

***Maesa membranacea* (Primulaceae): an addition to the flora of India from Manipur State**

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Abstract

Maesa membranacea Alphonse de Candolle is reported here as a new addition to the Flora of India. A brief description, photos and voucher specimens are provided to facilitate identification.

Résumé

Maesa membranacea Alphonse de Candolle est signalé ici comme un nouvel ajout à la flore de l'Inde. Une brève description et des illustrations sont fournies pour faciliter l'identification.

Key words: new record, North East India, Senapati district, taxonomy.

Mots clés : district de Senapati, nord-est de l'Inde, nouvel enregistrement, taxonomie.

Introduction

The genus *Maesa* Forsskål (1775: 66) comprises of about 176 species (POWO, 2019) of scrub and shrubs distributed throughout the Old World tropics (Mez, 1902). It's represented by 11 species in British India (Hooker, 1882).

The family into which the genus has been placed has changed several times due to different interpretations of family boundaries within this group (Stevens, 2001; APG, 2009; Timothy & Utteridge, 2012). Traditionally, the genus had been placed in the Myrsinaceae family (as a monogeneric subfamily) (Mez, 1902), then it was separated from Myrsinaceae and put processed into the Maesaceae family (Anderberg *et al.*, 2000) and more recently, following phylogenetic studies (APG, 2009), placed in the Primulaceae family.

During the years 2019-2021 botanical survey was undertaken extensively in State of Manipur in the northeast of India resulting in the collection of 200 taxa. Among these, an interesting species found in Senapati District of Manipur State, *Maesa membranacea* Alphonse de Candolle (1841: 80), was identified and confirmed by the data found in the reference literature (as Hooker, 1882; Haridasan & Rao, 1987; Chen & Pipoly, 1996; Kanjilal & Bor, 1997; Singh *et al.*, 2000; 2002; Giri *et al.*, 2008) and the consultation of herbaria (ARUN, CAL, ASSAM). This species, known until then in South Central and South Eastern China, Cambodia and Vietnam, has not been recorded in any of the Indian literature and Indian herbaria. Therefore our observations represent an addition to the Indian flora. The voucher specimens have been deposited at FRLH National Herbarium of Medicinal plants. A taxonomic description, habitat, phenology of specimens and illustrations are provided.

Taxonomic treatment

Maesa membranacea Alphonse de Candolle, *Annales des Sciences Naturelles, Botanique, serie 2*. 16: 80 (1841). *Maesa muscosa* Alphonse de Candolle, *Transactions of the Linnean Society of London* 17(1): 133 (1834). *Maesa subrotunda* Cheng Yi Wu & Chen Cheih, *Flora Yunnanica. Science Press, Beijing* 1: 318 (1977).

Description (Fig. 1): Small shrub, up to 3 m high; branchlets terete, flexuous. Petiole subterete or barely canaliculate, 2.5-3 cm long. Leaves broadly ovate or suborbicular, elliptic, 10-15 × 5-10 cm, thin, rounded to truncate at base,

