

## Notes on the occurrence of *Markhamia lutea* (Benth) K. Schumann [Bignoniaceae] in Khuntimari Forest of West Bengal, India

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### Abstract

*Markhamia lutea* (Benth) K. Schumann [Bignoniaceae], an indigenous plant to Africa, is spotted for the first time from the Dooars, North Bengal, India. A detailed description with illustration and relevant notes are provided for its easy identification.

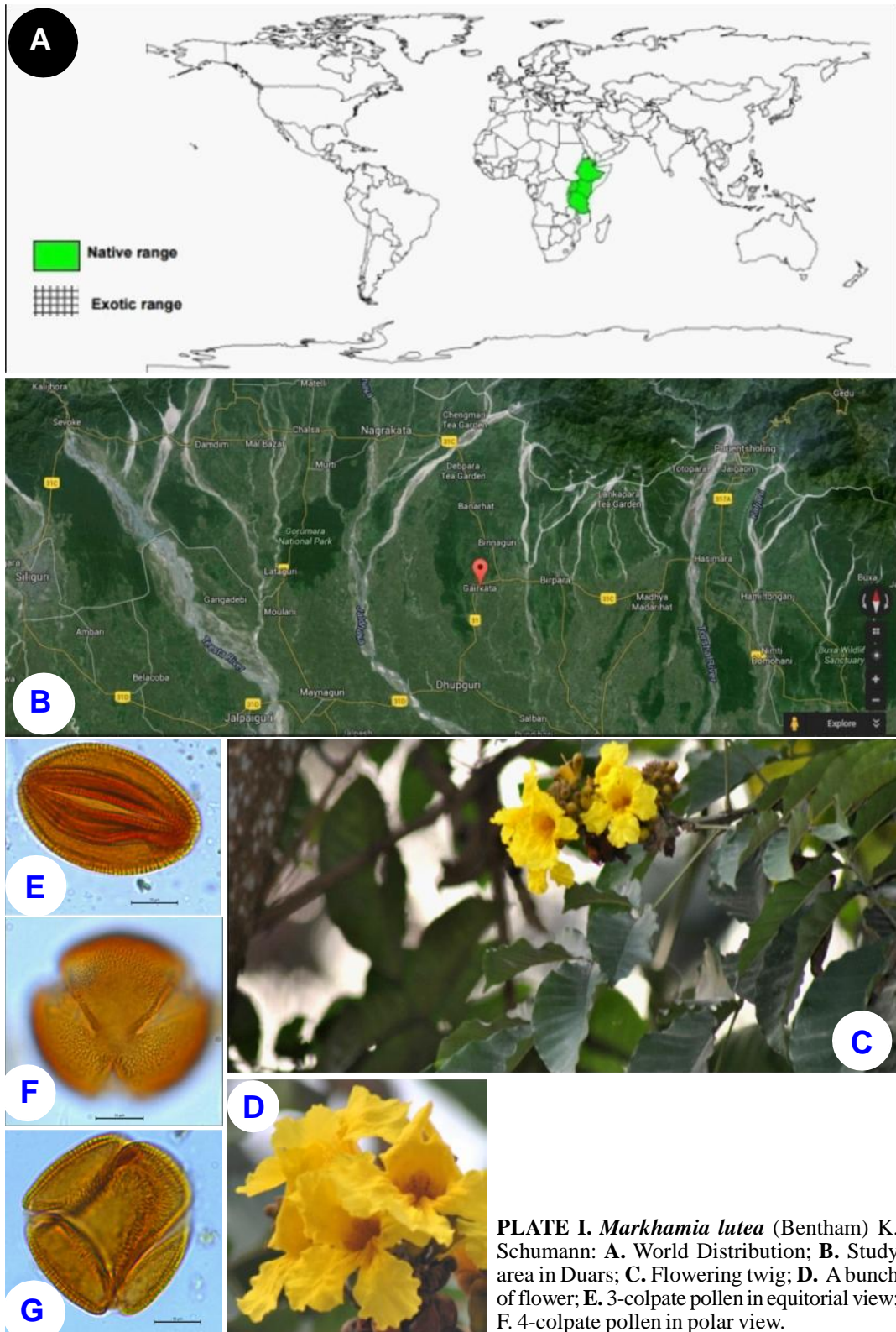
**Key words:** *Markhamia lutea*, Pollen morphology, Dooars

### INTRODUCTION

*Markhamia lutea* (Benth) K. Schumann [Bignoniaceae] or the Nile tulip or Nile trumpet tree is an evergreen tropical shrub or small tree of about 15 m height. The genus is represented by six species, out of which *Markhamia lutea* is indigenous to Africa. So far, two species of the genus are known to grow in India, namely *M. lutea* and *M. stipulata*. During a floristic exploration in the Dooars region of West Bengal, an interesting tree of Bignoniaceae was spotted in the Khuntimari forest, under the Jalpaiguri Forest Division. After careful study of the available literature (Noad & Birnie 1989; Bidgood *et al.* 2006) relevant websites [<http://www.efloras.org/flora>; <http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp>] and consultation of the specimen deposited in CAL the plant was authenticated as *Markhamia lutea* (Benth) K. Schumann. For nomenclature <http://theplantlist.org> has been consulted. This tree is indigenous to Kenya and in India it is planted as a road side tree in Bangalore only [Nagendra & Gopal 2011; [www.indiabiodiversity.org](http://www.indiabiodiversity.org)]. Earlier it has neither been collected nor was reported from West Bengal or even from the eastern part of India. The plant was monitored in the habitat for next months to study its reproductive phenology.

