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TYPIFICATIONS IN *VERBENA* (VERBENACEAE)

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Abstract. O'Leary, N. 2006. Typifications in *Verbena* (Verbenaceae). *Darwiniana* 44(2): 493-499.

One neotype and fourteen lectotypes are here designated for fifteen names of *Verbena*. In addition, typification of *Verbena nudiflora* is also clarified. Photographs of Sellow collections here designated as lectotypes are included.

Keywords. Lectotypes, neotypes, types, *Verbena*, Verbenaceae.

Resumen. O'Leary, N. 2006. Tipificaciones en *Verbena* (Verbenaceae). *Darwiniana* 44(2): 493-499.

Un neotipo y catorce lectotipos son designados aquí para quince nombres de *Verbena*. Se aclara además la tipificación de *Verbena nudiflora* y se incluyen fotografías de los ejemplares de Sellow designados como lectotipos.

Palabras clave. Lectotipos, neotipos, tipos, *Verbena*, Verbenaceae.

INTRODUCTION

Verbena L. was originally described by Linnaeus (1753) with 14 species. Several authors worked on *Verbena* later and increased the number to 650-700 taxa (Kunth, 1818; Martens & Galeotti, 1844; Schauer, 1847; Briquet, 1895; 1904a; 1904b; 1904c; 1907; Perry, 1933; Moldenke, 1940; 1947-1959; 1962-1964; 1971; 1973; 1976-1982; Yeo, 1990; Michael, 1995; 1997). Many taxa were transferred later (Schnack & Covas, 1944; Troncoso, 1968, 1975; Umber, 1979; Botta et al., 1995) into the neighbouring genera *Glandularia* Gmelin and *Junellia* Moldenke. Currently *Verbena* includes ca. 50 taxa (Sanders, 2001; O'Leary et al., sine data), organised into two main groups: the North American taxa, mainly belonging to sect. *Verbena*, and the South American taxa belonging mainly to sect. *Pachystachyae* Schauer. During a taxonomical revision of *Verbena*, several names were found requiring typification, most of them as a consequence of the destruction of the Verbenaceae types from the Herbarium Berolinense (B) during the Second World War. Therefore, this work presents the lectotypes and neotypes here designated for fifteen *Verbena* taxa.

MATERIALS AND METHODS

Verbena was studied during the late 1970s by Nélida Troncoso of the Darwinion Institute at San Isidro, Argentina. She visited European and North American herbaria and saw many Verbenaceae types. All Troncoso's notes and, in many cases, fragments of type material (now isotypes) are deposited at the Darwinion Institute (SI). This material was of great help because, together with a photograph or image of the type, it was in many cases enough to decide about typification problems. Photographs and digital images of the type specimens together with additional material from many North American and European herbaria were examined on loan (BR and K), and by e-mail (BM, G, NY, and P), and/or downloaded from available websites on the internet (NY: www.scisun.nybg.org:8890/searchdb/owa/wwwspecimen.searchform; US: www.ravenel.si.edu/botany/types). Each obtained image was deposited in the herbarium of Darwinion Institute. Collections deposited at the main herbaria from Argentina (BA, BAB, BAF, CTES, CORD, LP, SI) and Paraguay (AS, FCQ, PY) were examined to look for any possible duplicate or original material. Additionally, the

Darwinion Institution possesses many photographs, of the MacBride series from the Field Museum, of the type specimens formerly deposited at B. These are annotated: "FM xxx", the x refers to the photograph number. Sellow specimens chosen as lectotypes are here shown as photographs (Figures 1, 2), to avoid confusion due to their lack of numbers. Sometimes, herbaria have identification numbers and/or letters to designate the specimen; in this case it is given after the herbarium acronym (i.e. G 8696/270).

TAXONOMIC TREATMENT

- 1. *Verbena alata*** Otto ex Sweet, Brit. fl. gard. IV, 2nd. Ser., vol. 1: pl. 41. 1831. TYPE: Illustration from Sweet 1831, in Brit. fl. gard. IV, 2nd. Ser., vol. 1: pl. 41. (lectotype here designated; holotype unknown).

