

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

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Source: Willdenowia, 44(2) : 241-245

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

URL: <https://doi.org/10.3372/wi.44.44205>

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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, spatulate, 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.

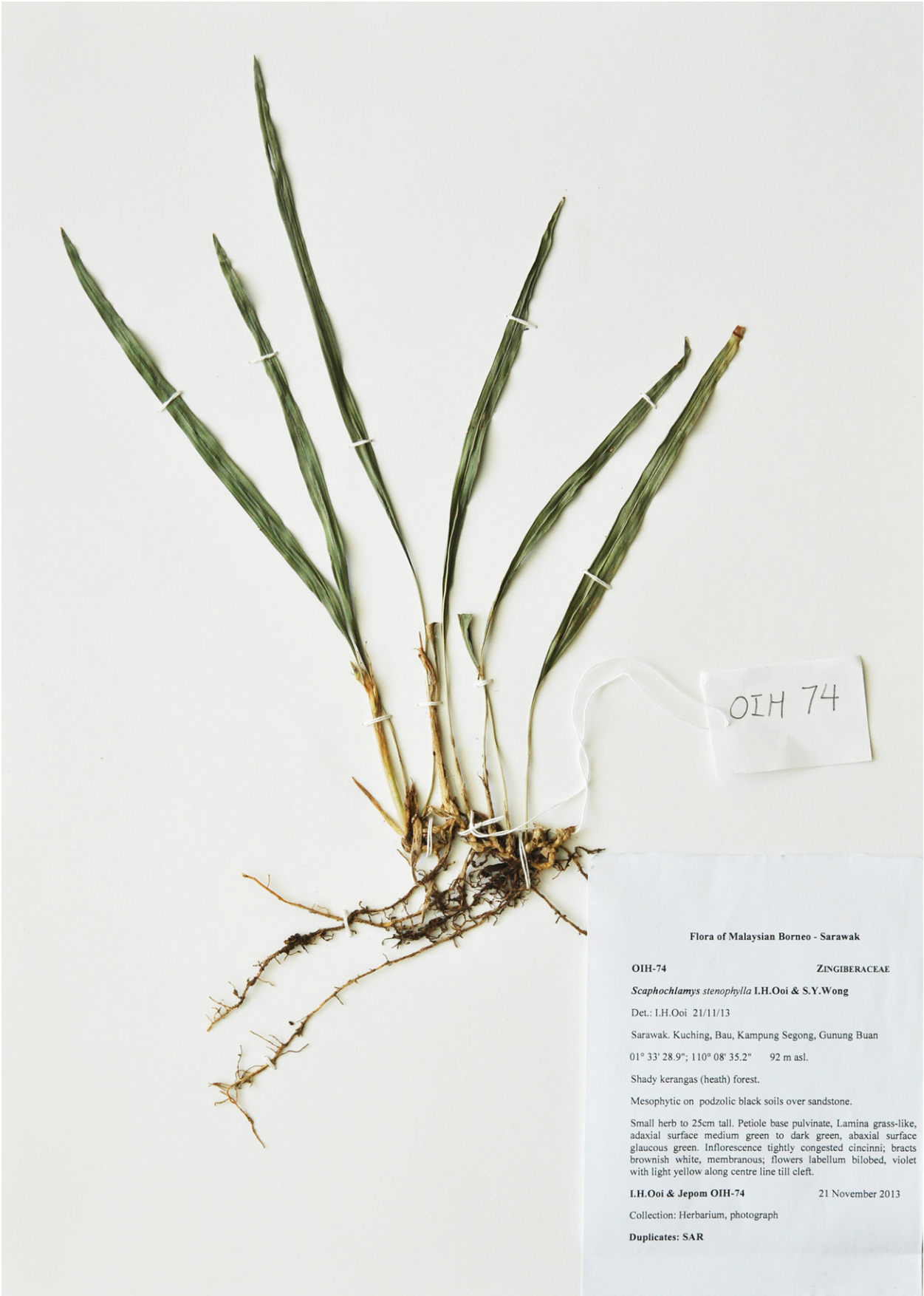


Fig. 1. *Scaphochlamys stenophylla* – holotype specimen deposited at SAR.



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.

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).

Acknowledgements

This study was funded by Ministry of Education Malaysia through Niche Research Grant Scheme No. NRGS/1089/2013-(03). The most recent field-

work has been conducted under Research Permit No. NCCD.907.4.4(Jld.9)-69 and Park Permit No. 140/2013. In addition, two anonymous reviewers are thanked for their comments on an earlier version of this paper.

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