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Authors: Hin, Ooi Im, and Yeng, Wong Sin

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OOI IM HIN[1] & WONG SIN YENG[1*]

Scaphochlamys stenophylla (*Zingiberaceae*): a new species from Sarawak, Malaysian Borneo

Abstract

Ooi I. H. & Wong S. Y.: *Scaphochlamys stenophylla* (*Zingiberaceae*): a new species from Sarawak, Malaysian Borneo. – Willdenowia 44: 241–245. 2014. – Version of record first published online on 8 July 2014 ahead of inclusion in August 2014 issue; ISSN 1868-6397; © 2014 BGBM Berlin-Dahlem.

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A new species of *Scaphochlamys* Baker (*Zingiberaceae*), *S. stenophylla* I. H. Ooi & S. Y. Wong, from Bau, Kuching Division, Sarawak, Malaysian Borneo, is described and illustrated with observations on the phenology. An identification key to the species of *Scaphochlamys* in Borneo is provided.

Key words: ginger, Kuching Division, phenology, taxonomy, identification key

Introduction

Scaphochlamys Baker is distributed from S Thailand through Peninsular Malaysia to N Borneo and Sumatra with 35 described species. Searle (2010) listed 31 species in the last revision for the genus. Since then, four species from Borneo and Peninsular Malaysia have been described (Sam & al. 2010; Meekiong & al. 2011). *Scaphochlamys* is generally defined by having the following characteristics: pulvinate petiole base (Borneo only), acropetalous flowering sequence, spiral bract arrangement, keeled first bracteole arising opposite the bract, bracteoles split to base, and thecae with free basal spurs (Shafreena 2006; Searle 2010).

The new species described here was discovered by the first author while carrying out fieldwork at Gunung (Mount) Buan, Bau, Kuching Division, Sarawak. The investigated plot is a native customary land utilized by local indigenous people (Bidayuh-Jagoi) for decades to hunt, cut wood and collect fruits. In situ observation on the floral mechanism was carried out from 10–21 November 2013. Recognition of this new species takes the genus *Scaphochlamys* to ten accepted species in Borneo.

Results and Discussion

Key to the species of *Scaphochlamys* in Borneo

1. Lamina adaxially with conspicuously raised tessellate venation; plants of karst limestone . . . . . ***S. reticosa*** (Ridl.) R. M. Sm.
– Lamina adaxially with striate venation, weakly raised or almost flush; plants of various geologies **2**

1 Department of Plant Science and Environmental Ecology, Faculty of Resource Science and Technology, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia; *e-mail: sywong@frst.unimas.my (author for correspondence).

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2. Lamina oblong to broadly elliptic in outline, adaxially with conspicuous silver banding . . . . . ***S. argentea*** R. M. Sm.
– Lamina broadly elliptic to lanceolate to linear in outline, adaxially concolorous **3**
3. Elements polyphyllous **4**
– Elements monophyllous **5**
4. Leaves (1 or)2 per element; elements discrete; lamina ovate to lanceolate; floral bracts erect, clasping . . . . . ***S. anomala*** (Hallier f.) R. J. Searle
– Leaves up to 6 per element; elements often superposed; lamina elliptic; floral bracts recurving, cymbiform . . . . . ***S. polyphylla*** (K. Schum.) B. L. Burtt & R. M. Sm.
5. Floral bracts distichous . . . . . ***S. calcicola*** A. D. Poulsen & R. J. Searle
– Floral bracts spiral **6**
6. Lamina linear to very narrowly lanceolate, < 3 cm wide . . . . . ***S. stenophylla*** I. H. Ooi & S. Y. Wong
– Lamina elliptic to ovate, > 3 cm wide **7**
7. Petiole < 10 cm long **8**
– Petiole > 10 cm long **9**
8. Lamina very dark green; apex acuminate, sometimes mucronulate; floral bracts c. 1 cm long . . . . . ***S. gracilipes*** (K. Schum.) S. Sakai & Nagam.
– Lamina light green, darkening with age; apex shortly pointed, blunt or almost rounded; floral bracts c. 10 cm long . . . . . ***S. iporii*** Meekiong & Ampeng
9. Lamina chartaceous, < 10 cm long . . . . . ***S. petiolata*** (K. Schum.) R. M. Sm.
– Lamina coriaceous, > 10 cm long . . . . . ***S. salahuddiniana*** Meekiong & al.

Taxonomy

Scaphochlamys stenophylla I. H. Ooi & S. Y. Wong, **sp. nov.** – Fig. 1 & 2.
Holotype: Malaysian Borneo, Sarawak, Kuching Division, Bau, Gunung Buan, 01°33'28.9"N, 110°08'35.2"E, 92 m, 21 Nov 2013, *Ooi Im Hin & Jepom ak Tisai OIH74* (SAR).

