



# Typifications of Eriocaulaceae for the species present in the Argentinean Flora

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**Summary.** As part of a revision of the Argentinean species of Eriocaulaceae, seven names were identified that required typification. As a result, five names in the genus *Eriocaulon* L. are lectotypified and one is epitypified, and one name in the genus *Syngonanthus* Ruhland is lectotypified. A note about the inability to typify *Eriocaulon arecavaletae* is provided.

**Key Words.** Argentina, epitype, *Eriocaulon*, lectotype, plant taxonomy, *Syngonanthus*.

## Introduction

Eriocaulaceae comprises 10 genera and approximately 1400 species, and is mainly distributed in tropical to subtropical regions with the main centre of diversity in Brazil (Giulietti *et al.* 2018). These species are found in swampy areas or areas with periodic floods (Giulietti *et al.* 2018; Sano *et al.* 2009; Simpson 2006), and are characterised by being grass-like plants, small, perennial, monococious, mostly terrestrial with a few species submerged, with short stems with narrow, rosulate leaves and with the inflorescence composed of a dense capitulum with a scape surrounded by a spathe, with very small unisexual flowers, and spiraperturate pollen grains (Giulietti *et al.* 2012, 2018; Sano *et al.* 2009; Simpson 2006; Stevens 2001 onwards). The dried inflorescences are often used as ornamentals and are commonly called "everlasting flowers" (Giulietti *et al.* 2012; Simpson 2006), and for this reason, some species are overexploited and consequently critically endangered (Sano *et al.* 2009).

In Argentina, the first author to cite the family was Molfino (1922) who included four species. Later, Castellanos (1945) and almost simultaneously, Abbiatti (1946a, 1946b) reported seven and four species, respectively. Nowadays, six species of *Eriocaulon* L. (Linnaeus 1753: 87) and two species of *Syngonanthus* Ruhland (1900: 487) are cited for Argentina (Zuloaga *et al.* 2019).

In the course of revising the family for the *Flora of Argentina*, it has been found that some names were not

effectively lectotypified, and therefore we have designated six lectotypes and one epitype.

## Typification

**1. *Eriocaulon crassiscapum* Bong.** (Bongard 1831: 628). Type: Brazil, Minas Gerais, Entre Prados y Barbacena, June 1824, L. Riedel 296 (lectotype LE [LE00002808]! ten plants located in the upper half of the sheet, selected here; isolectotype LE [LE00002807]! *without collector* s.n.). Image of the lectotype available at <https://plants.jstor.org/stable/viewer/10.5555/al.ap.specimen.le00002808>.

**NOTES.** Bongard cited in the protologue of *Eriocaulon crassiscapum* "Habitat in paludibus inter as Prados et Barbacena. Floret Junio". Although no collector or number was given in the protologue itself, Riedel was mentioned as a collector in the introduction to the publication. In LE, where Bongard worked (Stafleu & Cowan 1983), we found two sheets that match with the type locality cited in the protologue: *Riedel* 296 and *without collector* s.n. These sheets did not have a cross reference that indicated that they belonged to the same specimen, therefore according to ICBN (Art. 40, note 1) (Turland *et al.* 2018), it is appropriate to designate one of them as a lectotype. We chose the specimen LE00002808 (the ten plants located in the upper half of the sheet) as they present a greater number of well-preserved plants, although this specimen is

