

THE CORRECT ORIGINAL SPELLING OF BARTRAM'S IXIA  
(IXIA CAELESTINA: IRIDACEAE)

Alan R. Franck

Herbarium, Department of Cell Biology,  
Microbiology, and Molecular Biology  
University of South Florida  
4202 E. Fowler Avenue  
Tampa, Florida 33620, U.S.A.  
afranck@mail.usf.edu

Eleni H. Manolaraki

Department of World Languages  
University of South Florida  
4202 E. Fowler Avenue  
Tampa, Florida 33620, U.S.A.  
emanolar@usf.edu

ABSTRACT

For optimal communication, each taxonomic name ideally has one proper spelling. The specific epithet of Bartram's *Ixia* has usually been spelled as *coelestina*, which is incorrect and contrary to the International Code of Nomenclature for Algae, Fungi, and Plants. In the protologue, Bartram originally spelled it as *caelestina*, which is an acceptable Latin form that ought to be adopted. The *ae* variant has been utilized and accepted for names of several other taxa since Bartram. The proper spelling of the basionym of Bartram's *Ixia* is *Ixia caelestina*.

RESUMEN

Para una comunicación óptima, cada nombre taxonómico idealmente tiene una ortografía propia. El epíteto específico de la *Ixia* de Bartram se ha escrito usualmente como *coelestina*, que es incorrecto y contrario al International Code of Nomenclature for Algae, Fungi, and Plants. En el protólogo, Bartram lo escribió como *caelestina*, que es la forma aceptable del latín que debe adoptarse. La variante *ae* se ha utilizado y aceptado para nombre de otros varios taxa desde Bartram. La ortografía apropiada del basiónimo de Bartram es *Ixia caelestina*.

For the purposes of effective communication, there is a need for determining a singular proper spelling for each taxonomic name, especially when multiple online floristic and nomenclatural databases rely on exact matches and do not accommodate alternate spellings or misspellings. Except for errors of orthography or typography (McNeill et al. 2012: Art. 60), original spellings must be retained (Art. 60.1) and, bearing in mind the aim of nomenclatural stability, alterations to original spellings should be made with restraint (Art. 60.3) and only after careful study. However, preferred spellings can be conserved (Art. 14.11) and some parts concerning spelling are merely termed recommendations (Rec. 60A–60H).

As noted by Stearn (1992: 6–16), botanical Latin is not strictly adherent to classical Latin, but rather is necessarily an evolved form adapted from the progression of classical Latin to renaissance Latin with substantial use of the Greek language. Latin terms taken to mean sky or heavens can be found spelled as *caelum* (Dall'Olmo 1980; Stearn 1992) or *coelum* (Du Cange 1883; Ahern 1984). Both spellings are acceptable and both have been adapted in the binomial nomenclature of animals, fungi, algae, and plants to signify either the blue (Stearn 1992) or whitish color (Du Cange 1883) of the sky (e.g. as *caelestinum*, *coelestis*, etc.). Stearn (1992) only listed *caelestis* in his vocabulary section, while Du Cange (1883) also listed *caelestis* but directed to the entry for *coelestis* for the definition.

While near Lake Dexter, Volusia County, Florida during the spring of 1766 (Harper 1958: 360–361), William Bartram found a plant now known to be endemic to northeastern Florida, describing it as *Ixia caelestina* with the protologue affixed to an illustration (Bartram 1791: 155 [pl. 3]; Fig. 1). Bartram only referred to it in the text as *Ixia*. In the Philadelphia version of Bartram's *Travels* published in 1791, the binomial used capital letters, making it clear that the ligature form of *ae* was used to spell *caelestina*. In later editions (e.g. 1792), the generic name was spelled as *Ixia*, and it has been interpreted that Bartram intended to use this Linnaean genus originally but misspelled it as *Ixia* in 1791. This plant is commonly classified in the genus *Calydorea* Herb. (Iridaceae) (Goldblatt & Henrich 1991) and referred to colloquially as Bartram's *Ixia* (Wunderlin 1998). The appropriate genus for this species remains nebulous; Goldblatt and Manning (2008) speculated the species may ultimately reside within *Tigridia* Juss.



FIG. 1. Bartram's *Ixia*, *Ixia caelestina* (Bartram 1791).

Willdenow (1797: 200) referenced Bartram's name but changed the spelling of the specific epithet incorrectly as *Ixia coelestina*, which was adopted by Nuttall (1837: 157), *Index Kewensis* (Jackson 1893: 1241), and Small (1931). This spelling, *coelestina*, though contrary to Art 60.1, has since been widely perpetuated in several floristic and nomenclatural references.

