



RESEARCH ARTICLE

A new species of *Syzygium* (Myrtaceae) from the southern Western Ghats of Kerala, India

M.K. RATHEESH NARAYANAN¹, S.M. SHAREEF^{2*}, T. SHAJU²,
A.R. SIVU³, K.A. SUJANA⁴, M.K. NANDAKUMAR⁵ & K.T. SATHEESH⁵

1. Department of Botany, Payyanur College, Edat P.O., Payyanur, Kannur – 670 327, Kerala, India.
2. Jawaharlal Nehru Tropical Botanic Garden and Research Institute, Karimancode P.O., Palode, Thiruvananthapuram – 695 562, Kerala, India.
3. Department of Botany, N. S. S. College, Nilamel P.O., Kollam – 691 535, Kerala, India.
4. Botanical Survey of India, Central Botanical Laboratory, Botanic Garden P. O., Howraw –711103, West Bengal, India.
5. M. S. Swaminathan Research Foundation, Puthoorvayal, Kalpetta, Wayanad, Kerala – 673 121, India.

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*Corresponding Author

S.M. SHAREEF

Abstract

A new species of *Syzygium*, *S. dhaneshiana* is described and illustrated from the southern Western Ghats, Kerala, India. It is similar to *Syzygium gardneri* Thw., but differs by the strict terminal inflorescence with yellowish-white flowers, goblet shaped hypanthium and large broadly obovoid to subglobose fruits.

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Introduction:

The genus *Syzygium* Gaertner (Myrtaceae) comprises more than 1200 species mainly distributed in the Old World tropics from Africa to the West Pacific with major concentration in Malesia (Parnell *et al.*, 2007). A recent compilation revealed that ca. 55 taxa are recorded so far from India (Govaerts *et al.*, 2008) and the Western Ghats stands the highest concentration of the genus in India with 50 taxa (Govaerts *et al.*, 2008; Sheeba *et al.*, 2003; Murugan & Manickam, 2004; Viswanathan & Manikandan, 2008; Shareef *et al.*, 2010; Shareef *et al.*, 2012; Shareef *et al.*, 2012a; Sujana *et al.*, 2013), of which, ca. 20 taxa are endemic. Latest taxonomic compilation in the genus revealed ca. 39 taxa occur in the Western Ghats region of Kerala (Nayar *et al.*, 2008), among these 17 are endemic to the Western Ghats.

During a plant exploration to the southern Western Ghats of Kerala, the authors collected a few interesting specimens of a *Syzygium* from the evergreen forests of Nedumpoyil Ghats in Kannur district and later from Chanthanathodu of Wayanad district. The species resembles with *Syzygium gardneri* Thwaites, an Indo-Sri Lankan species but differs in several aspects (Table 1). On critical study with the original material of *S. gardneri* and perusal of authentic literature and type specimens, the collection was found to be a species new to science. Hence, it is described and illustrated here.

Syzygium dhaneshiana Ratheesh, Shareef, & Nandakumar *sp. nov.* (Plate 1).

Type: INDIA, Kerala, Kannur district, Nedumpoyil Ghat, ±600 m, 26 February 2013, Ratheesh Narayanan, Nandakumar & Satheesh 1519 (Holotype, MH; Isotypes, TBGRI).

Syzygium dhaneshiana is similar to *S. gardneri* by the slender and terete branchlets, ovate lanceolate to elliptic leaves with numerous lateral nerves and single intra-marginal nerve, shortly pedicellate flowers with shallowly lobed calyces and calyptrate petals. But it is distinguished from the latter by the medium sized tree habit, greyish white bark with pale pinkish-brown blaze, yellowish white flowers, goblet shaped hypanthium, and broadly obovoid to sub-globose large fruits.

Medium evergreen tree, to 10 m high; bole straight; bark grayish- white, smooth, outer part of inner bark fibrous, blaze pale pinkish-brown; twigs slender, terete, green. Leaves simple, opposite, exstipulate, ovate-lanceolate to elliptic, 7–9 × 2.5–3 cm, glabrous and glossy, membranous, cuneate at base, narrowly to caudate acuminate at apex, gland dotted on lower surface, margin wavy, slightly recurved, hyaline; midrib slightly canaliculate above, prominently raised beneath; lateral nerves many, slender, parallel, very close, prominent below, looped near the margin forming a prominent intra-marginal nerve, ca. 0.5 mm from margin, intercostae reticulate, not prominent above. Petiole 8–10 mm long, slender, grooved above. Inflorescence terminal cymose panicles, 3–4 cm long, glabrous, shorter than the leaves; bracts and bracteoles indistinct, caducous; peduncle terete, glabrous; branchlets opposite, terete, divaricate nearly at right angles. Flowers yellowish-white, bisexual, ca. 8-10 mm across, shortly pediceled, pedicels 2–3 mm long; hypanthium goblet shaped, to 4 × 3.5 mm. Sepals shallowly 4-lobed, obtuse. Petals 4, calyptrate, yellowish brown, broadly orbicular, ca. 3 × 3.3 mm, membranous, margin entire. Stamens many, free, whitish of different lengths, bent inwards at the middle when in bud; filaments ca. 4-4.5 mm long, glabrous; anthers reniform, ca. 1×1 mm. Ovary obovoid, 2-celled, ovules many on central axile placentation; style slender, yellowish white, ca. 5 mm long; stigma simple, acute. Fruit broadly obovoid to sub-globose, yellowish green when young, ca. 2.5 cm across, with a shallow terminal ring, the basal end with nipple like small projection. Seed one, grayish.

Additional specimens examined (Paratypes): INDIA, Kerala, Wayanad district, Chanthanathodu, ±700 m, 3 March 2014, Ratheesh Narayanan, Shareef & Shaju.

