315. ALOCASIA MELO

Araceae

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Summary. A horticulturally attractive new species of *Alocasia*, *A. melo*, from Sabah is described and illustrated in colour. Notes on its relationships, ecology and cultural requirements are provided.

Borneo is the main centre of diversity for *Alocasia* (Schott) G. Don (Araceae), a tropical and subtropical Asian to Australian genus remarkable for its extraordinary diversity of leaf sizes, shapes, colours and textures. A secondary centre is Papuasia, where, although there are only about 14 species, there are three endemic supra-specific groups, with one extending into Australia (Hay, 1989, 1994a; Hay & Wise, 1991).

Among the most outstanding Bornean species is the enormous *Alocasia robusta* M. Hotta, with perhaps the largest undivided leaf of any land plant – a fragile, membranous, cordate blade, waxy-white beneath and, in the largest specimens, well over 3 m long and 2 m wide. The marvellous, breast-plate ribbed, coppery-green, purple-backed leaves of *A. cuprea* (C. Koch & Bouché) C. Koch, looking as though moulded out of plastic, and the stiff, gun-metal blue, boat-shaped leaves of *A. peltata* M. Hotta are also notable features of much-prized members of the genus in Borneo. Several 'species' of the *Alocasia longiloba* Miq. complex, mostly with deep green, white-veined, peltate leaves, were introduced into European stove-house culture in the last century during the mania for exotic foliage plants, not only from Borneo, but also from Sumatra, the Malay Peninsula and the Philippines. The last is the provenance of the Kris Plant *Alocasia sanderiana* W. Bull and *A. zebrina* Schott ex van Houtte, at one time so much in demand and so heavily collected that they were CITES listed (though they have both now been removed from CITES schedules).

Many of the most striking or ornamental *Alocasia* species were first named in finely illustrated British and Continental botanical or horticultural periodicals, seed lists or nurserymen's catalogues, including *Curtis's Botanical Magazine, L'Illustration Horticole, Gardeners' Chronicle, Gartenflora, Flore des Serres et des Jardins de l'Europe, L'Horticulteur Français*, William Bull's retail lists and so on (see Hay et al., 1995). We continue this tradition by describing here another new *Alocasia* species from Borneo with very remarkable thick, sometimes

Alocasia melo

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almost circular, bullate and rugose leaves rather resembling the rind of a canteloupe melon, from which resemblance the specific epithet derives.

A plant of this species was in cultivation at Kew in the early 1960s, when it was painted by Mary Grierson and a specimen was preserved. Though known to have been from Sabah, the precise origin of the plant is obscure. About 10 years ago, Dr D.H. Nicolson (Smithsonian Institution, Washington D.C.) drew the existence of the painting to the attention of one of us (A.H.), and suggested that it represented an undescribed species. Recent work on the revision of *Alocasia* in West Malesia for the *Flora Malesiana* account of Araceae (see Hay, 1994b), confirms that this is so. A collecton made in 1964 with known provenance has now been found in the herbaria at Sandakan and Leiden. Moreover, living material has been collected by K.M.W. and A.H. in Sabah recently and is now in cultivation at the Forest Research Centre, Sepilok and at the Royal Botanic Gardens, Sydney. Our plate shows Mary Grierson's painting, reproduced at three quarters life size.

The new species evidently belongs in a complex grouping of Bornean and Philippine elements including *A. scabriuscula* N.E.Br., *A. guttata* N.E.Br., *A. villeneuvei* L. Linden & Rodigas, *A. heterophylla* (Presl) Merr. and perhaps others, in which species limits are mostly very difficult to define though there is a great deal of variation in vegetative aspects. The group is characterized by the spathes generally ivory-white throughout (including the lower spathe which is more generally green), variously dotted, streaked, edged or suffused with purple. The spathe limb typically becomes very fully reflexed at the point of constriction towards the end of female anthesis. The spadices are also generally ivory throughout, with little if any development of chlorophyll in the ovary at the flowering stage. The leaves are distinctly leathery in texture, with the petiole often scabrid. Although species limits are very hard to define over the entire range of the group, quite distinct forms may co-exist in particular localities. In spite of the complex pattern and great degree of variation and blurred species limits in this group, the new species is nevertheless easily distinguished and appears to be a segregate restricted to the ultramafic substrate. In aspect it comes closest to very immature plants of *A. guttata*, but adults of that element are significantly larger, have markedly different leaf proportions and lack the bullate rugose texture of the leaf blade.

Cultivation. *Alocasia melo* is found in rocky places on the floor of tropical lowland rainforest, so requires high temperatures and humidity and protection from direct sunlight. At Sepilok it has been successfully maintained in pots in ordinary loam under shady conditions. At Sydney it is growing under glass in an open soil mix incorporating 75% perlite and 25% composted pine needles with gypsum, epsom salts, iron sulphate, agricultural lime, dolomite and a little copper sulphate added. The plants are liquid-fed about fortnightly and occasionally dressed with poultry manure. No specific provision is made for the fact that the species grows in ultramafic sites in nature and the plants are healthy, although they have not yet flowered.

