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Schismatoglottideae (Araceae) of Borneo LXXVII — Circumscribing *Schismatoglottis sensu stricto*, and seven new genera

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Abstract. Based on published molecular analyses combined with morphological data, the genus *Schismatoglottis* is restricted to species with hapaxanthic shoots and a caducous spathe limb shed almost always in a single piece. Thus defined, *Schismatoglottis* comprises sixty-nine accepted species, twenty-four provisionally accepted names, and three species of doubtful affinity [*Schismatoglottis conoidea*, *S. convolvula*, and *S. priapica*] that are retained provisionally in *Schismatoglottis* pending further study. Eighty-five species hitherto assigned to *Schismatoglottis* with pleioanthic shoots and spathe limbs variously senescing are transferred into seven new genera: *Aia* (monotypic), *Ayuantha* (four species), *Bau* (26 species), *Borneoa* (22 species), *Ibania* (12 species), *Sarawakia* (five species), and *Tweeddalea* (15 species). All genera are illustrated, together with representative species of *Schismatoglottis* s.s., and a species-finder list provided as an Appendix. The changes presented here take the vascular plant Bornean flora to 1601 native genera.

Keywords: Araceae, Schismatoglottideae, monophyly, new genera.

INTRODUCTION

The taxonomy of *Schismatoglottis* Zoll. & Moritz has been the focus of much additional work since the publication of what was in all but name a monograph (Hay and Yuzammi 2000). Outputs include the recognition of an additional seventy-seven new species, the majority Bornean, and, beginning with Boyce and Wong (2008) and Wong et al. (2010), with supporting evidence in Low et al. (2014), and Low et al. (2018), compelling evidence that *Schismatoglottis sensu* Hay & Yuzammi is polyphyletic. Combined molecular and morphological evidence supported the first splits from *Schismatoglottis* including the new genus *Schottarum* P.C.Boyce & S.Y.Wong (Boyce and Wong 2008), resurrection of the neotropical genus *Philonotion* Schott (Wong et al. 2010), resurrection of *Apoballis* Schott (Boyce and Wong 2010),

and establishment of *Hestia* S.Y.Wong & P.C.Boyce [later for nomenclatural reasons renamed *Vesta* S.Y.Wong & P.C.Boyce (Low et al. 2018)] for *Schismatoglottis longifolia* Ridl. (Boyce and Wong 2010). Subsequent molecular analyses of the Schismatoglottideae (Low et al. 2018) recovered a clade of *Schismatoglottis* with hapaxanthic stems (Hay 1996) centred on the generic type, *Schismatoglottis calyptrata* (Roxb.) Zoll & Moritzi, that we subsequently referred to as 'Core *Schismatoglottis*'. Although we were confident at that time to erect new genera from the mass of species assigned to *Aridarum* Ridl. and *Piptospatha* N.E.Br., we were, with the exception of describing the massive pachycaul *Schismatoglottis corneri* A.Hay as a monotypic new genus, *Nabalu* S.Y.Wong & P.C.Boyce, and resurrecting Schott's *Colobogynium*, owing to the grade-nature of some of the retrieved clusters, reluctant of making further splits, even though intuitively further division of *Schismatoglottis* was indicated. Subsequently, a much larger gene sampling albeit of a limited taxon sampling (Haigh et al. 2022) provided broad support for the Low et al. (2018) topology of Schismatoglottideae giving us confidence to complete the dismemberment of *Schismatoglottis* that we began in 2018.

SCHISMATOGLOTTIS SENSU STRICTO

The genus *Schismatoglottis* is here defined by hypogea (mostly), hapaxanthic (all), shoots, a colonial habit (most), and a caducous spathe limb falling while fresh as a single piece (Figs. 1, 2). Further typical, but neither unique nor universal, characteristics of this newly defined *Schismatoglottis* are an hourglass-shaped spadix, a clavate spadix appendix composed of well-defined staminodes (a notable exception is *S. wallichii* (Fig. 3)), infructescences pendulous post-antheses, and cordato-sagittate leaf blades. Seventy-two species are assigned to *Schismatoglottis*, with a further twenty-four names (all allied to *S. calyptrata* s.s., and almost all Papuanian) provisionally accepted pending further field studies.

Schismatoglottis is widespread, occurring from SW Myanmar throughout continental tropical and subtropical Asia into SW China, including Hainan and southern Taiwan (Lanyu Do), and the Malay Peninsula, including Singapore, throughout the entire Indonesian Archipelago, with centres of diversity on, e.g., Sumatra, Borneo, the Philippines, and thence throughout New Guinea and the Bismarck Archipelago and extending to the Solomon Islands. Despite the proximity of New Guinea to northern Australia *Schismatoglottis* has yet to be found in Australia [c.f. *Alocasia*, (Hay and Wise 1991)].

The main purpose of this paper is establishment of new nomenclature, ahead of preparation for a forthcoming generic monograph of the Araceae (Hay, in prep.) wherein a key to the genera including these new ones will appear.

THE NEW GENERA

With *Schismatoglottis* thus demarcated, eight-five species with pleioanthic shoots hitherto assigned to *Schismatoglottis* but falling into separate clades/grades in Low et al. (2018) are transferred to seven new genera: *Aia* (monotypic), *Ayuantha* (four species), *Bau* (27 species, corresponding to part of the informal Asperata Group of Hay and Yuzammi (2000)), *Borneoa* (20 species, corresponding to the core species the informal Asperata Group of Hay and Yuzammi (2000)), *Ibania* (12 species), *Sarawakia* (five species), and *Tweeddalea* (16 species, corresponding to the informal Multiflora Group of Hay and Yuzammi (2000)) based on molecular analyses (Low et al. 2018: Figs. 1, 2) and well-defined morphological characteristics.

We are fully aware that the dismantling of *Schismatoglottis* and erecting of yet more genera proposed here will likely be met with scepticism from certain quarters. Our approach to the taxonomy of the tribe was explained in Low et al. (2018: 10) and readers are directed there.

The geology of Borneo is specified based on Hutchison (1989, 2005) and Tate (2001).

The changes presented here take the *Flora of Borneo: The vascular plant genera* (Wong 2023), to 1601 native genera.

AIA

Aia S.Y.Wong & P.C.Boyce, **gen. nov.**

Type species: *Aia tseui* (S.Y.Wong & P.C.Boyce) S.Y.Wong & P.C.Boyce, **comb. nov.**

Bas.: *Schismatoglottis tseui* S.Y.Wong & P.C.Boyce, *Aroideana* 37E(2): 22, fig. 2 (2014)]. Figure 4.

Diagnosis

Aia is unique in the tribe Schismatoglottideae by the branched interstice staminodes. The persistent ligular portion of the petiolar sheath and leaf blades with pellucid interprimary veins are reminiscent of some species of