The present study includes detailed description and photographs along with the pollen morphological study for its further easy identification. The voucher specimen are deposited in CAL and NBU Herbaria.

*Markhamia lutea* (Benth) K. Schumann in Engl. & Prantl, Nat. Pflanzenfam. IV, 3b: 242. 1895. *Spathodea lutea* Benth, Niger Fl. 461. 1849. *Markhamia hildebrandtii* (Baker) Sprague in Hooker's Icon. Pl. 28: t. 2800. 1905. *Dolichandrone hildebrandtii* Baker, Bull. Misc. Inform. Kew 1894: 31 1894. *Markhamia platycalyx* (Baker) Sprague in Hooker's Icon. Pl. 28: t. 2800. 1905. *Dolichandrone platycalyx* Baker, Bull. Misc. Inform. Kew 1894: 30. 1894.



**PLATE I.** *Markhamia lutea* (Benth) K. Schumann: **A.** World Distribution; **B.** Study area in Duars; **C.** Flowering twig; **D.** A bunch of flower; **E.** 3-colpate pollen in equatorial view; **F.** 4-colpate pollen in polar view.

Evergreen small to medium-sized tree 10 – 15 m high; trunk up to 1m in circumference; crown irregular; old bark greyish brown to reddish brown with fine vertical cracks. Leaves opposite, imparipinnate, with 4 – 6 pairs of opposite leaflets; each leaflet elliptical to obovate, up to 10 cm long, wavy, acuminate, cuneate to rounded at base, thin; stipules absent; petiole 6 – 12 cm long. Panicles terminal, up to 20 cm long and wide; Flowers large and showy, up to 6 cm long, zygomorphic, bisexual; calyx spatulate, 2 – 2.5 (–3) cm long; corolla trumpet-shaped, tube with 3 + 2 frilly lobes, golden yellow, throat with brownish or red lines or spots; stamens epipetalous, didynamous, 2 – 3 cm long; disk 5-lobed; ovary superior, 2-chambered; style 3 – 3.5 cm long. Capsules 40 – 80 cm long, curved and flattened, dark brown.

**Flowering:** February – April; **Fruiting:** March – May.

**Pollen Morphology:** Grains 3 – 4 colpate ; isopolar; radiosymmetric; EV: prolate, PV: circular with intruded colpi; the colpi with acute ends and prominent membrane thickening, colpi L/B  $\pm$  30.81/ 3.7  $\mu$ m; exine reticulate, perforation density high; sexine 1.21  $\mu$ m; nexine 1.1  $\mu$ m; PA x ED:  $\pm$  33.73 x 20.28  $\mu$ m.

**Exsiccatae:** Khuntimari forest of Moraghat range, Dooars, West Bengal, *Baishakhi & AP Das 0392*, dated 08.03.15 (CAL & NBU).

### CONCLUSION

It is difficult to explain the presence of *Markhamia lutea* within the natural forests of Dooars. The location is not showing any sign of modified vegetation. Arrival of its seeds/ propagules from some remote area is also difficult to explain. However, the forest department establishments in this area are quite old. It is possible that previously the species was introduced in the area, probably as an ornamental, which was escaped into the nature in due course. But, the presence of only two stands of the species is again confusing as on escape the species should have increased its population in the mean time!

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### LITERATURE CITED

- Bidgood, S.; Verdcourt, B. & Vollesen, K., 2006. Bignoniaceae. In: Beentje, H.J. & Ghazanfar, S.A. (Eds.). *Flora of Tropical East Africa*. Royal Botanic Gardens, Kew, Richmond, United Kingdom. Pp. 1 – 47.
- <http://www.efloras.org/flora> [accessed on 02.10.2015]
- <http://www.indiabiodiversity.org> [accessed on 02.10.2015]
- <http://theplantlist.org> [accessed on 02.10.2015]
- <http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp> [accessed on 02.10.2015]
- Nagendra, H. & Gopal, D. 2011. Tree diversity, distribution, history and change in urban parks: studies in Bangalore, India. *Urban Ecosystem* 14 (2): 221– 223.
- Noad, T. & Birnie, A., 1989. *Trees of Kenya. A fully illustrated field guide*. ICRAF-ECA, Nairobi, Kenya. Pp. 281.