



FOUR NEW COMBINATIONS IN ARGENTINIAN HELIOTROPIACEAE

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Abstract. Luebert, F. & M.W. Frohlich. 2016. Four new combinations in Argentinian Heliotropiaceae. *Darwiniana*, nueva serie 4(2): 192-194.

Four new combinations in the genera *Euploca* and *Myriopus* (Heliotropiaceae) are established: *Euploca aurata*, *E. catamarcense*, *Myriopus breviflorus* and *M. paniculatus* var. *austrinus*.

Keywords. Argentina; Boraginaceae; *Euploca*; *Heliotropium*; *Myriopus*; South America; *Tournefortia*.

Resumen. Luebert, F. & M.W. Frohlich. 2016. Cuatro combinaciones nuevas en Heliotropiaceae argentinas. *Darwiniana*, nueva serie 4(2): 192-194.

Se efectúan cuatro nuevas combinaciones en los géneros *Euploca* y *Myriopus* (Heliotropiaceae): *Euploca aurata*, *E. catamarcense*, *Myriopus breviflorus* y *M. paniculatus* var. *austrinus*.

Palabras clave. Argentina; Boraginaceae; *Euploca*; *Heliotropium*; *Myriopus*; Sudamérica; *Tournefortia*.

INTRODUCTION

Heliotropiaceae is a monophyletic group (Weigend et al., 2014) and is considered as a family (instead of as a subfamily of Boraginaceae s.l.) for reasons of nomenclatural stability and easiness of morphological recognition, which cannot be fulfilled when Boraginaceae is regarded in its broad sense (Luebert et al., 2016). Four genera are accepted within Heliotropiaceae (Diane et al., 2016): *Euploca* Nutt., *Heliotropium* L., *Ixorhea* Fenzl, and *Myriopus* Small, all of which are present in Argentina. *Euploca*, *Ixorhea* and *Myriopus* form a clade sister to a broadly defined *Heliotropium* (Hilger & Diane, 2003; Luebert et al., 2011, Diane et al., 2016). The latter includes *Tournefortia* L. sect. *Tournefortia* and the remaining sections traditionally ascribed to *Heliotropium*, except *H.* sect. *Orthostachys* (R.Br.) G.Don, which was transfe-

red to *Euploca* (Hilger & Diane, 2003). These phylogenetic studies also showed that the traditional *Tournefortia* is polyphyletic, with *T.* sect. *Cyphocyema* I.M.Johnst. forming a clade sister to *Euploca* and recognized under the generic name *Myriopus*. *Euploca* and *Myriopus* are morphologically well defined groups, and their generic circumscriptions are increasingly being accepted in the taxonomic literature (e.g., Degen Naumann & Melo, 2012; Feuillet, 2008, 2012, 2016; Feuillet & Halse, 2016; Hilger & Diane, 2003; Luebert et al., 2011; Melo & Semir, 2006, 2009, 2010).

During the revision of Argentinian Heliotropiaceae, we came across some species in *Heliotropium* and *Tournefortia* still in need of transfer to *Euploca* and *Myriopus*, respectively. The purpose of this contribution is to provide the necessary new combinations that can be used in

future treatments of the family in regional floras, as well as the yet incomplete treatment of Heliotropiaceae (sub Boraginaceae s.l.) of Flora Fanerogámica Argentina (Ariza-Espinar, 2006), now continued as Flora Argentina [Anton & Zuloaga]. Type specimens were examined at G, GH, MSB, P, SGO and US (Thiers, 2015).

RESULTS

Euploca Nutt., Trans. Amer. Phil. Soc. n.s. 5: 189. 1837. TYPE SPECIES: *Euploca convolvulacea* Nutt.

Heliotropium sect. *Orthostachys* (R.Br.) G.Don, Gen. Hist. 4: 361. 1838. TYPE SPECIES: *Heliotropium foliatum* R.Br. (lectotype designated by Johnston, Contr. Gray Herb. 81: 46. 1928).

