



Citation: Wong Sin Yeng, Peter C. Boyce (2022) Schismatoglottideae of Borneo LXXII – A new species of *Schottarum* (Araceae) from Sarawak, Malaysian Borneo. *Webbia. Journal of Plant Taxonomy and Geography* 77(1): 145-152. doi: 10.36253/jopt-12176

Received: October 13, 2021

Accepted: November 11, 2021

Published: April 20, 2022

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Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

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Schismatoglottideae of Borneo LXXII – A new species of *Schottarum* (Araceae) from Sarawak, Malaysian Borneo

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Abstract. *Schottarum inconspicuum* S.Y.Wong & P.C.Boyce, is described as a new species from the eastern part of the Rejang Basin, taking the genus to three species. All are illustrated from living plants. A distribution map is provided.

Keywords: *Schottarum*, Rejang Basin, Borneo, shales.

INTRODUCTION

Schottarum P.C.Boyce & S.Y.Wong (Boyce and Wong 2008) is a small genus of Bornean Steenisian rheophytes (Boyce and Wong 2019) allied to *Schismatoglottis* (in which genus both described species have formerly been placed – see Hay in Hay and Yuzammi 2000). It is defined by ovaries with basal placentation, few-seeded fruits with the seeds lacking a micropylar appendage, a spathe limb divided from the narrowly campanuliform persistent lower spathe by a pronounced constriction, with the persistent lower spathe reflexing and opening along the free margins at fruit maturity, and pollen released in dense fine threads (Wong 2013; Low et al 2018). It is distinguished from similar *Schismatoglottis* (*S. multiflora* Ridl., etc.) by the basal (not parietal) placentation and by the persistent lower spathe not splitting into pieces at fruit maturity. *Schottarum* is also reminiscent of *Bidayuha* S.Y.Wong & P.C.Boyce, the latter differing by seeds with a pronounced micropylar appendage, the persistent lower spathe splitting basipetally at fruit maturity and, uniquely in the tribe, a spathe with a very curious waxy-oily texture.

Schottarum was erected upon *Schottarum sarikeense* (Bogner and M.Hotta) P.C.Boyce & S.Y.Wong (Fig. 1 & 4C) with a second species, *S. josefii* (A.Hay) P.C.Boyce, S.Y.Wong & S.L.Low (Fig. 2 & 4B), recognized in 2013 (Low et al. 2013). Both occur in the western Rejang Basin, to the west

