Studies on Schismatoglottideae (Araceae) of Borneo XXVI — Schismatoglottis scintillans, a new species with horticultural potential from Sabah, Malaysian Borneo

Authors: Scherberich, David, and Boyce, Peter C.

Source: Willdenowia, 43(1) : 87-90

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

URL: https://doi.org/10.3372/wi.43.43109

DAVID SCHERBERICH[1*] & PETER C. BOYCE[2]

Studies on *Schismatoglottideae* (*Araceae*) of Borneo XXVI – *Schismatoglottis scintillans*, a new species with horticultural potential from Sabah, Malaysian Borneo

Abstract

Scherberich D. & Boyce P. C.: Studies on *Schismatoglottideae* (*Araceae*) of Borneo XXVI – *Schismatoglottis scintillans*, a new species with horticultural potential from Sabah, Malaysian Borneo. – Willdenowia 43: 87–90. June 2013. – Online ISSN 1868-6397; © 2013 BGBM Berlin-Dahlem.
Stable URL: http://dx.doi.org/10.3372/wi.43.43109

Schismatoglottis scintillans Scherberich & P. C. Boyce sp. nov., a taxonomic novelty with horticultural potential, is described from Sabah, Malaysian Borneo. *Schismatoglottis scintillans* belongs to the Calyptrata Group by the presence of hapaxanthic shoot modules, but differs from all species hitherto described for this Group by the combination of refractive variegated leaf blades, a pistillate flower zone extensively adnate to the spathe, a staminate flower zone only half exserted from the lower spathe portion, and a bullet-shaped appendix basally abruptly wider than the adjacent top of the staminate flower zone. The new species is keyed out and illustrated from living plants.

Additional key words: Calyptrata Group

Introduction

Hay & Yuzammi (2000) provide an excellent overview of *Schismatoglottis* that has proved to be an invaluable basis for the extended research now active, especially on Borneo, and through which it has become apparent that a significant quantity of *Schismatoglottis* species still remains to be formally described.

A hindrance facing herbarium-based taxonomists attempting to work on aroids is that herbarium material, and especially historical specimens, is often depauperate and degraded, frequently compounded by the absence of properly prepared and pressed and, critically, liquid-preserved inflorescences. An additional problem with physically larger species, especially those with extensive hypogeal stems, is that they are habitually sampled from the smallest portions that will fit conveniently in a standard plant-press, or can be mounted on a single, standard herbarium sheet. Combined with often inadequate field notes, and almost always lacking associated images, it is little wonder that herbarium holdings of *Schismatoglottis* are so frequently incorrectly identified, or left undetermined.

The Calyptrata Group of *Schismatoglottis* (sensu Hay & Yuzammi 2000) remains one of the most poorly understood informal groups of the genus. Apart from the difficulties noted above, species of this group are mostly not popular horticultural subjects owing to their large size and often extensively colonial habit, which combined renders them difficult to maintain in pots, and makes them invasive in the open ground where the climate permits outdoor cultivation. Consequently, in addition to the difficulties of interpreting preserved material, there is also a dearth of available fresh material from which to attempt

1 Jardin Botanique de Lyon, Mairie de Lyon, 69205 Lyon cedex 01, France; *e-mail: david.scherberich@mairie-lyon.fr (author for correspondence).
2 Pusat Pengajian Sains Kajihayat [School of Biological Sciences], Universiti Sains Malaysia, 11800 USM, Pulau Pinang, Malaysia.

taxonomic analysis. This is ironic given that a scrupulously documented and well-maintained living collection is a vital resource for studying aroids and, thus, research on the Calyptrata Group suffers dually. This is not to say, however, that there are no species of the Calyptrata Group with horticultural potential; quite the reverse, in fact. Several species, notably Bornean *Schismatoglottis silamensis* A. Hay, *S. venusta* A. Hay, and *S. decipiens* A. Hay possess considerable ornamental qualities. Here is described another such novelty, originally collected in Sabah and now in cultivation in two botanic gardens in Europe (Jardin Botanique de la ville de Lyon, France, and the Royal Botanic Gardens, Kew, U.K.), and in the Lyon Arboretum and Botanical Garden of the University of Hawai'i, as well as in the extensive private collection of John Mood, Hawai'i, from whom Kew in 1998 obtained living material, from which, in turn, it was distributed to Lyon, France.

