



## Typification of names in *Kaunia* (Asteraceae, Eupatorieae, Oxylobinae)

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### Abstract

During the revision of *Kaunia* (in prep.), we detected names which required typification or whose current typification was incorrect. After the analysis of protologues and original material, we designated six lectotypes and one neotype for seven names currently assigned to *Kaunia*, and we superseded one lectotype. We discuss the details for each case.

**Key words:** Compositae, *Kaunia*, lectotypes, neotype, nomenclatural checklist

### Introduction

The genus *Kaunia* King & Robinson (1980: 257) contains fourteen mostly Andean species, concentrated in Bolivia but extending northward into central Ecuador and southward into Argentina and southern Brazil (King & Robinson 1987). The current species of *Kaunia* had been included in *Eupatorium* Linnaeus (1753: 836) *sensu lato* until this genus was redefined in the series of studies of Eupatorieae by King & Robinson (1980). These authors placed the new genus *Kaunia* in the subtribe Oxylobinae based on various characters, like, for instance, the high chromosome number, large thinner-walled cells of the carpopodium and the cells of the inner surface of corolla lobes noticeably shortened as compared to those of the corolla throat.

During the revision of *Kaunia* (in prep.), we have detected names which need status clarification of their type material in order to assure the correct assignment of specimens in the future research. To proceed with this clarification, we analyzed specimens and photographs from the following herbaria: B, BR, CTES, E, F, G, GH, GOET, K, LD, MO, MOL, MPU, NY, PH, RB, S, US (acronyms from Thiers 2013); when type specimens could have not been studied, their photographs were obtained from <http://plants.jstor.org> or requested from various herbaria. We also consulted the following herbaria searching for duplicates of type specimens: CORD, M, P, RBGE, USM, W, and WU. All the protologues were analyzed. In the text, the type citation for each name refers to the information on the labels of the type material. Typified names are listed alphabetically according to accepted names.

After the analysis of the original material, we designated six lectotypes and one neotype for seven names currently assigned to *Kaunia*, and we superseded one lectotype.

### Nomenclatural checklist

1. *Kaunia camataquiensis* (Hieron.) King & Robinson (1980: 259). Basionym: *Eupatorium camataquiense* Hieronymus (1908: 377).

Lectotype (designated here):—BOLIVIA. Chuquisaca: “Camataqui, 2500 m.”, 10 February 1904, *K. Fiebrig* 3069 (B 10 0366430 [photo!], isolectotypes F 0050145!, fragment GH00007583 [photo!], K 000500260 [photo!], US 00147520 [photo!]).

Two species, *Eupatorium camataquiense* and *Eupatorium grossidentatum* were described in the same work (Hieronymus 1908). In both cases the author provided the following citation of the type material: “Bolivia: crescit prope Camataqui,

alt. s. m. 2500 m loco aquoso (K. FIEBRIG n. 3069 pro parte; 10. M. Febr. 1904)". In the protologues of these two new species, Hieronymus indicated that they are very closely related to each other and have been collected in the same place. He used "pro parte" in both protologues without indication of which "part" he was referring to. An observation of photographs of two specimens collected by Fiebrig (number 3069) destroyed in B (Field Museum, Photo Negative 16223 and 16267, [http://emuweb.fieldmuseum.org/botany/search\\_berlin.php](http://emuweb.fieldmuseum.org/botany/search_berlin.php)) allows identification of the two species based on the characters indicated in the protologues: *E. grossidentatum* ["Laminae rhombeo-ovatae, acutae, parte basali cuneata et summo apice acuto integris exceptis utrinque grosse et irregulariter dentatae (dentibus utrinque c. 4–12, c. 2–5 mm altis, mucronulatis c. 2–5 mm basi latis), subchartaceae, glauco-virides, glaberrimae..."] and *E. camataquiense* ("Laminae ovato-lanceolatae vel e basi breviter cuneata ovatae, acuminatae, mucronatae, integrae vel raro medio marginis obsolete 1–2 dentatae, chartaceae, glabratae...") (Fig. 1A, B). In addition both photographs (Field Museum, Photo Negative 16223 and 16267) show labels indicating "pro parte" (Fig. 1A, B). The photograph with number 16223 shows an additional label that states: "det. Georg Hieronymus" (Fig. 1B). All the information provided on the labels of these two photographs suggests that these destroyed specimens were the basis of Hieronymus's new species. We designated the lectotypes among the duplicate specimens collected by Fiebrig (number 3069) on the basis of the foliar characters indicated by Hieronymus in the protologue (Fig. 1C, D).

