

THREE BORNEAN SPECIES OF MADHUCA (SAPOTACEAE)

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SUMMARY

Madhuca eriobrachyon P. Royen is sunk into *M. borneensis* P. Royen and this species is redescribed. Two species, *M. primoplagensis* and *M. vulpina*, are described.

Key words: *Madhuca*, Sapotaceae, Borneo.

DESCRIPTIONS

1. *Madhuca borneensis* P. Royen

Madhuca borneensis P. Royen, Blumea 10 (1960) 20, f. 2. — Type: *Jaheri s.n.* (holo L).

Madhuca betis (Blanco) MacBride, p.p., pro *Jaheri 1568*, H.J. Lam, Bull. Jard. Bot. Buitenzorg III, 7 (1925) 161.

Madhuca eriobrachyon P. Royen, Blumea 10 (1960) 40. — Type: *bb 15284* (holo L; iso BO n.v.).

Tree(let)s 5–28 m high, dbh 7–48 cm. Bark smooth, cracked, brownish to dark grey; underbark dark red, slash ochre red; wood white. Indument yellowish brown to light ferruginous. Branchlets angularly ribbed, 3–8 mm in diam., densely stiffly patently hairy. Stipules ovate-acuminate to lanceolate-rostrate, 7–18 by 1.5–4.5 mm; outside only in lower centre to entirely tomentose, in young stipules margins sometimes ciliate; inside glabrous. *Leaves* spirally arranged, scattered along the ends of branchlets; blade (elliptic) to obovate to obovate-oblong, (8–) 11–47 by 3.5–14 cm, papyraceous to subcoriaceous, apex acute to rounded, 0–20 mm acuminate, base acute to obtuse, often slightly oblique; above when young with dense hairs with short shaft and long arms, soon glabrescent but usually remnants on midrib and nerves; below with (rather) dense hairs with arms generally about as long as shaft to very much shorter; midrib impressed and (slightly) crested above, very prominent and rounded below; secondary nerves 11–23, at 50–65°, straight or slightly curved, near margin diminishing until inconspicuous but joined by thickened tertiary nerves, to distinctly archingly joined, prominulous to impressed above, prominent below; tertiary nerves transverse, more or less sinuous, well-spaced, in some collections this arrangement disrupted by stronger nerves descending to midrib (sub)parallel to secondary nerves, prominulous to inconspicuous above, prominulous below; petiole 6–45 by (1.5–)2–3(–5) mm, narrowly canaliculate and often proximally flat above, rounded (rarely ribbed) below, base not to somewhat thickened, in old leaves often rugose, densely (patent) tomentose, ultimately glabrescent. *Inflorescences* between and below the leaves, 2–10-florous, leaving somewhat bulgy scars 1–2(–3) mm high; flowers rarely pendulous. *Pedicel* rather slender, 12–

38 by 1–2 mm, densely fuzzy hairy. *Sepals* 2 × 2, free, narrowly to broadly ovate, outer sepals 6–9 by 3.3–7 mm, inner sepals 6–10 by 3–6.5 mm; apex acute to narrowly rounded (to truncate), outside densely subpatently hairy but parts covered in bud appressedly hairy, apices often darker hairy, inner sepals often carinate and always glabrous along fuzzy ciliate margins; inside glabrous, or outer sepals with some scattered hairs, or thinly puberulous along apical margins. *Corolla* exerted, 8–12-lobed, 7–15 mm long, on outside median line of lobes with appressed light hairs (in *Arifin Berau-565* varying to glabrous), on inside densely fuzzy dark hairy in throat; tube 2–5 mm long; lobes narrowly elliptic to oblong, 5.5–10 by 1.5–2.5 mm, apex rounded, not ciliate. *Stamens* 17–22, inserted in corolla throat; filaments subcylindrical, straight, 0.3–1.5 mm long, hairy as corolla throat; anthers oblong to (narrow-)ovoid, 2–3 by 0.8–1.3 mm and 0.7–1.8 mm rostrate, densely long-hairy all over or apex of rostrum glabrous. *Disk* small, completely adnate to lower half of ovary, indument as ovary. *Ovary* 8–10-celled, with compitum, depressedly globose, 0.8–1.3 by 0.7–2 mm, densely hirsute; style cylindrical, 10–20 mm long, basal 1–3 mm short hirsute; stigma indistinct. *Infructescences* between and below the leaves. *Pedical* 18–33 by 1.5–2.5 mm. *Sepals* not incassate. *Fruit* 1-seeded, ellipsoid, 20–28 by 13–17 mm; apex rounded to flattened and indented, with style (remnant) hairy at base, base rounded, densely short (sub-)patently ferruginously hairy, at base with a ring of erect hairs (disk); pericarp 2 mm thick. *Seed* obovoid, 22–23 by 12 by 8 mm, apex obtuse, base rounded; testa light brown, nitidous, 0.2–0.3 mm thick; scar as long as seed, 6 mm wide; cotyledons thick, radicle exerted; albumen thin, incomplete.