Results and Discussion

Schismatoglottis scintillans Scherberich & P. C. Boyce, **sp. nov.**

Holotype: Malaysian Borneo, Sabah, Bahagian Pedalaman, Keningau, Apin Apin, 16 km on village road, west, and 2 km walk along Apin Apin river to 610 m ("2000 ft") elevation, 23 Jan 1993, *J. Mood 563* (K!; isotypes: LYJB!, SAN!, SAR!).

Diagnosis — *Schismatoglottis scintillans* most closely approaches *S. decipiens* A. Hay and *S. trusmadiensis* A. Hay & J. Mood by the pistillate flower zone extensively (≥ 1/2) adnate to the spathe, but it is readily distinguished from both species by the combination of a much longer proportion of this adnation (5/6 of the entire pistillate zone vs. 1/2), and by scintillating leaf blades. *Schismatoglottis scintillans* is specifically distinguished from *S. decipiens* by the staminate flower zone half enclosed (not fully exerted) from the lower spathe, and by lacking a naked interstice between the staminate and pistillate zones. From *S. trusmadiensis, S. scintillans* is further distinguished by a bullet-shaped appendix being much wider than the top of the staminate flower zone (vs. appendix bluntly conoid, and indistinctly wider than the top of the staminate zone) and by the overall much more compact stature, and ovate-sagittate, variegated, velvety leaf blades (vs. hastate-sagittate, plain glossy green).

Description — Clumping to weakly colonial mesophytic herb to 30 cm tall. *Stem* hypogeal, modules hapaxanthic, dense, c. 1 cm in diam. *Leaves* up to 5 together; *petiole* longer than blade, to c. 25 cm long, D-shaped in cross-section, with slightly raised dorsal margins, these merging abaxially with the basal veins of the leaf blade, glabrous, appearing very minutely glandular-vesicular under a (strong) lens, longitudinally weakly ridged, especially on flat side; *petiolar sheath* 0.3–0.4 × as long as petiole; wings of sheath fully attached, tapering, sometimes with a short (2–3 mm long) ligular portion apically, wings retuse or emarginate, persistent; *blade* ovate-sagittate, 5.7–20.5 cm long × 3.8–12.3 cm wide, adaxially mid- to dark green, velvety, variegated with a greyish irregular central band along midrib and a band on both sides between the midrib and margin, distinctly paler abaxially, base cordate with spreading rounded posterior lobes to 6 cm long, the tip acute and apiculate, distinctly greyish for the top 2–4 cm; midrib barely prominent adaxially, distinctly raised on abaxial side, with 4–9 primary lateral veins on each side, regularly alternating with lesser interprimaries and diverging at 60°–65°, gradually curving towards the apex before reaching intermarginal collecting vein, the basal veins usually branched, giving off 1 or 2 veins similar in size to the interprimaries; secondary venation arising from the midrib and from along the lower c. 1/3 of the proximal primary veins; tertiary venation obscure. *Inflorescence* solitary; peduncle 10–12.5 cm long, subtended by a somewhat reduced foliage leaf or a short cataphyll. *Spathe* to 10.5 cm long; lower spathe narrowly ovoid, 4.5–4.8 cm long, differentiated from the limb by a moderate constriction, dark green, interior glossy, exterior semi-glossy and verruculose; limb broadly ovate, c. 6 cm long, whitish outside but light green inside, inflated over the appendix, caducous and ripping into pieces at anthesis. *Spadix* shorter than spathe, c. 7.8 cm long, slender, subcylindric, sessile; *pistillate flower zone* c. 3.2 cm long, adnate to the spathe for c. 2.8 cm, c. 1 cm wide in the middle, distally slightly conic, c. 0.7 cm in diam. at the top, light green; pistils many, crowded; ovaries subglobose, laterally compressed and longitudinally faintly 2–4-lobed, c. 1 mm in diam., unilocular with parietal placentation; stigma sessile, button-like, papillate, about as wide as the ovary; *interpistillar staminodes* scattered among the pistils, essentially peripheral, a few concentrated at the base, subcylindric, subtruncate, slightly exceeding the pistils, occasionally much exceeding them; *sterile interstice* absent; *staminate flower zone* cylindric, 2.2–2.4 cm long × 5–6 mm in diam., the basal half held within the lower spathe chamber, yellowish-ivory; stamens densely crowded, truncate, c. 0.5 mm in diam., dumbbell-shaped; *appendix* subequalling or shorter than staminate zone, 2.2–2.4 cm long, bullet-shaped, the base abruptly wider than top of staminate zone, c. 8 mm in diam., yellow when fresh, turning white in alcohol; *appendix staminodes* columnar, irregularly polygonal, sometimes 2 connate, with rounded tips, c. 0.5 mm in diam. *Infructescence* unknown. – Fig. 1.