2. *Kaunia endyta* (B.L.Rob.) King & Robinson (1980: 259). Basionym: *Eupatorium endytum* Robinson (1919: 13).

Lectotype (designated here):—PERÚ. Puno: "between Sandia and the tambo Azalaya, on the way from Sandia to Chunchusmayo, 1500–2000 m. alt.", 5 June 1902, A. Weberbauer 1074 (Fragment in GH 00007650 [photo!]).

Robinson (1919) included in the protologue an explicit reference to the herbarium that houses the type of *E. endytum*: "Berlin, phot. and frag. Gr.". The holotype was destroyed during World War II (1943), like the majority of the specimens held at B (Sleumer 1949, Hiepko 1987). A photograph of this specimen at B (Field Museum, Photo negative 16249, [http://emuweb.fieldmuseum.org/botany/search\\_berlin.php](http://emuweb.fieldmuseum.org/botany/search_berlin.php)) was found. After consulting different herbaria (including B, MOL and USM), we could not find additional duplicates of the specimen collected by Weberbauer (number 1074). Here we designate the fragment at GH as the lectotype of *E. endytum*, according to Art. 9.12 of the International Code of Nomenclature for algae, fungi and plants (ICN) (McNeill *et al.* 2012), because this specimen was cited in the protologue.

3. *Kaunia grossidentata* (Hieron.) King & Robinson (1980: 259). Basionym: *Eupatorium grossidentatum* Hieronymus (1908: 377).

Lectotype (designated here):—BOLIVIA. Chuquisaca: "Camataqui, 2500 m.", 10 February 1904, K. Fiebrig 3069 (GH00007693 [photo!], isoelectotypes S-R-8999 [photo!], LD 1061796 [photo!], G 00223766 [photo!], SI!).