Diagnosis — *Scaphochlamys stenophylla* is similar to *S. petiolata* in its inflorescences and flowers, but is readily distinguished from all other described species of *Scaphochlamys* by the combination of a linear to very narrowly lanceolate lamina and an absence of anther spurs.

Description — *Herbs* perennial, terrestrial, clumping, to 25 cm tall. *Rhizome* horizontal on ground, c. 5 mm in diam., externally brown, internally yellowish white. *Elements* 1–3 mm apart, 1-foliate; *leafless sheaths* c. 2, 1.5–3.5 cm long, brownish green, glabrous, drying papery with age; *leaf sheath* 3–5 cm long, margin thin, broad, green, glabrous, drying out with age, terminating in an obscure membranous ligule (often hard to observe); *petiole* 3–6 cm long, channelled, green with scattered glaucous dots, pulvinate at base; *lamina* 6–18 × 1–2 cm, linear to very narrowly lanceolate, coriaceous, base cuneate, margin entire, apex acuminate; *adaxial surface* medium green to dark green, midrib sunken, lateral veins inconspicuous, glabrous; *abaxial surface* glaucous green, midrib raised, main lateral veins slightly visible, glabrous. *Inflorescence* 6–7 cm long, emerging from near leaf base inside leaf sheaths, tightly congested, comprised of c. 3 2-flowered cincinni borne on a peduncle, flowering spirally from base to apex; *peduncle* 2–2.5 cm long, glabrous, hidden at base of leaf; *bracts* c. 3, c. 20 × 4 mm, spirally arranged, lanceolate, apex acuminate, brownish white, glabrous, each subtending c. 2 flowers; *bracteoles* c. 2, 5–15 mm long, shorter than bracts but barely distinguishable from bract; *flowers* 4–4.5 cm long; *calyx* 8–10 mm long, white, apex acute, glabrous; *floral tube* 2.5–3 cm long, white, glabrous; *corolla lobes* c. 10 mm long, lanceolate, white, glabrous, apex acute, hooded; *staminodes* 7–8 mm long, linear to slightly oblanceolate, apex acute, white, adaxial surface covered with glandular hairs; *labellum* 14–15 × 12–13 mm, spathulate, violet with a light yellow band along median line until distal cleft, adaxial surface covered with glandular hairs, apex 2-lobed, indented c. 4 mm, lobes sometimes slightly overlapping; *stamen* c. 5.5 × 1.5 mm, white, covered with glandular hairs; *filament* c. 1 mm long; *anther thecae* c. 4 mm long, spurless, crest c. 0.5 mm long; *stigma* less than 1 mm long, club-shaped with 2 dorsal knobs, ostiole ciliate, forward facing; *style* c. 3 cm long, white, glabrous; *ovary* c. 2 mm long, 1-locular, yellowish white, densely pubescent; epigynous glands 2, c. 1 mm long, free, needle-like, yellowish white. *Fruit* a capsule, c. 11 × 4 mm, elongate ovoid, green, glabrous, subtended by a marcescent bract. *Seeds* not seen.

Ecology — Mesophytic in shady ridge kerangas (tropical heath-forest) on podzolic black soils over sandstone, at c. 90 m above sea level.

Distribution — *Scaphochlamys stenophylla* is known only from the type locality.

Phenology — Observations are from 10–21 November 2013. The flowers bloomed in succession, c. 3 days apart. Anthesis began (Fig. 2G) in the early morning at 06:35 local time (UTC + 08:00). The flower opened fully by 08:00 but the lateral corolla lobes continued to reflex toward the corolla tube until 09:45 (sometimes the dorsal corolla lobe reflexed as well). The stigma secreted a liquid drop and the anthers dehisced at c. 07:30. At the same time, a floral odour (torch ginger-like) was released and could be detected within 5 cm radius (peak at around 08:30). The odour was not detected by 12:00. At 00:00, the floral parts remained in the same position but started to degrade. The flower degraded by the next day.

