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New species and combinations in *Meniscium* (Thelypteridaceae)

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Abstract

Two new species of *Meniscium, M. divergens* and *M. triangularis* are described and illustrated. In addition, four new combinations, *M. cocleanum*, *M. hostmannii, M. lanceum,* and *M. maxonianum* and one lectotypification—*M. hostmannii*—are made in *Meniscium*.

Key words: Ferns, *Thelypteris*, Colombia, Guyana, Brazil, Amazon region

Introduction

Recent phylogenies that focus on Thelypteridaceae (Smith & Cranfill 2002; Alvarez-Fuentes 2010, He & Zhang 2012) have retrieved two main monophyletic groups in the family, the phegopteroid and the thelypteroid clade. The latter includes *Thelypteris palustris* Schott (1834: 10), which is the type species of the genus *Thelypteris* Schmidel (1763: 45), sister to a clade formed by the well supported cyclosoroid and amauropteroid clades (Smith & Cranfill 2002, Schuettpelz & Pryer 2007, He & Zhang 2012, Rothfels *et al.* 2012). The cyclosoroid clade includes up to 17 genera with members from both the Old and New World (Smith & Cranfill 2002), but the composition of these genera and their inter-relationships are not yet well established. This clade could be treated as a single genus as advocated by Smith (1990) and Smith *et al*. (2006, 2008), however, some Neotropical groups in the cyclosoroid clade are morphologically and phylogenetically cohesive (Smith & Cranfill 2002; Alvarez-Fuentes 2010, He & Zhang 2012) and could be considered as genera, including *Meniscium* Schreber (1791: 757), *Goniopteris* Presl (1836: 181), and *Steiropteris* (Christensen 1911:81) Pichi Sermolli (1973: 449).

Meniscium sensu stricto has been positioned within the cyclosoroid clade by Smith & Cranfill (2002) and it is the oldest generic name in the clade. It has priority if the cyclosoroid clade is considered as a genus, rather than *Cyclosorus* as suggested by Smith (1990), Smith *et al*. (2006, 2008) and Mazumbar & Mukhopadhyay (2013).
Meniscium sensu stricto is a tropical American fern genus, distributed from Florida, the Antilles and southern Mexico to northern Argentina and Paraguay (Smith 1992, Mickel & Smith 2004). In the first half of the last century, the number of species has grown considerably from 13 (Christensen 1913) to 23 (Maxon & Morton 1938) but since then, only three new species have been described (Smith & Lellinger 1985, Smith 1992). *Meniscium* has not been exhaustively revised, with all the names related to or cited in the genus checked and types examined.

The genus *Meniscium* as considered here is characterized by following combination of morphological characters: lamina 1–pinnate (rarely the lamina simple) with entire, undulate, crenulate, or serrate pinnae, apical pinnae conform or subconform, and veins regularly anastomosing, indument, if present, of acicular to curved trichomes and glands, and indusia always absent. The combination of regularly anastomosing venation and 1–pinnate lamina with conform apex also occurs in a few species of *Goniopteris,* but these have branched or stellate hairs along the fronds.

Meniscium was treated as a subgenus (Mickel & Smith 2004, Ponce 1987, Smith 1983, 1992, 1993, 1995, Tryon & Tryon 1982) or as a section of subg. *Cyclosorus* (Morton 1963) under *Thelypteris*. Based on knowledge of molecular phylogenies of Thelypteridaceae (Smith & Cranfill 2002, Alvarez-Fuentes 2010, He & Zhang 2012) and in the remarkable morphology of the group, we choose to adopt the rank of genus for *Meniscium.* In our taxonomic revision of *Meniscium* (R.S. Fernandes & A. Salino, unpub. data) we recognize 26 species and two of these are new and described here; additionally, four species are combined in *Meniscium*.

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–. Pinna margins subentire to undulate-crenulate ..... *M. reticulatum*

6. Fertile pinnae abaxially glabrous between veins; sporangia glabrous or with acicular trichomes on stalks 7
–. Fertile pinnae abaxially pubescent between veins; sporangia with acicular trichomes on capsule ..... *M. macropyllum*

7. Margins of fertile pinnae entire to undulate sinuate 8
–. Margins of fertile pinnae crenate to unicate–serrate ..... *M. lanceum*

8. Pinnae in 7–11 lateral pairs; abaxial surface of costae and veins with trichomes curved, sparse to moderate; sori usually acrostichoid; sporangia glabrous ..... *M. nesioticum*
–. Pinnae in 5–6 lateral pairs; abaxial surface of costae and veins glabrous; sori discrete, on the cross–veins; sporangia with acicular trichomes on stalks ..... *M. divergens*

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