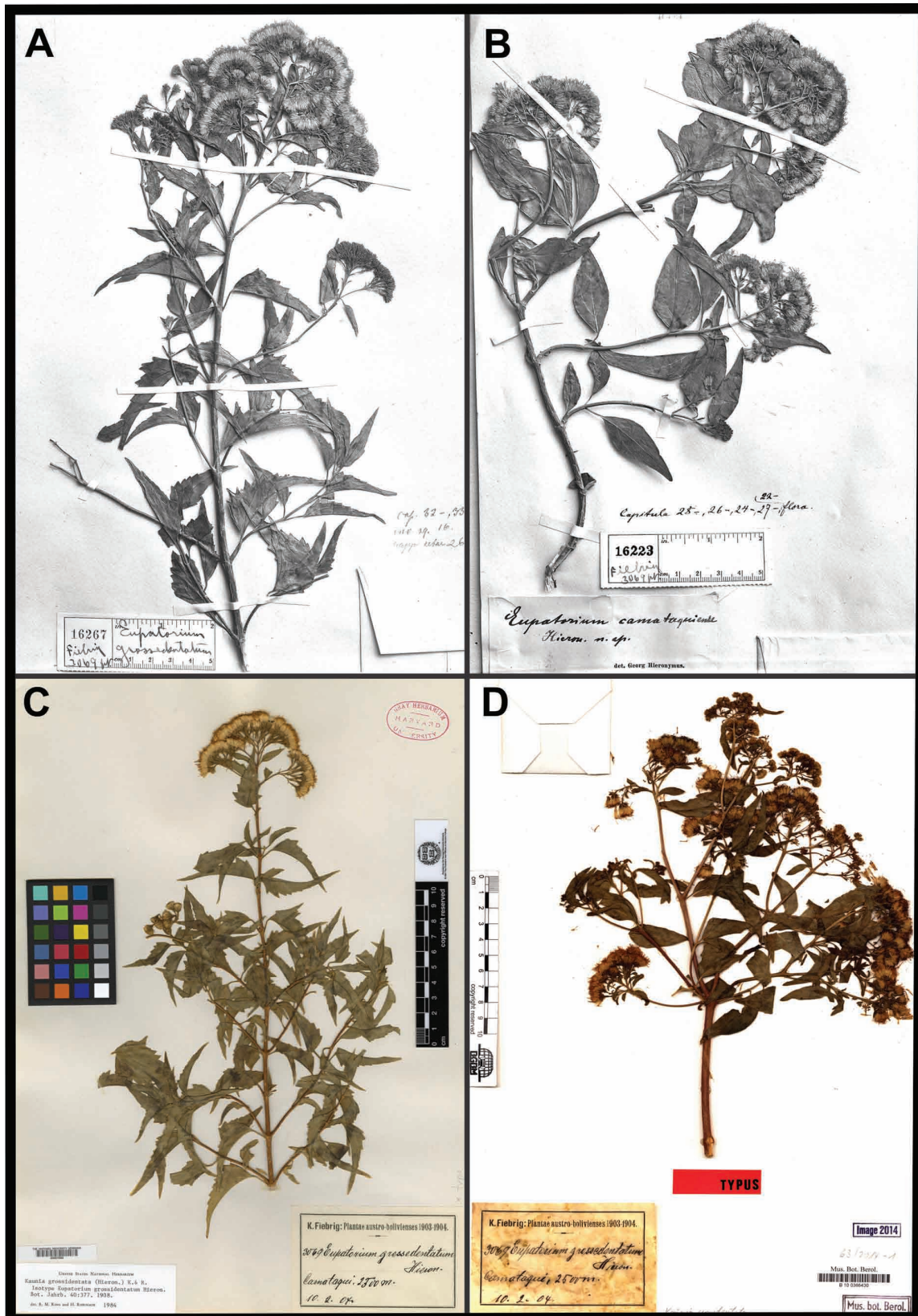
See comments in *Kaunia camataquiensis*. The figure 1A shows the photograph of the destroyed specimen at B (Field Museum, Photo Negative 16267, [http://emuweb.fieldmuseum.org/botany/search\\_berlin.php](http://emuweb.fieldmuseum.org/botany/search_berlin.php)) and the figure 1C shows the chosen lectotype (<http://plants.jstor.org/specimen/gh00007693?s=t>).

4. *Kaunia ignorata* (Hieron.) King & Robinson (1980: 259). Basionym: *Eupatorium ignoratum* Hieronymus (1908: 379).

Lectotype (designated here):—BOLIVIA. "Santa Cruz, 1600 m.", May 1892, O. Kuntze s.n. (NY 00169056!).

Hieronymus (1908) described *Eupatorium ignoratum* on the basis of a specimen collected by O. Kuntze in Santa Cruz (Bolivia). The holotype was destroyed at B, which housed the main collections of Hieronymus (Stafleu & Cowan 1979). After consulting various herbaria, no further duplicates than that of NY were found, and then we proceed to designate the duplicate at NY as lectotype.

Robinson (1920) in "The Eupatorium of Bolivia" mentioned the specimen at NY and cited "alt. 2600 m." perhaps by mistake.



**FIGURE 1.** A. Photograph of the type of *Eupatorium grossidentatum* (Fiebrig 3069 “pro parte”) destroyed at B (Field Museum, Photo Negative 16267, [http://emuweb.fieldmuseum.org/botany/search\\_berlin.php](http://emuweb.fieldmuseum.org/botany/search_berlin.php)). B. Photograph of the type of *E. camataquiense* (Fiebrig 3069 “pro parte”) destroyed at B (Field Museum, Photo Negative 16223, [http://emuweb.fieldmuseum.org/botany/search\\_berlin.php](http://emuweb.fieldmuseum.org/botany/search_berlin.php)). C. Lectotype of *E. grossidentatum* (<http://plants.jstor.org/specimen/gh00007693?s=t>) showing irregularly toothed margins of leaf blades. D. Lectotype of *E. camataquiense* (<http://herbarium.bgbm.org/object/B100366430>) showing entire margins of leaf blades.