Sweet did not indicate the specimens employed to describe the species. Although Moldenke (1961: 146) suggested that the type should be in K, stating Sellow sent Otto seeds collected in Montevideo in 1827, it was impossible to locate it. So the illustration that comes with the protologue has been chosen as lectotype (Art. 9.10; Greuter et al., 2000).

- 2. *Verbena bonariensis*** L. var. ***brevibractea*** Kuntze, Revis. gen. pl. 3(2): 254. 1898. TYPE: Argentina. Tucumán, Sierra de la Cuesta del Garrabal, 30-I-1874, *P. Lorentz et G. Hieronymus* 853 (lectotype NY here designated, photo SI!; isolectotypes CORD!, SI!).

In the protologue of this variety Kuntze cited three syntypes: "Argentina, Tucumán; Brasilia, Contendas; Uruguay, Montevideo". The Otto Kuntze herbarium was purchased by Andrew Carnegie for NY, so it is reasonable to assume that his types are housed there. At NY there are two of the three syntypes, the one from Argentina and the one from Brazil; the material from Uruguay is housed at US. A duplicate of the specimen from Argentina is also housed at CORD (since Lorentz was a pro-

fessor of Botany at Córdoba University) and SI. The specimen from Argentina is the more widely distributed, and the one that best matches the description in the protologue, so it is chosen here as the lectotype, following Dr. Zanoni's selection on an herbarium sheet in 2003. There are three duplicates of this material, the one in NY is selected because Kuntze probably worked with that specimen, and it is in a better state of conservation than the one from CORD; the one from SI is just a fragment from the one at NY. The handwriting on the sheet of the lectotype dates from Kuntze's time, and Dr. Zanoni (pers. comm.) thinks it could certainly belong to Kuntze. There is no other recent writing on it suggesting that it was not recognized as a type specimen before, not even by Harold Moldenke, during his revision of the genus *Verbena* (Moldenke, 1962-4, 9:376).

Paratypes

BRAZIL. **Contendas**, Minas, XII-1892 (NY, photo SI!).

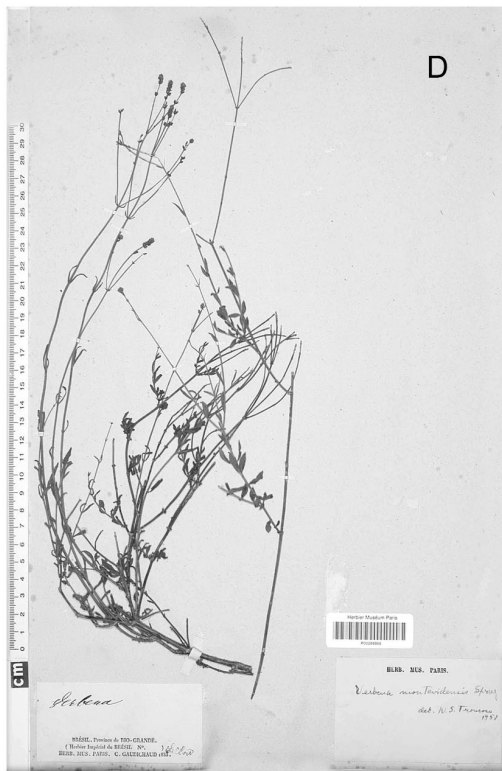
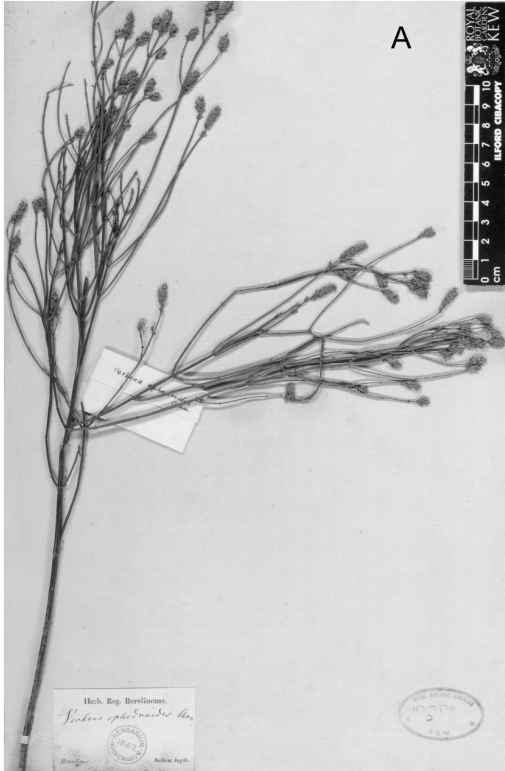
URUGUAY. **Montevideo**, 7-XII-1891 (US, photo SI!).

