Taxonomy and chorology of Corbichonia (Lophiocarpaceae s.l.) with further description of a new species from Southern Africa

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Abstract

A re-examination of the herbarium material has allowed to describe a new species, Corbichonia exellii, occurring in Southern Africa (Angola, Namibia and South Africa). C. exellii represents the third species in the genus. Morphological differences between all three Corbichonia species (C. decumbens, C. rubriviolacea, and C. exellii) are provided. The description of the genus is defined using the newly discovered characters (reproductive features). The taxonomy of all Corbichonia species (synonyms included) is provided, as well as maps for all species. The lectotypes of Orygia decumbens (basionym of Corbichonia decumbens) and O. mucronata (synonym of C. decumbens) are designated on specimens preserved, respectively, at BM and K. The genus Corbichonia, recently placed in Lophiocarpaceae, is markedly different from the core genus Lophiocarpus on the basis of embryological, morphological and carpological characters, and deserves further investigation concerning its taxonomic status.

Key words: Africa, Corbichonia, distribution, Lophiocarpaceae, new species

Introduction

The genus Corbichonia Scopoli (1777: 264) belongs to the order Caryophyllales Juss. ex Bercht. & J. Presl, but its systematic position was unstable for a long time. Previously, Corbichonia was included within Aizoaceae Martinov [e.g., Pax 1889, Pax & Hoffmann 1934 (sub Orygia Forsskål (1775: 103)), Hauman 1951, Adamson 1958, Jeffrey 1960, Nazir 1973] or Molluginaceae Bartl. (Fenzl 1836, Harvey & Sonder 1860, Endress & Bittrich 1993, Hofmann 1973, 1994, Sivarajan 1988, Pullaiah 2003) having some morphological similarities in the reproductive characters with both families. Recently, the separate position of Corbichonia from Aizoaceae or Molluginaceae was discovered on the basis of molecular data, and it was placed in the so-called ‘Globular Inclusion’ clade as a sister group to Lophiocarpus Turczaninow (1843: 55) (Cuénoud et al. 2002). The latter genus forms its own family Lophiocarpaceae Doweld & Reveal (2008: 416), which now consists of two genera: core genus Lophiocarpus and Corbichonia automatically included in this family (Schäferhoff et al. 2009, Brockington et al. 2013).

Corbichonia unites glaucous, almost glabrous annual or perennial herbs, sometimes with a basally lignified stem; with alternate, shortly-petiolate leaves with broad (obovate, ovoid or oblong) blades terminating in a short tip; bracteose inflorescences; 5 green sepals and numerous petals of staminodial origin; 10–20 normally developed stamens; 5 episepalous carpels bearing a dehiscent loculicidal capsule with many seeds. Only two Corbichonia species are known so far. The annual or short-leaved perennial Corbichonia decumbens (Forsskål 1775: 103) Exell (1935: 80) has an extended distribution pattern in the tropical (mostly arid) regions of Africa, Arabia and Indian subcontinent (Nazir 1973, Ghazanfar & Fisher 1998). The second species [C. rubriviolacea (Friedrich in Suessenguth & Bilgeri 1953: 340) C.Jeffrey (1960: 235)] is a perennial herb that is clearly distinguished by smaller leaves (up to 2.5 cm) and flowers, with records in southwest Africa (sub Orygia rubriviolacea Friedrich in Suessenguth et al. 1953: 340). Specimens of Corbichonia decumbens that have been examined are different in some characters (especially leaf shape and seed-coat ornamentation) and require further investigation.

The main goals of the present study are (1) to examine the taxonomy and chorology of Corbichonia, with the