the University of Geneva in 1911, then transferred to the Herbarium of the city of Geneva and included in the general collection since 1966. The original label of the first sheet, handwritten by Lojacono-Pojero, reports "Plantae Italicae Selectae – 42. Cistus Skanbergii M.[ichele] Loj.[acono] – in Natur.[alista] Sic.[iliano] anno 1885 – In fruticetis Insulae Lampedusae - Aprili 1884 – Leg. M. Lojacono" (Fig. 1). The second sheet, which includes the reminder of the original material sent by Lojacono-Pojero, holds another label, probably handwritten by W. Barbey.

The label of the specimen kept at Kew (K000651102, https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:168496-1/images) is identical to that of G, and indicates: "Plantae Italicae Selectae – n° 42 – Cistus Skanbergii M.[ichele] Loj.[acono] - in Natur Sic. anno 1885 – In fruticetis Insulae Lampedusae – Aprili 1884 – Leg.[it] M. Lojacono – com.[municavit] Lojacono 7/1885".

Moreover, the label of the specimen PAL76127 (https://herbarium.unipa.it/zoomify/view_img.asp?ic=76127) contains the following information: "Vi flores rosei ut in Flora depicti / Cistus Skanbergi Lojac. / In fruticetis Ins.[ulae] Lampedusae / Leg.[it] MLP [= Michele Lojacono-Pojero] / Apr.[ili] 1884".

Lojacono-Pojero (1885, p. 94) wrote that all the species marked with an asterisk were personally observed by himself. In addition, the protologue includes also a date which can be interpreted as that of collection, and in fact the same information (locality and date) are reported on the above cited specimens collected by him, which, in our opinion, can be therefore regarded as syntypes. Moreover, as Lojacono described the flowers (lacking in the Gussone's syntype, see below), it can be argued that the protologue was largely based on those specimens.

The specimen of K and the first sheet of the collection kept at G explicitly quote the article published on *Il Naturalista Siciliano* (Lojacono-Pojero, 1885) containing the protologue, whilst the one in PAL only refers to the plate published on the first volume of the Flora Sicula by Lojacono-Pojero (1889). As this is the best conserved of all those examined, we designate here specimen K000651102 as the lectotype (art. 9.12 of ICBN) of the name *C.* × *skanbergii* Lojac.. Additionally, in compliance with art. 9.4 of ICBN, the two herbarium sheets of the specimen kept at G (G004201289) and the one kept in PAL (PAL76052), being duplicates of the same collection of the lectotype, have to be considered isolectotypes.

Out of curiosity, the specimen PAL76052 (https://herbarium.unipa.it/zoomify/view_img.asp?ic=76052) bears a printed label of the Botanical Garden of Palermo handwritten by an anonymous botanist in the late 19th century, who reports: "Cistus monspeliensis / Lampedusa / Lojacono". Indeed, also this specimen belongs to *C.* × *skanbergii*, as already pointed out by a label added by G. Demoly (10.IV.2000).

