

TWO ADDITIONAL SPECIES OF AMOMUM FROM BORNEO

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ABSTRACT. *Zingiber borneense* K. Schum. is transferred to *Amomum* and a closely related species, *A. epiphyticum* R. M. Smith is described.

In a previous paper (Smith in *Notes RBG Edinb.* 42:295, 1985) Bornean *Amomum* was informally subdivided into four groups. Recently, while making preliminary studies for a review of *Zingiber* in Borneo, two further species of *Amomum* have been discovered; one is already described in *Zingiber* (*Z. borneense* K. Schum.), the other, *A. epiphyticum* R. M. Smith is delineated below. These two extra taxa form a distinct group which may be characterized as follows:

Group V. Flowers borne singly; bracteoles open to the base; corolla-tube long exserted from the calyx; lateral petals free; lateral staminodes absent; anther-thecae dehiscing throughout their entire length, connective crested; capsule flattened laterally.

The shape of the capsule, which is more or less oval when viewed dorso-ventrally, but flattened to an extraordinary degree when seen from the side, is of particular interest and unrecorded in *Amomum* hitherto. Since our knowledge of the Zingiberaceous fruit is still limited, this is no reason to exclude these plants from *Amomum*.

Both *A. borneense* and *A. epiphyticum* are commonly of epiphytic habit with distinctly petiolate leaves which become brownish when dry; the ligules are entire and coriaceous. The large inflorescences are cylindric to fusiform with imbricating bracts and have the general facies of some species of *Zingiber*; however, the obvious pulvinus, which lies below the base of the lamina, and the elongated anther-crest, which distinguish that genus so well, are absent.

***Amomum borneense* (K. Schum.) R. M. Smith, comb. nov.**

Lectotype (selected here): Sarawak; 1st Division, near Kuching, epiphytic?, 1892, *Haviland* 1855 (K).

Syn.: *Zingiber borneense* K. Schum., *Pflanzenr. Zing.* 178 (1904).

Syntypes: *Haviland* 1855; Kalimantan, G. Sakumbang, without date, *Korthals* s.n. (n.v.)

Amomum sp. R. M. Smith in *Notes RBG Edinb.* 42:341, f. 11 (1985).

It is appropriate to expand Schumann's description:

Epiphyte, height unknown. Leaves 30-40 × 6-8 cm, lanceolate-acuminate glabrous, coriaceous, brown when dry; petioles up to 3 cm long (often much less); ligules 4-6 mm long entire, coriaceous, sheaths glabrous. Inflorescence radical, 14-18 × 5-7 cm, cylindric-fusiform, glabrous; peduncle (not seen) 45 cm long; bracts red, 6-7 × 2-2.5 cm (measurements from bracts arising in centre of inflorescence), oblong acuminate with membranous margins which appear 'frilled' when dry; bracteoles 1.8-2.2 cm long, open to the base. Flowers reddish-pink, one

per bract; calyx 2.5–3cm long, slender, dorsal petal $c.2 \times 1$ cm, obtuse. laterals smaller. Labellum 1.5×0.8 cm, rectangular, shallowly 3-lobed at apex; lateral staminodes absent. Stamen $c.1.2$ cm long; filament $c.3$ – 4 mm long; thecae 6mm, the connective prolonged into a $c.2$ mm crest. Ovary $c.5$ mm, trilocular with axile placentation, glabrous; epigynous glands 3–4mm, thickened. Capsule to 3×2.5 cm, much compressed laterally.

Other material examined:

SARAWAK: 2nd Division, Lingga, G. Lesung, 630m, ridge top in dipterocarp forest, epiphyte 2.5m above ground in fork between two branches, bracts red, tepals pale pink with some red down throat of lower lobe, 29 xi 1981, *Hansen* 1080 (C).

A short note on *Hansen* 1080, together with an illustration, has already been published (Smith in *Notes RBG Edinb.* 42:341, f.11, 1985). The plant was then placed tentatively in *Amomum*, but with some reservation, notably that it was unclear whether the inflorescence was terminal on the leafy-shoot or radical. Dr Hansen was unable to clarify the situation since, on this occasion, he had not collected the plant personally.