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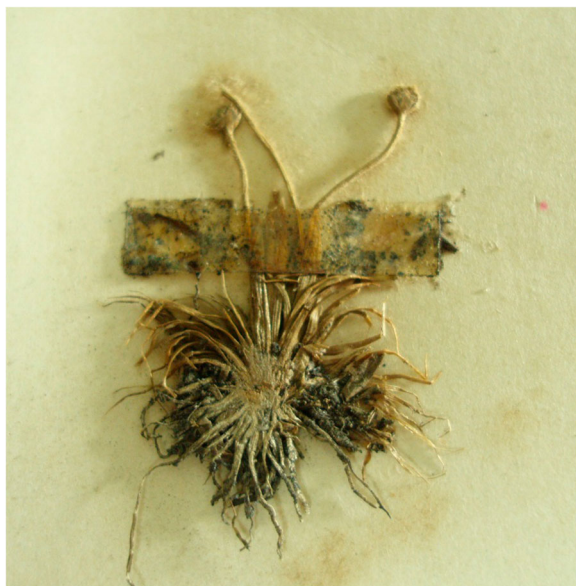
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Fig. 1. Holotype of *Eriocaulon argentinum* A.Cast. (Niederlein 2257 BA).





**Fig. 2.** Original material filed under *Eriocaulon missionum* A.Cast. (*C. L. Spegazzini* s.n. [LP16240]!), could be *Syngonanthus*.

mounted on the same sheet as another collection “Brazil. Minas Gerais, Aug-April 1840; P. Claussen s.n.” (seven plants located at the bottom of the sheet) belonging to same entity. Although the isoelectotype LE00002807 does not specify the collector’s name nor the collection number, the label has the same inscriptions as the chosen lectotype. The label information matches the brief description of the leaves, the locality and the date published in the protologue, and for this reason we assume that it is an isoelectotype. There is one difference in the terms used: “pedunculo” in the protologue, “culmo” on the label of the specimen LE00002808 and “scapo” on the label of the specimen LE00002807; the person who wrote the labels probably changed the term.

*Eriocaulon molle* Mart. ex Körn. (Körnigke 1863: 487), **nom. illegit.** Type: Brazil, without locality, *C. F. P. Martius* s.n. [*herb. Fl. Bras.* 890] (lectotype M [M0152655]!, selected here; isoelectotypes BM [BM000884732]!, BM [BM000884733]!, HAL [HAL0134369]!, M [M0152656]!, MO [MO-152656]!, MO [MO-202614]!, NY [NY00102645]!). Image of the lectotype available at <https://plants.jstor.org/stable/viewer/10.5555/al.ap.specimen.m0152655>

**NOTES.** Körnigke (1863: 487) cited the herbarium name *Eriocaulon molle*, attributed to Martius, and validly published by Körnigke with the specimen “in *Herb. Fl. Bras.* n. 890” as synonymous with *Eriocaulon crassiscapum*, Martius’ types were deposit-

ed mostly in M (Stafleu & Cowan 1981), where two sheets were found which have not been cross referenced to indicate that they belong to the same specimen. Therefore, according to ICBN (Art. 40, note 1) (Turland *et al.* 2018) it is appropriate to designate one of them as a lectotype. For this reason, we chose as lectotype the specimen M0152655 because it presents a larger number of complete plants, among of all the duplicates in the different herbaria.

**2. *Eriocaulon leptophyllum* Kunth (1841: 549).** Type: Uruguay [“*Brasilia meridionalis*”]. Montevideo, *F. Sellow* 2513 [Ex reliquiis Sellowianus, Humboldt ded. 1836] (lectotype B [B\_10\_0244407]!, selected here; isoelectotypes B [B\_10\_0244408]!, K [K000457732]!). Image of the lectotype available at <https://plants.jstor.org/stable/viewer/10.5555/al.ap.specimen.b%2010%200244407>

*Eriocaulon argentinum* A.Cast. (Castellanos 1945: 83, t. 18B). Type: Argentina, Corrientes, Depto. Santo Tomé: Bañado del Monte Susto, 11 Nov. 1886, *G. Niederlein* 2257 (holotype BA). Fig. 1.

