

***Hapaline celatrix* (Araceae: Caladieae)  
– A New Record for Sarawak, Malaysian Borneo**

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**Abstract**

*Hapaline celatrix* P.C.Boyce, a species known from only two collections and hitherto considered endemic to Brunei, has recently been collected in Gunung Mulu NP. An expanded description for the species, additional ecological notes and the first ever published field photographs are presented.

**Introduction**

Studies on the predominantly Indo-Chinese genus *Hapaline* Schott in recent years have resulted in a published generic revision (Boyce, 1996) including the description of a second Bornean endemic, *Hapaline celatrix* P.C.Boyce, based on two collections from the Setap Shales of eastern Brunei, and the rediscovery of Sarawak-endemic, *H. appendiculata* Ridl., after a period of nearly 30 years, and then only the fourth collection (Boyce *et al.*, 2005).

Yet still more recent fieldwork by the authors in Gunung Mulu N.P. has located extensive populations of *H. celatrix* along the Sungai Licat, a stream draining into the Sungai Tutoh along the SW flank of the park. These collections represent the first ever record for Sarawak and are furthermore a new species record for Malaysia. Additionally the new discovery expands the information concerning species variability, not least variation in leaf shape and leaf markings.

***Hapaline celatrix*** P.C.Boyce

Kew Bull. 51: 70 (1996). **Type:** *Boyce* 417 (holotype K!; isotypes: BRUN!, L!, K! + Kew spirit coll. no. 57283!, SING!). **Plates 1 & 2.**



**Plate 1.** *Hapaline celatrix* P.C.Boyce. A. Colony at Sg. Licat; B & C. Inflorescences at male anthesis. Note the short appendix in B & C compared with that of *H. appendiculata*; D. *Hapaline appendiculata*; E. Variation in leaf markings of *H. celatrix* at Sg. Licat.



**Plate 2.** *Hapaline celatrix* P.C.Boyce. A & B. Range of variation in leaf shape and markings present at Sg. Licat; C. Adaxial venation.

[*Hapaline celator* P.C. Boyce in Hay *et al.* in Blumea suppl. 8: 68 (1995), *nom. nud.*]

Diminutive, weakly tuberous or/or moderately rhizomatous evergreen perennial **herb** up to 15 cm tall. **Stem** with globose tuber, 7-20 x 7-13 mm; stolons terete, 1-16 cm x 2-4 mm, enclosed by several sub-fleshy, later papery, later still decomposing cataphylls. **Roots** rather few, ca 0.2 mm in diam. Prophyll of **leaf** linear-triangular, up to 10 cm x 5 mm, rather weakly 2-keeled, acute to briefly apiculate; cataphyll linear-triangular, up to 12 cm x 9 mm, attenuate to rather blunt; petiole 8-17 cm x 0.5-1.5 mm, longer petioles with up to half of the length buried; leaf blade hastato-sagittate to ovato-sagittate to cordiform, 5.5-16 x 2.7-10.5 cm, thinly to rather thickly coriaceous or sub-succulent, dark green to variously and variably spotted and blotched with pale green, yellow green or grey, margins smooth to minutely crispulate, apex acuminate, posterior lobes rounded, divergent to sub-parallel; mid-rib prominently raised abaxially, impressed adaxially; primary lateral venation arising at ca 75° to the mid rib, prominent abaxially, slightly impressed adaxially, running to a prominent (abaxially), impressed (adaxially), brochidodromous intramarginal collecting vein; interprimary veins much less prominent, running into intramarginal collecting vein; secondary venation reticulate, moderately raised abaxially, slightly impressed adaxially; tertiary venation reticulate, weakly visible abaxially, invisible adaxially in fresh material, barely visible in dried specimens, reticulate. **Inflorescence** solitary to several together; peduncle 3-9 cm x 0.5-2 mm, longest peduncles with much of the length buried; **spathe** 1.5-2 cm long; spathe limb elliptic, 1.5-2 cm x 6-10 mm, apex acute, base decurrent into lower spathe; lower spathe margins clasping, 1.5-3 cm x 2 mm; **spadix** 1 cm x 2.5-3 mm, free portion narrowly conic, ca 8 mm long, tapering apically into a stout conical appendix composed of fused synandrodies. **Flowers** synandria, irregularly elongate in plane view, 2-7 x 0.75-1.5 mm; ovaries ellipsoid, 2-2.5 x 0.5-1 mm, 2-4 in a single row; stigma slightly prominent, ca 0.2 mm diam; style absent. **Infructescence** on declinate to reflexed peduncle, partially enclosed by the persistent lower spathe, 1 cm x 3.5 mm, 2-3-berried; berries more or less globular, ripening pale green, ca 2.4 mm in diam, stigmatic remains not prominent. **Seed** ellipsoid, ca 1.5 x 3 mm, glossy pale brown with a conspicuous white oily rhape.

*Other specimens seen:* SARAWAK: Miri Division, Mulu, Long Lama, Mulu N.P., Sg. Licat, trail to Long Lansat, 04° 00' 03.5"; 114° 48' 49.8", 9 Aug 2007, P.C.Boyce, S.Y.Wong *et al.*, AR-1972 (SAR, SING). BRUNEI. Temburong: Sg. Temburong at Kuala Belalong, 4°32' N, 115°9' E, 20 June

1989, *P.C.Boyce* 358 (BRUN!, K!); Sg. Temburong at Kuala Belalong, banks of Sg. Belalong. 4°32', 115°10' E, 24 June 1989, *P.C.Boyce* 417 (BRUN, K+K spirit 57283, L, SING).

*Distribution:* Sarawak (Miri Division); Brunei (Temburong District).

*Ecology:* Disturbed lowland mixed dipterocarp forest on river banks in deep leaf litter overlying soils derived from Setap shales. 20-32 m asl.

*Notes:* *Hapaline celatrix* differs from all other species of *Hapaline* by the combination of evergreen habit, small inflorescences borne beneath the leaves and a short sterile spadix appendix. It is most similar to *H. brownii* Hook.f. in Peninsular Malaysia and S Thailand, and *H. appendiculata*. It may be distinguished from *H. brownii* by its evergreen habit and overall lesser stature and the smaller inflorescence carried beneath the leaves. Additionally, *H. brownii* is restricted to Karst limestone. *Hapaline celatrix* differs from *Hapaline appendiculata* by its evergreen habit, more coriaceous leaves and short sterile appendix.

The habitat of *H. celatrix* is briefly seasonally-dry riverine forest on shale. All known localities of *H. celatrix* are more exposed (higher light levels) and less humid for at least part of each day than the known habitats of *H. appendiculata*.

The specific epithet comes from the Latin *celator*, 'the concealer', in allusion to the manner in which the foliage obscures the inflorescences, a character otherwise unknown in the genus.

### Acknowledgements

The collaboration and support of the Sarawak Forestry Department, the Sarawak Biodiversity Centre, in particular Datin Eileen Yen Ee Lee and the Forest Research Centre (Kuching), notably L.C.J. Julaihi & Lucy Chong. Thanks are due to Datuk Amar (Dr) Leonard Linggi Tun Jugah, Graeme Brown and Dr Timothy Hatch of Malesiana Tropicals Sdn Bhd for their support and funding of fieldwork in Sarawak. This study is funded by the Ministry of Higher Education, Malaysia under fundamental research grant scheme No. FRGS/01(04)/609/2006(42) and permitted by Sarawak Forestry department Research Permit No. NPW.907.4.2(II)-80 and Permit to enter Park No. 66/2007 valid until 10th October 2008, on a yearly renewal basis.

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