



Taxonomic position and identity of *Stemodia scoparioides* (Gratiolae, Plantaginaceae)

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Abstract

In recent floristic and taxonomic studies, *Stemodia scoparioides* (Gratiolae, Plantaginaceae) has been considered a synonym of *S. lanceolata* or a synonym of *S. stricta*. However, a detailed analysis of the type material and additional specimens clearly indicates that this is a different species, which can be distinguished by the aspect of the plants, the size of the leaves, the shape of the blades, and the length of the corollas. Consequently, in this contribution *Stemodia scoparioides* is resurrected from the synonymy as an independent species based on the analysis of morphological features. Additionally, complete description (including the pollen grains), geographic distribution, ecological observations, and a key to distinguish the related species are also reported, together with an illustration of *S. scoparioides*.

Introduction

Stemodia Linnaeus (1759: 1118) belongs to the tribe Gratiolae Benth (1846: 340) of the large plant family Plantaginaceae Jussieu (1789: 89) and comprises about 49 species (Dawson 1968, Turner & Cowan 1993, 1994, Barringer & Burger 2000). For the New World 29 species are recognized, 16 of them are exclusive from South America (Turner & Cowan 1994). In southern South America nine species have been reported, but just *Stemodia verticillata* (Miller 1768: 5) Hassler (1909: 110) has a wide distribution, while the remaining eight taxa are typically endemic of Argentina, Paraguay, Uruguay, extreme south of Bolivia, and southern Brazil.

Stemodia scoparioides Hassl. ex Minod (1918: 208) was validly published by Minod (1918) based on material collected by Hassler near the Apa river in northern Paraguay. The author distinguished the species from its allied taxa by the leaf shape and the general appearance of the plant. According to Minod (1918) this species differs from the rest of the genus by having smaller leaves and more abundant branching (“C’est, de tout le genre, l’espèce qui possède les feuilles les plus réduites et la ramification la plus abondante”). However, Turner & Cowan (1994) considered *Stemodia scoparioides* as a synonym of *S. lanceolata* Benth. in Benth (1846: 384), while Souza (2008) and Souza & Giulietti (2009) considered *S. scoparioides* as a synonym of *S. stricta* Chamisso & Schlechtendal (1828: 10). The main goal of this work is to clarify this situation, if *Stemodia scoparioides* is a synonym of *S. lanceolata* or *S. stricta* or if it is an independent species.

Materials and Methods

This study was based on morphological analysis of the type specimens and additional material deposited at BM, CTES, G, G-DEL, and K.

Additionally, a comparative study of the pollen grains of the involved species was conducted. Pollen grains were acetolyzed according to the procedure suggested by Erdtman (1960). For the observation with the light microscope (LM) the pollen samples were mounted in glycerin jelly on glass slides, sealed with paraffin