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Lectotypification of *Centaurea alpina* L. (Compositae) and the identity of *Centaurea linaresii* Lázaro Ibiza

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Short title: Lectotypification of *Centaurea alpina*

Abstract A lectotype for the name *Centaurea alpina* (\equiv *Rhaponticoides alpina*, Compositae) is herein designated from original material conserved in the BM Herbarium (Clifford Herbarium). A previously accepted name, *Centaurea linaresii*, is treated as a synonym; this name was previously typified from original material conserved in the MAF Herbarium, but was wrongly considered as holotype. Thereafter, it is here corrected to lectotype.

Keywords: *Centaurea alpina*; *Centaurea linaresii*; Compositae; lectotypification; nomenclature; Linnaeus; *Rhaponticoides*.

INTRODUCTION

The genus *Centaurea* L. (Compositae) comprises a large number of taxa mainly distributed in the Mediterranean region and southwest Asia (Susanna & Garcia-Jacas, 2007). It was clear from the first description of the genus by Linnaeus (1753) that *Centaurea* was an artificial assemblage. The type species of the genus, *Centaurea centaurium* L. (current name *Rhaponticoides centaurium* (L.) M.V. Agab. & Greuter), occupies an isolated position in the phylogeny, distant from the monophyletic group that includes the great majority of species in the genus (reviewed in Garcia-Jacas & al., 2001). Molecular tools were to provide the phylogenetic evidence (Susanna & al., 1995; Garcia-Jacas & al., 2000, 2001, 2006) and as late as 2001, a new type was chosen for the genus, *Centaurea paniculata* L. (Greuter & al., 2001), putting an end to the old problem of the delineation of *Centaurea*. The species of former sect. *Centaurea* (sect. “*Centaurium*”) were moved to the genus *Rhaponticoides* Vaill.

Centaurea alpina L., from central and southern Europe (Hayek, 1930: map 45), is one of the species of *Centaurea* described by Linnaeus (1753, 1755, 1759, 1763, 1767, 1771) and is currently accepted as *Rhaponticoides alpina* (L.) M.V. Agab. & Greuter (Greuter, 2003: 51). However, from a nomenclatural standpoint, *Centaurea alpina* has not been typified (Jarvis, 2007: 399). This paper proposes the designation of a lectotype for *Centaurea alpina* L. based on the protologue and consultation of Linnaeus’s original material.

TYPIFICATION

Rhaponticoides alpina (L.) M.V. Agab. & Greuter, *Willdenowia* 33: 60. 2003 ≡ *Centaurea alpina* L., *Sp. Pl.*: 910. 1753. Ind. loc.: “*Habitat in Baldo* [Italy]” — **Lectotype (designated here)**: Herb. Clifford: 421, *Centaurea* 6 (BM 000647255!) (Fig. 1)
= *Centaurea linaresii* Lázaro Ibiza in *Anales Soc. Esp. Hist. Nat.* 29: 152. 1900 ≡ *Centaurea centaurium* subsp. *linaresii* (Lázaro Ibiza) Borja (*in schedis*, MA 170064!) ≡ *Rhaponticoides linaresii* (Lázaro Ibiza) M.V. Agab. & Greuter, *Willdenowia* 33(1): 60. 2003 — Lectotype (cited as holotypus by Rivas-Goday, 1969) [corrected here, Art. 9.9; McNeill & al., 2012]: Cuesta de la Maruquesa, Valladolid [Spain], *Daniel Gutiérrez Martín s.n.* (MAF 10480!).

The *nomen specificum legitimum* in the Linnaean protologue is followed by two synonyms, both accompanied by excellent illustrations: *Centaureum alpinum luteum* from Bauhin (1620: 56; 1623: 117) and Morison (1699: 132, s. 7 t. 25, f. 5), and *Centaureum majus luteum* from Cornut (1635: 69--70) (Fig. 2). As for the herbarium sheets, after consultation of several collections conserved in the Linnaean herbarium (BM, LINN, S-LINN, UPS), we found only one sheet to designate as the nomenclatural type of *Centaurea alpina*: Herb. Clifford: 421, *Centaurea* 6 (BM 000647255; image available at <http://www.nhm.ac.uk/resources/research-curation/projects/clifford-herbarium/1gimages/BM000647255.JPG>) (Fig. 1). This sheet is annotated “*Centaureum alpinum luteum // majus // alpina*”. The specimen has three leaves and a flowering head, which allows preserving and applying traditional and current use of the Linnaean name. Although the illustrations and herbarium specimens are in all cases identified

with *Centaurea alpina* L., the good conservation condition of the BM specimen allows its designation as a better choice for the lectotype of the Linnaean name versus the illustrations.

Regarding the synonyms recorded in the present paper, we have included *Centaurea linaresii* following the suggestions by Pau (1905), Lacaita (1930), Rivas Goday (1969), Bellot & Ron (1975), Burgaz (1983: 104), and Susanna (1988). *Centaurea linaresii* was discovered near Valladolid (Spain), with the type locality on “La Cuesta de la Maruquesa” hill, and “Olmedo (Valladolid)”. It was described with an interesting story that accompanies the text, which tells how the plant attracted the attention of the author (Lázaro Ibiza, 1900). Rivas Goday (1969) referred the sheet MAF 10480 as holotype of *Centaurea linaresii*. This designation under the indication holotype is here treated as an “error” to be corrected as lectotype, according to Art. 9.9 of the Melbourne Code (McNeill & al., 2012). Therefore, this should be regarded as valid type designation (see Art. 7.9), specifically a lectotype (Art. 9.2).

In July 1958, José Borja Carbonell collected this species in the vicinity of the type locality, adding a more specific location close to the “Granja Escuela” farm and suggested for it a new status as a subspecies of *C. centaurium*. However, this new combination was not effectively published and only appears on the label of herbarium sheet MA 170064. In later collections preserved in the Royal Botanical Garden of Madrid (MA 165289, MA 180683, MA 179666, MA 170064, MA 133923 and MA 179685), all of them collected in the province of Valladolid and in some cases at the type locality, the material is determined by Borja as *C. linaresii* Lázaro Ibiza. A study of the labels of these sheets highlights Borja’s doubts on the identity of these plants, which subsequently led Bellot & Ron (1975) to write down: “*Está perfectamente aclarado que Centaurea linaresii* Láz. Ib. no es otra cosa que *C. alpina* L.”. “...En resumen, deben rectificarse todas las citas de *Centaurea linaresii* Láz. Ib. dándolas

como *C. alpina* L." [it is perfectly clear that *Centaurea linaresii* Láz. Ib. is nothing other than *C. alpina* L. ". "... In short, all citations of *Centaurea linaresii* Láz. Ib. should be rectified and identified as *C. alpina* L.]. Bellot and Ron were referring without doubt to previous suggestions by Pau (1905), Lacaita (1930), and Rivas Goday (1969), and the annotations on herbarium specimens collected by Borja in Valladolid, by Bourgeau in Murcia, by Reverchon in the Sierra de la Sagra in Jaén, by Lacaita in Valladolid (MA 133922), and the citation published by Caballero (1942) for the province of Cuenca. Despite the fact that some authors still continued considering *C. linaresii* as independent of the Linnaean taxon (Casaseca & al., 1981: 22, No. 184; Dostál, 1976: 263; Agababian [sic], 1997; Aghababian & Greuter in Greuter, 2003: 60), here it is considered a synonym of *C. alpina* L.

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Figure 1. Lectotype of *Centaurea alpina* L. (BM 000647255), selected here.