- 3. *Verbena caracasana*** Kunth, Nov. gen. sp. (quarto ed.) 2: 275. 1818. TYPE: Venezuela. Caracas, *Humboldt & Bonpland* 658 (lectotype P here designated, photo SI!; isolectotype SI!; holotype B destroyed).

The protologue of this species says "Crescit rarissime in sylvaticis prope Caracas..." Most of Humboldt and Bonpland's collection is deposited at B and P; the holotype of *Verbena caracasana* was deposited at B and is now destroyed, so the lectotype is chosen from original material found at P.

- 4. *Verbena ephedroides*** Cham., Linnaea 7: 260. 1832. TYPE: Brazil. Without locality, *Sellow s.n.* (lectotype K here designated, photo SI!; isolectotype SI!; holotype B destroyed). Fig. 1A.

Fig. 1. Sellow collection lectotypes. **A**, *Verbena ephedroides* Cham. **B**, *V. gracilis* Cham. **C**, *V. hirta* Spreng. **D**, *Verbena ovata* Cham.



The specimen from K is an isotype from the destroyed holotype, since it bears a label "Herb. Reg. Berolinense", and the data is consistent with the protologue indication: "E Brasilia misit Sellowius..."; besides, the plant material is similar to the destroyed holotype seen in the photograph FM 17415.

5. *Verbena filicaulis* Schauer, Prodr. 11: 549. 1847. TYPE: Brazil. São Paulo, 1834, *Lund 823* (lectotype G here designated, photo SI!; isolectotype SI!).

Schauer mentioned three syntypes in the protologue, all from Brazil: "prov. S. Pauli (Lund!) et Minarum Generalium (Sellow! Khotsky!)" The specimen *Lund 823* (G) was chosen as lectotype because it best matches the description in the protologue; there is a photograph (FM 7854) from this specimen. Moldenke (1962-64, 9: 120) had already established that *Verbena filicaulis* was based on 3 different collections, and he was the first one to introduce the numbers *Lund 823* and *Sellow 28*, associated to each collection, and stated that it was *Lhotsky* and not *Khotsky*. These numbers must have been omitted by Schauer in the protologue.

Paratype

BRAZIL. *Sellow 28* (NY, photo SI!, SI!).

6. *Verbena gracilis* Cham., Linnaea 7: 261. 1832. TYPE: Brazil. Without locality, *Sellow s.n.* (lectotype K here designated, photo SI!; isolectotype BR, photo SI!; holotype B destroyed). Fig. 1B.

The protologue indicates: "In Brasilia meridionali, Campo de Tacagua Grande, aliisque locis. Sellow"; this type was certainly deposited at B and now destroyed. The specimen from K has a label "Museum Botanicum Berolinense" and another one "*Verbena gracilis* n. Sellow Bras. Merid.", the letter "n" used by Chamisso to designate type specimens of his new species, so it is certainly original material.

7. *Verbena hirta* Spreng., Syst. Veg. 2: 749. 1825. TYPE: Uruguay [Brazil]. Without loca-

lity, *Sellow s.n.* (lectotype K here designated, photo SI!; holotype B, destroyed). Fig. 1C.

The destroyed holotype from B, photograph FM 17420, had a label that read "Brasil", nevertheless the protologue indicates "Monte Video. Sello" (Montevideo is now in Uruguay). This is so, because at that time Montevideo was part of Brazil, in the province of Rio Grande do Sul. The material from K has a label that reads "*Sellow, Brasil*", it is an adequate lectotype, and is here chosen.

