



## Revision of *Neobertiera* (Rubiaceae, Sipaneeae) with observations on distyly, and three new species from the Guianas<sup>#</sup>

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### Abstract

The ongoing treatments for the *Flora of the Guianas* (Guyana, Surinam, and French Guiana) and the monographic study of the tribe Sipaneeae prompted a revision of *Neobertiera*, discovering the distylous condition of this genus, and three undescribed species, one probably restricted to Guyana, and two probably restricted to French Guiana. Because of these novel observations and the different kinds of inflorescence of the newly described species, a generic description, with yet another amendment, a key to the species, illustrations, and material examined are presented.

**Key Words:** Guayana Shield, French Guiana, Guyana, Surinam, South America, *Dendrosipanea*, *Sipanea*, *Sipaneopsis*, critically endangered species, taxonomy

### Introduction

The Sipaneeae were treated as a separate tribe (Bremekamp, 1934; Robbrecht, 1988, 1993) or included in the widely delimited Rondeletieae (Verdcourt, 1958; Steyermark, 1974; Delprete, 1999), and positioned in subfamily Cinchonoideae. Rova *et al.* (2002) were the first to confirm that it should be recognized as a separate tribe, based on molecular phylogenies, and positioned it instead within subfamily Ixoroideae. A molecular phylogeny of the tribe Sipaneeae, using trnL-F and ITS sequence data, was published by Delprete & Cortés-B. (2004); in this study it was shown that the tribe is monophyletic, and sister to *Posoqueria* Aublet (1775: 133) and *Molopanthera* Turczaninow (1848: 580) (tribe Posoquerieae) and *Gleasonia* Standley (1931: 372) and *Platycarpum* Bonpland (1811: 81) (tribe Henriquezieae). In addition, the monophyletic condition of *Limnosipanea* J.D. Hooker (1868: 38) and *Sipanea* Aublet (1775: 147) was supported (Delprete & Cortés-B. 2004), demonstrating that the herbaceous habit originated at least two times in the tribe. Kainulainen *et al.* (2013) in a molecular phylogenetic study on the subfamily Ixoroideae retrieved a strongly supported clade with a few species of *Chalepophyllum*, *Dendrosipanea*, *Neobertiera* and *Sipanea*, corresponding to a reduce sample of the Sipaneeae, as here delimited.

While preparing treatments for the *Flora of the Guianas* and the monographic revision of the tribe Sipaneeae, three undescribed new species of this tribe with herbaceous habit, left-contorted corolla lobes, and indehiscent dry fruits, were discovered. Further examination narrowed the position of these new taxa to the genus *Neobertiera* Wernham (1917: 169) because of their indehiscent, dry fruits and stamens inserted near the base of the corolla tube, although some forms of these species also have stamens inserted at the middle or upper portion of the tube (see discussion below). When Wernham published the monotypic genus *Neobertiera*, his description was erroneous by stating that its fruits are berries with a few seeds. Based on these erroneous observations, he included *Neobertiera* in tribe Hamelieae, indicating that the closest genus was probably *Pseudohamelia* Wernham (1912b: 242). At the same time, he also indicated that “the inflorescence is closely similar to that characteristic of *Bertiera* [Aublet (1775: 180)] sect. *Laxae* Wernham (J. Bot. 1912a: 113) from which I have derived my choice of a generic name.” Sandwith (1931: 470) published a short note about *Neobertiera gracilis* Wernham (1917: 169), citing several collections present in the Kew