

# Typification of two Cavanillesian names, *Galium frutescens* (Rubiaceae) and *Scorzonera pumila* (Compositae)

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The Cavanillesian names *Galium frutescens* and *Scorzonera pumila*, basionym of *Launaea pumila*, are lectotypified from original specimens preserved in the Cavanilles herbarium in the Royal Botanic Garden of Madrid (MA).

*Keywords:* Cavanilles, Compositae, Rubiaceae, lectotype, nomenclature.

## Tipificació de dos noms Cavanillesians, *Galium Frutescens* (Rubiaceae) i *Scorzonera pumila* (Compositae)

Els noms cavanillesians *Galium frutescens* i *Scorzonera pumila*, basionim de *Launaea pumila*, són lectotipificats a partir d'espècimens que pertanyen al material original de l'autor conservat a l'herbari del Reial Jardí Botànic de Madrid (MA).

*Paraules clau:* Cavanilles, Compositae, Rubiaceae, lectotip, nomenclatura.

Antonio José (Joseph) Cavanilles (1745-1804) was the most outstanding botanist of the Spanish Enlightenment. His contributions to the taxonomic knowledge of the world flora (more than 80 genera and 1000 taxa) are good proof of his significance (see e.g., Stafleu & Cowan, 1976; López Piñero & López Terrada, 1995). Garilleti (1993) studied the Cavanilles's herbarium, however he explicitly stated in the introduction to his work, that his aim was to study the Herbarium, and in any case a lectotypification of his taxa was achieved. In this sense, the author indicates that “Nuestro objetivo ha sido estudiar el herbario de A. J. Cavanilles, en ningún caso se ha concretado una lectotipificación de sus táxones” [Our aim was to study the herbarium of A. J. Cavanilles, in no case has materialized a lectotypification of their taxa] (Garilleti, 1993: 5; Garilleti, pers. comm.). Therefore, the type indication in this work only indicates the Cavanilles's original material preserved in several herbaria, but does not constitute an effective typification according to Art. 7.11 of the ICN (Turland et al., 2018) because “designation of a type is achieved only if the type is definitely accepted as such by the typifying autor [...]”.

The purpose of this paper is to lectotypify of the names *Galium frutescens* Cavanilles (1795: 3) and *Launaea pumila* Cavanilles (1793: 19). The designation of the lectotypes is based on the consultation of Cavanilles's original elements and the literature cited in the protologues.

### Lectotypification of the names

#### *Galium frutescens* Cav.

*Galium frutescens* Cavanilles (1795: 3) is closely related to *G. lucidum* All. (Ehrendorfer, 1976) a common species in South and Southern Europe, so that in some cases has been treated as a subspecies (Bolòs & Vigo, 1983; Ortega Olivencia & Devesa, 2007). *Galium frutescens* is a plant without stolons, leaf margin is revolute and strongly scabrid, with pedicels relatively long and may be as long as the diameter of the flowers, which may be up to 5 mm. The species is characterized by their leaves of the main stems usually 2,5-8 (18) mm, those of the non-floriferous branches mostly heavily incurved at least towards the apex and less than 5 (6) mm, with very thickened margins or

revolute, and these characteristic are not found in *G. lucidum*. This plant inhabits altered scrubs, rocky and stony, very sunny slopes, subnitrophilous grasslands of road and highway margins, etc., on limestone, marl, limestone marl, gypsiferous loam and coastal sand in the East, Central and South-Central parts of the Iberian Peninsula (Ortega Olivencia & Devesa, 2007).

Cavanilles's protologue (1795:3) consists of a diagnosis "GALIUM caule frutescente : foliis linearibus, senis : pedunculis bifloris," followed by a complete description of the plant, a geographical locality "Habitat copiose in montibus Valdignae, Enguerae, et prope Monasterium de la Murta", and an illustration (Cavanilles, 1795: icon 206, f. 2). A note is also provided in the protologue "A Thunbergio exemplar accipi in promontorio Bonae-Spei lectum, quod a Valentina planta nullatenus differt". The Cavanilles's icon is an excellent illustration that represents a complete plant, and it is suitable for the lectotype of the name.

In the Cavanilles's collection at MA (Herbarium of the Royal Botanic Garden of Madrid, Spain), there is a sheet that contains original material (MA barcode MA 150798) (image available at <http://161.111.171.57/herbarioV/visorVCat.php?img=MA-01-00150798>) (Fig. 1). The sheet bears a plant well developed and complete, and three fragments also with fruits, and is labelled "*Galium fruticosum* sp. / in Valdigna Enguera montibus" handwriting by Cavanilles (see also Garilleti, 1993: 206). We have not been able to locate any further original material in any consulted herbarium [e.g., at BM, C, G, LD, LINN, MA, MO, P (incl. P-LA and P-JU), UPS, acronyms according to Thiers (2019)].