**NOTES.** Kunth (1841: 549) cited in the protologue of *Eriocaulon leptophyllum* “*Brasilia meridionalis* (Sellow)”. Sellow’s type materials were deposited in B (Stafleu & Cowan 1985), where we found two sheets that match the original description, although they have not been cross-referenced to indicate that they belong to the same specimen, and therefore, according to ICBN (Art. 40, note 1) (Turland *et al.* 2018) it is appropriate to designate one of them as a lectotype. We designate the specimen B\_10\_0244407 as lectotype, since it presents the inscription “*Brasilia meridionalis*” cited in the protologue and also carries the inscription “ex herb. Kunth”.

**3. *Eriocaulon missionum* A.Cast.** (Castellanos 1945: 88, t. 18A). Type: Argentina, Misiones, Depto. Capital: Posadas, Jan. 1907, *C. L. Spegazzini* s.n. pro parte (lectotype BAF [BAF00000032]!, selected here; epitype: tab. 18A, in *Gen. Sp. Pl. Argent.* 3. 1945, selected here). Image of the lectotype available at: <https://plants.jstor.org/stable/10.5555/al.ap.specimen.baf00000032?searchUri=plantName%3D%2522Eriocaulon%2Bmissionum%2522%26syn%3D1>

**NOTES.** Castellanos (1945: 88) cited the specimen “Misiones, Posadas, leg. Spegazzini I 1907, in parte *Syngonanthus caulescens* (BAF)” as a holotype of *Eriocaulon missionum*. The holotype deposited in BAF is a specimen in very poor condition since it only consists of fragments of roots, leaves and two



Fig. 3. Lectotype of *Syngonanthus anthemiflorus* (Bong.) Ruhland (L. Riedel 1409 [LE00002796]!).



