



Article

Reducing the fern genus *Dryopsis* to *Dryopteris* and the systematics and nomenclature of *Dryopteris* subgenus *Erythrovariae* section *Dryopsis* (Dryopteridaceae)

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Abstract

The fern genus *Dryopsis* (Dryopteridaceae) is characterized by the presence of multicellular hairs and costal and costular grooves closed near their bases. Following a recent molecular analysis the monophyletic *Dryopsis* is nested in a paraphyletic *Dryopteris* and therefore should be viewed as part of an expanded *Dryopteris*. The current paper treats *Dryopsis* as a section of *D.* subg. *Erythrovariae* because both of these two taxa have bullate scales and importantly *Dryopsis* has been resolved as sister to *D.* subg. *Erythrovariae* sect. *Erythrovariae*. Twenty-two species are here recognized in *D.* sect. *Dryopsis*. Included in this treatment are nine new combinations, names and statuses, and five names are lectotypified. The present study further located and cited types of an additional 37 related names, many of which have been poorly to science. A key and distributional information of every species recognized is given and related nomenclatural issues are discussed. The nine new names, combinations and statuses include *Dryopteris* sect. *Dryopsis*, *D. dulongensis*, *D. leiboensis*, *D. nidus*, *D. nushanensis*, *D. submariformis*, *D. wantsingshanica*, *D. crassirachis* and *D. × fauriei*. The following five names are lectotypified: *Ctenitis silaensis*, *C. tibetica*, *Dryopteris aureovestita*, *D. mariformis*, and *Polystichum transmorrisonensis*.

Key words: Bullate scales, pteridophytes, sectional classification

Introduction

The fern genus *Dryopteris* Adans. (Dryopteridaceae) was estimated to contain 225 to 300 species worldwide (Fraser-Jenkins 1986, Lu 1993). Approximately 50 species will be added to *Dryopteris* when all the genera below are merged. Following a molecular phylogenetic analysis based on DNA sequences of four plastid loci, the genera, *Acrophorus* C.Presl, *Acrorumohra* (H.Itô) H.Itô, *Diacalpe* Blume, *Dryopsis* Holttum & Edwards, *Nothoperanema* (Tagawa) Ching and *Peranema* D.Don were all found to be monophyletic except the paraphyletic *Acrorumohra* (Zhang *et al.* 2012). Importantly, these genera were all found to be embedded in a paraphyletic *Dryopteris* and are therefore better merged into an expanded *Dryopteris* (Zhang *et al.* 2012). The transfer of species of Peranemataceae (*Acrophorus*, *Diacalpe* and *Peranema*) and *Nothoperanema* into *Dryopteris* subg. *Nothoperanema* will be conducted elsewhere (Zhang & Zhang, in press). Here I perform a taxonomic and nomenclatural study of *Dryopsis* and transfer its species to *Dryopteris* subg. *Erythrovariae* sect. *Dryopsis*.

The inclusion of *Dryopsis* in *Dryopteris*

The genus *Dryopsis* was established by Holttum & Edwards (1986) based on “*Ctenitis* subgen. *Dryopsis* Ching, *nom. inval.*”. It is widely recognized (Dong & Lu 2001, Wang & Wang 2001, Smith *et al.* 2006, Dong