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Rediscovery and lectotypification of *Maesa kurzii* (Primulaceae), a poorly known species from India

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Abstract: *Maesa kurzii* Mez (Primulaceae) is rediscovered from Namdapha National Park of Arunachal Pradesh in India, after a gap of nearly 150 years, after the initial collection of type material from Patkoye Mountain. The present collection extends the distributional range of the species to the northeastern region of the country. A detailed taxonomic account is provided to facilitate easy identification. The name has also been lectotypified here.

Keywords: Arunachal Pradesh, Namdapha, Primulaceae, Typification.

Introduction

The Old World tropical genus *Maesa* Forssk. comprises *c.* 183 species worldwide (Utteridge, 2019, 2021; Sumanon *et al.,* 2020, 2021; Govaerts *et al*., 2023; POWO, 2023). The genus is represented by 14 species and two infraspecific taxa in India (Roy & Pramanik, 2020) and is most diverse in the northeastern part of the country. Some species of *Maesa* (*viz*., *M. chisia* D.Don, *M. indica* (Roxb.) Sweet, *M. rugosa* C.B.Clarke) are frequently found within their range of distribution, while some of them need rigorous exploration for their habitat.

A recent exploration to Namdapha National Park in the Changlang district of Arunachal Pradesh by two of the authors (SP & VK), located a few individuals of *Maesa*. The subsequent critical study and comparisons based on living and herbarium material (CAL), perusal of the literature (Kurz, 1873; Clarke, 1882; Roy & Pramanik, 2020), and verification with digital images of authentic specimens deposited at K (http://specimens.kew.org/herbarium/K000756229, http://specimens.kew.org/herbarium/K000756228) and at P (P00436370), the identity of this material was confirmed as *M. kurzii* Mez based on characters such as, a plant with hairs on branches, leaves, sepals and fruits, a largely crenate leaf margin, a branched inflorescence with many flowers, and an inflorescence equal to or just exceeding the length of the petiole. The present collection of *M. kurzii* from Arunachal Pradesh, India happens to be the first authentic collection and is a rediscovery after almost 150 years with an extended distribution to northeastern states, being an addition to the state flora of Arunachal Pradesh.

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Materials and Methods

Photographs were taken using a DSC-HX60V digital camera (Sony, Shanghai, China). The geo-coordinates were recorded with an Etrex 30x GPS (Garmin, New Taipei City, Taiwan). The Extent of Occurrence (EOO) and Area of Occupancy (AOO) were calculated in GeoCAT (Geospatial Conservation Assessment Tool), a semi-automated IUCN Red List assessment and analysis platform (Bachman, 2011). Voucher specimens were deposited at CAL.

Taxonomic Treatment:

Maesa kurzii Mez in Engler, Pflanzenr. Myrsin. IV, 236: 36. 1902. *Maesa muscosa* Kurz, J. Asiat. Soc. Bengal 42(2): 87. 1873, *nom. illeg*., non A.DC. 1834 ; C.B.Clarke in Hook.f., Fl. Brit. India 3: 511. 1882. *Lectotype* (designated here): MYANMAR (BURMA), at Nempean in the Patkoye ('Patkoi') mountains, 1862-3, *Griffith no.* 3556, (P [P00436370 digital image!]; isolecto K [K000756228, K000756229 digital images!]). **Fig. 1**