Examination of the lectotype of *Z. borneense*, which Schumman inadvisedly described from material which had finished flowering, has shown it to be identical vegetatively, and in the character of the bracteole, calyx and capsule, with *Hansen* 1080. The inflorescence of the latter is preserved in alcohol; this, while retaining the more or less cylindric-fusiform shape, does not show the frilled margins of the bracts which are very apparent on the type specimen.

Amomum epiphyticum R. M. Smith, *species nova*, *A. borneensi* foliis petiolatis ligula integra, corollae tubo elongato et capsula lateraliter complanata similis, sed foliis minoribus, bracteis apice rotundatis et floribus luteis differt.

Fronda foliorum ad 2m alta. Folia 15–20 $\times$ 2.5–4.5cm, lanceolata, acuminata, glabra; petioli 0.5–1cm, integri, coriacei, glabri. Inflorescentia 7–14 $\times$ 5–7cm, cylindrica, glabra; pedunculus 10–18cm; bracteae rubrae, 5–6 $\times$ 2–2.5cm, oblongae, apice rotundatae, glabrae; bracteolae ad 1.5 $\times$ 0.4cm, ad basin apertae. Flores lutei; calyx 2cm, bidentatus; corollae tubus 3.5–4cm; lobus dorsalis $c.1.8 \times 0.6$ cm, ovatus; lobi laterales 1 $\times$ 0.4cm; labellum (laesum) 1cm longum, oblongum vel rectangulum?; staminodia lateralia absentia; stamen $c.1.5$ cm; filamentum 2–3mm; anthera 0.8–1cm, thecis pubescentibus, connectivo in cristam $c.2 \times 4$ mm undulatum producto; ovarium 3–4mm, glabrum. Fructus 2 $\times$ 1cm, ovalis, lateraliter complanatus.

Note. The description of the fruit is taken from *Burt & Martin* B4875, not from the holotype.

Type: Sarawak; 7th Division, Hose Mts, B. Kajangcarapa, $c.900$ m, pole forest on basalt plateau, maroon red bracts, rich yellow flowers, 5 iv 1964, *Ashton* S19067 (holo. K).

Other material seen:

SARAWAK: 7/4th Division boundary, Ulu Sebako, Belaga, 100mm, rich clay soil, mixed dipterocarp forest, rich crimson bracts, orange corolla, 10 iv 1963, *Ashton* S18220 (K); 7th Division, N Semperaja, Mujong Balleh, epiphyte at 5' on riverside tree, bracts red, 14 iv 1964, *Paie* S19861 (AAU.K); *ibidem*, Ulu Chenaning, heath forest, 950m, Kakus sandstone plateau, magenta bracts, yellow flowers, 28 iii 1964, *Unyong* S21183 (K); Hose mts, below B

Nibong, epiphytic, red bracteate inflorescence, yellow bud, 9 vii 1967, *Burt & Martin* B4875* (E); *ibidem*, E of Sanpandai, camp V, c.4500ft, pendulous epiphyte, old inflorescence with red bracts, 2 iv 1980, *Burt* 12769 (E).

A. epiphyticum differs from *A. borneense* in the more cylindric, often rather flat topped inflorescence and in the yellow flowers. It is also smaller leaved, the blades are up to 20×4.5 cm; those of *A. borneense* measures $30-40 \times 5-8$ cm.

A collection from Kalimantan, Liang Gagang, *Hallier* 2948 (K), resembles *A. epiphyticum* vegetatively but the narrow bracts are acute rather than rounded. It may represent a third member of this group of *Amomum*.

ACKNOWLEDGEMENTS

Thanks are due to the Directors of AAU, C & K for the loan of material and also to Mr B. L. Burt for the latinization of the description.

*B4875 has been previously cited as *Zingiber* sp. (*Burt & Olatunji, Notes RBG Edinb.* 31:168, 1972). The collection is in fruit with a few young buds at the top of the inflorescence and the character of the anther could not be checked.