



A new species of *Maesa* (*Primulaceae-Maesoideae*) from New Guinea

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Key words

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Abstract A new species of *Maesa* (*Primulaceae-Maesoideae*) is described from Indonesian New Guinea. *Maesa megistophylla* is unique in the genus in the combination of the very long elliptic leaves, and racemes with subsessile flowers. The species is illustrated, taxonomic affinities are discussed, and is assessed as Data Deficient according to the criteria of IUCN.

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INTRODUCTION

Maesa Forssk., comprising some 150 species distributed throughout the Old World, was last monographed by Mez (1902). The New Guinean taxa were revised by Sleumer (1987) and several have been treated since by the present author (see Utteridge 2000, 2001, 2003, 2013), partly following extensive fieldwork and observations of populations of *Maesa* in Indonesian New Guinea during the Mt Jaya checklist project (see Johns et al. 2006). The genus is represented in New Guinea by at least 32 species in a wide range of habitats – from lowland to montane forest, and by a variety of morphological types including procumbent creepers, small shrubs, trees, and ‘climbers’ which can reach the canopy in montane forest. Most species are found in gaps and edges of primary and secondary forest, but some are known from the understorey of primary forest, including the new species described here.

Sleumer (1987: 64) included several distinct collections in a list of material ‘not specifically named’. One specimen from this list is described here as a new species. Whilst Sleumer determined this collection as ‘*Maesa* sp. nov.’ in 1986, he did not describe it formally in his revision. Sleumer’s key to the genus uses floral merosity, which he considered ‘constant enough to be used as a character of the first order in the key’, but flowers of *Maesa* spp. can be tetramerous, pentamerous, and hexamerous within the same species (Caris et al. 2000: 89). The species described here exhibits a combination of morphological features which is unique in the genus. The type and distribution of indumentum in *Maesa* are taxonomically very useful (Utteridge 1998), and two types of indumentum are found in the genus: single-celled hairs of variable length, and irregularly shaped peltate scales (see Caris et al. 2000: 89); both are present on the new species described here, but with distinct distribution on different structures, e.g. only scales are found on the inflorescence and floral parts.

Maesa megistophylla Utteridge, sp. nov. — Fig. 1

Unique in the genus *Maesa* with very large elliptic-lanceolate leaves over 40 cm long, and the short racemes with subsessile flowers; most similar to *Maesa haplobotrys* but differing from this species in the larger leaves (larger than 22 cm), the petioles (longer than 2.5 cm), and the subsessile flowers (pedicels shorter than 0.5–2.5 mm long at anthesis).

Type. Brass 13603 (holotype L; isotype BO n.v.), Netherlands New Guinea [Indonesia, Papua Province], 4 km SW of Bernhard Camp, Idenburg River [approx. S3°28' E139°10'], 850 m alt, fl. & fr., March 1939.

Etymology. The epithet is derived from the Greek ‘greatest leaf’, and refers to the extremely long leaves, other taxa have large leaves but these are usually more broadly elliptic to ovate (e.g. *M. maxima* (C.B. Clarke) Mez with leaves recorded up to 30 cm long but with an almost orbicular leaf shape).

‘Unbranched, 2–2.5 m high’ *vide* Brass 13603. *Indumentum* of hairs and scales: hairs short, less than 1 mm long, translucent and colourless, giving a hirsutellous appearance on the vegetative parts (see description of specific structures for distribution); scales peltate, up to 1 mm diam, pale ginger-brown with a central dark centre (sometimes drying white due to collecting method), ± sessile, circular, (see description of specific structures for distribution). *Branches* terete, c. 9.5 mm diam, drying pale grey-brown with scattered lenticels, scaly to densely scaly, glabrous. *Leaves* spirally arranged; lamina elliptic-lanceolate, 42–47 by 10–12 cm, chartaceous, drying dark brown above, tawny-brown below, adaxial surface glabrous, abaxial surface scaly to densely scaly; base attenuate; margins serrulate-serrate, with 23–27 teeth on each side terminating the secondary veins; apex acute; midrib hairy to densely hairy adaxially (scales absent), scaly to densely scaly abaxially (hairs absent); secondary veins 15–17 pairs, semicraspedodromous, indumentum as lamina; petiole 2.5–3.5 cm long, lamina ± decurrent along the petiole at the distal end, glabrous. *Staminate inflorescences* and *flowers* not seen. *Pistillate inflorescences* lateral (axillary), racemes, solitary or fasciculate with up to 3 inflorescences per axil, 1.5–3.5 cm long at anthesis, 4–7 cm long at fruit, axis densely scaly (hairs lacking); flowers subsessile on pedicels less than 0.25 mm long at anthesis, densely scaly toward the distal end; bracts triangular, 1–1.5 mm long, scaly to densely scaly (hairs absent), margins entire, apex acute; bracteoles subopposite, inserted at the base of the hypanthium, size and

