Studies on Schismatoglottideae (Araceae) of Borneo XXXIV — Schismatoglottis iliata, a new species from NW Sarawak, and notes on the Schismatoglottis Multiflora Group and the Schismatoglottis mayoana Complex

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Studies on Schismatoglottideae (Araceae) of Borneo XXXIV – Schismatoglottis iliata, a new species from NW Sarawak, and notes on the Schismatoglottis Multiflora Group and the Schismatoglottis mayoana Complex

Abstract

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A summary of the Schismatoglottis Multiflora Group of Hay & Yuzammi is presented and the group shown to comprise about 15 species, including that described here. Schismatoglottis iliata P. C. Boyce & S. Y. Wong is described as a taxonomic novelty from forested sandstone riverside bluffs of the Ulu Batang Kayan, Lundu District, Kuching Division, NW Sarawak, Malaysian Borneo, and compared with the morphologically most similar species, S. mayoana Bogner & M. Hotta and S. nicolsonii A. Hay, with which S. iliata shares leaf blades adaxially matte olive green and abaxially with very fine and dense (c. 2 veins per mm) pellucid secondary venation, and stamen thecae each with two pores. A key to this newly recognized S. mayoana Complex is provided, and all described species for the S. mayoana Complex are illustrated.

Additional key words: aroids, Malaysian Borneo, Kuching Division, taxonomy, identification key

Introduction
It has been previously highlighted that the Lundu area of Kuching Division, Sarawak, has an aroid flora quite distinct to that of the more southerly and easterly part of the Division (Wong 2010b; Wong & al. 2009). Field work in Lundu and the areas around Sematan and Sempadi continues to reveal taxonomic novelties. One such collection made sterile in 2012 and assigned to the Schismatoglottis Multiflora Group and clearly similar to S. mayoana Bogner & M. Hotta has recently flowered in cultivation and revealed itself to be a new and undescribed species.

The Schismatoglottis Multiflora Group (sensu Hay & Yuzammi, 2000) is a morphologically distinct group of species defined by pleionanthic shoots, a marcescent, or very seldom persistent, ligular petiolar leaf sheath, and a caducous spathe limb. In all species the spadix is held subhorizontal by the bent apex of the peduncle or, less frequently, the bent base of the pistillate zone. All known species of the Multiflora Group are restricted to Borneo, where they are often lithophytic, or occasionally rheophytic, although rather seldom obligately so. Most species are locally endemic, and where known all are habitually restricted to a specific geology.

Circumscription of the Schismatoglottis Multiflora Group
Hay & Yuzammi (2000) recognized 14 species for the Multiflora Group. Subsequently, two of these (Schismatoglottis josefii A. Hay and S. sarikeensis (Bogner) Bogner & A. Hay) have been shown to belong to a separate and not even particularly closely related genus, Schottarum P.
Field work has established *Schismatoglottis nicolsonii* to be restricted to rather dry forested sandstone outcrops at Santubong and Bako, opposing promontories about 15 km apart on Tanjung Sipang and Tanjung Po, respectively, across the mouth of a bay in Kuching Division, NW Sarawak. *Schismatoglottis mayoana* Bogner & Nicolson is so far known only from the Matang Masif and the surrounding area of Kuching Division, where it occurs on wet sandstone outcrops. At Kubah N. P. *S. mayoana* co-occurs with *S. multiflora*, the latter restricted to the parts of a waterfall receiving water flow year-round, whereas *S. mayoana* occurs exclusively on the drier shadier parts and is only seldom subjected to spate.

**Results and Discussion**

*Schismatoglottis iliata* S. Y. Wong & P. C. Boyce, sp. nov. – Fig. 1.

Holotype: Malaysian Borneo, Sarawak, Kuching, Lundu, Ulu Batang Kayang, 01°27′36″N, 109°53′35″E, 17 Jun 2012, Jepom ak Tisai AR-3972 (SAR!); isotypes: SAR! [alcohol], BO! [alcohol]).

Diagnosis — *Schismatoglottis iliata* most closely resembles *S. mayoana* Bogner & M. Hotta (Fig. 2), but is immediately distinguishable by the jade-green spathe limb, the shorter spadix c. 5.5 cm long (vs c. 8 cm long), the pistillate flower zone being about the same width as the staminate zone and appendix, the lack of interstitiell Staminiodes between the pistils (restricted to a row at the base of the pistillate zone), by the appendix staminodes being only c. 0.4 mm across (vs c. 1 mm across) and by the pendulous (not erect) inflorescence. *Schismatoglottis iliata* also resembles *S. nicolsonii* A. Hay (Fig. 3), but is separable by the jade-green (vs white) spathe limb and the presence of a sterile interstice between the pistillate and staminate flower zones.