5. *Kaunia lasiophthalma* (Grisebach) King & Robinson (1980: 259). Basionym: *Eupatorium lasiophthalmum* Grisebach (1874:167).

Holotype:—ARGENTINA. Tucumán: “Cuesta de Siambón (inter Siambon et Juntas)”, March 1872, P.G. Lorentz 508 (GOET 001519 [photo!], isotypes CORD 00006264 [photo!], CORD 00006265 [photo!]).

Recently, Freire & Ariza Espinar (2014) designated the specimen 508 collected by P.G. Lorentz and deposited in CORD (CORD 00006264) as the lectotype of *Eupatorium lasiophthalmum* Grisebach. Probably, these authors were unaware about the existence of a duplicate of that collection at GOET. Dr. A. Grisebach was Professor at the University of Goettingen from 1837 and was appointed Director of the Botanical Garden there in 1875. A set of P.G. Lorentz collections from Argentina was kept at CORD and another set was sent to GOET where Dr. A. Grisebach had an opportunity to study the Argentinian material (Hunziker 1960). It is unlikely that the specimen at CORD was studied by Dr. Grisebach. On the contrary, the specimen at GOET was undoubtedly studied by this botanist as can be confirmed by his handwritten note indicating the new name of the species in this collection (<http://plants.jstor.org/specimen/goet001519?s=t>). Moreover, the locality indicated on the labels of the specimens of P.G. Lorentz 508 at CORD slightly differs from that indicated in the protologue (i. e. the labels at CORD point out “Garabatal” as part of the locality, instead of “between Siambon et Juntas” as indicated in the protologue and on the GOET specimen). Art. 9.19 of the ICN (McNeill *et al.* 2012) requires that the author who first designates a lectotype must be followed, but that choice is superseded if (a) the holotype is rediscovered. Based on the information above and in agreement with Art. 9.19, we proceed to supersede the lectotype designated by Freire & Ariza Espinar since the holotype of *E. lasiophthalmum* is kept at GOET.

6. *Kaunia longipetiolata* (Sch. Bip. ex Rusby) King & Robinson (1980: 259). Basionym: *Eupatorium longipetiolatum* Sch. Bip. ex Rusby (1893: 52). Homotypic synonym: *Ageratina longipetiolata* (Sch. Bip. ex Rusby) King & Robinson (1972: 92).

Lectotype (designated here):—BOLIVIA: La Paz: “Songo”, November 1890, M. Bang 867 (NY 00169096!, isotype BR 000000531285 [photo!], E 00433267 [photo!], GH 00273957!, GH 00007783 [photo!], MO 714311!, NY 00169095!, PH 00008376 [photo!], US 00610850 [photo!]).

Schultz Bipontinus (1865) first reported this taxon as “*Eupatorium longipetiolatum* Sch. Bip.” based on Mandon’s material (number 257), but this name was a nomen nudum. Rusby (1893) validly published the name indicating Bang’s specimen (“Songo, Nov. 1890 (867) = Mandon 257”) in the protologue, probably as a reference to the similarity between both specimens. In the NY herbarium, the institution to which H.H. Rusby was tightly related, there are two specimens collected by Miguel Bang with the number 867. One of them (number 867, NY 00169096) has the label of “PLANTAE BOLIVIANAE of Miguel Bang”, and a handwritten note indicating “Mandon n° 257 =” beside the number 867 of Bang’s collection. This handwritten note is similar to that in the protologue. The other duplicate collected by Bang (number 867, NY 00169095) does not have the handwritten note referring to the specimen *Mandon 257*. These two Bang’s specimens were treated as holotype and isotype respectively by John Pruski (annotation on the sheet, 1987) and as syntypes by Hind (2011). This last author assumed that the specimen *Mandon 257* was cited as the other syntype by Rusby. For the sake of clarity, hereby we designate as lectotype the specimen *Bang 867* (NY 00169096) because it is well preserved and complete, and probably it is the very one that the author indicated in the protologue. Duplicates of *Mandon 257* at BR, F, GH, MPU, NY, P, S, K and RB were further analyzed.