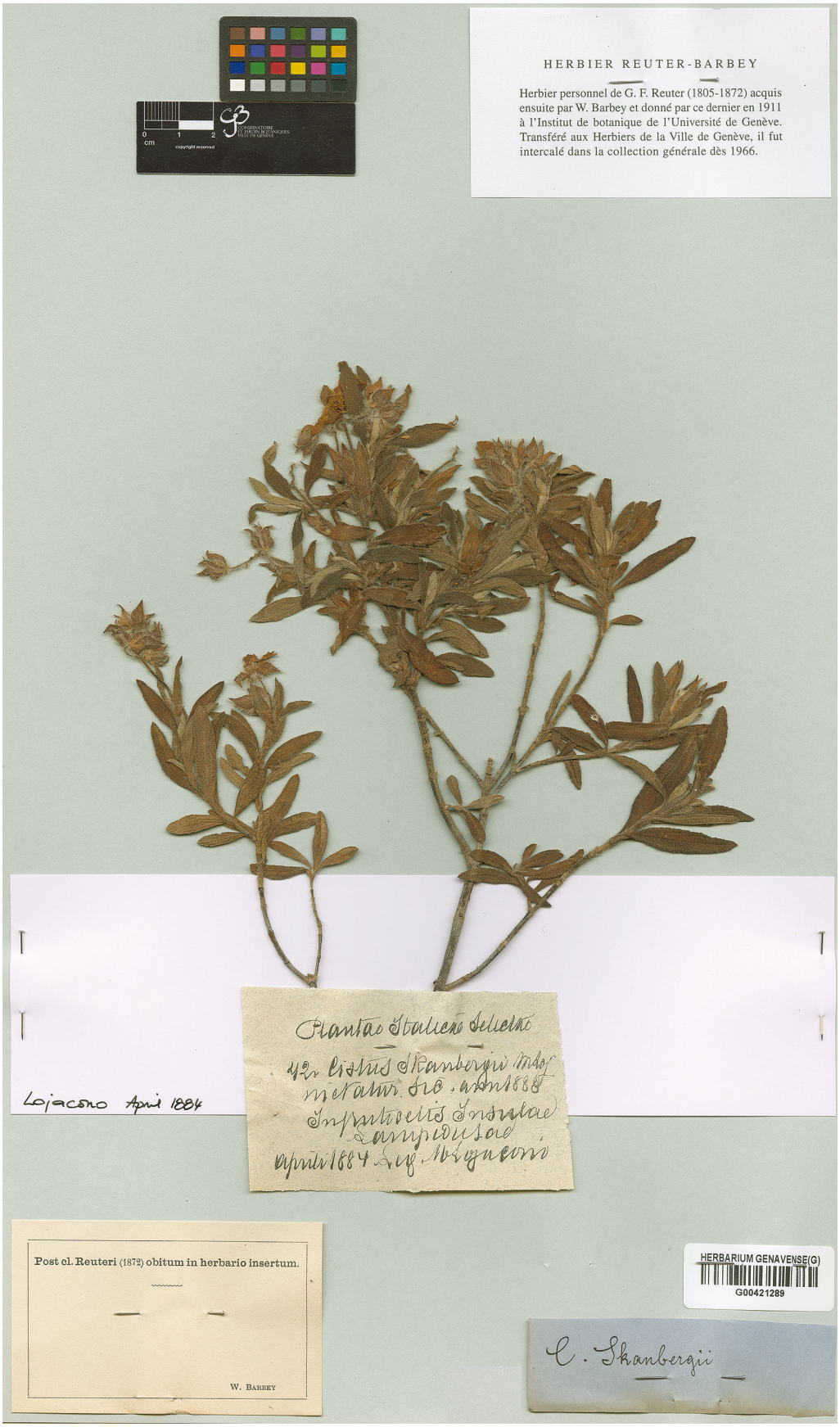

Fig. 1 - Specimen of *Cistus* × *skanbergii* kept at the Herbarium of Geneva (G004201289) (photo credit: Conservatoire et Jardin botaniques de la Ville de Genève). / Campione di *Cistus* × *skanbergii* conservato presso l'Erbario di Ginevra (G004201289) (foto: Conservatoire et Jardin botaniques de la Ville de Genève).

The specimens of Gussone

The specimen PAL76043 (https://herbarium.unipa.it/zoomify/view_img.asp?ic=76043) bears two labels, both handwritten by Gussone. On the first, we read: "Maggio [= May, with no doubt a guess of the flowering period, author's note] / Cistus incanus b. Dec. / Lampedusa", in the second: "Cistus incanus b". Moreover, the second label contains the following notes, added with a pencil by Lojacono-Pojero himself "[Cistus incanus b.] Guss. non DC. / Lampedusa / flores rosei" (Fig. 2). With no doubt this damaged and incomplete specimen is the one Lojacono-Pojero refers to in his protologue. Concerning this sample, its citation in the protologue of Lojacono-Pojero (1885) is given in a note after the description of the new taxon. Considering the very bad conditions of this specimen, there is no doubt that it is the very same mentioned in the protologue by Lojacono-Pojero (1885) as a "rachitic twig with two or three leaves"; hence this specimen is an obvious syntype.

Moreover, two other specimens mounted on two herbarium sheets at NAP may belong to the same field collection carried out by Gussone on Lampedusa; having no evidence that they were collected on the very same day, they cannot be regarded as syntypes with certainty. More in detail, the label of the specimen NAP0002001, handwritten by Grande, reports: "Herbarium R. Horti Neapolitani / C. skanbergi Lojac. / Loc. Lampedusa / Leg. Gussone / Grande 1915". Besides providing the very same information (except from the lacking locality), the specimen NAP0002000 (Fig. 3) bears two original labels, handwritten by Gussone himself, where we can read: "Luglio [= July, author's note] 1828, Lampedusa" and "[…] Cistus incanus var. b. Dec. Prodr. s. nat. I, p. 264 / in collibus calcareis, Lampedusa".

Taxonomic treatment

Cistus × *skanbergii* Lojac., Naturalista Sicil. 4: 95(-96) (1885, "*Skanbergi*") pro sp.

Lectotype (here designated): "Plantae Italicae Selectae – n° 42 – Cistus Skanbergii M.[ichele] Loj.[acono] - in Natur Sic. anno 1885 – In fruticetis Insulae Lampedusae – Aprili 1884 – Leg.[it] M. Lojacono – com.[municavit] Lojacono 7/1885" (K000651102).