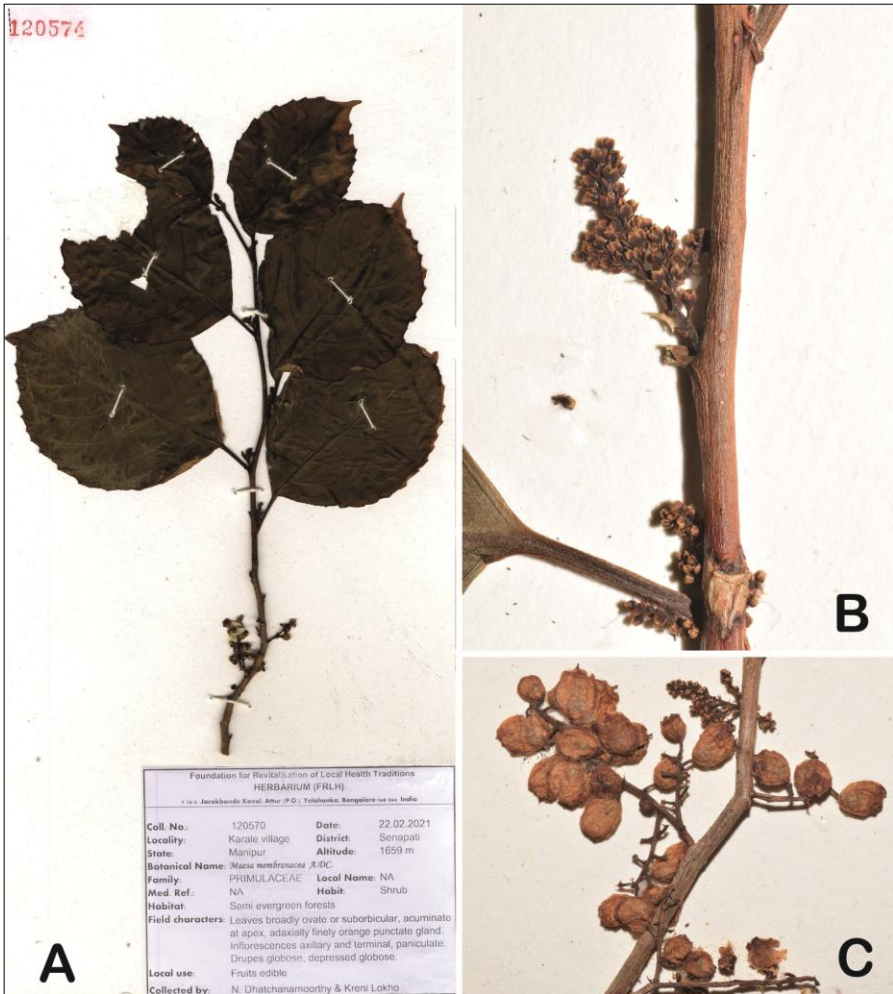


Fig. 1: *Maesa membranacea*

A- Voucher specimen; B-Close up of inflorescence and flowers; C-Close up of twig with fruits.

margin serrate or denticulate, sometimes punctate at margins, acuminate at the apex, leathery, abaxial surface glabrous, adaxial surface glossy, glabrous, with finely gland orange punctate; lateral veins 6-10 on each side of midrib, ending in teeth, submarginal vein absent. Inflorescences axillary and terminal, paniculate, 5-7 cm long, with 4-5 ramifications, glabrous. Flowers ca. 2 mm long, white; bracteoles ovate, ca. 2 mm long, acute at

apex, glabrous. Pedicel 0.8-15 mm long. Calyx lobes broadly ovate, ca. 1 mm long in fruit, obtuse or rounded, entire or irregularly crenulate, minutely ciliate or not, orange punctate-lineate. Corolla campanulate; lobes tubular, broadly ovate, rounded at the apex, crenulate at margins, with lines punctate with orange. Stamens 5, minute, inserted on lower part of corolla tube; filaments shorter than anthers; anthers ovoid, ca. 0.1 mm long, pale yellowish. Pistil included. Style thick, lightly lobed, unequal; stigma obscurely lobed. Drupes globose-depressed, whitish, conspicuously semi-inferior, ca. 6 mm long, orange punctate.

Flowering: February–March.

Habitat: Dense mixed and open forests; growing with *Buddleja asiatica* Loureiro (1790: 72), *Coffea benghalensis* Benjamin Heyne ex Schultes (1819: 200), *Daphne papyracea* Wallich ex George Don (1830: 156), *Lepidagathis incurva* Buchanan-Hamilton ex D. Don (1825: 119), *Passiflora wilsonii* Hemsley (1908: 17), *Phlogacanthus thyrsiformis* Mabberley (1980: 83), *Pogostemon purpurascens* Dalzell (1850: 337), *Rungia pectinata* Nees von Esenbeck (1847: 470) and *Tetrastigma serrulatum* (Roxburgh, 1820: 432) Planchon (1887: 432).

Distribution: It is considered to be native to South Central and South East China (Guangxi, Hainan and Yunnan), Cambodia and Vietnam and, with the present record, India (Senapati District of Manipur).

Specimens examined: INDIA — Manipur, Senapati district, Karale village, alt. 1659 m, 22th February 2021, N. Dhatchanamoorthy & Kreni Lokho 120570 (FRLH).

