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Augustea (Polycarpaeae, Caryophyllaceae), a new genus from South America

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Abstract

Recent published molecular analyses have shown that the genus *Polycarpon* is polyphyletic and includes only the members belonging to the *Polycarpon tetraphyllum* aggregate. Morphologically, dehiscence of the capsule by valves that elastically roll inwards and eject the seeds provides a clear synapomorphy for *Polycarpon* in this restricted sense. Among the excluded taxa, the South American *P. anomalum*, *P. suffruticosum* and *P. coquimbense* are not described taxonomically, although molecular and morphological evidence exists. We here propose to recognise these species as a new South American endemic genus (*Augustea gen. nov.*) with three recognized species. The names *Polycarpon suffruticosum* (var. *suffruticosum*, and var. *virens*), *P. australe*, and *P. anomalum* are lectotypified. A diagnostic key is provided, as well as descriptions, ecological information and distribution for each species.

Keywords: August Grisebach, nomenclature, Neotropical taxonomy, *Polycarpon*, South American endemism

Introduction

Polycarpon Linnaeus (1759: 859, 881) traditionally included about 16 species distributed in warm and temperate regions of both hemispheres (Fraga & Rosselló 2011). Kool *et al.* (2007) recently showed that this genus is polyphyletic and includes only the "*Polycarpon tetraphyllum* clade": *Hagaea alsinefolia* Bivona (1815: 7−8), *H. polycarpoides* Bivona (1815: 5−6), *Polycarpon colomense* Porta (1887: 305), *P. dyphyllum* Cavanilles (1793: 40), *P. herniarioides* Ball (1873: 301), *P. polycarpoides* subsp. *catalunicum* Bolòs & Vigo (1974: 86) and *Mollugo tetraphylla* Linnaeus (1753: 89). According to the molecular results of Kool *et al.* (2007) and the ecological, chorological and morphological considerations of Iamonico (2013, 2015a, 2015b, 2015c), a single species (*P. tetraphyllum*) can be recognized and the various taxa treated at subspecific rank as suggested by Kool *et al*. (2007).

The South American species *P. suffruticosum* Grisebach (1874: 77−78) and *P. coquimbense* Gereau & Marticonema (1995: 154) should be excluded from *Polycarpon* because they form a well-supported sister to *Polycarpea spicata* Wight & Arnott (1831: 91) plus *Hoya obovata* Decaisne (1844: 635) (Kool *et al.* 2007). Although morphologically similar to *Polycarpon*, they have an important diagnostic character: a non-involute capsule. In fact, the dehiscence of the capsule in *Polycarpon tetraphllum s.l.* by valves that elastically roll inwards and eject the seeds is unique in Caryophyllaceae and provides a clear synapomorphy for *Polycarpon* in the restricted sense of Kool *et al.* (2007).

Although molecular and morphological evidence exists, the taxonomic position of *P. coquimbense* and *P. suffruticosum* is not still clear at present. Furthermore, a third taxon, *P. anomalum* Hassler (1907: 12−13) from Paraguay, needs to be discussed because it was not considered by Kool *et al.* (2007).

We here propose to separate these South American former members of *Polycarpon* as an endemic genus, *Augustea gen. nov.*

Materials and methods

This paper is based both on the analysis of the relevant literature and examination of the specimens preserved at BM, CONC, G, GOET, K, LP, MICH, MO, NDG, NMNH, NY, OS, P, and US (see Thiers 2015+). The articles cited through the text follow McNeill *et al.* (2012).

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