

LECTOTYPIFICATION OF SEVEN NAMES IN *AMARANTHUS*

NÉSTOR D. BAYÓN¹ y SUSANA E. FREIRE^{1,2}

Summary: Typification is provided for seven names of American and African species of *Amaranthus* as a nomenclatural contribution to a forthcoming taxonomic revision of this genus.

Key words: *Amaranthus*, lectotypification, nomenclature.

Resumen: Lectotipificación de siete nombres en *Amaranthus*. Se tipifican siete nombres pertenecientes a especies de *Amaranthus* originarias de África y América como una contribución nomenclatural a una próxima revisión taxonómica del género.

Palabras clave: *Amaranthus*, lectotipificación, nomenclatura.

INTRODUCTION

The genus *Amaranthus* L. (1753) was originally circumscribed to include 11 species. The genus today includes about seventy species (Costea *et al.*, 2001; Palmer, 2009) and represents the largest pantropical genus in Amaranthaceae, with the center of diversity occurring in America, and few species in Australia, Africa and Eurasia. In the course of ongoing studies for a monograph of the genus, almost all known herbarium collections were examined, and type material of nearly all names that pertain to taxa currently included in *Amaranthus* has been located. The purpose of this paper is to designate lectotypes for seven names of genus *Amaranthus*.

MATERIALS AND METHODS

The protologues of all typified names have been examined and original material has been located in the herbaria AAU, B, BA, BAB, CORD, CTES, K,

LIL, LP, LPAG, MO, NBG, NSW, NY, SI, US and Z (abbreviations according to Thiers, 2011). Online or e-mail images of type specimens from B, BISH, BM, BOLO, CAS, EA, G, GH, HAL, LINN, LY, M, MEL, MICH, MO, NY, OXF, P, PH, PR, TEX, UC, UPS, US and Z were also available.

NEW TYPIFICATIONS

Amaranthus blitoides S. Watson var. *densifolius* Uline & W. L. Bray, *Bot. Gaz.* 19: 315. 1894. [= *Amaranthus blitoides* S. Watson]. – Lectotype (designated here by Bayón): United States of America. Arizona, Hackberry, 18-IX-1883, H. H. Rusby 804 (NY 00951459!; duplicates, NY 951458!, MICH 1207149, photo LPAG!, US 00106234, photo LPAG!).

Uline & Bray (1894) mentioned two syntypes in the protologue of *Amaranthus blitoides* var. *densifolius*, “Arizona, Hackberry, Rusby 804” and “Colorado, Greene 614”. Since the syntype *Greene 614* was not found, the collection *Rusby 804* kept at NY 951459, which is in accordance with the protologue and it is better preserved is selected as the lectotype.

Amaranthus buchtienianus Thell., *Repert. Spec. Nov. Regni Veg.* 21: 323. 1925.[= *Amaranthus*

¹ Área de Botánica, Departamento de Ciencias Biológicas, Facultad de Ciencias Agrarias y Forestales, Universidad Nacional de La Plata, calle 60 y 119, 1900 La Plata; nbayon@isis.unlp.edu.ar (author for correspondence).

² Instituto de Botánica Darwinion, Labardén 200, CC 22, B1642HYD San Isidro, Buenos Aires.

asplundii Thell.]. – Lectotype (designated here by Bayón): Bolivia. Dep. La Paz, Prov. Murillo, Sopocachi, ca. 3600 m, 27-4-1921, E. Asplund 3838 (S R-254!; duplicate, Z 240!).

The protologue of *Amaranthus buchtienianus* includes two syntypes, "Bolivia: La Paz, Straße in Sopocachi, E. Asplund N° 3838" and "Dep. Postosí, Prov. Sur Chichas, Atocha, Rüderalland in der Nähe der Eisenbahnstation, E. Asplund N° 2988" (S R-253!). The collection E. Asplund 3838 kept at S, which has well-developed leaves and inflorescences, is selected as the lectotype.

Amaranthus capensis Thell. in Asch. & Gräbner, *Syn. Mitteleur. Fl.* 5(1): 293. 1914. – Lectotype (designated here by Bayón): Germany. Saxony-Anhalt, Rodleben, near Rosslau, 1-VIII-1908, A. Zobel s.n. (Z 241!).

Thellung (1914) mentioned two syntypes in the protologue of *Amaranthus capensis*, one from South Africa, "Kaplande, Ecklon & Zeyher 88" and the other from Germany, "Hautwollfabrik Rodleben bei Rosslau (Anhalt), 1-VIII-1908, A. Zobel". Brenan (1981) selected the first one, *Ecklon & Zeyher 88*, as the lectotype, expressing explicitly that he has not seen this specimen. The lectotype *Ecklon & Zeyher 88* has not been found at NBG, S or STR where the original herbarium of Ecklon & Zeyher should be. Therefore, the collection *Zobel in 1908* kept at Z, which agrees in all respects with the protologue of *Amaranthus capensis*, is selected as the lectotype.