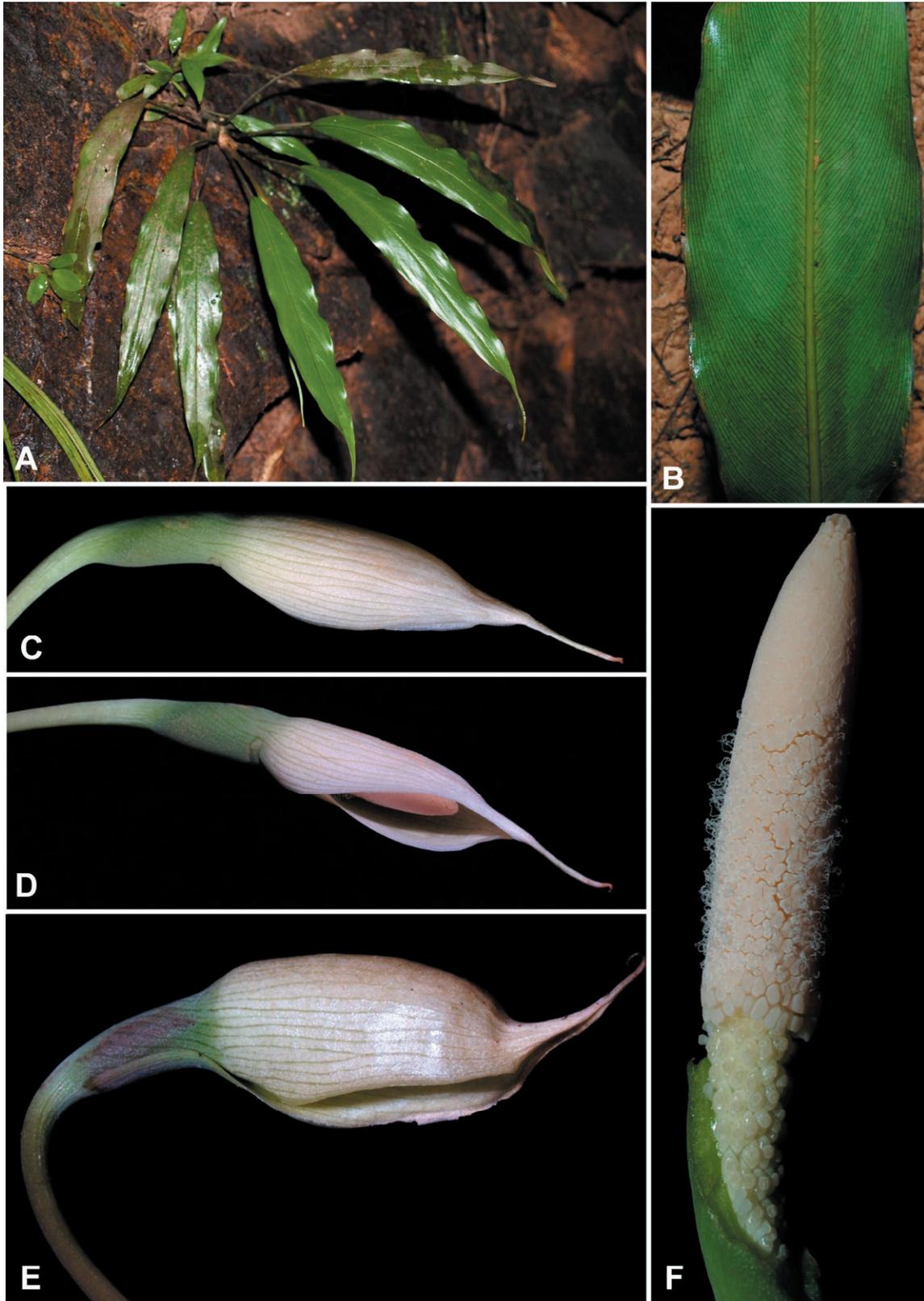


Figure 1. *Schottarum sarikeense* (A) Plant in habitat. (B) Leaf blade abaxial surface showing the fine venation. (C & D) Bloom at pistillate anthesis. (E) Bloom at staminate anthesis. (F) Spadix at staminate anthesis, spathe artificially removed. All from AR-1605.

