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RESEARCH ARTICLE

Glochidion tirupathiense (Phyllanthaceae) – A New Species from Seshachalam Biosphere Reserve of Andhra Pradesh, India

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ABSTRACT: A new species, *Glochidion tirupathiense* Rasingam, Chorghe, Prasanna & Sankara Rao is described from Tirumala hills of Seshachalam Biosphere Reserve, Andhra Pradesh, India. It is allied to *G. ellipticum* Wight and differs in ovary, style and fruit characters.

KEY WORDS: Andhra Pradesh, *Glochidion,* new species, Seshachalam Biosphere Reserve, Tirumala hills.

INTRODUCTION

Seshachalam is the first Biosphere Reserve established in 2011in Andhra Pradesh. It lies between 13° 38" and 13° 55" N latitudes and 79° 07" and 79° 24" E longitudes and spreads over two southern districts *viz*. Chittoor and Kadapa of Andhra Pradesh. The total geographical area of the Biosphere Reserve is *c.* 4755.99 km^2 with diverse vegetation types. The vegetation is broadly classified in to Southern dry mixed deciduous forests, dry deciduous scrub, dry savannah, Red sander forests and *Hardwickia* forests (Champion and Seth, 1968). The hills vary in elevation from 400 to 1370 m with average altitude of 700 m. A total of 1756 species of flowering plants belonging to 176 families have been recorded from the area (Sudhakar, 2012).

The genus *Glochidion* J.R. Forst. & G. Forst. is represented by *c.* 320 species distributed in Tropical Asia to Northern Australia and Polynesia, and a few species in Madagascar and tropical America (Chakrabarty and Gangopadhyay, 1995; Balakrishnan and Chakrabarty, 2007; Chakrabarty and Gangopadhyay, 2012). In India, the genus is represented by *c.* 22 species, of which 3 species are reported from Andhra Pradesh (Babu, 1997; Chakrabarty and Gangopadhyay, *l.c.*). While working on the flora of Tirumala hills of Seshachalam Biosphere Reserve, the authors collected an interesting *Glochidion* species, which showed remarkable difference from all the known Indian species of the genus and therefore, it is described here as new to science.

TAXONOMIC TREATMENT

Glochidion tirupathiense Rasingam, Chorghe, Prasanna & Sankara Rao ***sp. nov.*** Figs. 1 & 2

Type: INDIA: Andhra Pradesh, Tirumala hills, on the way to Kumaradara Pusupudara Dam (13°43'10.95"N 79°19'12.30"E), 978m, 4 Sept. 2012, *L. Rasingam, M. Sankara Rao & Alok R. Chorghe* 2901 (Holo: CAL!; Iso: BSID!).

Paratype: India: Andhra Pradesh, Tirumala hills, on the way to Kumaradara Pusupudara Dam, 978m, 3rd June 2013, *P.V. Prasanna & M. Sankara Rao* 3205 (BSID!).

Glochidion tirupathiense Rasingam, Chorghe, Prasanna & Sankara Rao is allied to *Glochidion ellipticum* Wight, differing in the urn-shaped ovary with unlobed columnar style; style as broad as ovary from the base and capsules deeply lobed with each lobes further bilobulate (Table 1).

Small spreading tree, up to 4 m high; branchlets terete, puberulous when young, turning glabrescent on maturity. Leaves simple, alternate, oblong-elliptic to obovate, 6–12 × 2–4 cm, acute to apiculate or sometimes rounded at apex, cuneate or acute at base, entire along margins, coriaceous, glabrous; midrib raised on both surfaces, lateral nerves 10 pairs, prominent on both sides; tertiary nerves scalariform, faint above, prominent beneath; petioles 3–4 mm long, glabrous; stipules ovate, acuminate, *c.* 2 mm long, puberulous. Inflorescence axillary, fascicled, 3–6-flowered; both male and female flowers mixed or in separate fascicles. Male flowers: few, green; pedicels filiform, *c.* 5 mm long, glabrous; tepals 3 + 3, free, subequal, oblong-elliptic, *c.* 1.5 × 1 mm, glabrous; anthers 3, sessile with filaments connate into an oblong mass, *c.* 0.8 mm long, connectives produced into an erect, ovate appendages, pistillode absent. Female flowers: many; pedicels 2–5 mm long, glabrous; tepals 6, free, subequal, ovate, obtuse, *c.* 1.5 × 1 mm, white puberulous, ciliate along margins; ovary urn-shaped, hairy, 4–5 locular, each locule bi-ovulate; style