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Fig. 1 *Maesa megistophylla* Utteridge. a. Habit, showing stem with scattered lenticels; b. detail of upper part of leaf drawn from the adaxial surface; c. detail of the abaxial leaf surface showing distribution of scales; d. detail of peltate scales; e. detail of adaxial midrib showing dense short hairs; f. detail of axillary inflorescences (most basal portion obscured by petiole); g. flower; h. detail of corolla opened up showing staminodes; i. hypanthium and ovary; j. fruit with bracteoles at base; k. whole placenta showing arrangement of seeds (all: *Brass 13603*). — Scale bars: a, b = 6 cm; c, f = 7 mm; d = 0.8 mm; e, j, k = 4 mm; g–i = 2.2 mm. — Drawing by Lucy Smith.

shape as bracts. *Pistillate flowers* pentamerous, 'brown' *fide Brass 13603*; calyx lobes triangular, 1.2–1.5 by 1.5–2.0 mm, glabrous, margins entire, apex acute to rounded; corolla 2.5–3.0 mm long, connate to half its length; corolla lobes broadly triangular, margins entire, apex rounded; staminodes epipetalous, arising c. 1.0 mm from the base of the corolla; pistil (including hypanthium) ellipsoid, c. 2.0 mm long; hypanthium scaly to sparsely scaly; style 1.5–2.0 mm long, stigma \pm 3-lobed. *Fruits* globose to ellipsoid, 4.0–5.5 by 5.0–6.0 mm, scaly to sparsely scaly (hairs absent); pedicels at fruiting 1.5 mm long; bracteoles remaining subopposite to each other at the base of the fruit; persistent calyx lobes overlapping; seeds c. 65 per fruit.

Distribution & Ecology — New Guinea, Papua Province (formerly the eastern half of Irian Jaya), known only from the type. 'Rain-forest undergrowth'; *Brass 13603*; 850 m.

Conservation assessment — *Maesa megistophylla* is assessed here as Data Deficient following the criteria of IUCN (2012). The species is currently only known from the type collection made during the Archbold Expedition in 1939 from an area of lowland forest on the northern side of the central range along the Idenburg River (western tributary of the Mamberamo), an area which has no road access and has not been exploited for logging or plantations. The collection notes state that the species is 'common on river plains', but it was not collected during expeditions that visited adjacent areas, e.g. Doctors van Leeuwen who collected in the Mamberamo basin during the Dutch-American (Stirling) Expedition of 1926, and no collections of this species were made during the RBG Kew Mt Jaya expeditions on the southern side of the range. These observations suggest that the species may have a small Extent of Occurrence, but without more collections to understand the distribution and population size it is assessed here as Data Deficient.

Notes — *Maesa megistophylla* is unlikely to be confused with any other species in New Guinea or throughout the range of the genus as it is the only species currently known to have leaves of this size and shape. In addition to the leaf morphology, the combination of the following characters make this species distinctive: the habit and ecological requirements being an unbranched monopodial treelet found in the rainforest understorey, the two types of indumentum and their distribution, the short inflorescences, and the sessile flowers. The inflorescences are very compact at the beginning of anthesis and elongate to their full length at fruiting, and in the initial, compact stage, the sessile flowers are congested and almost obscured by the bracts and bracteoles giving a 'cone-like' appearance such as is found in the young inflorescences of *Gnetum* (and also in some members of *Opiliaceae*).

In New Guinea, *M. megistophylla* is unlikely to be confused with any other species but shares some characters with the common and widespread *M. haplobotrys* F.Muell., including the elliptic-lanceolate leaves and the indumentum. In contrast to *M. haplobotrys*, *M. megistophylla* is a primary forest understorey plant, not a plant of coastal to montane forest edges, open areas, and secondary forests.

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