Amaranthus dinteri Schinz var. *uncinatus* Thell., *Repert. Spec. Nov. Regni Veg.* 13: 79. 1913. [= *Amaranthus capensis* Thell. subsp. *uncinatus* (Thell.) Brenan]. – Lectotype (designated here by Bayón): Germany. Lower Saxony, Döhren, near Hanover, VII-1911, J. Scheuermann s. n. (Z 245!).

The protologue of *Amaranthus dinteri* var. *uncinatus* includes two syntypes from Germany, "verschleppt in Deutschland: Spremberg (Lausitz), *Riese, 1890*" and "Hannover: Döhrener Wollwäscherei seit einigen Jahren, Scheuermann,

1911". Since the syntype *Riese in 1890* was not located, the collection *Scheuermann in 1911* kept at Z is proposed as the lectotype.

Amaranthus graecizans var. *pubescens* Uline & W. L. Bray, *Bot. Gaz.* 19: 317. 1894.

[= *Amaranthus albus* L.]. Lectotype (designated here by Bayón): United States of America. New Mexico, near Silver City, 16-VII-1880, E. L. Greene 185 (GH 00036994!, on the left side and below; duplicate NY 00324452!).

Uline & Bray (1894) mentioned six syntypes from United States of America: *Nevada*, "Empire City, Torrey 457 in 1865", "San Francisco Mts., Knowlton 198 in 1879", New Mexico "place unknown, Fendler 731 in 1847", "New Mexico, Silver City, Greene 185 in 1880", "Camp Bache, Bigelow in 1852", and "Arizona, Flagstaff, Jones 3978 in 1884". The collections of *Jones 3978* and *Bigelow in 1852* have not been found. After a careful analysis of the remaining specimens, the syntype *Greene 185* kept at GH is proposed as lectotype of *Amaranthus graecizans* var. *pubescens*, which is in accordance with the protologue and presents the most complete plant.

Amaranthus thunbergii Moq. in DC., *Prodr.* 13(2): 262. 1849. – Lectotype (designated here by Bayón): South Africa. "Amaranthus albus alfa, in cultis Cap. b. Spei. Thunberg", C. P. Thunberg 22237 (UPS, not seen; photo LPAG!).

According to the protologue, *Amaranthus thunbergii* was based on specimens of Thunberg from the herbarium of Hooker and Krauss, "Ad caput Bonae-Spei (Thunb. herb. Hook. Krauss!)". Since no specimens of Thunberg have been found at K –where the original herbarium of Hooker should be– and B (probably destroyed), the collection Thunberg 22237 from UPS is suggested as lectotype. Although unfortunately the study of this specimen was not possible, a detailed analysis of the image shows that the floral features are completely in agreement with the species (awned bracts, bracteoles and sepals; widest part of sepals in the lower half). In addition, this sheet

is selected because: 1) according to the curator of UPS (Hjertson, comm. pers.) the handwriting on the sheet belongs to Thunberg, and 2) the place of collection is the same mentioned in the protologue.

Euxolus emarginatus A. Braun & C. D. Bouché, *Index Sem. (Berlin)* 4, 13. 1851, hom. illeg. [= *Amaranthus acutilobus* Uline & W. L. Bray]. – Lectotype (designated here by Bayón): Mexico. A. Braun s.n., 1851 (MO 1740841!).

The holotype deposited at Berlin was destroyed and three isotypes are located at MO. It was possible to analyze the sheet of MO number 1740841 and the images of the other two (MO 37555 and MO 1740843). The first one of these isotypes is chosen as the lectotype since it bears a complete specimen with leaves, flowers of both sexes and fruits and it is in accordance with the protologue.

ACKNOWLEDGEMENTS

Thanks are due to the curators of the following herbaria: GH, MO, NY, S, UPS and Z. We are also grateful to Thomas A. Zanoni (NY) for providing digital images and to Mats Hjertson

(UPS) for digital images, bibliography and valuable comments.

BIBLIOGRAPHY

- BRENAN, J. P. M. 1981. The genus *Amaranthus* in southern Africa. *J. S. African Bot.* 47: 451-492.
- COSTEA, M., A. SANDERS & G. WAINES. 2001. Preliminary results toward a revision of the *Amaranthus hybridus* species complex (Amaranthaceae). *Sida* 19: 930-974.
- LINNEO, C. 1753. *Species Plantarum*. 1st ed. Holmiae: impensis L. Salvii, 1753.
- PALMER, J. 2009. A conspectus of the genus *Amaranthus* L. (Amaranthaceae) in Australia. *Nuytsia* 19: 107-128.
- THELLUNG, A. 1914. *Amaranthus*. In: P. Ascherson & P. Gräbner (eds.), *Synopsis der Mitteleuropäischen Flora* 5(1), pp. 225-356. Leipzig.
- THIERS B. 2011. Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. <http://sweetgum.nybg.org/ih/>: 19.04.2011.
- ULINE, E. B. & W. L. BRAY. 1894. A preliminary synopsis of the North American species of *Amaranthus*. *Bot. Gaz.* 19: 313-320.

Recibido el 20 de diciembre de 2010, aceptado el 9 de Mayo de 2011.

