

(2019) Proposal to conserve the name *Sobralia* (Orchidaceae) with a conserved type

Robert L. Dressler,¹ Mario A. Blanco,^{1,2} Franco Pupulin¹ & Kurt M. Neubig²

¹ University of Costa Rica, Lankester Botanical Garden, P.O. Box 302-7050 Cartago, Costa Rica

² University of Florida, Florida Museum of Natural History, 385 Dickinson Hall, Gainesville, Florida, U.S.A.

Author for correspondence: Kurt M. Neubig, kneubig@flmnh.ufl.edu

(2019) ***Sobralia*** Ruiz & Pav., Fl. Peruv. Prodr.: 120. Oct (prim.) 1794 (*Orchid.*), nom. cons. prop.
 Typus: *S. biflora* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 1: 232. Dec 1798, typ. cons. prop.

Ruiz and Pavón (l.c.) described *Sobralia* in 1794, without mentioning any specific epithets, though the publication was accompanied by a drawing of a flower (icon. XXVI). Four years later, the same authors (Syst. Veg. Fl. Peruv. Chil. 1: 232–233. 1798) described three

species of *Sobralia*, *S. dichotoma* Ruiz & Pav., *S. biflora*, and *S. amplexicaulis* Ruiz & Pav. (in that order).

Reichenbach (in Fl. Serres Jard. Eur. 8: 247. Oct 1853) proposed the first subgeneric classification of *Sobralia*. He divided the genus into two unranked groups: “*Eusobralia*” (not validly published under ICBN Art. 32.1(c) and 21.3, McNeill & al. in Regnum Veg. 146. 2006) for species with terminal inflorescences, and *Brasolia* Rchb. f. for those with lateral (i.e., axillary) inflorescences. Reichenbach (l.c. 1853) listed *S. dichotoma* as the only member of *Sobralia* [unranked]

Brasolia, but later (e.g., in *Bonplandia* 2: 278. 1854; *Xenia Orchid.* 2: 175–179. 1874) he added additional species to that group. Reichenbach (l.c. 1853) listed *S. biflora* in the category of uncertain affinity (“*Species obscuro-obscurores*”), probably because of its very incomplete original description and poorly preserved type material (he likely did not see the painting of the live type plant, see below). Thus, even when not complying with modern rules, Reichenbach implicitly proposed that the “typical” species of *Sobralia* (“*Eusobralia*”) should be one with terminal inflorescences.

Subsequent subgeneric classifications of *Sobralia* were proposed by Lindley (Fol. Orchid. 5: *Sobralia*. Feb 1854), Brieger (Orchideen (Schlechter) ed. 3, 13: 780–800. 1983) and Dressler (in *Lankesteriana* 5: 9–15. 2002). However, the first one to validly publish a type designation for *Sobralia* was Angely (Fl. Analítica São Paulo 6: 1268. 1973), who chose *S. dichotoma* without any explicit rationale, perhaps because it was the first species listed by Ruiz and Pavón (type of *S. dichotoma*: “Habitat abundè in nemoribus Muña, Pozuzo et Chinchao per runcationes in locis calidis et saxosis”, Ruiz & Pavón s.n., [G, MA, P]). This was accepted by Garay (in *Harling & Sparre*, Fl. Ecuador 9: 111. 1978), Brieger (l.c.), Dressler (l.c. 2002; in *Pridgeon & al.*, Gen. Orchid. 4: 601. 2005) and Ortiz (in *Orquideología* 23: 50, 60. 2004), who thus used the autonymic section *Sobralia* for the unranked group called *Brasolia* by Reichenbach.

A recent molecular phylogenetic study of tribe *Sobralieae* (Neubig & al. in *Proc. Third Sci. Conf. Andean Orchids*: 216–233. 2010) resolved *Sobralia* as paraphyletic, with most species of section *Sobralia* (i.e., the *Brasolia* group, including *S. dichotoma*) in turn forming a paraphyletic grade more closely related to the genera *Elleanthus* C. Presl., *Epilyna* Schltr. and *Sertifera* Lindl. & Rchb. f. than to the other sections of *Sobralia* (*Abbreviatae* Brieger, *Globosae* Brieger, *Intermediae* Brieger, and *Ramosae* Brieger, all sensu Dressler, l.c. 2002), which together comprise the vast majority of species in the genus (ca. 100, vs. 13 spp. in section *Sobralia*) and form a well-defined clade. Members of section *Sobralia* are easily distinguishable from other species in the genus.