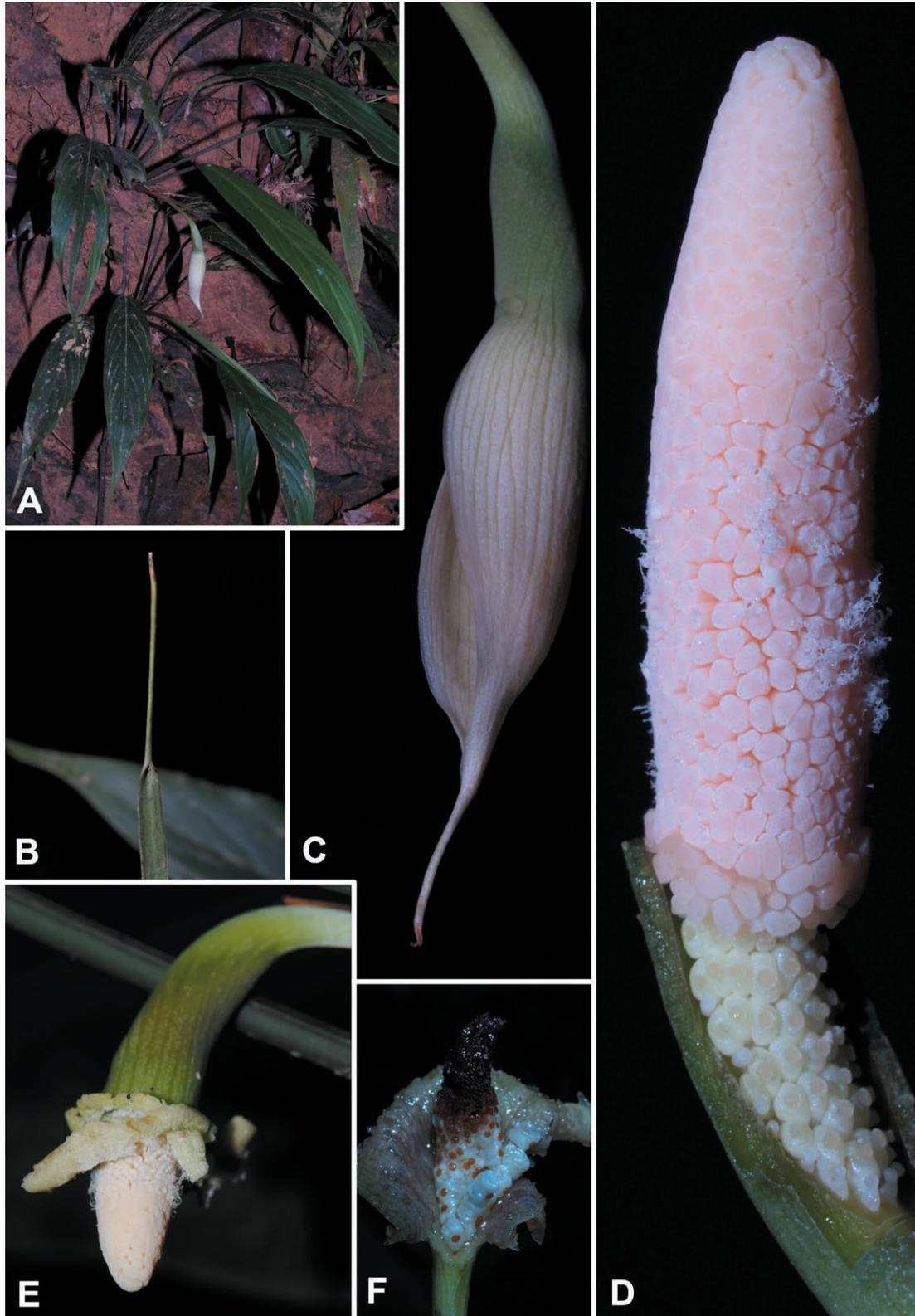


Figure 2. *Schottarum josefii* (A) Flowering plant in habitat. (B) Detail of leaf blade terminal tubular mucro. (C) Bloom at pistillate anthesis. (D) Spadix at staminate anthesis, spathe artificially removed. (E) Bloom at late staminate anthesis with spathe limb partially shed. (F) Ripe infructescence with persistent lower spathe already opened and fruits being shed. All from AR-2418.

of the Rejang and Kanowit rivers, with *S. sarikeense* in the north and *S. josefii* in the south (Map 1). Here we describe a third species, from the central east Rejang Basin. All three species are shale obligates. Geology in this paper is specified based on Hutchison (1989, 2005) and Tate (2001).

***Schottarum inconspicuum* S.Y.Wong, & P.C.Boyce, sp. nov.**

Type: Malaysia. Sarawak, Kapit, Nanga Gaat, Batang Balleh, Rejang Wood Concession, Sungai Piat, 1°38'9.10"N 113°24'9.90"E, 480 m asl, 14 Oct 2003, P.C. Boyce & Jeland ak Kisai AR-117 (holotype SAR + spirit). (Figure 3 and 4A).

Diagnosis

Schottarum inconspicuum differs from both *S. josefii* and *S. sarikeense* by the fusiform (vs bluntly conic) spadix appendix equalling (vs about half as long as) the staminate floret zone, by the pistillate floret zone being about one third free (vs fully adnate or at most only slightly free from the spathe), and the much smaller and more densely congested pale green pistillate florets.

Description

Small obligate rheophytes to 15 cm tall. Stem pleioanthic, condensed; roots thin but tough, wide-spreading, adhering strongly to rocks. Cataphylls conspicuous, papery, soon marcescent. Leaves numerous; petiole 5-7 cm long, shorter than blade, slender, almost terete, adaxially very narrowly canaliculate; petiolar sheath sheathing only at extreme base, wings extended into a 3-4 cm long very narrowly triangular ligular marcescent portion; leaf blade thinly leathery, narrowly elliptic, 8-15 cm long, 1.5-3 cm wide, rather pale bright green, somewhat paler beneath, base cuneate, apex acuminate with a conspicuous tubule to 3 mm long; midrib abaxially prominent, adaxially flush with blade to slightly impressed; primary lateral veins fine, 6-7 on each side, prominent adaxially, pellucid; interprimary venation pellucid, fine and dense, barely differentiated from primary venation; secondary and tertiary venation obscure. Bloom solitary, nodding (down-curved in lower part), c. 4 cm long; smelling slightly esteric during anthesis; peduncle shorter than petiole, 4-5 cm long, medium green, terete; lower spathe very narrowly campanulate, 1.5-2 cm long, glaucous pale green, differentiated from limb by a constriction; spathe limb caducous, dull white with slightly darker veins, more-or-less oblong lanceolate, inflating and somewhat cucullate over spadix at anthesis, nar-