Distribution — Borneo (17 collections seen).

Ecology — Primary (mixed dipterocarp) forest, sometimes secondary forest, on well-drained terrain, from sea level up to 250 m altitude. Flowering and fruiting apparently throughout the year.

Vernacular names — Malay language: Nyatoh (general name); Kutai: Tempudau (twice; but this is also the name of *Dipterocarpus*).

Notes — The sepals of the type specimen of *M. borneensis* are twice as wide as those of the type specimen of *M. eriobrachyon*, but the other material fills up this gap completely.

There are two groups of specimens: one from Kutai-Berau and that one includes the type of *M. eriobrachyon*; the other from Sarawak, together with the type of *M. borneensis*. In the latter group the leaves reach larger sizes: 11.5–47 by 4–14 cm vs. (8–)11–33 by 3.5–9.5 cm.

The Sumatran species *M. aspera* H.J. Lam and *M. magnifolia* (King) Moore, probably conspecific, differ only by their shorter pedicels and glabrous corolla lobes; of these species no fruits are known. In all other characters they are similar to the Bornean material.

The flowers of *Arifin Berau-565* outsize those of all other collections; e.g. the corolla length is 13–15 mm vs. 7–10 mm. Moreover, the corolla lobes are glabrous in fully mature flowers, although they have a median hair line in flowers with an open but not yet fully stretched corolla. The other Berau collections are not deviating.

This may have a bearing on an observation by H.J. Lam. In an unpublished manuscript (on the reverse side of letters dated 1927; in L, archives H.J. Lam) he describes *Madhuca betioides*, based on *bb 11943* and *bb 11955*, as having “Corolla tubulosa,

glabra, tubo 0.5 longa, petala \pm 10, aequilonga, 0.5 longa, anguste 0.1 lata, apice rotundata; corolla intus cum staminum insertianum pilosa". The accompanying pencil drawing shows no indument on the outside of the corolla lobes. Presently, the material in Bogor is sterile. I have included these specimens in the present species.

Jacobs 5380, identified by van Royen as the second collection of *M. borneensis*, differs in: branchlets with less stiff hairs, lower leaf side with a layer of appressed colourless hairs below a stratum of long upright hairs as in *M. borneensis*, sepals larger (outer ones 7.5–8 by 5.5–7 mm, inner ones 8.5–9 by 7–7.5 mm) and more hairy inside.

Material seen:

MALAYSIA. Borneo. Sarawak: Bintulu. Segan Forest Reserve, *Ilias Paie S 15120* (L) fr. – 3rd Division. Balingian, Ulu Arip, Bukit Iju, *Sibatak Luang S 23226* (L) y. fr.; Kapit, Ulu Balleh, Sungei Mengiong, 240 m alt., *Othman bi Haron S 29065* (L) old fl., *Othman Ismawi & Juga S 29691* (L) fr. — Kalimantan: West Kalimantan. Deduai, Sanngau, 60 m alt., *Hotta K-577* (L) fl. buds. – East Kalimantan. W Kutai. sine loc., *Jaheri s.n.* (L, type of *M. borneensis*) fl.; Soengei Magne, *Jaheri 1568* (L) fr. pedicels. – E Kutai. Berau, Inhutani I. area, Labanan-Samarinda Rd, km 15, 60 m alt., *Arbainsyah Berau-632* (L) y. fr., ibidem, 100 m alt., *Ambriansyah & Arbainsyah Berau-588A* (L) y. fr., ibidem, km 16, *Arifin Berau-565* (L) fl., ibidem, *Arifin & Abriansyah Berau-988* (L) fr., ibidem, km 17, 20 m alt., *Keßler et al. Berau-661* (L) fl., fr.; Tandjung Redeb, *Kostermans 21166* (L) buds; Sangkoelirang, Rantau Bahan, 18 m alt., *bb 15228* (BO, L) ster., *bb 15248* (L, type of *M. eriobrachyon*) old fl., Palawan village, 50 m alt., *bb 11943, 11955* (BO) ster.; KPC area Bengalon, Melawan, 57 m alt., *Arifin Zainal & Arbainsyah 1783* (L) fl.; E Kutai Reserve, Sengata & Mentoko Rivers, 250 m alt., *Leighton 839* (L) fl.