All this indicates that the splitting of the genus *Sobralia* is imminent, with the inconvenience that the generic name would remain anchored by a species (*S. dichotoma*) of the smaller group (which is not even monophyletic itself), and that the vast majority of the species (ca. 100, including virtually all of those that are commonly cultivated) would have to be transferred to *Cyathoglottis* Poepp. & Endl., the second oldest generic name available for *Sobralia* s.l. A type for *Cyathoglottis* has not yet been designated, but both of its two original species, *C. candida* Poepp. & Endl. and *C. crocea* Poepp. & Endl., belong in the larger group of *Sobralia* s.l.

This undesirable scenario can be avoided by conserving *Sobralia* with a different type in order to retain the generic name for the majority of the species currently placed in that genus. The second species

described by Ruiz and Pavón, *S. biflora* (a species very similar to the well-known *S. decora* Bateman, and a member of section *Abbreviatae*—the largest one of *Sobralia* s.l.) would be the ideal species.

Ortiz (l.c.) assumed that the flower illustrated by Ruiz and Pavón in 1794 represents *Sobralia biflora*. However, this is not the case. Most of the botanical paintings of the Ruiz and Pavón expedition, prepared in the field directly from the live plants, are kept at the Real Jardín Botánico in Madrid. The flower drawing of *Sobralia* published in 1794 was clearly traced from part of the original painting of *S. amplexicaulis* (Icones RP1306 in MA). The painting of *S. biflora* (Icones RP1305 in MA) depicts a different species. Both paintings are labeled with their corresponding binomial in Ruiz’s handwriting, and both names are based on different type collections (type of *S. amplexicaulis* Ruiz & Pav.: “Habitat affatim in Chinchao runcationibus et locis meridionalibus”, Ruiz & Pavón s.n., MA no. 810759; type of *S. biflora*: “Habitat in Pozuzo runcationibus et calidis locis, versus Cheniço et Tramo tractus”, Ruiz & Pavón s.n., MA no. 810834).

Sobralia amplexicaulis actually belongs in the superficially similar but unrelated genus *Epistephium* Kunth, and thus is not an option for conserving the generic name. The name *E. amplexicaule* Poepp. & Endl. has been erroneously treated as a nomenclatural synonym of *S. amplexicaulis* Ruiz & Pav. (e.g., Foster in *Contr. Gray Herb.* 184: 53. 1958; Brako & Zarucchi in *Monogr. Syst. Bot. Missouri Bot. Gard.* 45: 796. 1993; and several online databases). Although Poeppig & Endlicher (Nov. Gen. Sp. Pl. 1: 52. 1836) listed Ruiz & Pavón’s name as a doubtful synonym of *E. amplexicaule*, the latter is based on a different collection (type: “Chihuahucala in viciniis Cuchero”, Poeppig 1601, W).

An alternative course of action would be to lump *Elleanthus*, *Epilyna* and *Sertifera* into an all-encompassing *Sobralia*. However, this would necessitate ca. 110 generic transfers, and the morphology of those genera is very different from that of any group of *Sobralia*. Moreover, species of *Elleanthus* are often cultivated, and that generic name is well established in horticultural circles (as is also the case with *Sobralia*).

If this proposal succeeds, the autonymic section *Sobralia* would cease to apply to the *S. dichotoma* group (for which *Sobralia* [unranked] *Brasolia* could perhaps be revived), and section *Abbreviatae* would become a taxonomic synonym of section *Sobralia*.

Acknowledgements

We would like to thank the herbaria G, MA, P and W for providing access to materials cited in this proposal. Portions of this research were funded by the American Orchid Society and the Lewis and Varina Vaughn Fellowship in Orchid Biology to K. Neubig. We also thank John Wiersema (BARC) for helpful suggestions to improve this proposal.