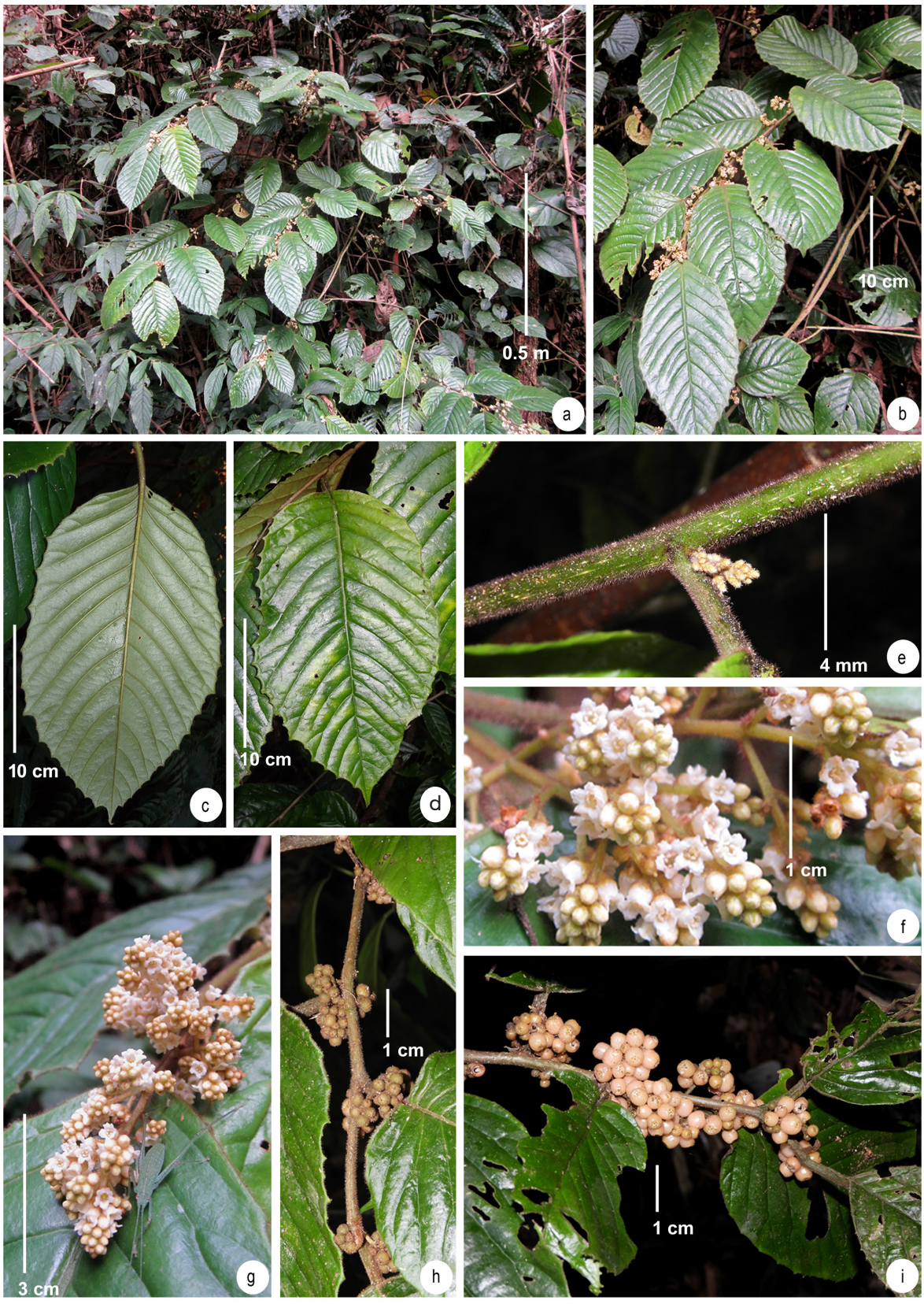

Fig. 1. *Maesa kurzii* Mez: **a**. Habit; **b**. Flowering twig; **c**. Leaf– abaxial view; **d**. Leaf– adaxial view; **e**. Portion of stem, showing hairs and a young inflorescence; **f**. Close-up of flowers; **g**. Inflorescence; **h**. Twig with immature fruits; **i**. Twig with mature fruits (from *V. Kumar & S. Panday* 64605; photos by V. Kumar and S. Panday).