Madhuca aff. borneensis: Borneo. Sarawak: 3rd Division, Kapit distr., Belaga subdistr., Rajang R., below 500 m alt., *Jacobs 5380* (L) old fl.

2. *Madhuca primoplagensis* Vink, *spec. nov.*

Arbor (vel arbuscula). Stipulae ovato- ad triangulari-lanceolatae 13–16 mm longae 5–8 mm latae. Folia obovata (14–)8–33 cm longa (6–)8–17 cm lata valde papyracea ad subcoriacea, apex late rotundato ad 1 cm acuminato, basis acuta ad obtusa, supra glabra sed costa appresse tomentosa glabrescens, infra pilis minutis argenteis dense appressis pilis longioribus subappressis atris interspersis cito glabrescens sed indumentum costae nervorumque persistentibus, nervi secundarii 23–30 angulo 65–75° divergentes prope marginem arcuate connati, nervi tertiarii transversales. Petiolus 20–40 mm longus tomentosus. Flores plerumque penduli. Pedicellus (2.5–)5–11 mm longus 1.5–3 mm crassus tomentosus. Sepala in paribus duobus libera (6–)7.5–10 mm longa 5–7 mm lata extus tomentosa intus in parte apicali puberula. Corolla imperfecta cognita; extus glabra praeter loborum apices pilorum comam intus fauce dense pubescenti, tubus 2–3 mm longus, lobi oblongi ca. 5.5 mm longi 1–1.5 mm lati. Stamina in corollae fauce inserta, filamenta breviter dense longe pubescentia. Discus inapparens. Ovarium 10- vel 11-loculare ovoideum 2 mm longum 2 mm diam. hispidum, stylus ca. 12 mm longus basi breviter pubescenti. Fructus 1-seminalis ellipsoideus ad 20 mm longus 14 mm diam., apex late rotundatus indentatus, basis obtusas breviter appresso-tomentosa. Semen ellipsoideum ca. 18 mm longum 9 mm latum 9 mm crassum, apex truncato-rotundatus, basis obtuse rotundata, testa atro-brunnea nitida, cicatrix semine equilonga 5 mm lata, cotyledones aliquantum crassae. — Typus: *Dania Godeb S 41015* (holo L; dupl. n.v.: K, KEP, SAN, SAR).

Tree(let) 5–17 m high, dbh 12–35 cm. Outer bark smooth, (blackish) brown. Branchlets rather stout, with rounded ribs, becoming terete, solid, 6–7 mm in diam., dark ferruginously tomentose, quickly to tardily glabrescent. Stipules ovate- or triangular-lan-