8. *Verbena intercedens* Briq., Bull. Herb. Boissier, sér. 2, 4: 1057. 1904. TYPE: Paraguay. Cordillera. Caraguatay, 1898-1899, *E. Hassler 3324* (lectotype G 8696/270 here designated, photo SI!; isolectotypes G 8696/271 photo SI!, K photo SI!, SI!).

Verbena intercedens was originally based on two syntypes: *Hassler 3324* and *Hassler 6149*. Briquet worked at Geneva, so the lectotype should be selected from original material housed at that herbarium. *Hassler 3324* is housed at G, and there are two sheets, G: 8696/271 without the inflorescence, therefore inadequate for identification of the species; G 8696/270 with the labels "*Verbena intercedens* Briq.=*V. bonariensis* x *ovata*", and "det. John Briquet anno 1904", this one was chosen as lectotype. *Hassler 6149* was not found at G, because it was possibly deposited at B and now destroyed, as the existence of the photograph FM 17422 suggests.

Paratype

PARAGUAY. **Cordillera**. Cerros de Tobaty, X-1900, *E. Hassler 6149* (K, photo SI!; NY, photo SI!; P; SI!).

9. *Verbena nudiflora* Nutt. ex Turcz., Bull. Soc. Imp. Naturalistes Moscou 36(2): 195. 1863. TYPE: Sandwich Isles. Ouan, *Nuttall s.n.* (holotype BM, photo SI!).

Turczaninow indicated in the protologue "in insula Sandwicensi Wahoo lecta", but did not mention where the type was housed. Following Rec. 9A. 4 (Greuter et al., 2000), the holotype is presumed to be housed at the institution where the author of the species worked. Thomas Nuttall's

types are deposited at BM; Turczaninow worked from 1832 till 1835 at the "Academy of Sciences" in London, where he might have studied the specimen collected by Nuttall, and later, in 1863, published his new species. Even if Turczaninow's types are mainly at KW and LE, LE answered they did not have the type, and it has been impossible to make contact with KW. The specimen from BM bears a determination label "*Verbena officinalis*" by Harold St. John, dated 1950. There is another label that reads "*Verbena * nudiflora*, Ouan (?) Sandwich Isles" with something illegible underneath, deleted. The label in the centre of the sheet is annotated "*Verbena * nudiflora*, (illegible), Sandwich Isles". Both this and the previous label appear to be in the same handwriting and are probably original labels (Steve Cafferty, pers. comm.) The reverse of the sheet is annotated Herb. Nuttall.

- 10. *Verbena ovata*** Cham., *Linnaea* 7: 263. 1832. TYPE: Brazil. Without locality, *Sellow s.n.* (lectotype K here designated, photo SI!; isolectotypes BR, photo SI!; SI!; holotype B destroyed). Fig. 1D.

There is a photograph (FM 17435) from the destroyed holotype that bears a label "Brasilia, *Sellow 3671*"; nevertheless Chamisso indicated in the protologue: "E Brasilia misit Sellowius" without a number. There is a specimen from BR with a label "Herb. Reg. Berolinense", and "*Verbena ovata* n Brasilia, Sellow legit", this specimen has the leaves a bit eaten. There is also a specimen at K with a label "*Verbena ovata* n, Sellow, Brasilia"; Both specimens have the typical "n" from Chamisso's new taxa and are original material, the K type is here chosen, because it suits best the protologue and is a better preserved material.

- 11. *Verbena pinnatisecta*** Schauer, *Prodr.* 11: 549. 1847. TYPE: Brazil. Without locality, *Sellow 4874* (lectotype K here designated, photo SI!; isolectotype SI!).

In the protologue Schauer mentioned two collections from Brazil, one from *Sellow*, the other from *Riedel*. The *Riedel* specimen could not be found, the *Sellow* one was deposited at B, now destroyed, but there is a photograph (FM 17439)

of it with a label "Sellow Brasilia, *Verbena pinnatisecta* Schauer! 20". In K there is a specimen with no original labels, just the indication "ex Museo botanico Berolinensi" and with the number "4874". This specimen is part of the original collection of Sellow, certainly seen by Schauer because of his cursive addition of the number 4874; so, even if it does not share the number 20 with the destroyed holotype, it was chosen as lectotype (Art. 9.10; Greuter et al., 2000).