Ecology — *Schismatoglottis scintillans* grows terrestrially in very shaded riverine forests on wet alluvial soils, at c. 600 m above sea level.

Distribution — So far known only from the type locality in Sabah, Malaysian Borneo.

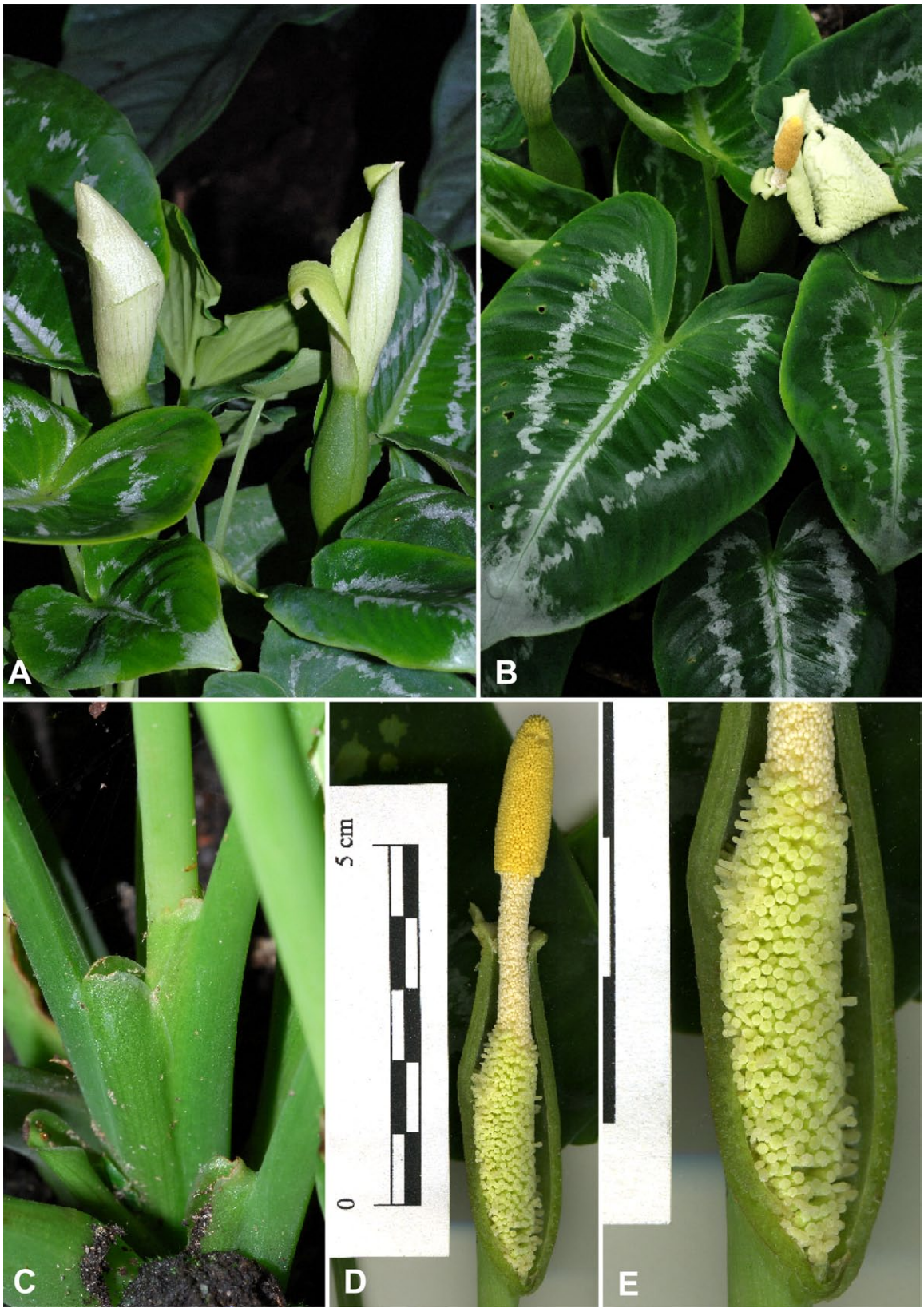

Fig. 1. *Schismatoglottis scintillans* Scherberich & P. C. Boyce – A: cultivated flowering plant at pistillate anthesis; note that the right-hand spathe limb is just beginning to split and reflex; B: inflorescence at staminate anthesis; the spathe limb is already degrading; C: detail of the petiolar sheath; D: spadix (spathe artificially removed) at pistillate anthesis; note that the greater portion of the pistillate flower zone is adnate to the spathe; note, too, the abrupt expansion of the appendix at the junction with the staminate flower zone; E: spadix (spathe artificially removed) at pistillate anthesis with details of the pistillate flower zone; note the interpistillar staminodes. – All from the type gathering, *J. Mood 563*. – Images © D. Scherberich.

Etymology — The epithet for this new species is derived from Latin *scintillo* ("sparkle" or "glitter") and is in reference to the refractive properties of the adaxial surface of the leaf blade.

Discussion — The region of Sabah in which *Schismatoglottis scintillans* occurs is comparatively well botanized and *S. scintillans* appears to be genuinely locally endemic, as opposed to collection deficient. Other *Schismatoglottis* species in the same general area that also appear to be locally restricted are *S. moodii* A. Hay (Tenom), *S. trusmadiensis* A. Hay & J. Wood (Trus Madi), *S. unifolia* A. Hay & P. C. Boyce (Tenom).

Schismatoglottis scintillans is a compact, highly attractive, and moreover easily grown plant with considerable potential as an ornamental foliage plant.

Key to species — *Schismatoglottis scintillans* may be accommodated as follows into a modified version of the key in Hay & Yuzammi (2000):

