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RESEARCH ARTICLE

Rediscovery of *Thottea dalzellii* (Hook.f.) Karthik. & Moorthy (Aristolochiaceae) from the Western Ghats

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Abstract

Thottea dalzellii (Hook.f.) Karthik. & Moorthy is an endemic species of the Southern Western Ghats, hitherto known only from its type collection described in 1886, has been rediscovered after a lapse of 12 decades. A detailed description with relevant illustrations is given herewith to facilitate its easy identification.

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INTRODUCTION

The genus *Thottea* Rottb., has about 35 species, principally distributed across the Southeast Asian countries of the globe (Oelschlägl *et al*., 2011). In India, it is represented by 14 species which include 10 endemics confined to the Peninsular India.

One of the plant explorations carried out in Wayanad District in Kerala during the year 2005, the senior author has located a few interesting specimens of a *Thottea* species from the evergreen forests of Kunhome Gene Pool Conservation Area (GPCA). On critical examination with relevant literature, the specimens were found identical with *Thottea dalzellii*, a little known endemic species thought to be extinct from the Western Ghats. Later the identity of the specimen was confirmed with the type material housed at K.

Thottea dalzellii was originally proposed by Joseph Dalton Hooker in 1886 as *Bragantia dalzellii* based on a single fruiting specimen collected by N. A. Dalzell from an imprecise locality (without date) and the type specimen is housed at K (K000634541). There are no further indications available to trace out the type locality as well as the date of collection of the type specimen. Nevertheless, Hooker (1886) has been recorded the locality of the taxon as Concan, with the fair presumption that Dalzell might have been collected the material along with his other herbarium specimens from the Concan region of the South India. Interestingly, Cook (1906) rejected the inclusion of this species in his flora of the erstwhile Bombay Presidency owing to inadequate authenticated specimens at his disposal. He has also been further commented that….."*it is impossible to say whether the plant is or is not a native of Bombay one. The plant has not apparently been found by any other Bombay collector. Neither Talbot nor Woodrow has seen it*".

The type collection of this taxon represented by a single fruiting specimen and the protologue is devoid of its floral details. A detailed investigation revealed that it has not been reported from any part of the world after 1886, evidently by the dearth of specimens and literature. It is described and illustrated here based on recent collection from Wayanad (*E.S. Santhosh Kumar 56416*, TBGT) to facilitate its easy identification.

Thottea dalzellii (Hook.f.) Karthik. & Moorthy, Fl. Pl. India 156. 2009. *Bragantia dalzellii* Hook.f., Fl. Brit. India 5: 73. 1886. *Apama dalzellii* (Hook.f.) Kuntze, Revis. Gen. Pl. 1: 63. 1891 (Plate No.1)

Large branched shrubs upto 2 m high; stem woody at base, often flexuous, young shoots dark-purple, cylindrical, minutely hairy. Leaves alternate, elliptic to obovate 7-18 x 3.5-8.5 cm, rounded-cuneate at base, entire at margin, acuminate at apex, chartaceous, glabrous above, pubescent beneath, strongly 3-nerved from the base; lateral veins 3-5, tertiary veins closely reticulate; petiole 0.2-0.5cm long, pubescent, channelled above. Inflorescences axillary, bracteate in peduncled cymes; peduncle 1-1.8 cm long; bracts ovate, 0.3-0.5 cm long, densely hairy outside. Flowers 8-10 mm in diameter, dark purple; perianth lobed to the base, lobes to 10 x 0.8 cm, broadly ovate-suborbicular, acute-obtuse at apex, strigosely hairy without and multicellular cylindrical hairs within; margins not reflexed; flower buds trigonous, perianth lobes closely meet at their margins, obtuse at apex, strigosely hairy without. Gynostemium pubescent with uncinate multicellular hairs. Stamens uniseriate, 9-11 in 3 groups of 3 each or 4+4+3, alternating with solitary staminoides between the groups, 4-8 staminoides are also seen beneath the stigmatic lobes; filaments short, covered with small uncinate hairs; anthers linear, extrorse, dehiscing longitudinally. Ovary inferior, 1-2 cm long, linear, 4-carpellary, 4-locular, pubescent, stigmatic lobes7-11, often bifurcated, crowned by uncinate hairs at apex. Capsules 9-14 cm long, subterete, brown-purple and glabrescent when young, pale green at maturity. Seeds many, trigonous, 0.24-0.27 x 0.11-0.19cm, testa irregularly and transversely corrugated.

Flowering and fruiting: Throughout the year.

Distribution and Ecology: Endemic to the Western Ghats. It is growing in association with *Debraegesia ceylanica*, *Elatostemma lineolatum*, *Garcinia gummi-gutta* etc.