rowed into an abrupt beaked tip; spadix subcylindric, c. 3 cm long; pistillate floret zone 2-2.5 cm long, dorsally adnate to spathe for about two thirds its length; pistils subglobose, c. 0.8 mm diam., pale green; stigma sessile, discoid, about as wide as the ovary, papillate; inter-pistillar staminodes absent from among the pistils, confined to scattered few along the spathe/spadix adnation, block-like, very slightly exceeding the pistils in height; sterile interstice comprised of a few irregular whorls of sterile stamens at base of staminate floret zone, with some coalesced into larger structures, these expanding laterally during pistillate anthesis; staminate floret zone cylindrical, 1 cm long, faintly wider distally than proximally; staminate florets partially to completely connate into groups of two to three stamens, with a few of these groups congested into random clusters; stamens truncate, flat-topped, c. 0.7 mm across, rather irregular in shape and size, ellipsoid to dumbbell-shaped from above; filament block-like; connective flat; thecae embedded in stamens, opening via a terminal pore; pollen in dense fine strings; appendix fusiform, c. 1.5 cm long, basally slightly wider than the top of staminate floret zone, distally widening and then tapering and finally narrowly obtuse, pale yellow; appendix staminodes columnar, flat-topped, c. 0.5 mm wide. Fruiting peduncle arching, later declinate; fruiting spathe narrowly urceolate, about 1 cm long, reflexing and opening along the free margins (not splitting) at fruit maturity; fruit oblong-globose; seed ellipsoid, c. 0.5 mm long, micropyle blunt; testa longitudinally very finely ridged.

Etymology

From Latin, *inconspicuus* (neuter *inconspicuum*), unremarkable – in allusion to the small and easily overlooked plants.

Distribution

Known only from the area around Nanga Gaat where it is scattered and seldom abundant.

Ecology

Paleogene deepwater shale riverside rocks and boulders under shady perhumid lowland gallery forest between 150 and 480 m asl.

Notes

With their rather featureless leaf blades sterile plants of the three described *Schottarum* species are highly similar in appearance; even when flowering, plants are likely overlooked since the nodding blooms are held beneath the foliage. Much as with outwardly