ceolate, 13–16 by 5–8 mm, apex acute to attenuate, outside subappressed ferruginously tomentose on crested midrib and apex, ultimately glabrescent, inside glabrous. *Leaves* spirally arranged, scattered along ends of branchlets; blade obovate, (14–)18–33 by (6–)8–17 cm, strongly papyraceous to subcoriaceous, apex (acute to) broadly rounded and up to 1 cm narrowly to broadly acuminate, base (obliquely) acute to obtuse; above glabrous but on midrib appressed tomentose, glabrescent; below with silvery closely appressed minute hairs interspersed with larger subappressed dark ferruginous hairs, quickly glabrescent but indumentum longer persistent on midrib and nerves; midrib slightly impressed and flat above, strongly prominent and rounded below; secondary nerves 23–30, at 65–75°, steeper towards apex, slightly curved to straight, 2–3 mm from margin joined by rather flat archs, above distinct, prominulous to slightly impressed, below prominent; tertiary nerves transverse, more or less sinuous or forked, well-spaced, above distinct to faint, flat to slightly impressed, below prominulous; petiole 20–40 by 2.5–4 mm, base thickened, above flat with lateral ridges, below rounded, dark ferruginously subappressed tomentose, ultimately glabrescent. *Inflorescences* between and below the leaves, (1–)3–13-florous, leaving burly scars; inflorescence bracts ovate, c. 7.5 by 5.5 mm, flower bracts narrowly oblong to lingulate, 4–8.5 by 2–3 mm, (sub)acute to truncate, all (sub)appressed hairy outside, glabrous inside. Flowers usually pendulous. *Pedicel* rather thick, (2.5–)5–11 by 1.5–3 mm, subappressed ferruginously tomentose. *Sepals* 2 × 2, free, outer sepals separated by crest of inner ones; outer sepals ovate or elliptic to oblong, 7.5–9(–10) by 5–7 mm, lateral margins usually recurved, apex acute to obtuse, often seemingly acuminate by a tuft of dark hairs, outside subappressed ferruginously tomentose, inside (minutely) puberulous in upper 0.2–0.3 (and along lower margins); inner sepals ovate or elliptic, (6–)7.5–10 by 5–7 mm, margins not recurved, apex acute to truncate, outside on crest as the outer sepals, otherwise sericeous but glabrous along the ciliate margins, inside as outer sepals or entirely glabrous. *Corolla* poorly known because of insect damage; outside glabrous except for tuft of fuzzy hairs at lobe apices, inside densely hairy in throat; tube 2–3 mm; lobes oblong, c. 5.5 by 1–1.5 mm. *Stamens* inserted in corolla throat; filament straight, c. 1 mm, densely straight-hairy; anthers 4 mm long including 1 mm prolonged connective continuous with anther apex, rather densely straight-hairy all over. *Disk* not apparent. *Ovary* 10- or 11-celled, with compitum, ovoid, 2 by 2 mm, densely dark ferruginously hispid; style terete, c. 12 mm long, lower 2 mm short-hairy; stigma indistinct. *Infructescences* below the leaves, burly, 2–4 mm high. *Pedicel* and *calyx* not incrassate. *Fruit* 1-seeded, ellipsoid, 18–20 by 13–14 mm, apex broadly rounded and indented, with style remnant surrounded by traces of ring of appressed hairs, base obtuse, short ferruginously appressed-tomentose, base surrounded by longer straight hairs; pericarp 1–3 mm thick. *Seed* ellipsoid, 18 by 9 by 9 mm, apex truncate-rounded, base obtuse-rounded; testa dark brown, nitidous, 0.3 mm thick; scar as long as seed, 5 mm wide; albumen c. 0.5 mm thick, open on one lateral side; cotyledons rather thick, outside flattened, elliptic-obovate, 13.5 by 6 by 2 mm, apex broadly rounded, base obliquely truncate; radicle cylindrical, distally narrowed, 2 by 1.5 mm, exerted, enclosed by albumen.

Distribution — Endemic to 1st Division of Sarawak, Borneo (5 collections seen).

Ecology — Kerangas forest, riverine forest, ridge top; at 20–175 m altitude. Flower buds September, old flowers June, July; fruiting October.

Vernacular name — Iban/Malay: Nyatoh (general name for many Sapotaceae).

Etymology — This species is named after the 1st Division of Sarawak, to which it is endemic.

Note — As only incomplete corollas are available, the number of stamens remains unknown.

Material seen:

MALAYSIA. **Borneo.** Sarawak: 1st Division. Samumsan Wildlife Sanctuary, 20 m alt., *Ilias Paie S 42991* (L) old fl.; Lundu, Bukit Gebong, 90 m alt., *Anderson (S) 15438* (L) y. fr.; Sabal Kruim, Sabal For. Reserve, 74th Mile Kuching-Simanggang Rd, 150 m alt., *Y.P. Ching S 41119* (L) fr.; ibidem, *D. Godeb S 41015* (holotype L) old fl.; Ulu Sg. Cina, Matang, 175 m alt., *Rantai Jawa S 69808* (L) fl. buds.