Isolectotypes: 1) "Vi flores rosei ut in Flora depicti / Cistus Skanbergii Lojac. / In fruticetis Ins.[ulae] Lampedusae / Leg.[it] MLP [= Michele Lojacono-Pojero] / Apr.[ili] 1884" (PAL76127); 2) "Plantae Italicae Selectae – 42. Cistus Skanbergii M.[ichele] Loj.[acono] – in Natur.[alista] Sic.[iliano] anno 1885 – In fruticetis Insulae Lampedusae - Aprili 1884 – Leg. M. Lojacono" (G00421289)

Further syntype: "Maggio / *Cistus incanus* b. Dec. / Lampedusa" (PAL76043)

= *Cistus* × *skanbergii* f. *albiflorus* Demoly, Bull. Assoc. Parcs Bot. France 45: 47 (2008)

Holotype: Chypre: Akamas, 8.IV.2002, *Demoly 1593* (herb. Demoly) (designated by Demoly, 2008)

CONCLUSIONS

Discovered and described just few decades before disappearing from the Island of Lampedusa, its type locality, the fate of *C.* × *skanbergii* sounds paradoxical, as its name holds some commercial interest. In fact, despite its extreme rarity throughout the whole Mediterranean Basin, this rockrose is massively cultivated and traded for ornamental purposes worldwide (Pasta, 2022). Actually, reproductive individuals of this hybrid have been obtained by purposely crossing the parental species from Greece and Cyprus. Although these cultivated plants do not descend from those

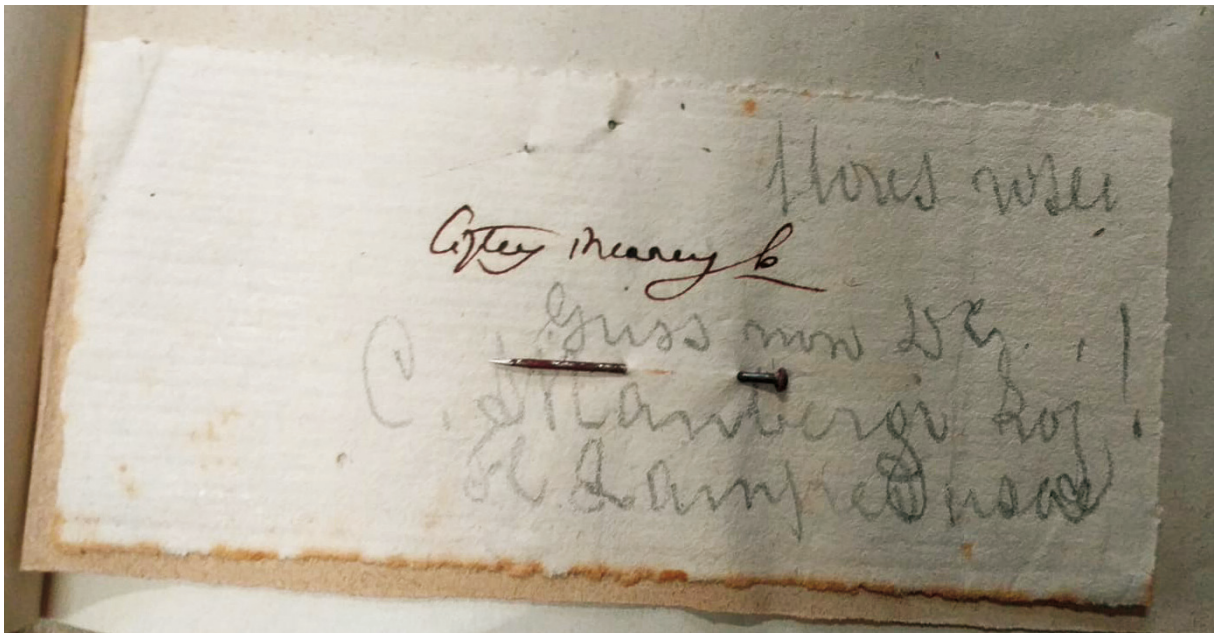

Fig. 2 - Label of the specimen of *Cistus* × *skanbergii* collected by Gussone and kept at the Herbarium of Palermo (PAL76127; photo credit: S. Pasta). / Etichetta del campione di *Cistus* × *skanbergii* raccolto da Gussone e conservato presso l'Erbario di Palermo (PAL76127; foto: S. Pasta)

Fig. 3 - Specimen of *Cistus* × *skanbergii* collected by Gussone and kept at the Herbarium of Naples (NAP0002000; photo credit: Herbarium of Naples). / Campione di *Cistus* × *skanbergii* raccolto da Gussone e conservato presso l'Erbario di Napoli (NAP0002000; foto: Erbario di Napoli).

that once grew on Lampedusa, considering that they undoubtedly share the same parental species, they should be named with the same binomial epithet (see art. H.4 of ICBN).

Acknowledgements

We are grateful to Jean-Marc Tison (Heyrieux, France), Frédéric Médail (IMBE, University of Aix-Marseille, France), Katia Diadema (Conservatoire botanique national méditerranéen de Porquerolles, Hyères, France), Michel Boudrie (Limoges, France) and the Association des Parcs Botaniques de France for helping to find and consult the publications of J.-P. Demoly. We are also indebted with John McNeill and the anonymous reviewers: their patient support, their critical comments and insightful suggestions significantly improved the manuscript. We thank the staff of the Herbaria of Palermo, Naples and Geneva, for their helpful assistance during the search for specimens suitable for typification.

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