Shrubs 1–2 m tall. Branches terete, villous when young, gradually becoming glabrous when old. Leaves simple, alternate; petioles stout, 3.7–4 cm long, hairy, widely channeled; lamina ovate-elliptic, 24.5–27.6 × 11–15.2 cm, attenuate at base, acuminate at apex, margins dentate, 17–24 teeth present on each side, almost glabrous abaxially, hairy adaxially; hairs long, stiff, branched, linear, subulate; veins prominent adaxially, secondary veins alternate, often dichotomously branched nearing margin before entering dentation teeth, resin deposits rare, densely hairy on secondary veins adaxially. Racemes axillary, 5–7.5 cm long, branched; bract 1, persistent, hirsute with brown hairs. Flowers regular, 3–3.5 mm long; bracteoles 2, linear, persistent, with dense brown hairs adaxially; pedicels stout, hirsute, *c.* 0.5 mm long. Sepals 5; ovate-lanceolate, 1–1.2 mm long, acute at apex, pilose adaxially, green. Petals 5, ovate, *c.* 3 mm long, glabrous, rounded at apex, white. Androecium *c.* 1.5 mm long; stamens 5, exserted; filaments slender, 0.7–1 mm long, white; anthers sub-globose, 0.5–0.8 mm long, dorsifixed. Ovary semi-inferior, sub-globose or ellipsoid, 1.2–1.5 mm long; style *c*. 0.3 mm long; stigma obtuse. Berries globose, brownish green when young, white when matured, with persistent calyx teeth and stigma, hairy, 3–5 mm in diam. Seeds 5–7, triangular, *c*. 1 mm long.

Flowering & fruiting: Flowering from January to–April and fruiting from April to June.

Habitat: Growing in shady, moist places of tropical rain forest in association with *Antidesma montanum* Blume (Euphorbiaceae), *Ardisia solanacea* (Poir.) Roxb. (Primulaceae), *Boehmeria macrophylla* Hornem. (Urticaceae), *Myxopyrum smilacifolium* (Wall.) Blume (Oleaceae), and *Sabia lanceolata* Colebr. (Sabiaceae).

Distribution: India and Myanmar.

Specimens examined: INDIA, **Arunachal Pradesh**, Changlang district, Namdapha National Park, Haldibari camp, N 27°31'30.31", E 96°24'32.06", 383 m, 12.01.2018, *V. Kumar & S. Panday* 64645; 25 miles area of MV road, N 27°26'55.32", E 96°26'25.40", 542 m, 12.01.2018, *V. Kumar & S. Panday* 64605 (CAL). MYANMAR, **Upper Burma**, Bhamo division, Mosit reserve, 500 ft, June 10, *G.E.S. Cubit* 335; Kachin hills, May 1898, *Shaik Mokim s.n.*; Kachin hills, Sadon Road, 8000 ft, February 1900, *Shaik Mokim* 117 (CAL).

*Conservation status***:** The species has a very restricted distribution and is found only in India and Myanmar. In India, it is reported to be distributed in two northeastern states, Arunachal Pradesh and Assam, particularly near Nempen mountains of southeast Assam as mentioned by Mez (1902). While assessing its status pertaining to IUCN guidelines, it has an EOO of approximately 217 km^2 and an AOO of 12 km^2 in India using GeoCAT tool (Bachman, 2011). The species occurs in fragmented localities with number of locations three (B2a). Thus, threats perceived for the species makes the final assessment as Endangered [EN B2ab(ii)]. *Maesa kurzii* is reported from Myanmar, thus there is the possibility of exchange of propagules. But, as the species has a very restricted habitat, the status of the assessment is not altered. In the Indian scenario the species is thus placed in the Endangered category of IUCN (IUCN, 2022).

Typification: Kurz (1873) described *M. muscosa* based on Griffith's collection (*Griff. 3556*) from Burma (Myanmar). But this name became invalid because, it was already occupied for a different species by A.P. De Candolle (1834). Therefore, Mez (1902) provided a new name *M. kurzii* for *M. muscosa* Kurz. Mez (*l.c.*) specified the locality as Patkoye (Patkai) mountains of Southeast Assam. As Patkai mountain range stretches into both India and Myanmar, the species can be considered as endemic to this region. While searching for the type materials, three sheets of *Griffith's* 3556 were found to be deposited at K (K000756228 and K000756229 digital images!), and P (P00436370 digital image!). The latter possesses a determination slip by Mez identifying the specimen as type specimen. This specimen at P (P00436370 digital image!) is a complete specimen and agrees with the protologue and has been designated here as the lectotype of *M. kurzii*.

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