**Description** — Herbs lithophytic, to 30 cm tall. Stem pleionanthic, often somewhat reddish green, condensed, c. 2 cm in diam. Leaves several together; petiole slender, 13–23 cm long, sheathing only at extreme base, sheath extended into a reddish green, later turning dark brown and papery, tapering ligureal portion to 13 cm long; leaf blade pendulous, elliptic to rather narrowly oblanceolate, 14–21 cm long, 4–8 cm wide, base cuneate; apex acuminate for c. 3 cm; midrib abaxially prominent; primary lateral veins hardly prominent abaxially, c. 10 on each side, diverging at c. 45°, alternating with lesser interprimary veins; secondary venation arising from midrib, very fine and dense, pellucid and darker than surrounding tissue. Inflorescence solitary, comparatively large; peduncle medium semi-glossy green, sometimes slightly suffused reddish brown in lower part, ½–2½ length of subtending petiole, terete, apex bent, obliquely deflecting spathe and spadix. Spathe c. 7 cm long; lower spathe bright glossy
Fig. 1. *Schismatoglottis iliata* – A: plants in type habitat, shaded sandstone bluff above upper reaches (Ulu) of Batang Kayang. Note pendent leaf blades; B: inflorescence at onset of staminate anthesis, with spathe limb caducous and lower spathe top edges flaring; C: inflorescence at staminate anthesis, with spathe limb fallen; D: spadix at onset of staminate anthesis, with nearside part of lower spathe artificially removed. Note that spathe zones of spadix are uniform in width, but interstice staminodes (just below upper edge of lower spathe) have expanded laterally. – All from Jepom ak Tisai AR-3972. – Photographs by Peter C. Boyce.
Fig. 2. *Schismatoglottis mayoana* – A: plants in habitat, edge of sandstone waterfall, Kubah N. P.; B: detail of abaxial surface of leaf blade, showing dense pellucid secondary venation; C: plant flowering (very early pistillate anthesis) in habitat. Note matt reddish-suffused peduncle and white spathe limb; D: inflorescence at late pistillate anthesis. Note that in nature inflorescence would be pendent; E: spadix at late pistillate anthesis, with spathe artificially removed. Note that top of pistillate zone is markedly narrower than other zones of spadix. – All from *P. C. Boyce & S. Y. Wong* AR-1828. – Photographs by Peter C. Boyce.
Fig. 3. *Schismatoglottis nicolsonii* – A: plants in habitat, edge of sandstone waterfall, Bako N. P.; B: flowering plant in habitat; C: inflorescence at onset of staminate anthesis, with spathe limb shed; D: detail of pistillate zone and lower part of staminate zone. Note that staminate zone is fertile to base; E: spathe limb shed during onset of staminate anthesis. – All from P. C. Boyce & al. AR-2106. – Photographs by Peter C. Boyce.
green with dark longitudinal striations, spindle-shaped, c. 2 cm long, differentiated from limb by a distinct constriction; limb jade-green on both surfaces, glossy on inner surface, broadly lanceolate, gaping ventrally at pistillate anthesis, caducous at staminate anthesis (with lower spathe apical edges then flaring), apex mucronate for c. 1 cm. Spadix sessile, c. 5.5 cm long, c. ½ length of spathe; interstitial staminodes white, clavate, slightly exceeding pistils in height, forming a basal row to pistillate zone on each side along adnation of spathe and spadix; pistillate flower zone c. 2.5 cm long, adnate to 10 Wong & Boyce: Studies on Schismatoglottideae of Borneo XXXIV green with darker longitudinal striations, ... nuclear and plastid DNA sequences. – Pl. Syst. Evol.: published at http://dx.doi.org/10.1007/s00606-013-0906-7

Spadix at least 5 cm long .............. 2
2. Spadix c. 8 cm long; top of pistillate flower zone c. ½ width of staminate zone and appendix; stamens and appendix staminodes large, c. 1 mm across; interstitial staminodes present between pistils and forming a row at base of pistillate zone; peduncle and lower spathe matt olive green, usually reddish stained, spathe limb white; infructescence erect (Kuching: Matang) ............... S. mayoana

Spadix c. 5.5 cm long; top of pistillate flower zone about same width as staminate zone and appendix; stamens and appendix staminodes small, c. 0.4 mm across; interstitial staminodes only present as row at base of pistillate zone; peduncle and lower spathe bright glossy green, lower spathe with darker longitudinal striations, spathe limb jade-green; infructescence pendulous (Kuching: Sempadi) .... S. iliata

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References