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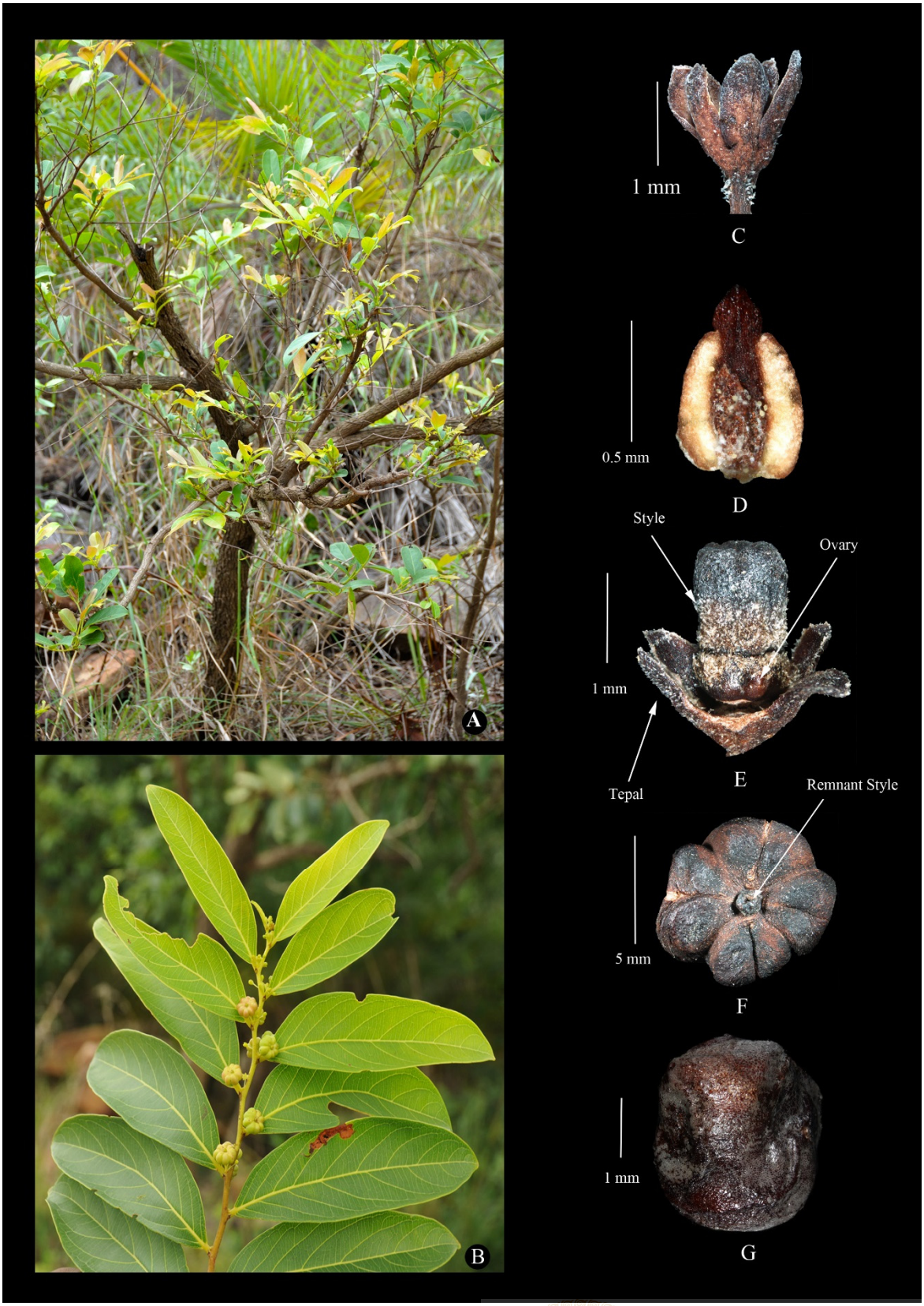


Fig. 1. *Glochidion tirupathiense*. A: Habit. B: A twig with flowers and fruits. C: Male flower. D: Anther. E: Female flower with ovary and style. F: Fruit. G: seed.

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Table 1. Difference between *Glochidion tirupathiense* & *Glochidion ellipticum*

Characters	*Glochidion tirupathiense*	*Glochidion ellipticum*
Inflorescence	3–6-flowered	Densely flowered
Ovary	Urn-shaped, pubescent	Subglobose, tomentellous to glabrous
Style	Columnar, unlobed, as broad as ovary from the base	Columnar to conical or sometimes obconic, lobed, smaller than the ovary
Fruits	Deeply lobed, lobes bilobulate, coriaceous	Unlobed or shallowly lobed, crustaceous

columnar, *c.* 2 × 1 mm, unlobed, as broad as the ovary from base. Fruits capsular, depressed, *c.* 1 cm in diam., 4 or 5-locular, deeply lobed; each lobe further bilobulate, coriaceous, glabrous with *c.* 1 mm long remnant of columnar style at apex; seeds hemispherical, 3.3 × 2.7 mm, with a red arillate coat, shining, glabrous.