54. Leaves distinctly hastate-sagittate (i.e. posterior lobes distally acutely rounded and out-turned) 55
– Leaves narrowly oblong-lanceolate to elliptic to ovate-sagittate (posterior lobes absent to rounded and not out-turned) 56
55. Appendix shortly cylindric, abruptly wider than top of staminate zone; pistillate zone obliquely inserted but not otherwise adnate to spathe; Tenom, Sabah . . . . . ***S. moodii*** A. Hay
– Appendix bluntly conoid, indistinctly wider than top of staminate zone; pistillate zone adnate to the spathe in the lower half; G. Trus Madi, Sabah . . . . . ***S. trusmadiensis*** A. Hay & J. Mood
56. Appendix shortly cylindric-bullet-shaped, basally isodiametric with top of staminate zone; staminate flower zone completely exserted from lower spathe and separated from the pistillate zone by a naked interstice; anthers with the connective almost as broad as the thecae; ultramafic substrate; scattered in Sabah . . . . . ***S. decipiens*** A. Hay
– Appendix bullet-shaped, basally abruptly wider than the top of the staminate zone; staminate flower zone about half enclosed in the lower spathe 57
57. Stem hapaxanthic and hypogeal; pistillate flower zone $^{5}/_{6}$ adnate to lower spathe; leaf blades scintillating; Apin Apin, Sabah . . . . . ***S. scintillans*** Scherberich & P. C. Boyce
– Stem erect, epigeal and pleionanthic, if hapaxanthic and hypogeal then pistillate flower zone obliquely inserted or only to c. $^{1}/_{3}$ length adnate to spathe . . 58
58. Stem erect, epigeal and pleionanthic; limestone; Niah, Sarawak . . . . . ***S. niahensis*** A. Hay
– Stem hapaxanthic and hypogeal 59

Acknowledgements

The first author wishes to express his thanks to the Curator and staff of the Tropical Section, Living Collection, Royal Botanic Gardens, Kew, for the donation of living plants of *Schismatoglottis scintillans* for the collection held in the Jardin Botanique de la ville de Lyon.

References

Hay A. & Yuzammi. 2000: *Schismatoglottideae* in Malesia I – *Schismatoglottis*. – Telopea **9(1):** 1–177.