Ferrer-Gallego & Guara (2011: 85) indicated the sheet MA 150798 as "Typus". Nevertheless, according to the Art. 7.11 of the ICN, they failed in not reporting the statement "designated here" (*hic designatus*) or an equivalent phrase, therefore the "typification" is ineffective. Among the Cavanilles's original elements, the illustration included in the protologue and the specimen at MA, we designate the specimen MA number 150798-1-1, as the lectotype of the name *Galium frutescens*. This specimen matches the traditional and current concept of the name (see e.g., Willkomm & Lange, 1865; Ehrendorfer, 1976; Bolòs & Vigo, 1996; Ortega Olivencia & Devesa, 2007).

*Galium frutescens* Cav., Icon. Descr. Pl. 3: 3 (1795)  
 ≡ *Galium lucidum* subsp. *frutescens* (Cav.) O. Bolòs & Vigo, Collect. Bot. (Barcelona) 14: 100 (1983).

Ind. loc.: "Habitat copiose in montibus Valdignae, Enguerae et prope Monasterium de la Murta".

**LECTOTYPUS (*hic designatus*):** SPAIN. Valdigna, Enguera [Valencia], Cavanilles s.n., MA, barcode MA 150798 (image available at <http://161.111.171.57/herbarioV/visorVCat.php?img=MA-01-00150798>).

#### *Scorzonera pumila* Cav.

The genus *Launaea* (Cichorieae, Compositae) comprises about 40 taxa (Tomb, 1977). Cavanilles (1793: 19) describes *Scorzonera pumila*, name currently accepted in the genus *Launaea* [as *Launaea pumila* (Cav.) Kuntze]. This species is distributed in North Africa (Morocco and Algeria) and Iberian Peninsula (Central, South and East parts, rarely in the Northeast part), and grows in dry gypsaceous, saline, loamy, limestone or clay soils. It is a perennial herbaceous plant with leaves usually confined to lower half of stem, pinnatisect, and capitula 20-24 × 12-16 mm (Boulos, 1976; Mejías, 2017).

Cavanilles's protologue (1793: 19) consists of a diagnosis "SCORZONERA acaulis, foliis pinnatis, pinulis linearibus glabris, apicibus albis" followed by a complete description, a geographical locality "Habitat prope Sucronis oppidum ad montis radices contra mare, et in incultis Noveldae ditonionis", and an excellent illustration (Cavanilles, 1793: icon 221, f. 3) that represents a complete plant, and it is suitable for the lectotype of the name.

In the Cavanilles's collection at MA, there is a sheet that contains original material, MA barcode 476254 (image available at [http://herbario.rjb.csic.es/zoom3.php?filename=Scorzonera\\_pumilla\\_476254](http://herbario.rjb.csic.es/zoom3.php?filename=Scorzonera_pumilla_476254)). The sheet bears eight plants well developed (five of these with flowers), and two fragments also with flowers, and is labelled "*Scorzonera pinnata: humilis pumila* / Icon. Tab. 121 / In maritimis Cullera, et in / collibus Novelda. / Maio 1791" handwriting by Cavanilles (see Garilleti, 1993: 228-229). We have not been able to locate any further original material in any consulted herbarium (e.g., at BM, C, G, LD, LINN, MA, MO, P [incl. P-LA and P-JU], UPS).

In conclusion, among the Cavanilles's original elements, the illustration included in the protologue and the specimen at MA, we designate the specimen MA with barcode 4762541 as the lectotype of the name *Scorzonera pumila*. This specimen matches the traditional concept and current use of the name (see e.g., Willkomm & Lange, 1865; Kuntze, 1891; Boulos, 1976;

Bolòs & Vigo, 1996; Mateo et al., 2013; Mejías, 2017).

*Scorzonera pumila* Cav., Icon. 2: 19, tab. 121, fig. 2 (inter IV et XI-1793).

≡ *Launaea pumila* (Cav.) Kuntze, Revis. Gen. Pl. 1: 351 (1891).

Ind. loc.: “Habitat prope Sucronis oppidum ad montis radices contra mare, et in incultis Noveldae ditionis”.

**LECTOTYPUS (hic designatus):** SPAIN. Cullera [Valencia], Novelda [Alicante], V-1791, Cavanilles s.n., MA, barcode 476254 (Fig. 2) (image available at [http://herbario.rjb.csic.es/zoom3.php?filename=Scorzonera\\_pumilla\\_476254](http://herbario.rjb.csic.es/zoom3.php?filename=Scorzonera_pumilla_476254)).

