Systematics of Mappia (Icacinaceae), an endemic genus of tropical America

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Abstract

Mappia includes four species of trees and shrubs distributed in Central America, Mexico and the Greater Antilles. Mappia has historically been associated with the genera Casimirella (=Humirianthera), Iacina, Leretia and Nothapodytes, collectively comprising the Mappia complex, and over the years authors have merged or maintained these genera based on various lines of morphological and anatomical evidence. Here we present a phylogenetic study of the Mappia complex, based on morphological and molecular data, to assess monophyly of Mappia as well as relationships among other icacinaceous genera. Our results indicate that Mappia is sister to the Asiatic genus Nothapodytes, consistent with previous studies, and that Leretia, Iacina and Casimirella form a clade more closely related to other genera of Icacinaceae (e.g., Alsodeiopsis, Iodes, Phytocrene) than to Mappia+Nothapodytes. These results support recognition of Mappia as a distinct entity, and here we provide an updated taxonomic treatment for the genus, recognizing four species including three from Mexico and Central America (M. longipes, M. mexicana, and M. multiflora) and one from the Greater Antilles (M. racemosa).

Key words: Caribbean flora, Central American flora, lamiids, Mexican flora, Neotropical flora, nhdf

Introduction

Mappia Jacquin (1797: 22) was forgotten until Miers (1852) assigned many new species mainly from Asia to this genus. Mappia has historically been associated with the Neotropical genus Leretia Vellozo (1829: 99), and both have been treated in different ways. Bentham (1862), Engler (1893), House (1922), Baehni (1936) and Sleumer (1940, 1942) merged these genera. In contrast, Miers (1852), Engler (1893) and Howard (1942) maintained both. Baehni (1936) segregated the Asiatic species of Mappia into a new genus, Neoleretia Baehni (1936: 35) (= Nothapodytes Blume 1850: 248). Howard (1942) provided morphological evidence that these genera are all distinct. More recently, Dahl (1952) provided palynological evidence supporting Leretia and Mappia as distinct entities. House (1922) and Baehni (1936) mentioned that the name Mappia is illegitimate, but the last author proposed to conserve the name, which was agreed in 1940.

Phylogenetic analyses based on morphological data (Kårehed 2001) indicated that Mappia and Leretia are not closely related and that the Asiatic genus Nothapodytes is sister to Mappia, although these analyses did place Mappia+Nothapodytes within a larger clade including Lavigeria Pierre (1892: 267), Leretia, Iacina Jussieu (1823:174), Casimirella Hassler (1913: 249) and Pleurisanthes Baillon (1874: 201). However, several of these genera (i.e., Casimirella, Lavigeria, Leretia and Pleurisanthes) have yet to be included in molecular phylogenetic analyses, and consequently relationships among members of the Mappia complex (Mappia, Nothapodytes, Leretia, Casimirella and Iacina) and other icacinaceous genera, especially Lavigeria, Pleurisanthes, Iodes Blume (1825: 29) and Phytocrene Wallich (1831: 11), remain poorly known.