Bartram appears to be the first to have used the *ae* variant, at least among binomials for algae, fungi, and plants. Preceding Bartram's binomial are *Eupatorium coelestinum* L. and *Teucrium coeleste* Schreb., which both appeared to use the ligature form of *oe*. Because the *oe* variant prevailed before Bartram and because Bartram had made apparent errors in the names of other binomials (Merrill 1944–1945), perhaps it was thought appropriate to change Bartram's specific epithet to agree with the form used by Linnaeus. It is possible that *caelestina* was simply misread from a later edition (e.g. 1792) that had the figure text in cursive, making it difficult

to discern *ae* from *oe*. In any case, the change is inappropriate as the *ae* variant is acceptable in Latin, unless one can somehow prove that Bartram knew only of the *oe* variant and had intended to replicate it. Notably, the *ae* variant has been used and accepted for the binomials of several plants and fungi since Bartram.

The correct original spelling of Bartram's *Ixia* is *Ixia caelestina*, and is cited from Bartram (1791: 155 [pl. 3]). The genus was clearly misspelled as *Ixea* and is rightly corrected to the Linnaean genus *Ixia*. The specific epithet is correctly spelled as *caelestina*, an acceptable Latin form. The ligature form of *ae* that was used by Bartram is simply to be spelled out as individual letters (Art. 60.6). The correct spelling *caelestina* has rarely been adopted (Wunderlin 1998: 222), while the spelling *coelestina* is pervasive but incorrect in this instance since it was not spelled this way originally (Bartram 1791; McNeill et al. 2012: Art. 60.1). The purpose of this article is to draw attention to this oversight so that Bartram's preferred and correct epithet *caelestina* may be restored.

#### ACKNOWLEDGMENTS

We thank Peter Goldblatt for helpful comments on the manuscript.

#### REFERENCES

- AHERN, J. 1984. Dante's last word: The comedy as a liber coelestis. *Dante Studies*, with the Annual Report of the Dante Society 102:1–14.
- BARTRAM, W. 1791. *Travels through North & South Carolina, Georgia, East & West Florida, the Cherokee Country, the Extensive Territories of the Muscogulges, or Creek Confederacy, and the Country of the Chactaws*. James & Johnson, Philadelphia, U.S.A.
- DALL'OLMO, U. 1980. Latin terminology relating to aurorae, comets, meteors, and novae. *J. Hist. Astronomy* 11:10–27.
- DU CANGE, C. DU F. 1883. *Glossarium Mediae et Infimae Latinitatis, auctum a Monachis Ordinis S. Benedicti, cum supplementis integris D.P. Carpenterii, adelungii, aliorum, suisque digessit G.A.L. Henschel, sequuntur glossarium Gallicum, tabulae, indices auctorum et rerum, dissertationes. Editio nova aucta pluribus verbis aliorum scriptorum a L. Favre. Vol. 2. Niort, France. [Accessed at <http://gallica.bnf.fr/>].*
- GOLDBLATT, P. & J.E. HENRICH. 1991. *Calydorea* Herbert (Iridaceae-Tigridieae): Notes on this New World genus and reduction to synonymy of *Salpingostylis*, *Cardiostigma*, *Itysa*, and *Catila*. *Ann. Missouri Bot. Gard.* 78:504–511.
- GOLDBLATT, P. & J.C. MANNING. 2008. *The Iris family: Natural history & classification*. Timber Press, Portland, OR, U.S.A.
- HARPER, F. (ED.). 1958. *The travels of William Bartram. Naturalist's Edition*. Yale University Press, New Haven, CT, U.S.A.
- JACKSON, B.D. 1893. *Index Kewensis. Pt. 2*. Clarendon Press, Oxford, UK.
- MCNEILL, J., F.R. BARRIE, W.R. BUCK, V. DEMOULIN, W. GREUTER, D.L. HAWKSWORTH, P.S. HERENDEEN, S. KNAPP, K. MARHOLD, J. PRADO, W.F. PRUD'HOMME VAN REINE, G.F. SMITH, J.H. WIERSEMA, & N.J. TURLAND (EDS.). 2012. *International code of nomenclature for algae, fungi, and plants (Melbourne Code)*. *Regnum Veg.* 154:1–208. Koeltz Scientific Books, Königstein, Germany.
- MERRILL, E.D. 1944–1945. In defense of the validity of William Bartram's binomials. *Bartonia* 23:10–35.
- NUTTALL, T. 1837. Collections towards a flora of the territory of Arkansas. *Trans. Amer. Philos. Soc.* 5:139–203.
- SMALL, J.K. 1931. Bartram's *Ixia caelestina* rediscovered. *J. New York Bot. Gard.* 32:155–161.
- STEARNS, W.T. 1992. *Botanical Latin*. 4th ed. David & Charles, Brunel House, Newton Abbot, Devon, UK.
- WILDENOW, C.L. 1797. *Caroli a Linné Species Plantarum exhibentes Plantas Rite Cognitas ad Genera Relatas, cum Differentiis Specificis, Nominibus Trivialibus, Synonymis Selectis, Locis Natalibus, Secundum Systema Sexuale Digestas. Vol. 1*. G.C. Nauk, Berlin, Germany.
- WUNDERLIN, R.P. 1998. *Guide to the vascular plants of Florida*. University Press of Florida, Gainesville, U.S.A.