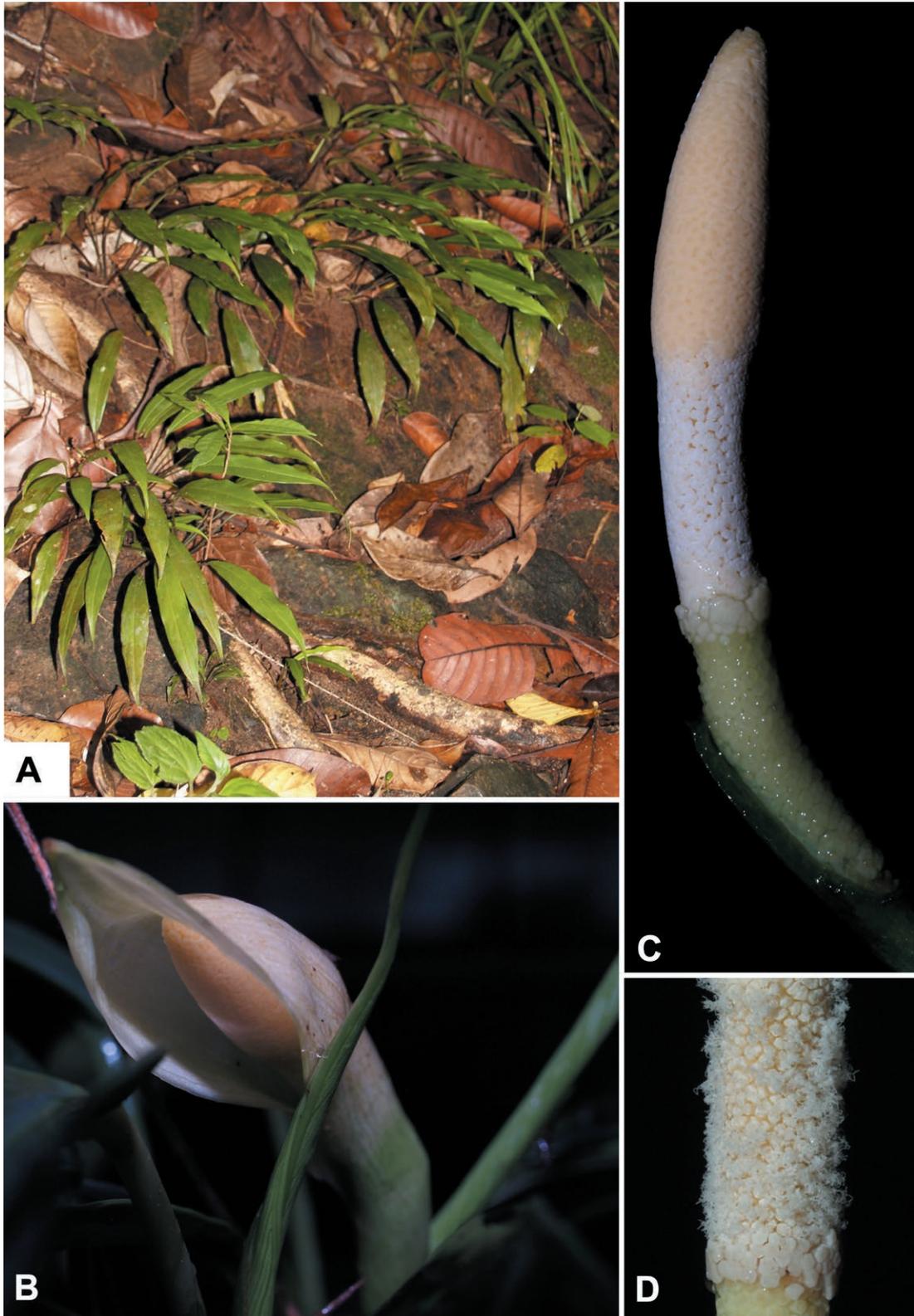


Figure 3. *Schottarum inconspicuum* (A) Plants in habitat. (B) Bloom at staminate anthesis. Leaf blade abaxial surface showing the fine venation. (C) Spadix at staminate anthesis, spathe artificially removed. (D) Detail of staminate zone with pollen shed in fine dense strings. All from AR-117.



Figure 4. Spadix comparisons (A) *Schottarum inconspicuum* [AR-117]. (B) *Schottarum josefii* [AR-2418]. (C) *Schottarum sarikeense* [AR-1605].

highly homogenous *Ooia* S.Y.Wong & P.C.Boyce (Wong & Boyce 2016) species, examination of the spadix at the onset of pistillate anthesis is critical for species determination.

Additional specimens examined (paratypes)

MALAYSIA: Sarawak. Kapit. Nanga Gaat, Batang Balleh, Rejang Wood Concession, Sungai Piat,



Map 1. △ = *Schottarum josefii*; ☆ = *Schottarum sarikeense*; ○ = *Schottarum inconspicuum*.

1°38'9.10"N 113°24'9.90"E, 480m asl., 14 Oct 2003, P.C.Boyce & Jeland ak Kisai AR-102 (SAR + spirit). Nanga Gaat, Batang Balleh, Rejang Wood Concession, stream below Camp Gahada, 1°41'49.40"N 113°26'16.30"E, 350m asl., 15 Oct 2003, P.C.Boyce &

Jeland ak Kisai AR-135 (SAR + spirit). Nanga Gaat, Batang Balleh, Rejang Wood Concession, km 65 road to Camp Gahada, 1°42'01.1"N 113°31'14.8"E, 190m asl., 12 May 2004, P.C.Boyce, Jeland ak Kisai & Jepom ak Tisai AR-326 (SAR + spirit). Nanga Gaat, Batang

Balleh, Rejang Wood Concession, km 3.5 after heli-logging camp on road to Camp Gahada, Sungai Bereng, 1°45'36.0"N 113°27'54.7"E, 228m asl., 15 Dec 2004, P.C.Boyce, *Jeland ak Kisai & M.Gibernau AR-890* (SAR + spirit). Nanga Gaat, Batang Balleh, Rejang Wood Concession, km 65 road to Camp Gahada, 01°41'59.7"N 113°31'13.7"E, 182m asl., 16 Dec 2004, P.C.Boyce, *Jeland ak Kisai & M.Gibernau AR-921* (SAR + spirit).

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