References

- Anderberg, A.A., B. Stahl, & M. Kallersjo, 2000. Maesaceae, a new primuloid family in the order Ericales ser. I. *Taxon* 49: 183–187.
- APG (Angiosperm Phylogeny Group), 2009. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG III. *Botanical Journal of the Linnean Society* 161: 105-121.
- Candolle, A., 1841. § II. Caractères des genres nouveaux et des espèces nouvelles. Sur les Myrsinèacées. *Annales des Sciences Naturelles; Botanique*, sér. 2, 16: 80.
- Chen, Jie & J.J. Pipoly, 1996. Myrsinaceae. In: Wu, Z.Y. & P.H. Raven, eds. *Flora of China*. Vol. 15 (Myrsinaceae through Loganiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis. 387 p.

- Dalzell, N.A., 1850. *Hooker's Journal of Botany and Kew Garden Miscellany*, London. 2: 337.
- Don, D., 1825. *Prodromus Florae Nepalensis*. London. 119 p.
- Don, G., 1830. *Loudon's Hortus Britannicus: a catalogue of all the plants indigenous, cultivated in, or introduced to Britain*. London. 156 p.
- Forsskål, P., 1775. MAESA. *Flora Aegyptiaco-Arabica* 66.
- Giri, G.S., A. Pramanik & H.J. Chowdhery, (editors), 2008. *Materials for the Flora of Arunachal Pradesh*. Vol. 2. (Asteraceae-Ceratophyllaceae). *Flora of India*. Ser.2. Calcutta: Botanical Survey of India. 498 p.
- Haridasan, K. & R.R. Rao, 1987. *Forest Flora of Meghalaya*. Vol. 2. Dehra Dun: Bishen Singh Mahendra Pal Singh. 560 p.
- Hemsley, W.B., 1908. *Bulletin of Miscellaneous Information, Royal Gardens, Kew*. (1): 17.
- Hooker, J.D., 1882. *Flora of British India*. London: L. Reeve & Co. 3: 507-511.
- Kanjilal, U.N. & N.L. Bor, 1997. (Repr. ed.). *Flora of Assam*. New Delhi: Omsons Publications. 1-5: 162-165.
- Loureiro, J., 1790. *Flora cochinchinensis: sistens plantas in regno Cochinchina nascentes. Quibus accedunt aliae observatae in Sinensi imperio, Africa Orientali, Indiæque locis variis. Omnes dispositae secundum systema sexuale Linnæanum*. Ulyssipone. 1: 72.
- Mabberley, D.J., 1980. *Catalogues with particular reference to Hortus Malabaricus. Botany and history of Hortus Malabaricus* Oxford and IBH Publishing Company. 83 p.
- Mez, C., 1902. *Myrsinaceae*. In: A. Engler (ed.), *Das Pflanzenreich*, 9 (IV. 236). Wilhelm Engelmann, Berlin. 437 p.
- Nees von Esenbeck, C.G.D., 1847. in A.P. de Candolle, *Prodromus Systematis Naturalis Regni Vegetabilis*. In: A.P. de Candolle. 11: 470.
- Planchon, J.E., 1887. *Monographiae Phanerogamarum*. 5(2): 432.
- POWO 2019. "Plants of the World Online" Facilitated by the Royal Botanic Gardens, Kew, available from: <http://www.plantsoftheworldonline.org/> Retrieved 03 June 2021.
- Roxburgh, W., 1820. *Flora Indica; or descriptions of Indian Plants* 1: 432
- Schultes, J.A., 1819. PENTANDRIA. MONOGYNIA. *Systema vegetabilium* 5: 200.
- Singh, N.P., A.S. Chauhan & M.S. Mondal, 2000. *Flora of Manipur*. 1. Calcutta: Botanical Survey of India. 600 p.

- Singh, N.P., K.P. Singh & D.K. Singh, 2002. *Flora of Mizoram*. 1. Calcutta: Botanical Survey of India, Ministry of Environment and Forest. 845 p.
- Stevens, P.F., 2001. Angiosperm Phylogeny Website. Version 9, June 2008 [and more or less continuously updated since]. <http://www.mobot.org/MOBOT/research/APweb/> Retrieved 01 April 2021.
- Timothy, M. & A. Utteridge, 2012. Four new species of *Maesa* Forssk. (Primulaceae) from Malesia. *Kew Bulletin* 67: 367-378.