Alocasia melo A. Hay, P.C. Boyce & K.M. Wong, **sp. nov.** *Alocasiae guttatae* N.E.Br./*A. scabriusculae* N.E.Br. affinis sed statura valde minore, folio peltato bullato superne rugoso, inflorescentia minore differt. Typus. Malaysia: Sabah, *Mrs I.S. Collenette* s.n. Cult. Hort. Bot. Reg. Kew, Acc. No. 1960–443 (holotype K!, isotype K in spirit under no.22427!).

Description. *Small herb* about 25–35 cm tall. *Stem* to about 3 cm diam., erect, short. *Leaves* to about 4 together, their bases overlapping. *Petiole* about 14–19 cm long, pale green, glabrous, smooth, sheating and sparingly burgundy-spotted in the lower fifth; wings of sheath rather broadly triangular. *Leaf blade* very broadly ovate to sub-orbicular, 18–25 cm long, 15 cm wide, rugose and bullate and very deep somewhat bluish green adaxially, smooth and pale greenish white abaxially, coriaceous, peltate; anterior lobe about 12.5–16 cm long, the tip broadly acute to obtuse and then shortly acuminate for about 1 cm and/or apiculate; posterior lobes to 8.5 cm long, united for 75–90% of their length; posterior costae diverging from one another at ca. 20–30°, poorly developed and not or hardly differentiated in size from the primary venation arising from the anterior costa; primary lateral veins (excl. posterior costae) 3–4 on each side of anterior costa, diverging at 90° (most proximal) to 45° (most distal), adaxially deeply impressed, abaxially more or less flush with lamina and dark green, irregularly bearing veins intermediate in thickness between primary and secondary venation, running the same course as the latter; secondary venation deeply impressed adaxially, abaxially somewhat raised and concolorous with abaxial lamina, arising at a wide angle (about 80°) from the primary venation and running to form quite well-defined intercostal collective veins; tertiary venation strongly raised adaxially into an irregular honeycomb pattern, abaxially imperceptible. *Inflorescences* paired, subtended by conspicuous broadly lanceolate persistent cataphylls about 8–10 cm long; peduncle about 5 cm long. *Spathe* ivory-white, 9–16 cm long, constricted slightly less than half way from the base; lower spathe

burgundy-spotted, especially towards the insertion of the peduncle, ovoid, about 1.5 cm wide; spathe limb broadly lanceolate, strongy reflexed by male anthesis, the tip acuminate for about 1 cm, margins translucent, the entire limb swiftly withering and marcescent (in cultivation; probably deciduous or deliquescent in nature). *Spadix* shortly stipitate, much shorter than spathe, about 5 cm long, with the male and female zones enclosed within the lower spathe. *Female zone* 1.2 cm long, 1.3 cm wide at base, tapering distally. *Ovaries* pale green, about 1.5–2.2 mm diam., ovoid, partially 2–3-locular with 2–3 intrusive basal to sub-parietal placentae; style virtually none, stigma 2–3-lobed, orange-brown. *Ovules* orthotropous, 2–3 per locule. *Sterile interstice* much narrower than female zone, about 5 mm long, 1.2 mm thick, bearing a few somewhat distant white synandrodia. *Male zone* cylindric, pale ivory-white, 1.3 cm long, 4–6 mm thick. *Synandria* rhombohexagonal, 1–2 mm across; anthers opening by apical pores visible

Alocasia melo. Inflorescence, longitudinal section, × 1. Drawn by Mary Grierson.

on the spadix surface. *Appendix* ivory-white, cylindric-subclavate, 1.7 cm long, 4 mm thick. *Infructescence* peduncle about 12 cm long; fruiting spathe ovoid, about 4 cm long; ripe fruit unknown.

Other specimens seen. Sabah: Tongod, G. Tingkar, *Hay & Wong* 12001 (no voucher), cult. Royal Botanic Gardens Sydney, Acc. No. 960489 (NSW, sterile); Beluran, Porog, west side of Bidi Bidu near Kubar Labuk, *Meijer* 41241 (L, SAN); Tongod, G. Tingkar, *Radin* s.n. (no voucher), cult Forest Research Centre, Sepilok & Royal Botanic Gardens Sydney, Acc. No. 950381 (NSW, sterile).

Distribution. Endemic to Sabah, Malaysian Borneo. This species joins a growing list of rare and endemic plants peculiar to the ultramafic substrate in Sabah.

Habitat. Rain-forest on ultramafic rock: in rock crevices and on thin soil along steep banks of fast-flowing streams, 120–400 m.

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