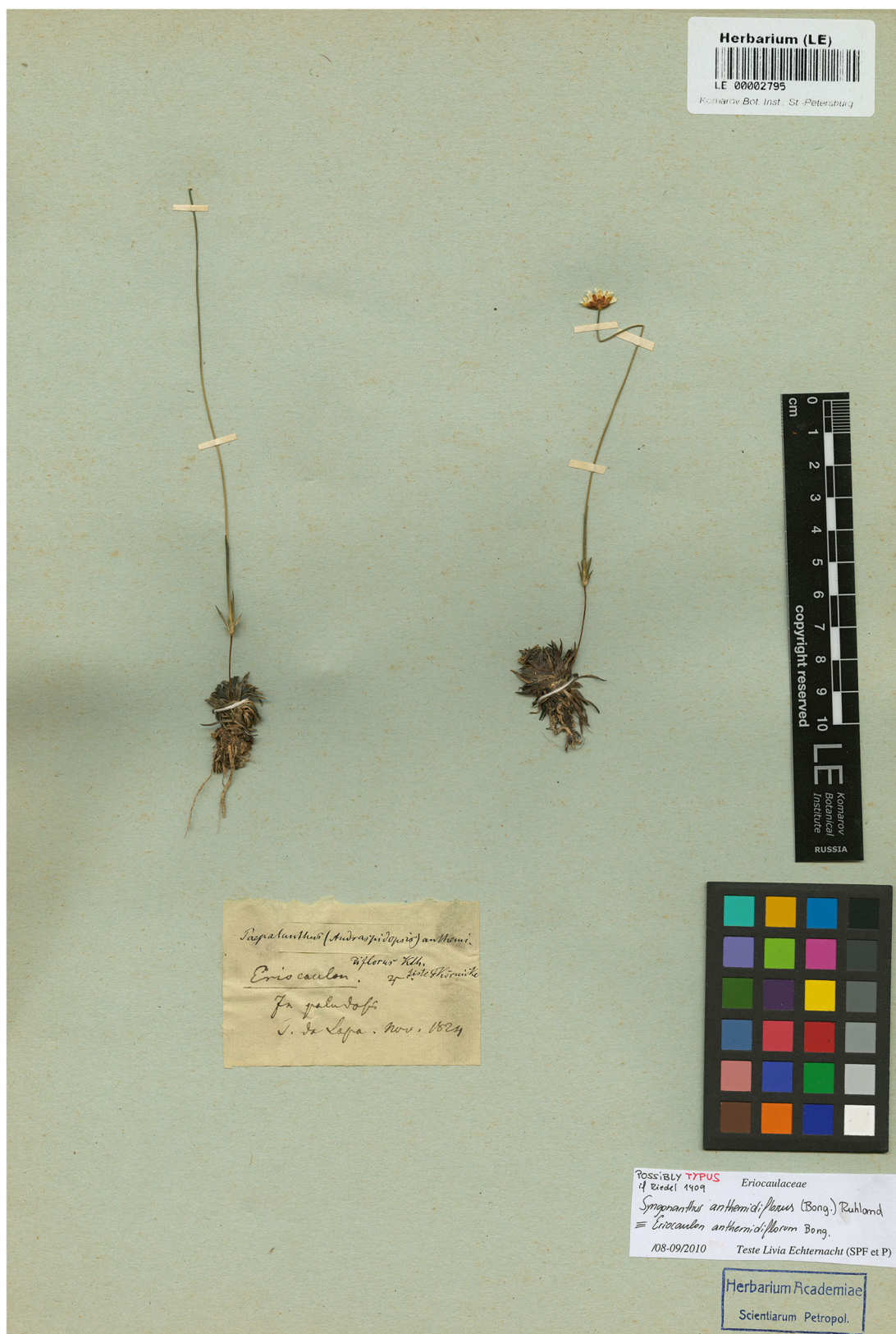


Fig. 4. Isolectotype of *Syngonanthus anthemiflorus* (Bong.) Ruhland (L. Riedel 1409 [LE00002795]!).

inflorescences. This specimen is accompanied by the original drawings published by Castellanos. The original Spegazzini specimen for this species should be in LP (Stafleu & Cowan 1985), where only very poor material is filed under *E. missionum*. This material was collected by Spegazzini s.n. (LP-16240) and judging by the leaf morphology, it belongs to a species of *Syngonanthus* (Fig. 2). Abbiati (1946b: 280) alluded to having seen a specimen that matches the original description made by Castellanos in LP, but the single specimen we have found is the one previously mentioned, which clearly does not match the original description of *E. missionum*. Therefore, it is highly probable that the original material is, in fact, deposited in BAF. As the remaining material is in such poor condition we herein choose an epitype considering it is impossible for the original material to serve as an interpretative type for this species (Art. 9.9) (Turland *et al.* 2018).

**4. *Eriocaulon sellowianum* Kunth (1841: 545).** Type: Uruguay [“Brasilia meridionalis”], Montevideo, *F. Sellow* s.n. [“Ex reliquiis Sellowianis, Humboldt ded. 1836”] (lectotype B [B\_10\_0244385]!, selected here). Image of the lectotype available at <https://plants.jstor.org/stable/10.5555/al.ap.specimen.b%2010%200244385?searchUri=plant-Name%3D%2522Eriocaulon%2Bsellowianum%2522%26syn%3D1>

**NOTES.** Kunth (1841: 545) cited in the protologue of *Eriocaulon sellowianum* “Brasilia meridionalis. (Sellow.)”. According to Stafleu & Cowan (1985), Sellow’s type specimens were deposited in B. Two sheets that match with the location mentioned in the protologue were found in B. To avoid misunderstandings, the specimen B\_10\_0244385 is chosen as a lectotype, firstly because it has the script “ex Herb. Kunth” and secondly because the other specimen B\_10\_0244390 deviates from the original description given by Kunth, primarily by possessing leaves longer than those cited in the protologue. This specimen probably belongs to *E. weddellianum* A.L.R.Oliveira.

