

***Cryptocoryne* ×*batangkayanensis* (Araceae), a new hybrid from Sarawak**

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Source: Willdenowia, 45(2):183-187.

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

DOI: <http://dx.doi.org/10.3372/wi.45.45204>

URL: <http://www.bioone.org/doi/full/10.3372/wi.45.45204>

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Abstract

Ipor I. B., Ørgaard M. & Jacobsen N.: *Cryptocoryne* × *batangkayanensis* (Araceae), a new hybrid from Sarawak. – Willdenowia 45: 183–187. 2015. – Version of record first published online on 06 July 2015 ahead of inclusion in August 2015 issue; ISSN 1868-6397; © 2015 BGBM Berlin.

DOI: <http://dx.doi.org/10.3372/wi.45.45204>

A new hybrid species, *Cryptocoryne* × *batangkayanensis* Ipor, Ørgaard & N. Jacobsen (*C. cordata* var. *grabowskii* (Engl.) N. Jacobsen × *C. ferruginea* Engl. var. *ferruginea*), from the Batang Kayan basin, Sarawak, Malaysia, is described and illustrated. It is compared with the parent species and an artificial hybrid of the same parentage.

Additional key words: aroids, taxonomy, relationships

Introduction

Cryptocoryne species have for a long time been relatively well known from Sarawak due to the works of Engler (1879), Schulze (1971), Jacobsen (1985) and Ipor & al. (2007–2008). Presently 12 species of *Cryptocoryne* are recognized from Sarawak.

When several species of *Cryptocoryne* inhabit the same and adjacent stream and river systems, it is not unlikely that hybridization will occur. Natural hybrids between species of *Cryptocoryne* are not uncommon; they have previously been reported from Sri Lanka (Jacobsen 1981, 1987), Thailand (Jacobsen 1980; T. Idei unpub-

lished), Lao P. D. R. (T. Idei unpublished), Peninsular Malaysia (Othman & al. 2009), Singapore (Bastmeijer & Kiew 2001) and Kalimantan (Jacobsen & al. 2002; Bastmeijer & al. 2013). A molecular study of *C. xpurpurea* Ridl. (*C. cordata* Griff. × *C. griffithii* Schott) in Peninsular Malaysia, Sarawak and Kalimantan, presented by Ipor & al. (2010), showed that it was possible to distinguish between hybrid populations. The study also showed that it was possible to separate the Peninsular Malaysian populations (with diploid *C. cordata* var. *cordata* as one of the parents) from the Bornean populations (with tetraploid *C. cordata* var. *grabowskii* (Engl.) N. Jacobsen as one of the parents).

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Results

During a *Cryptocoryne* field trip in 2004, I.B.I. brought us to a site west of Bau (some 55 km west of Kuching), in the eastern part of the Batang Kayan catchment area. In small forest-ditch pools we saw a green-leaved *Cryptocoryne* population which according to I.B.I.'s information produced a spathe with a purple limb. The plant was taken into cultivation as accession *NJS 04-07* and indeed soon proved to have a purple limb, thereby resembling *C. xpurpurea* nothovar. *purpurea* of Peninsular Malaysia (*C. cordata* var. *cordata* × *C. griffithii*, $2n = 34$), and the South Kalimantan counterpart *C. xpurpurea* nothovar. *borneoensis* N. Jacobsen & al. (*C. cordata* var. *grabowskii* × *C. griffithii*, $2n = 51$; Jacobsen & al. 2002; Othman & al. 2009).

Ipor & al. (2008), in their treatment of the ecology and distribution of the *Cryptocoryne* species in Sarawak, pictured and assigned the Batang Kayan plant with uncertain status under *C. xpurpurea* nothovar. *borneoensis*.

Although the Batang Kayan plant resembled the hybrid *Cryptocoryne xpurpurea*, there was a problem: one of the parental species of this hybrid, *C. griffithii*, has only been reported from the southern part of Kalimantan, Peninsular Malaysia and some of the nearby Riau islands. This fact left some uncertainty as to the Batang Kayan plant belonging to *C. xpurpurea*.

The other parental taxon of *Cryptocoryne xpurpurea* nothovar. *borneoensis*, viz. *C. cordata* var. *grabowskii*, is widespread on Borneo, including Sarawak, and has been found in Sungai Stunggang, also in the Batang Kayan basin (less than 20 km north of the Batang Kayan locality), as well as in the adjacent Sungai Sarawak basin toward the east.

Another parent candidate with a purple spathe limb within the region would be *Cryptocoryne ferruginea* Engl. var. *ferruginea*, which has been found some 20 km

east of the Batang Kayan locality at Sungai Salalang (north of Bau) within the neighbouring Sungai Sarawak catchment basin.

The relatively small Sungai Salalang and its tributaries lies toward the eastern border the Batang Kayan basin some 15 km east of the Batang Kayan locality; this rather short distance to the hybrid locality makes a hybridization event possible, especially since the intervening area has not been investigated for *Cryptocoryne* populations. Moreover, even though at the present time the two catchment areas have separate runoffs, they had combined runoffs during the last glaciation and until about 13000 BP (Voris 2000; Sathiamurthy & Voris 2006).



Fig. 1. *Cryptocoryne xbatangkayanensis* – A: habitat of type locality; B: habitat close up. – Both photographs taken on 29 Nov 2004 by N. Jacobsen.