



Validation of the name *Centaurea ×forsythiana* Levier (Asteraceae)

ROSSELLA FILIGHEDDU¹, EMMANUELE FARRIS^{1*}, STEFANIA PISANU¹, MALVINA URBANI¹ & ALFONSO SUSANNA²

¹Dipartimento di Scienze della Natura e del Territorio, Università degli Studi di Sassari, Via Piandanna, 4, 07100 Sassari, Italy; e-mail: filighed@uniss.it; emfa@uniss.it; pisanus@uniss.it; urbani@uniss.it

²Institut Botànic de Barcelona (IBB-CSIC-ICUB), Pg. del Migdia s/n, 08038 Barcelona, Spain; e-mail: asusanna@ibb.csic.es

*corresponding author

Two individuals morphologically intermediate between *Centaurea horrida* Badarò (1824: 367) and *C. filiformis* Viviani (1825: 6) were collected by Charles Immanuel Forsyth Major on 26 May 1885 at Tavolara Islet, Italy (FI!); these samples were published by Fiori (1904) and later reported in Arrigoni (1972) as two different hybrids: “*C. superfiliformis* × *horrida* Levier” and “*C. superhorrida* × *filiformis* Levier”. As annotated on the label by Emile Levier, the material deposited in FI shows that the morphology of the two hybrids is very different and only the one named by Fiori as “*C. superfiliformis* × *horrida* Levier” was labelled as *C. forsythiana* Levier (Fig. 1). This sample is morphologically similar to the individuals of a hybrid population we discovered in the same site in the Tavolara Islet (Timone), on limestone, as reported by Fiori (1904). The hybrid named “*C. superhorrida* × *filiformis* Levier” by Fiori (1904) was collected by Forsyth Major in a different site (Bocchetta) on granite, and has never been recollected afterwards. For the matter of this note, this is not a problem since, according to Article H.4.1 of the International Code of Nomenclature (McNeill *et al.* 2012), all the hybrid variants originated from the same parental species, as far as considered nothotaxa (Art. H.3.1), should bear the same name.

The name *C. forsythiana* was not validly published (Art. 36.1(c)) because it was merely cited as a synonym in Fiori (1904). But subsequently, it was widely used by Italian botanists to define this nothotaxon at the species level (Béguinot & Vaccari 1927, Arrigoni 1972, Bacchetta *et al.* 2012, etc.). In this note we start from the Levier’s name (handwritten on the label of the type material), we give a diagnosis and indicate the holotype to validate the name *C. forsythiana*.

Béguinot & Vaccari (1927) quoted this taxon simply citing the nomenclatural treatment of Fiori (1904), but surprisingly they did not list any name referred to the hybrid taxon in the floristic annex at the end of their paper, whereas they listed the names of the two parental species. They also cited the specimen no. 388 that was distributed in the Flora Italica Exsiccata (Fiori *et al.* 1906), but that sample reported is *C. filiformis*, without any mention of the hybrid taxon. However, the name is actually in use, because it was accepted (though not validly published) in a recent list of Sardinian endemic plants (Bacchetta *et al.* 2012). This taxon has a scientific interest because it is one of the few examples of incipient homoploid hybrid speciation between two narrow endemic species: the parental species are exclusive of Sardinia, *C. horrida* growing only in the north-western part of the island and *C. filiformis* in the central-eastern part, and overlapping only at the Tavolara island (Pisanu *et al.* 2011, Mameli *et al.*, in press).

Centaurea ×forsythiana Levier ex Filigh., Farris, Pisanu & Urbani, nothosp. nov.

The new hybrid differs from *Centaurea horrida* in being unarmed and by its erect, not pulvinate habit; it also differs from *C. filiformis* in the ovoid-oblong or cylindrical capitula, very similar to those of *C. horrida*.

Type—ITALY. Olbia-Tempio: «239. *Centaurea forsythiana* Levier, ab Ascherson prolem hybridum inter *C. horridam* et *C. filiformis suspicatus, in insulae Tavolarae solo calcareo* “al Timone”», 26 May 1885, Forsyth Major s.n. (holotype FI!). (Fig. 1)



FIGURE 2. Plant of *Centaurea* \times *forsythiana* Levier in the wild.

Acknowledgements

This study was supported by the Regione Autonoma della Sardegna, LR 7/2007–PO Sardegna FSE 2007–2013, with the grant no. CRP2_474 for all authors and no. CRP3_188 for SP. We thank the Protected Marine Area of Tavolara–Punta Coda Cavallo for the technical aid received. The Marina Militare Italiana is acknowledged for the authorisation to enter the areas it manages in the Tavolara island. Chiara Nepi (Herbarium FI) kindly provided us with a photograph of the type.

References

- Arrigoni, P.V. (1972) Sulla distribuzione e il rango sistematico di *Centaurea filiformis* Viviani e *Centaurea ferulacea* Martelli. *Webbia* 27: 279–287.
<http://dx.doi.org/10.1080/00837792.1972.10669976>
- Bacchetta, G., Fenu, G. & Mattana, E. (2012) A checklist of the exclusive vascular flora of Sardinia with priority rankings for conservation. *Anales del Jardín Botánico de Madrid* 69: 81–89.
<http://dx.doi.org/10.3989/ajbm.2289>
- Badarò, G.B. (1824) Osservazioni sopra diverse piante della Liguria occidentale e della Sardegna, dirette per lettera dal D.G.B. Badarò al Sig. Giuseppe Moretti professore di Economia rurale nell'Università di Pavia. *Giornale di Fisica, Chimica, Storia Naturale, Medicina ed Arti* 2: 363–370.
- Béguinot, A. & Vaccari, A. (1927) Le piante vascolari sinora note per l'isola di Tavolara e considerazioni fitogeografiche sulle stesse. *Archivio Botanico e Biogeografico Italiano* 3–4: 269–290.
- Fiori, A. (1904) *Centaurea*. In: Fiori, A. & Paoletti, G. *Flora Analitica d'Italia* 3(2). Tipografia del Seminario, Padova, pp. 332–333.
- Fiori, A., Béguinot, A. & Pampanini, R. (1906) Flora Italica Exsiccata. *Nuovo Giornale Botanico Italiano* 13(2): 165–205.
- Mameli, G., Lòpez-Alvarado, J., Farris, E., Susanna, A., Filigheddu, R., Garcia-Jacas, N. (in press) The role of parental and

- hybrid species in multiple introgression events: a case of homoploid hybrid speciation in *Centaurea* (Cardueae, Compositae). *Botanical Journal of the Linnean Society*
- McNeill, J., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawkworth, D.L., Herendeen, P. S., Knapp, S., Marhold, K., Prado, J., Prud'homme van Reine, W. F., Smith, G.F., Wiersema, J.H. & Turland N.J. (2012) International Code of Nomenclature for algae, fungi and plants (Melbourne Code) adopted by the Eighteenth International Botanical Congress Melbourne, Australia, July 2011. *Regnum Vegetabile* 154. Koeltz Scientific Books, Königstein, XXX + 208 pp.
- Pisanu, S., Mameli, G., Farris, E., Binelli, G. & Filigheddu, R. (2011) A natural homoploid hybrid between *Centaurea horrida* and *Centaurea filiformis* (Asteraceae) as revealed by morphological and genetic traits. *Folia Geobotanica* 46: 69–86.
<http://dx.doi.org/10.1007/s12224-010-9085-2>
- Viviani D. (1825) *Appendix ad florae Corsicae prodromum* 1. Typographia Gravier, Genoa, 8 pp.