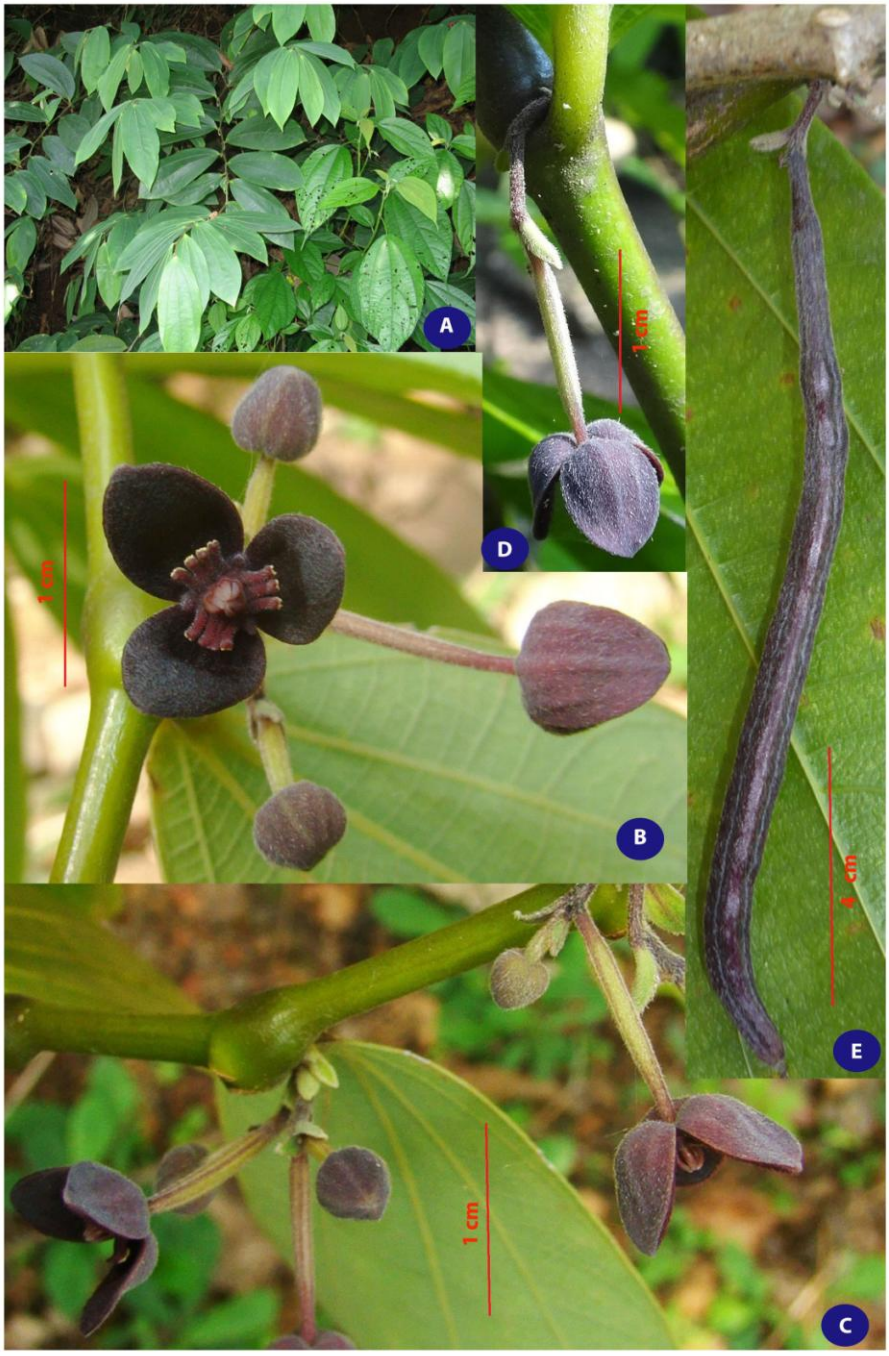
Specimens examined: INDIA: Kerala, Wayanad distr., Kunhome, 25.05. 2005, E.S. *Santhosh Kumar 56416* (TBGT); Thiruvananthapuram distr., JNTBGRI Filed Gene Bank, 08.01.2015, *Suchithra & Murugesan 70445* (TBGT).

Conclusion

Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI) located at the foothills of the Southern Western Ghats, about 40 km away from the capital city of the Kerala State has established with the principal mandate on conservation of plant genetic resources from the Western Ghats and the Andaman-Nicobar Islands. According to an official estimation, presently there is 3400 Angiosperm taxa have been conserving at JNTBGRI. The field gene bank of JNTBGRI has remarkable living collections of *Thottea* species from the Western Ghats and Andaman-Nicobar Islands. The live collections of concerned genus include 11 taxa *viz.* *Thottea abrahamii* Dan, P.J.Mathew, Unnithan & Pushp., *T. adichilthottiana* Sunil & Naveen Kumar, *T. barberi* (Gamble) Ding Hou, *T. dalzellii* (Hook.f.) Karthik. & Moorthy, *T. dinghoui* Swarupan., *T. duchartrei* Sivar., A.Babu & Balach., *T. idukkiana* Pandur. & V.J.Nair, *T. ponmudiana* Sivar., *T. siliquosa* (Lam.) Ding Hou, *T. sivarajanii* E.S.S.Kumar, A.E.S.Khan & Binu, *T. tomentosa* (Blume) Ding Hou.

A detailed investigation on various *Thottea* taxa from the Western Ghats revealed that *Thottea dalzellii* (Hook.f.) Karthik. & Moorthy is closely allied to *T. sivarajanii* E.S.S. Kumar, A.E.S. Khan & Binu, another endemic species of the Western Ghats; but it mainly differs from the latter by the elliptic-obovate leaves, ovate bracts, perianth lobes with straight margins, obtuse flower buds, 7-11 stigmatic lobes, 9-14 cm long brown-purple subterete capsules; whereas in *T. sivarajanii*, the leaves are narrowly elliptic-lanceolate, ovate–oblong bracts, perianth with deeply reflexed margins, apiculate or beaked flower buds, 4-6 stigmatic lobes and the 5-7 cm long sharply 4-angled fruits which are green in colour.

Plate No. 1.A-E: *Thottea dalzellii* (Hook.f.) Karthik. & Moorthy. A. Habit; B. & C. Inflorescence shows mature flowers and flower buds; D. Lateral view of a flower; E. A fruit.



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