## Bibliography

- Bolòs, O. & Vigo, J. 1983.** Notes sobre taxonomia i nomenclatura de plantes, II. Collectanea Botanica (Barcelona), 14: 89-104.
- Bolòs, O. & Vigo, J. 1996.** Flora dels Països Catalans 3 (Pirulàcies-Compostes). Barcino, Barcelona.
- Boulos, L. 1976.** *Launaea* Cass. In: Tutin, T. G., Burges, N. A., Chater, A. O., Edmondson, J. R., Heywood, V. H., Moore, D. M., Valentine, D. H., Walters, S. M. & Webb, D. A. (Eds.), *Flora Europaea*, 4: 326. Cambridge University Press. Cambridge.
- Cavanilles, A. J. 1793.** Icones et descriptiones plantarum, quae aut sponte in Hispania crescunt, aut in hortis hospitantur, vol. 2. Ex Regia Typographia, Matriti. <http://bibdigital.rjb.csic.es/spa/Libro.php?Libro=239&Hojas=>
- Cavanilles, A. J. 1795.** Icones et descriptiones plantarum, quae aut sponte in Hispania crescunt, aut in hortis hospitantur, vol. 3. Ex Regia Typographia. Matriti.
- Ehrendorfer, F. (coll. Krendl, F. & Puff, C.) 1976.** *Galium* L. In: Tutin, T. G., Burges, N. A., Chater, A. O., Edmondson, J. R., Heywood, V. H., Moore, D. M., Valentine, D. H., Walters, S. M. & Webb, D. A. (Eds.), *Flora Europaea*, 4: 14-36. Cambridge University Press, Cambridge.
- Ferrer-Gallego, P. P. & Guara, M. 2011.** Táxones descritos para el Lugar de Interés Comunitario “Muela de Cortes y Carоче” y territorios limítrofes (Valencia, España), parte I. *Flora Montiberica*, 47: 71-93.
- Garilleti, R. 1993.** Herbarium Cavanillesianum, seu, Enumeratio plantarum exsiccatarum aliquo modo ad novitates Cavanillesianas pertinentium, quae in Horti Regii Matritensis atque Londinensis Societatis Linnaeanae herbariis asservantur. *Fontqueria*, 38: 1-248.
- Kuntze, C. E. O. 1891.** Revisio Generum Plantarum: vascularium omnium atque cellularium multarum secundum leges nomenclaturae internationales cum enumeratione plantarum exoticarum in itinere mundi collectarum, vol. 2. A. Felix, Leipzig, 634 pp. <http://dx.doi.org/10.5962/bhl.title.327>
- López Piñero, J. M. & López Terrada, M. L. 1995.** Bibliografía de Antonio José Cavanilles (1745-1804) y de los estudios sobre su vida y su obra. *Asclepio*, 47: 241-260.
- Mateo, G., Crespo, M. B. & Laguna, E. 2013.** Flora Valentina, vol. 2. Fundación de la Comunidad Valenciana para el Medio Ambiente. Valencia.
- Mejías, J. A. 2017.** *Launaea* Cass. In Talavera, S., Boira, A., Quintanar, A., García, M. Á., Talavera, M., Fernández Piedra, P & Aedo, C. (Eds.), *Flora iberica* 16(2): 859-870. Real Jardín Botánico, C.S.I.C., Madrid.
- Ortega Olivencia, A. & Devesa, J. A. 2007.** *Galium* L. In: Devesa, J. A., Gonzalo, R. & Herrero, A. (Eds.), *Flora iberica*, 15: 56-162. Real Jardín Botánico, C.S.I.C., Madrid.
- Stafleu, F. A. & Cowan, R. S. 1976.** *Taxonomic literature* 1, Ed. 2. 1136 pp. Bohn, Scheltema & Holkema. Utrecht.
- Thiers, B. 2019.** Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. Available from: <http://sweetgum.nybg.org/ih/> (accessed 19/04/2018).
- Tomb, A. S. 1977.** Lactuceae-systematic review. In: Heywood, V. H., Harborne, J. B. & Turner, L. (Ed. V. 11), *The biology and chemistry of the Compositae*: 1067-1079. Academic Press. London.
- Turland, N. J., Wiersema, J. H., Barrie, F. R., Greuter, W., Hawksworth, D. L., Herendeen, P. S., Knapp, S., Kusber, W.-H., Li, D.-Z., Marhold, K., May, T. W., McNeill, J., Monro, A. M., Prado, J., Price, M. J. & Smith, G. F. (eds.) 2018.** International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. *Regnum Vegetabile* 159. Glashütten: Koeltz Botanical Books. <https://doi.org/10.12705/Code.2018>
- Willkomm, H. M. & Lange, J. 1865.** *Prodromus florum Hispanicae*, Vol. 2. Sumtibus E. Schweizerbart (E. Koch). Stuttgart.