3. *Madhuca vulpina* Vink, *spec. nov.*

Arbor. Indumentum atro-rubrum. Stipulae (ovato-)lanceolato-rostratae ad acerosae (4–)7–10 mm longae 0.8–1.5 mm latae. Folia oblanceolata 5–14 cm longa 2–4 cm lata valde papyracea ad subcoriacea, apex (acutus ad) obtusus (vel emarginatus) late acuminatus 0–0.5 cm longus, basis anguste acuta interdum attenuata, nervi secundarii 9–16 angulo (45–)55–75° divergentes distaliter curvati prope marginem nervis tertiariis incrassatis connexis, nervi tertiarii late reticulati. Petiolus 5–10 mm longus longe pubescens glabrescens. Pedicellus 7–15 mm longus 1–1.5 mm crassus longe pubescens. Sepala in paribus duobus; par exterius (late) ovatum 4.5–7 mm longum 6–8 mm latum extus longe pubescens intus dense longe pubescens in zona lata secus marginem, par interius (late) ovatum ad orbiculare 5–7 mm longum 5–7.5 mm latum extus costa exclusa dense appresse longe pubescens secus marginem ciliatorum partem inferiorum sparse appresse pubescens ad glabrum intus apicaliter pubescens. Corolla exserta 8–10-lobata ca. 9 mm longa, tubus ca. 5 mm longus glaber, faux glaber ad crispate pubescens, lobi obovati vel elliptici ad oblongi ca. 4 mm longi 2.5 mm lati, apex utrinque dense pubescens extus pilis appressis in forma V deorsum lobi longitudinem super partem dimidiam ad bi-tertiam. Stamina 16–20, filamenta ca. 1 mm longa glabra, antherae apiculatae basis profunde cordata lateraliter pubescens. Discus nullus. Ovarium 8–10-loculare ovoideum admodum supra basin constrictum longe molliter atro-ferrugineum pilis in constrictione insertis partis ovarii latioris glabri basin tegentibus, stylus 10–13 mm longus glaber. Fructus globosus 13–25 mm longus alterutris extremis rotundatus longe pubescens, styli basis zona 1–2 mm lata glabra ad laxa appresse pubescenti ut in ovario. Semina aliquot obovoidea 15–17 mm longa 9–10 mm lata 6–7 mm crassa, testa dilute brunnea subnitida, cicatrix semine aequilonga 2–4.5 mm lata, embryo ignotus. — Typus: *Sibatak Luang S 24613* (holo L; dupl. n.v.: A, BO, FHO, K, MEL, SAN, SAR, SING).

Tree 18–31 m high, dbh 24–45 cm. Bark light, greyish, or dark brown. Indumentum dark reddish brown, on exposed surfaces (except corolla, androecium, and gynoecium) long-hairy: hairs with short shaft and rather long subappressed arms mixed with hairs with short shaft, one short and one (sub)patent long arm. Branchlets slender with shallow rounded ribs, soon becoming terete, solid, long-hairy when young, quickly glabrescent. Stipules (ovate-)lanceolate-rostrate to acerosae, (4–)7–10 by 0.8–1.5 mm, outside long-hairy, distally shorter, glabrescent from apex downwards, inside with scattered hairs especially on lower margins, or puberulous on rostrum, glabrescent. Innovations not concurrent, long-hairy on either side. *Leaves* scattered or, mostly, subconferted at ends of lateral shoots (flushlike growth); blade oblanceolate, 5–14 by 2–4 cm, strongly papyraceous to subcoriaceous, apex (acute to) obtuse (or emarginate), 0–0.5 cm broadly acuminate, base narrowly acute, sometimes attenuate; glabrous on

