



Taxonomic and nomenclatural notes on the fern genus *Polystichum* (Dryopteridaceae) in China

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Abstract

For the Flora of China treatment of the fern genus *Polystichum* (Dryopteridaceae), the following nine new combinations and three new names are proposed. Two varieties were raised to the species level. In addition, *P. kangdingense* is validated and *Cyrtogonellum caducum*, *Cyrtomidietyum conjunctum* and *Polystichum deltodon* var. *henryi* are lectotypified.

Introduction

The fern genus *Polystichum* Roth (Dryopteridaceae) is one of the largest genera of ferns. In its expanded circumscription, i.e., *Polystichum* s.s. + *P.* sect. *Haplopolystichum* Tagawa s.l. (Zhang & He 2009, 2010, 2011, 2012), *Polystichum* is estimated to contain about 500 species (Zhang & Barrington, in press). Species of *Polystichum* commonly occur in temperate and subtropical regions, in lowlands and montane to alpine areas, most diverse in the Northern Hemisphere, especially in southwestern and southern China (Kung *et al.* 2001), the Himalayas (ca. 50 spp., Fraser-Jenkins 1991), Japan (32 spp., Iwatsuki 1995) and Vietnam (ca. 50 spp.). A rich diversity of *Polystichum* is also found in the mountains of tropical America (e.g., Central America: 18 spp., Barrington 1995; Bolivia: 21 spp., Kessler *et al.* 2005; Costa Rica: 12 spp., Barrington 2012; Cuba: ca. 30 spp., C. Sánchez, pers. comm.; Mexico: 17 spp., Mickel & Smith 2004). About 15 species of *Polystichum* are distributed in North America and north of Mexico (Wagner 1993), 16 in mainland Africa (Roux 2000), eight in Madagascar and the Mascarene Islands (Roux 2001), three in Macronesia (Roux 2004), four in Europe (Tutin *et al.* 1993), 12 in Australasia (Green 1994, Brownsey & Smith-Dodsworth 2000), and a few in New Guinea and the Pacific islands. Currently there are 208 species known to occur in China (Zhang & Barrington, in press), including nine species which are currently described in *Cyrtogonellum* Ching, *Cyrtomidietyum* Ching, and *Cyrtomium* subser. *Balansana* Ching & K.H.Shing and which need to be transferred to *Polystichum*. These two genera and the subseries of *Cyrtomium*, have been unambiguously resolved as part of *Polystichum* using molecular data (Lu *et al.* 2007, Li *et al.* 2008, Liu *et al.* 2010, Zhang & He 2010, 2011, 2012, He & Zhang 2011). In the current paper, the nine species currently not in *Polystichum* are transferred to that genus, the rank of two taxa is raised from variety to species, three names are lectotypified, and one species is validated for the Flora of China treatment of *Polystichum*.

Taxonomical treatment

Polystichum conjunctum (Ching) Li Bing Zhang, *comb. nov.*

Basionym:—*Cyrtomidietyum conjunctum* Ching (1957: 263). Type:—CHINA. Jiangxi: Yifeng County, Huangkan Shan, Hegangkou, at the foot of cliffs, 25 October 1947, Y. K. Hsiung 06466 (lectotype PE-00044497!, isolectotypes, HLG-00007186!, HLG-00118044!, PE-00044496!, **here designated**).

This species occurs in Jiangxi, China.