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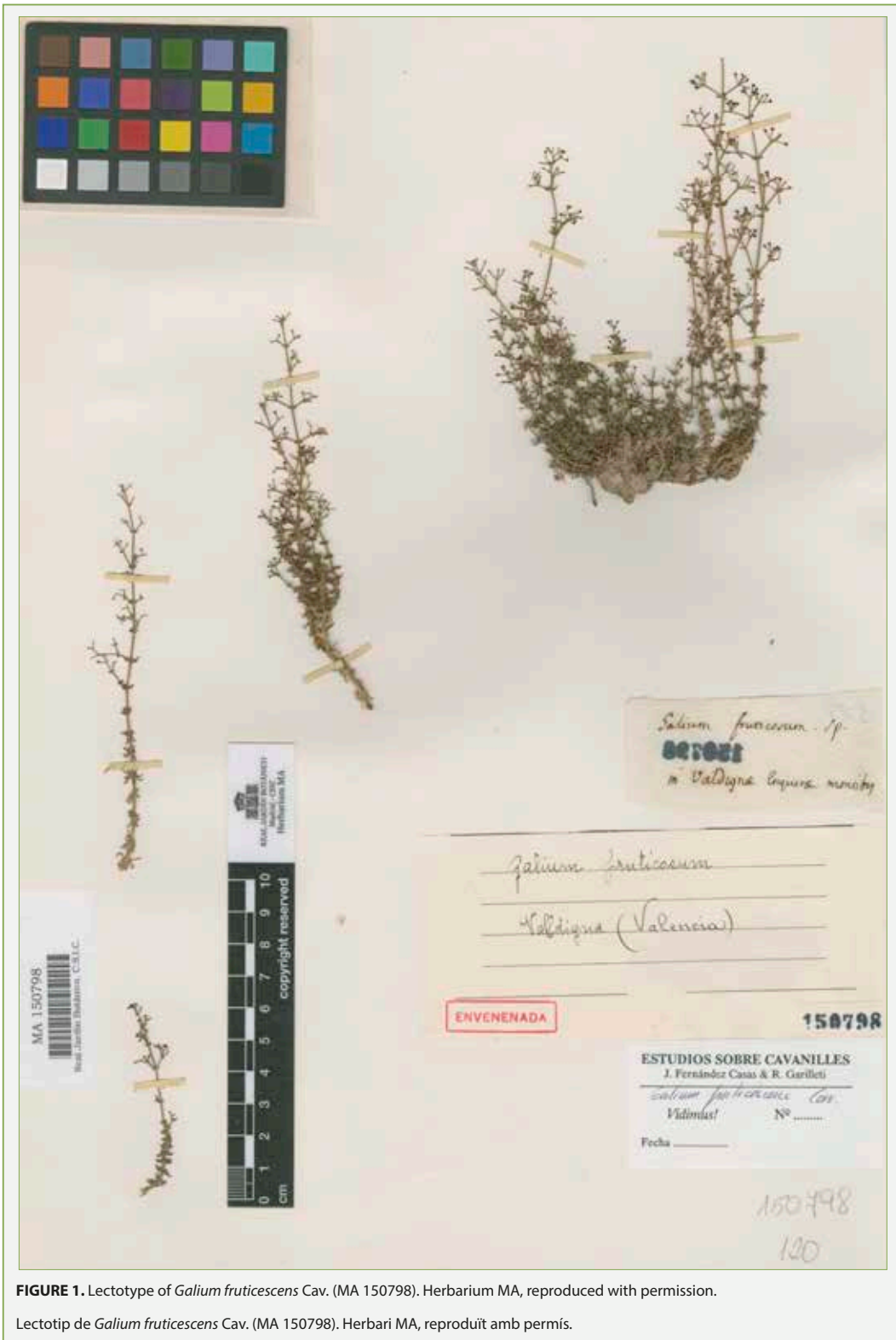


FIGURE 1. Lectotype of *Galium frutescens* Cav. (MA 150798). Herbarium MA, reproduced with permission.

Lectotip de *Galium frutescens* Cav. (MA 150798). Herbari MA, reproduït amb permís.



FIGURE 2. Lectotype of *Scorzonera pumila* Cav. (MA 476254). Herbarium MA, reproduced with permission.

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