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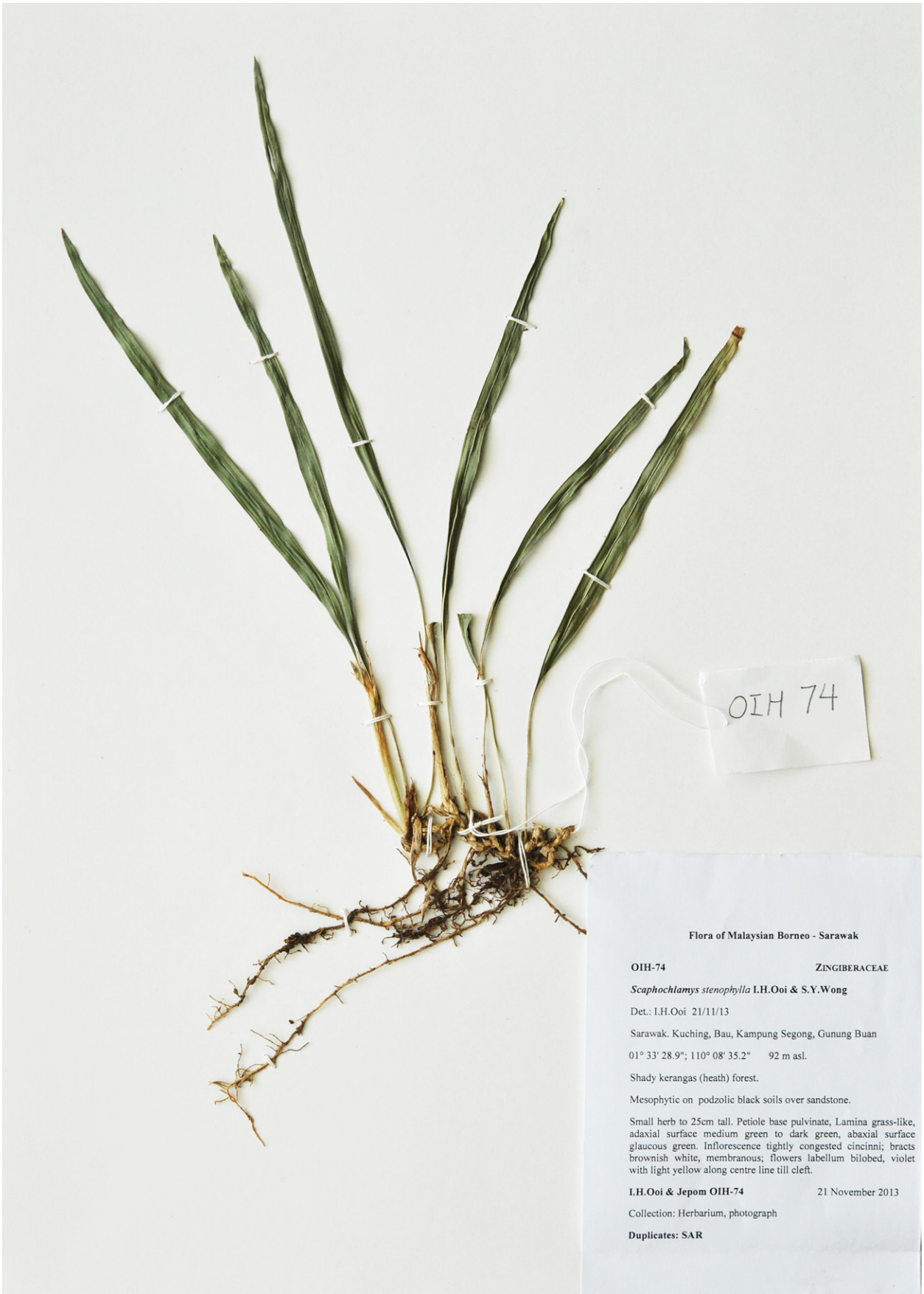


Fig. 1. *Scaphochlamys stenophylla* – holotype specimen deposited at SAR.

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Fig. 2. *Scaphochlamys stenophylla* – A: whole plant; B: pulvinate petiole base; C: inflorescence with bud and wilted flower; D: lamina adaxial surface; E: lamina abaxial surface; F: bud with visible violet veins; G: corolla lobes opening, labellum uncoiling; H: flower at anthesis, labellum violet with light yellow band along median line until distal cleft; I: corolla lobes reflexed; J: semi-erect fruit; K: immature fruit cross-section; L: stigma and crest; M: spurless anther (specimen in alcohol); N: bracts and bracteoles artificially opened. – A, C, F, G, I & J from *OIH74* (type); B, D, E, H, K, L & M from *OIH171*; N from *OIH91* – Photographs by I. H. Ooi.

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Etymology — The adjectival specific epithet *stenophylla* is derived from Greek, *stenos* (narrow) and *phyllon* (leaf), and refers to the leaf blade of this species being narrower than all previously recognized species.

Remarks — The anthers are not spurred. Hitherto the only other species of *Scaphochlamys* with spurless anthers reported is *S. calcicola*, which differs in the long peduncle, broadly elliptic to lanceolate lamina, distichous floral bracts, large flowers, white labellum lobes and in being a limestone-obligate lithophyte (Poulsen & Searle 2005).

Additional specimens seen (paratypes) — Malaysian Borneo: Sarawak: Kuching Division, Bau, Gunung Buan, 01°33'28.9"N, 110°08'35.2"E, 92 m, 11 Feb 2014, *Ooi Im Hin, John D. Mood & Jepom ak Tisai OIH91* (SAR); Bau, Gunung Buan, 01°33'28.9"N, 110°08'35.2"E, 92 m, 25 May 2014, *Ooi Im Hin & Jepom ak Tisai OIH171* (SAR).

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