

Typification of the name *Johnstonella* (Boraginaceae)

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DOI <http://dx.doi.org/10.12705/634.8>

Abstract The genus *Johnstonella* Brand was published in 1925, as a segregate genus of *Cryptantha* (Boraginaceae). Brand included two species, *J. racemosa* and *J. inaequata*, in his treatment. Johnston, in the same year, indicated *J. racemosa* as the type of *Johnstonella*. However, Johnston's publication predated Brand's; therefore, Johnston's typification is not effective. Although *Johnstonella* has generally not been accepted by taxonomists, it has recently been resurrected based on molecular phylogenetic studies. Because of the need for a type for the genus, we designate the type of *Johnstonella racemosa* as the type of *Johnstonella*.

Keywords Boraginaceae; *Cryptantha*; *Johnstonella*; *Johnstonella racemosa*; type

The genus *Johnstonella* Brand (1925) (Boraginaceae) was named in honor of Ivan M. Johnston, an expert in the family Boraginaceae and author of numerous publications on that group. Brand (1925) recognized two species in the genus, *J. racemosa* (A.Gray) Brand (\equiv *Eritrichium racemosum* S.Watson ex A.Gray) and *Johnstonella inaequata* (I.M.Johnst.) Brand (\equiv *Cryptantha inaequata* I.M.Johnst.). Brand (1925) also effected the combination *Johnstonella racemosa* var. *lignosa* (I.M.Johnst.) Brand (\equiv *Cryptantha racemosa* (A.Gray) Greene var. *lignosa* I.M.Johnst.).

After Brand's (1925) publication, *Johnstonella* was largely treated as a synonym of *Cryptantha* Lehm. ex G.Don. However, a recent molecular phylogenetic study by Hasenstab-Lehman & Simpson (2012) supported splitting the genus *Cryptantha* s.l. into five genera: *Cryptantha* s.str., *Eremocarya* Greene, *Greeneocharis* Gürke & Harms, *Johnstonella*, and *Oreocarya* Greene. Thus, the genus *Johnstonella* was resurrected, consisting of the two species included in Brand's original circumscription plus an additional eleven species (one with three varieties) recently transferred to *Johnstonella* from *Cryptantha* (Hasenstab-Lehman & Simpson, 2012) (see Table 1). In addition to forming a strongly supported clade, *Johnstonella* is morphologically distinguishable from *Cryptantha* s.str. and other close relatives in having nutlets that are usually triangular or ovate (rarely lance-ovate) in shape, usually with a "knife-like", sharply angled, and often narrowly winged (rarely rounded) margin and a sculpturing consisting of prominent, regularly spaced, whitish tubercles, the nutlets of most species being heteromorphic in size and shape (Hasenstab-Lehman & Simpson, 2012).

In the original description of *Johnstonella*, Brand did not designate a type for the genus. However, Johnston (1925: 21)

Table 1. Currently accepted species and varieties in *Johnstonella*.

<i>J. angelica</i> (I.M.Johnst.) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. angustifolia</i> (Torr.) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. costata</i> (Brandege) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. diplotricha</i> (Phil.) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. echinosepala</i> (J.F.Macbr.) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. fastigiata</i> (I.M.Johnst.) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. grayi</i> (Vasey & Rose) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. grayi</i> (Vasey & Rose) Hasenstab & M.G.Simpson var. <i>grayi</i>
<i>J. grayi</i> var. <i>cryptochaeta</i> (J.F.Macbr.) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. grayi</i> var. <i>nesiotica</i> (I.M.Johnst.) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. holoptera</i> (A.Gray) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. inaequata</i> (I.M.Johnst.) Brand in Repert. Spec. Nov. Regni Veg. 21: 249. 1925
<i>J. micromeres</i> (A.Gray) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. parviflora</i> (Phil.) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. pusilla</i> (Torr. & A.Gray) Hasenstab & M.G.Simpson in Syst. Bot. 37: 754. 2012
<i>J. racemosa</i> (A.Gray) Brand in Repert. Spec. Nov. Regni Veg. 21: 249. 1925

stated: “The genus *Johnstonella* is being proposed by Brand to include certain species thought to be generically ambiguous. *Cryptantha racemosa*, the type species, is said to have ...” Based on this statement by Johnston, Hasenstab-Lehman & Simpson (2012) stated in their synopsis of the resurrected genus: “Two species, one with two varieties, have existing names in *Johnstonella*: *J. racemosa* (I.M.Johnst.) Brand (designated the type for the genus; see Johnston 1925) and *J. inaequata* (Watson) Brand (Brand 1925).”

However, Johnston’s 1925 indication of *Johnstonella racemosa* as the type of *Johnstonella* was not an effective type designation because his work was published on 22 Apr 1925, prior to Brand’s publication of the genus *Johnstonella*, which appeared on 20 Jul 1925. Hasenstab-Lehman and Simpson’s (2012) recognition of *J. racemosa* as the type of the genus also cannot be taken as a designation since the term “designated here” (or an equivalent) was not used (see Art. 7.10, McNeill & al., 2012). Therefore, we formally designate a type for *Johnstonella* here.

Johnstonella Brand in Repert. Spec. Nov. Regni Veg. 21: 249. 1925 – **Type (designated here):** *Johnstonella racemosa* (S.Watson ex A.Gray) Brand in Repert. Spec. Nov. Regni Veg. 21: 250. 1925 ≡ *Eritrichium racemosum* S.Watson ex A.Gray in Proc. Amer. Acad. Arts 17: 226. 1882 ≡ *Krynitzkia ramosissima* A.Gray in Proc. Amer. Acad. Arts 20: 277. 1885, nom. superfl. et illeg. ≡ *Krynitzkia racemosa* (S.Watson ex A.Gray) Greene in Bull. Calif. Acad. Sci. 1(4): 208. Aug. 1885 ≡ *Cryptantha racemosa* (A.Gray) Greene in Pittonia 1: 115. 1887 – Holotype: U.S.A. California, Imperial Co., Mesquite Cañon, 25 Mar 1881, *S.B. Parish* & *W.F. Parish* 775 (GH barcode 00097032!). — Image of holotype available at <http://firuta.huh.harvard.edu/image.php?id=146599&convert=jpeg>

Note. – Brand (1925) incorrectly indicated San Bernardino Co. in his specimen citation; however, the county of collection was not indicated in the original collection label, “San Bernardino” on the label referring to the home location of the Parishes.

■ ACKNOWLEDGEMENTS

We thank Kanchi Gandhi for pointing out the need for designating the type of *Johnstonella*.

■ LITERATURE CITED

- Brand, A.** 1925. Drei neue Gattungen der Cryptantheae. *Repert. Spec. Nov. Regni Veg.* 21: 249–254.
- Hasenstab-Lehman, K.E. & Simpson, M.G.** 2012. Cat’s eyes and popcorn flowers: Phylogenetic systematics of the genus *Cryptantha* s.l. (Boraginaceae). *Syst. Bot.* 37: 738–757. <http://dx.doi.org/10.1600/036364412X648706>
- Johnston, I.M.** 1925. Studies in the Boraginaceae IV. The North American species of *Cryptantha*. *Contr. Gray Herb.* 74: 1–114.
- McNeill, J., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Marhold, K., Prado, J., Prud’Homme van Reine, W.F., Smith, G.F., Wiersema, J.H. & Turland, N.J. (eds.)** 2012. *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code): Adopted by the Eighteenth International Botanical Congress Melbourne, Australia, July 2011*. Regnum Vegetabile 154. Königstein: Koeltz Scientific Books. <http://www.iapt-taxon.org/nomen/main.php>