Observations. Generic description found in Diane et al. (2016). *Euploca* consists of ca. 100 species of pantropical distribution, especially in semiarid zones, with centers of diversity in the Americas and Australia. Ten species have been reported to occur in Argentina [*Euploca aurata* (Phil.) Frohlich, *E. campestris* (Griseb.) Diane & Hilger, *E. catamarcense* (I.M.Johnst.) Frohlich, *E. chrysantha* (Phil.) Diane & Hilger, *E. filiformis* (Lehm.) J.I.M.Melo & Semir, *E. hassleriana* (Chodat) J.I.M.Melo & Semir, *E. mendocina* (Phil.) Diane & Hilger, *E. ocellata* (Cham.) J.I.M.Melo & Semir, *E. pallescens* (I.M.Johnst.) J.I.M.Melo & Semir, *E. procumbens* (Mill.) Diane & Hilger, and *E. salicoides* (Cham.) J.I.M.Melo & Semir; Zuloaga et al., 2008, sub *Heliotropium*].

Euploca aurata (Phil.) Frohlich, **comb. nov.** *Heliotropium auratum* Phil., Anales Mus. Nac., Santiago de Chile 8: 56. 1891. TYPE: Argentina, Catamarca, Antofagasta de la Sierra, I-1885, *F. Philippi* s.n. (lectotype SGO 54425! designated by Förther, Sendtnera 5: 180. 1998; isolectotypes SGO 42267!, GH bc GH00097639!).

Observations. This species is endemic to northwestern Argentina and was long considered as a synonym of *Euploca chrysantha* (Phil.) Diane & Hilger (e.g., Johnston, 1928; Pérez-Moreau &

Cabrera, 1983; Förther, 1998; Correa, 1999, sub *Heliotropium chrysanthum* Phil.). Di Fulvio & Ariza-Espinar (2000) consider it to be a good species, a criterion followed in subsequent publications (Zuloaga et al., 2008).

Euploca catamarcense (I.M.Johnst.) Frohlich, **comb. nov.** *Heliotropium catamarcense* I.M. Johnst., Contr. Gray. Herb. 81: 59. 1928. TYPE: Argentina, Catamarca, Pilciao, 700 m, 20-IV-1917, *P. Jörgensen 1868* (holotype GH bc GH00097604!; isotypes GH bc GH00097605!, LIL bc LIL001430 photo!, LIL bc LIL001431 photo!, SI bc SI001133 photo!, SI bc SI001134 photo!, SI bc 001135 photo!, US bc US00110847!).

Observations. This species is endemic to western Argentina (Johnston, 1928; Zuloaga et al., 2008).

Myriopus Small, Man. S.E. Fl. 1131. 1933. TYPE SPECIES: *Myriopus poliochros* (Spreng.) Small (lectotype designated by Förther, Sendtnera 5: 128. 1998).

Tournefortia sect. *Cyphocyema* I.M.Johnst., Contr. Gray Herb. 92: 72. 1930. TYPE SPECIES: *Tournefortia membranacea* (Gardner) DC.

Observations. Generic description found in Diane et al. (2016). *Myriopus* comprises around 25 species of largely Neotropical distribution from southern United States to northern Argentina with centers of diversity in Brazil and the Caribbean. Four species have been reported to occur in Argentina [*M. breviflorus* (DC.) Luebert, *M. paniculatus* (Cham.) Feuillet, *M. rubicundus* (Salzm. ex DC.) Luebert, and *M. salzmannii* (DC.) Diane & Hilger; Zuloaga et al., 2008, sub *Tournefortia*].

Myriopus breviflorus (DC.) Luebert, **comb. nov.** *Tournefortia breviflora* DC., Prodr. 9: 520. 1845. TYPE: Brazil, Rio [de Janeiro], 1834, *N. Lund* s.n. (holotype G00147013! [photo F neg 7760!, photo MSB!]; isotype P bc P03525470!).

Observations. This species occurs in Argentina, Brazil, Paraguay and Uruguay (Johnston, 1930; Zuloaga et al., 2008).

Myriopus paniculatus var. **austrinus** (I.M. Johnst.) Luebert, **comb. nov.** *Tournefortia paniculata* var. *austrina* I.M. Johnst., Contr. Gray. Herb. 92: 82. 1930. TYPE: Argentina, Tucumán, La Ramada, XII-1914, *M. Lillo 3032M* (holotype GH bc GH00096176 photo!).

Observations. This variety is distributed in northwestern Argentina and southern Bolivia (Johnston, 1930).

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