Flowering & Fruiting: June–November.

Habitat: Rare along stream banks in moist deciduous forests at about 1000 m altitude growing in association with *Mimusops elengi* L., *Memecylon umbellatum* Burm.f., *Syzygium alternifolium* (Wight) Walp., *Terminalia pallida* Brandis, *Phoenix loureiroi* Kunth, *Buchanania angustifolia* Roxb. and *Carallia brachiata* (Lour.) Merr.

Etymology: The species is named after the type locality, Tirupathi, a famous temple town in Andhra Pradesh.

Conservation status: As per the IUCN guidelines version 4 (IUCN, 2012), the species is Data Deficient (DD), since only few individuals could be located on the way to Kumaradara Pusupudara dam area. Further studies and explorations in the adjacent areas are essential to ascertain the status of this species.

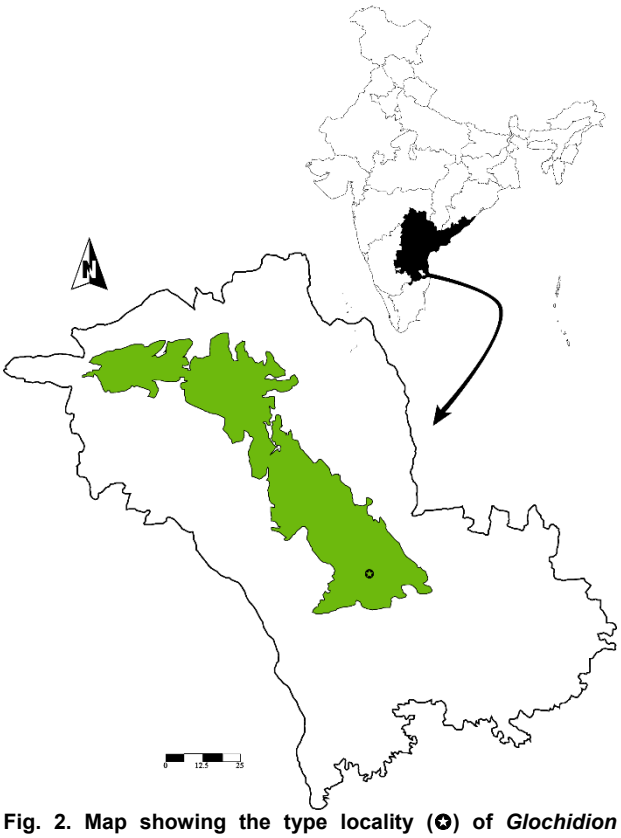


Fig. 2. Map showing the type locality (✪) of *Glochidion tirupathiense* in Seshachalam Biosphere Reserve, Andhra Pradesh, India.

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LITERATURE CITED

Babu, S. P. 1997. Euphorbiaceae. *In*: T. Pullaiah & D. Ali Moulali (eds.), Flora of Andhra Pradesh (India), **2**: 839–890. Scientific Publishers, Jodhpur, India.

Balakrishnan, N. P. and T. Chakrabarty. 2007. The Family Euphorbiaceae in India – A Synopsis of its Profile, Taxonomy, and Bibliography. Bishen Singh Mahenra Pal Singh, Dehra Dun, pp. 1–500.

Chakrabarty, T. and M. Gangopadhyay, 1995. The genus *Glochidion* (Euphorbiaceae) in the Indian subcontinent. J. Econ. Taxon. Bot. **19**: 173–234.

Chakrabarty, T. and M. Gangopadhyay. 2012. *Glochidion*. In N. P. Balakrishan *et al.* (eds.) Flora of India, **23**: 87–511. Botanical Survey of India, Kolkata.

Champion, H. G. and S. K. Seth, 1968. A revised survey of the forest types of India. Manager of Publications, New Delhi. pp. 1–404.

IUCN. 2012. Guidelines for Application of IUCN Red List Criteria at Regional and National Levels: Version 4.0. Gland, Switzerland and Cambridge, UK.

Sudhakar, G. 2012. Seshachalam Biosphere Reserve- Deccan South, India. In: Palni, L.M.S. & R.S.Rawal (eds.), Compendium on Indian Biosphere Reserve, Progression during two decades of Conservation. Ministry of Environment & Forests, New Delhi. pp. 178–183.

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印度賽夏恰蘭生物保留區發現之新種 *Glochidion tirupathiense*（葉下珠科）

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摘要：本文發表了一個在印度安德拉邦的賽夏恰蘭生物保留區發現的新種：*Glochidion tirupathiense*；該種在保留區內的提魯瑪拉山發現，並與四裂饅頭果為相近種，但可由子房、花柱與果實等特徵辨別出來。

關鍵詞：安德拉邦、饅頭果屬、新種、賽夏恰蘭生物保留區、提魯瑪拉山。

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