*Eriocaulon brevifolium* Mart. ex. Körn. (Körn. 1863: 485), **nom. illegit.** Type: Brazil, without locality, *C. F. P. Martius* s.n. [*Herb. Fl. Bras.* 881] (lectotype M [M0152621]!, selected here; isolectotypes B [B\_10\_0244384]!, NY [NY00102608]!, P [P00570188]!). Image of the lectotype available at [https://plants.jstor.org/stable/10.5555/al.ap.specimen.m0152621?searchUri=filter%3Dname%26so%3Dps\\_group\\_by\\_genus\\_species%2Basc%26](https://plants.jstor.org/stable/10.5555/al.ap.specimen.m0152621?searchUri=filter%3Dname%26so%3Dps_group_by_genus_species%2Basc%26)

[Query%3DEriocaulon%2Bbrevifolium%2BMart.%2Bex%2BK%25C3%25B6rn](#)

**NOTES.** *Eriocaulon brevifolium* is a name attributed to Martius and validly published by Körnicke (1863: 486) who cited the specimen “*Eriocaulon brevifolium* Mart. Hb. Fl. Bras. 881”. We found four sheets corresponding to the collection of Martius s.n. [*Hb. Fl. Bras.* 881] deposited in B and M. According to Stafleu & Cowan (1981), Martius’ types were usually deposited in M, and therefore, because it is the most complete specimen, we designate the specimen M0152621 as the lectotype. *Eriocaulon brevifolium* was published by Körnicke as a synonym of the earlier *E. sellowianum* Kunth, and so was not validly published (Art. 36.1b).

*Eriocaulon paranense* Moldenke (1949: 166).

*Eriocaulon sellowianum* var. *paranense* (Moldenke) Moldenke & L.B.Sm. (Moldenke & Smith 1973: 37). Type: Brazil, Paraná: Florestal, 29 kilometer para este de Curitiba, estrada C-Paranagua, 13 Dec. 1947, *G. Tessmann* 2751 (holotype NY [NY00102650]!).

**NOTES.** Oliveira & Bove (2015: 186) mistakenly cited the specimen Smith *et al.* 15667 (K) as the type of *Eriocaulon paranense* Moldenke. Here, we correct this citation.

**5. *Syngonanthus anthemiflorus* (Bong.) Ruhland (1903: 258).**

*Eriocaulon anthemiflorum* Bong. (Bongard 1831: 636).

Type: Brazil, Minas Gerais: Serra da Lapa, habitat in paludosis, Nov 1824, *L. Riedel* 1409 (lectotype LE [LE00002796]!, selected here; isolectotypes B, BR [BR0000008600912]!, G [G00301758]!, K [K000640205]!, LE [LE00002795]!, OXF, P [P00761881]!, U [U0001811]!, USP). Figs 3 and 4.

**NOTES.** Bongard (1831: 631) cited in the protologue of *Eriocaulon anthemiflorum*: “Habitat in paludosis Serra la Lapa. Floret Novembri”. In LE, where Bongard worked (Stafleu & Cowan 1983), two sheets were found that matched with the type locality. These sheets, did not have a cross reference that indicated that they were derived from the same specimen, and therefore, according to ICBN (Art. 40, note 1) (Turland *et al.* 2018) it is appropriate to designate one of them as a lectotype. For this reason, the specimen LE00002796 is designated as the lectotype as it has the collector’s name and the collection number on the label and it is the most complete and better preserved specimen.



## Additional species

**Eriocaulon arechavaletae** Herter (1935: 125).

*Eriocaulon latifolium* Arechav. (Arechavaleta 1902: 21),  
**nom. illegit.**

**NOTES.** Herter proposed *Eriocaulon arechavaletae* as a new name based on the homonym *E. latifolium* published by Arechavaleta (1902), with a detailed description but without citing any specimen. It was an illegitimate name because it was pre-empted by *Eriocaulon latifolium* Sm. (Smith 1809). Presumably, Arechavaleta's types were deposited in MVM (Stafleu & Menega 1992). Unfortunately we could not verify if such material exists. As we did not have access to any specimen of this species, a typification was not performed at this point.

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