either side; midrib crested above, prominent and rounded below; secondary nerves 9–16, at (45–)55–75°, straight or the longer ones curved, near margin curving distally and connected by thickened tertiary nerves, above distinct and often slightly impressed, towards base becoming inconspicuous, below prominulous; tertiary nerves widely reticulate, often a stronger one subparallel to secondary nerves, with tendency to fork descendingly near midrib, above minutely impressed or prominulous to faint, below prominulous to inconspicuous; petiole 5–10 by 1–2 mm, base not or slightly thickened, above flat to convex with median crest, below rounded, long-hairy, glabrescent. *Inflorescences* between and below the leaves, 1–8-florous. *Pedicel* rather thick, 7–15 by 1–1.5 mm, long-hairy. *Sepals* 2 × 2, free; outer sepals valvate, (broadly) ovate, 4.5–7 by 6–8 mm, apex acute to broadly rounded, outside long-hairy, inside a broad zone along margins with dense, long, soft subappressed hairs, sometimes also scattered appressed hairs along base; inner sepals (broadly) ovate to orbicular, 5–7 by 5–7.5 mm, apex acute to obtuse, base broadly rounded to truncate and usually minutely eared, outside long-hairy on midrib, laterally densely appressed long-hairy, along lower part of ciliate margins thinly appressed hairy to glabrous, inside apically densely to laxly appressed to fuzzy, usually descending, hairy. *Corolla* exerted, 8–10-lobed, c. 9 mm long, white; tube obconical, 5 mm long, glabrous; throat glabrous to (partly) fuzzy hairy; lobes obovate or elliptic to oblong, recurved, c. 4 by 2.5 mm, apex rounded, densely hairy, outside continuing with appressed hairs in V-shape down over 1/2–2/3 of lobe length, inside forming dense to rather lax subapical tuft of fuzzy to straight descending hairs. *Stamens* fully presented because corolla lobes curve backwards, 16–20, inserted in corolla throat in 2 rows; filaments rather thick, c. 1 mm long, glabrous, sometimes some with a patch of descending hairs; anthers narrowly ovate-oblong to lanceolate, apex apiculate, base deeply cordate, laterally with colourless hairs sometimes mixed with scattered ferruginous hairs. *Disk* absent. *Ovary* 8–10-celled, with compitum, ovoid, 1–2 by 1–2.5 mm, constricted just above base at the level of the locules or below these, apically confluent with widened base of style, long soft dark ferruginous hairs arising in constriction covering base of glabrous wider ovarial part; style shallowly ribbed, 10–13 mm long, glabrous; stigma indistinct. *Infructescences* below the leaves. *Pedicel* 12–15 by 2 mm. *Sepals* 6–9 mm long, outer ones 8–9 mm wide, inner ones 7–7.5 mm. *Fruit* with several seeds, globose, 13–25 mm long; rounded at either end; long-hairy, at base with c. 1 mm long stipe appressed hairy as ovary, around base of style 1–2 mm wide zone glabrous to laxly appressed hairy as ovary; style broken, up to 13 mm long. *Seed* obovoid, 15–17 by 9–10 by 6–7 mm, apex broadly rounded, base narrowly rounded; testa light brown, subnitidous, brittle, 0.15 mm thick; scar as long as seed, 2–4.5 mm wide; embryo unknown.

Distribution — Borneo: Sarawak (16 collections seen).

Ecology — Primary lowland (mixed) dipterocarp forest on hills or slopes from sea level up to 120 m altitude. Innovations throughout the year. Flowering: August to October; fruiting: October to November.

Vernacular name — Nyatoh (general name for many Sapotaceae).

Notes — For this description only buds and one insect-damaged open flower were available, mature anthers were not seen.

The constriction of the ovary is peculiar. It is only visible upon longisection as long hairs fill it completely. The glabrous upper part of the ovary is still visible in fruit

as a more or less glabrous area around the style base, and the basal constriction results in the very short stipe of the fruit.

Material seen:

MALAYSIA. **Borneo.** Sarawak: 1st Division. Samumsan Wildlife Sanctuary, 20 m alt., *Ilias Paie S 42979* (L) old fl.; 'Bankroka Ra.', Mile 9 Bau-Lundu Rd, *Mamit S 42108* (L) fr.; outside Arboretum, Semengoh For. Res., Kuching, *Ilias & Bernard S 37982* (L) old fl.; Arboretum c. 100 m alt., *Ghazali & Asah S 12849* (L) ster., *Banyeng ak Nudong c.s. S 25376* (L) fl., *Rantai & Tinjan S 66085* (L) old fl.; Arboretum, Tree 60: dd. 1957, *Awang Yacup (S) 8910* (L), fr.; dd. 1960, *Zen s.n.* (L) ster.; dd. 1961, *Rosli S 15017* (L) y. fr.; dd. 1972, *Haji Bujang S 32427* (L) old fl.; Tree 915: *Banyeng ak Nudong S 25456* (L) old fl.; Tree 1206: *Rosli (S) 3377* (L) fl. buds. — 4th Division. Nyabau, 50–120 m alt., *Hou 350* (L) fl. buds, *381* (L) fl. buds, *Sibatak Luang S 24515* (L) fl. buds, *S 24613* (type L) fl. buds.

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