- 12. *Verbena rugosa*** D. Don in Sweet, *Brit. fl. gard.* VII, 2nd. ser., vol. 4: pl. 318. 1837. TYPE: Illustration from Sweet 1837 in *Brit. fl. gard.* VII, 2nd. ser., vol. 4: pl. 318. (lectotype here designated; holotype unknown).

The selected drawing is based upon a plant, whose actual location is unknown, grown at the Birmingham Botanic Gardens from seeds brought from Buenos Aires, Argentina. Munir (2002) chose this illustration as type, but did not use the word "lectotype", as established in the Code (Art. 9.21; Greuter et al., 2000), so this was not a valid lectotypification.

- 13. *Verbena sagittalis*** Cham., *Linnaea* 7: 259. 1832. TYPE: Brazil. Rio Grande do Sul, 1833, *C. Gaudichaud 521* (neotype P 00289956 here designated, photo SI!).

The reference to the type of this taxa in the protologue indicates: "E Brasilia misit Sellow". The holotype was probably deposited at Berlin, as most of Chamisso's types, and now destroyed, and unfortunately it was never photographed. It has been impossible to locate any original material and, according to the Code (Art. 9.15; Greuter et al., 2000) a neotype should be selected, preferably from the original region and in agreement with the protologue. The only material found from Brazil, that agrees entirely with the description at the protologue is a specimen housed at P. This specimen has a label: "*V. sagittalis* Chamiss. Brésil. Province de Rio-Grande. (Herbier Impérial du Brésil N° 521) Herb. Museo de Paris. C. Gaudichaud 1833" most certainly not original because the species is from 1832 and the label says 1833. It also bears a note indicating "Isotype", and another label that reads: "*V. sagittalis* Chamisso leg. Sellow"; both which might have been put by



Fig. 2. Sellow collection lectotype of *V. strigosa* Cham.

Troncoso (the handwriting matches hers). This specimen was here chosen as neotype.

14. *Verbena scabra* Marnock., Floric. Mag. & Misc. Gard. 5: 87, pl. 54, fig. 3. 1840. TYPE: Illustration in the Floric. Mag. & Misc. Gard. 5: 87, pl. 54 fig 3. 1840 (lectotype here designated).

Marnock cites no type material in the protologue, just the indication that the picture was drawn from a specimen that grew at the nursery. Munir (2002) suggested that the type should be this drawing, but made no formal lectotypification, following Article 9.21 (Greuter et al., 2000), so it is here formally lectotypified.

15. *Verbena strigosa* Cham., Linnaea 7: 256. 1832. TYPE: Brazil. Without locality, *Sellow s.n.* (lectotype K here designated, photo SI!;

isolectotypes BR, photo SI!, P 00289960, photo SI!; holotype B destroyed). Fig. 2.

Chamisso indicates in the protologue “*Brasilia. Sellow*” and the photograph (FM 17448) from the destroyed holotype bears a label “*Verbena strigosa n, Sellow Brasilia*”, with the typical letter “n” used by Chamisso to designate new species. The specimen at P, as well as the one at K and at BR, bear a label “Herb. Reg. Berolinense”, so they are all duplicates from the destroyed holotype from B. The one from K is here chosen because it is a good specimen for lectotypification, with a label that reads exactly the same as the one in the destroyed holotype, written in the same handwriting, probably Chamisso's.

16. *Verbena tandilensis* Speg., Contr. fl. Tandil: 41. 1901. TYPE: Argentina. Buenos Aires, Tandil, 1/1901, *C. Spegazzini 2409* (lectotype LP! here designated).

Spegazzini did not specify any type; Troncoso (1939) mentioned *Spegazzini 2408* and *2409* from LP as “cotypes”, a term that is inadequate, according to the *Code*, meaning syntypes. Spegazzini worked at LP and his types are deposited there. The two specimens referred by Troncoso are the only material found at LP related to this taxon, both bearing Spegazzini's handwriting. *Spegazzini 2409* is the more complete material so it was chosen as lectotype.

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