7. *Kaunia saltensis* (Hieron.) King & Robinson (1980: 260). Basionym: *Eupatorium saltense* Hieronymus (1897: 786).

Neotype (designated here):—ARGENTINA. “Salta: Cafayate, Río Colorado”, 8 January 1972, A. Krapovickas & C.L. Cristóbal 20687 (F 1783063!, isoneotypes CTES 00893 [photo!], GH 00273967!, LP!).

In the protologue, Hieronymus (1897) cited two specimens with different localities, dates and collectors: “Salta: bei der Stadt Salta (LOR. u. HIERON., März 1873). Jujui: an nicht angegebenen Orte vermutlich bei der Stadt Jujui

(AUGUST STUMPF, Sommer 1874–1875)”. The herbarium B housed the main collections of Hieronymus (Stafleu & Cowan 1979). We have found a photograph of the specimen collected by Lorentz and Hieronymus in Salta (Field Museum, Photo Negative 16355, [http://emuweb.fieldmuseum.org/botany/search\\_berlin.php](http://emuweb.fieldmuseum.org/botany/search_berlin.php)) and formerly kept at B. After consulting various herbaria including CORD and B, which hold important collections of specimens collected by Lorentz and Hieronymus, we could not find duplicates of the material cited by Hieronymus in the protologue. Due to apparently no original material is extant, we proceed to designate an appropriate neotype (Art. 9.7). The specimen collected by Krapovickas and Cristóbal (number 20687) at F is complete and well preserved, and agrees entirely with the characteristics indicated by Hieronymus in the protologue. In addition, the designated neotype has duplicates in other herbaria which assures the link of the type gathering to the name in case of the loss of the F material.

8. *Kaunia uber* (B.L.Rob.) King & Robinson (1980: 260). Basionym: *Eupatorium uber* Robinson (1919: 37).

Lectotype (designated here):—PERÚ. Ancash: “woods near a brook, 2100 m, below Pampa Romas, between Samanco and Caraz”, 29 May 1903, A. Weberbauer 3184 (Fragment in GH 00008039 [photo!], islectotype MOL 00006430 [photo!]).

Similarly to the case of *Eupatorium endytum*, B.L. Robinson included in the protologue of *E. uber* an explicit reference to the herbarium that houses the type of this name: “Berlin, phot. and frag. Gr.”. In addition, we found a well preserved and complete duplicate of *Weberbauer 3184* at MOL, that holds duplicates of most Peruvian collections of Dr. A. Weberbauer. We proceed to designate the fragment at GH as lectotype because is the specimen that the author of the species analyzed and cited in the protologue. The fragment at GH is accompanied by a photograph of the specimen that was destroyed in Berlin and has a label handwritten by B. L. Robinson.

## Acknowledgements

We gratefully acknowledge the help of Robert Vogt and Ulrike Starck (B), Gloria Barboza and Jimena Ponce (CORD), María Mercedes Arbo (CTES), Christine Niezgodá (F), Laurent Gautier and Laurence Loze (G), Donald Pfister (GH), Marc Appelhans and María Elena Reiner-Drehwald (GOET), Patrik Frödén (LD), Andreas Fleischmann (M), James Solomon (MO), Carlos Reynel and Aniceto Daza (MOL), Barbara Thiers (NY), Florian Jabbour (P), Adele Smith (RBGE), Mia Ehn (S), Rusty Russell (US), Hamilton Beltran (USM), Armin Löckher and Ernst Vitek (W), and Walter Till (WU), by the loan of materials, or by providing images or information about the presence of type specimens in their herbaria. We thank Alexander Sennikov for his very useful editorial work. The photographs of the materials in Figure 1 are reproduced with permission from Field Museum Website, JSTOR and Virtual Herbarium Berolinense. This work was supported by Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET).

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