NOTE

Dryopsis (Dryopteridaceae), a Fern Genus New to Vietnam

Hui-Hui Ding(1,2), Ping Wang(3) and Shi-Yong Dong(1*)

1. South China Botanical Garden, Chinese Academy of Sciences, Guangzhou 510650, China.
2. Graduate University of the Chinese Academy of Sciences, Beijing 100093, China.
3. College of Tourism and Geography Science, Yunnan Normal University, Kunming 650092, China.

* Corresponding author. Email: dongshiyong@scib.ac.cn

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ABSTRACT: Dryopsis clarkei (Baker) Holttum & P.J. Edwards, representing the whole genus, is reported new to Vietnam. A detailed description, including the variation of gross morphology, spore morphology, and chromosome counts, is provided by means of words as well as photographs or drawings. Dryopsis clarkei is for the first time demonstrated to be a sexual diploid (2n = 82), with rather stable morphology except for the length of stipe.

KEY WORDS: Dryopsis clarkei, morphology, new record, taxonomy.

INTRODUCTION

Dryopsis Holttum & P.J. Edwards is a less known fern genus partly due to its rather late establishment (in 1986) and rare occurrence in the field. This is an intermediate group between Dryopteris Adans. and Ctenitis C. Chr., occurring mainly in the mountains of northeastern India and southwestern China. Morphologically Dryopsis is similar to Dryopteris primarily in frond dissection and scales on axes of fronds, but shares a kind of peculiar hairs (ctenitioid hairs) on adaxial surface of fronds with Ctenitis. As the close affinity of Dryopsis to Ctenitis suggested by ctenitioid hairs, the former has long been treated as a subgenus under Ctenitis (Ching, 1938). In recent phylogenetic analyses (Li and Lu, 2006; Liu et al., 2007, McKeown et al., 2012, Zhang et al., 2012), a few samples of Dryopsis were included and they were clustered with dryopterioid and peranemoid ferns. Molecular evidence so far obtained indicates Dryopsis is closer to Dryopteris than to Ctenitis, while the monophyly of Dryopsis and its systematic position remain uncertain.

A total of 27 named species have been proposed in Dryopsis, and none of them is recorded from Vietnam, i.e., most in central Himalayas to southwestern China, a few in Japan and Taiwan, southward to Malesia, and three separately in southern India and Sri Lanka (Holttum and Edwards, 1986; Dong and Lu, 2001). However, we recently found a specimen (Petelot 7805) of D. clarkei (Baker) Holttum & P.J. Edwards from northern Vietnam (Fig. 1A), which is deposited in the Philippine National Herbarium (PNH) and was erroneously assigned a name as Dryopteris paleacea C. Chr. (= D. wallichiana (Spreng.) Hyl.). The specimen, Petelot 7805 (PNH), is hitherto the only representative of D. clarkei, as well as the genus Dryopsis recorded from Vietnam. Along with the report of new distribution, we provide here a critical observation on the morphology of D. clarkei, including the variation of gross morphology, spore morphology, and chromosome number. Hope this contribution could add knowledge to this less-known group and do help to a revision of flora of Vietnam and a revision of Dryopsis in the future.

MATERIAL AND METHODS

We checked all specimens of Dryopsis in Chinese herbaria (GAUA, HITBC, IBK, IBSC, PE, KUN, PYU) and in BM, BO, K, L, P, and PNH, and conducted field observations in southwestern China. The following description of D. clarkei is based on specimens throughout its distribution range. Spore samples of D. clarkei from an individual in East Himalaya (voucher: Chu et al. 22475, PYU) were observed under a scanning electronic microscopy using the method described in Dong (2010). For chromosome counts, root tips of a population in East Himalaya (voucher: Jin et al. 2127, IBSC, PE) were pretreated in the field and squashed according to the method also in Dong (2010).

TAXONOMIC TREATMENT