Flowering and fruiting: January–April

Distribution and Ecology: So far known only from the Nedumpoyil Ghat area in Kannur district and Chantahnathode area of Periya Forest Range in north Wayanad Forest Division of southern Western Ghats, mainly along the western slopes. Evergreen forests, at elevations between 600–800 m a.s.l. are the ideal habitat of the new species and it is seen as a middle stratum tree. Populations of the new species are fragmented and are represented by a few scattered mature individuals. The observations showed that the regeneration of this species is very poor and the population is near to the Thalassery-Mysore State Highway, an area which is highly subject to various kinds of developmental disturbances. Some of the plant species commonly found in this habitat are *Myristica malabarica* Lam., *Vateria indica* L., *Desmos lawii* Safford, *Goniothalamus wynaadensis* Bedd., *Meiogyne ramarowii* Gandhi, *Orophea malabarica* Sasidharan & Sivarajan, *Polyalthia fragrans* (Dalz.) Bedd., *Arenga wightii* Griff., *Agrostistachys borneensis* Becc., *Dimocarpus longan* Lour., *Drypetes venusta* (Wight) Pax & Hoffm., *Epiprinus mallotiformis* (Muell.-Arg.) Croizat and *Palaquium ellipticum* (Dalz.) Baill.

Eponymy: The specific epithet is in honour of Mr. P. Dhanesh Kumar, Divisional Forest Officer, south Wayanad Forest Division, Kerala who is a recipient of ‘Sanctuary Wildlife Award - 2012’, instituted by the Sanctuary Asia Magazine for his valuable and tireless efforts for protecting the forest of the State. He is a courageous forest officer and a visionary environmentalist who has undertaken herculean tasks to protect India’s wildernesses.

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References

- Govaerts, R., Sobral, M., Ashton, P., Barrie, F., Holst, B. K., Landrum, L.R., Matsumoto, K., Mazine, F.F., Nic Lughadha, E., Proença, C., Soares-Silva, L.H., Wilson, P.G. & Lucas, E. (2008): *World checklist of Myrtaceae*. Royal Botanic Gardens, Kew. Available from: <http://apps.kew.org/wcsp/> [accessed: 10 June 2013].
- Murugan, C. & V.S. Manickam (2004): Two new additions to Myrtaceae of India. *JETB* 28(3):523-526.
- Nayar, T.S., Beegam, A.R., Mohanan, N. & Rajkumar, G. (2006): Flowering Plants of Kerala—A Handbook. TBGRI, Thiruvananthapuram, Kerala, 1069 pp.
- Parnell, J.A.N., Craven, L.A. & Biffin, E. (2007): Matters of scale dealing with one of the largest genera of Angiosperms. In: Hodkinson, T. & Parnell, J. (eds.) *Reconstructing the Tree of Life, Taxonomy and Systematic of Species Rich Taxa*. The Systematics Association, Taylor & Francis, Boca Raton, pp. 251–273.
- Shareef, S.M., Geetha Kumary, M.P., Santhosh Kumar, E.S. & Shaju, T. (2010): *Syzygium claviflorum* (Myrtaceae) —A new record for south India. *Rheedea*, 20: 53–55.
- Shareef, S.M., Santhosh Kumar, E.S. and Shaju, T. (2012): A new species of *Syzygium* (Myrtaceae) from the southern Western Ghats of Kerala, India. *Phytotaxa* 71: 28–33.
- Shareef, S.M., Santhosh Kumar, E.S. & Roy, P.E. (2012a): *Syzygium fergusonii* (Myrtaceae) —New record for Kerala. *Journal of Economic and Taxonomic Botany*, 36 (2): 397–98.
- Sheeba Irwin, J., Narasimhan, D. & Ganeshan, R. (2003): Status of *Syzygium gambleanum* Rathakr. & Chithra (Myrtaceae) from southern Western Ghats. *Bulletin of the Botanical Survey of India*, 45: 111–120.
- Sujanapal, P., A.J. Robi, P.S. Udayan & K.J. Dantus (2013): *Syzygium sasiharanii* sp.nov. (Myrtaceae)- A new species with edible fruits from Agasthyamala Hills of Western Ghats, India. *International Journal of Advanced Research*, 1 (5):44-48.
- Viswanathan, M.B.G. & U. Manikandan (2008): A new species of *Syzygium* (Myrtaceae) from the Kalakkad-Mundanthurai Tiger Reserve in Peninsular India. *Adansonia* 3:113–118.

Table 1. Comparative morphological differences between *Syzygium dhaneshiana* and allied species

Characters	<i>Syzygium gardneri</i>	<i>Syzygium dhaneshiana</i>
Habit	Large tree, to 20 m. high	Medium sized tree to 10 m. high
Sucker shoots	Present	Absent
Bark	Pale grey or cream-brown	Greyish-brown
Blaze	Pale pink	Pale pinkish brown
Twigs	Terete or sub-tetragonous, pale cream	Terete, green
Lateral nerves	Slightly elevated on both surfaces	Prominent only on lower surface
Petiole	1–1.5cm	0.8–1.0 cm
Inflorescence	Axillary and terminal, to 5 cm long	Strictly terminal, 3–4 cm long
Flowers	White, 0.3-0.4 cm across	Yellowish-white, 0.8-1.0 cm across
Hypanthium	Funnel shaped	Goblet shaped
Stamen	Filaments 2–2.5 mm long	Filaments 4-4.5 mm long
Fruit	Ellipsoid-obovoid, 0.5–0.8 cm across	Broadly obovoid to sub-globose, ca.2.5 cm across

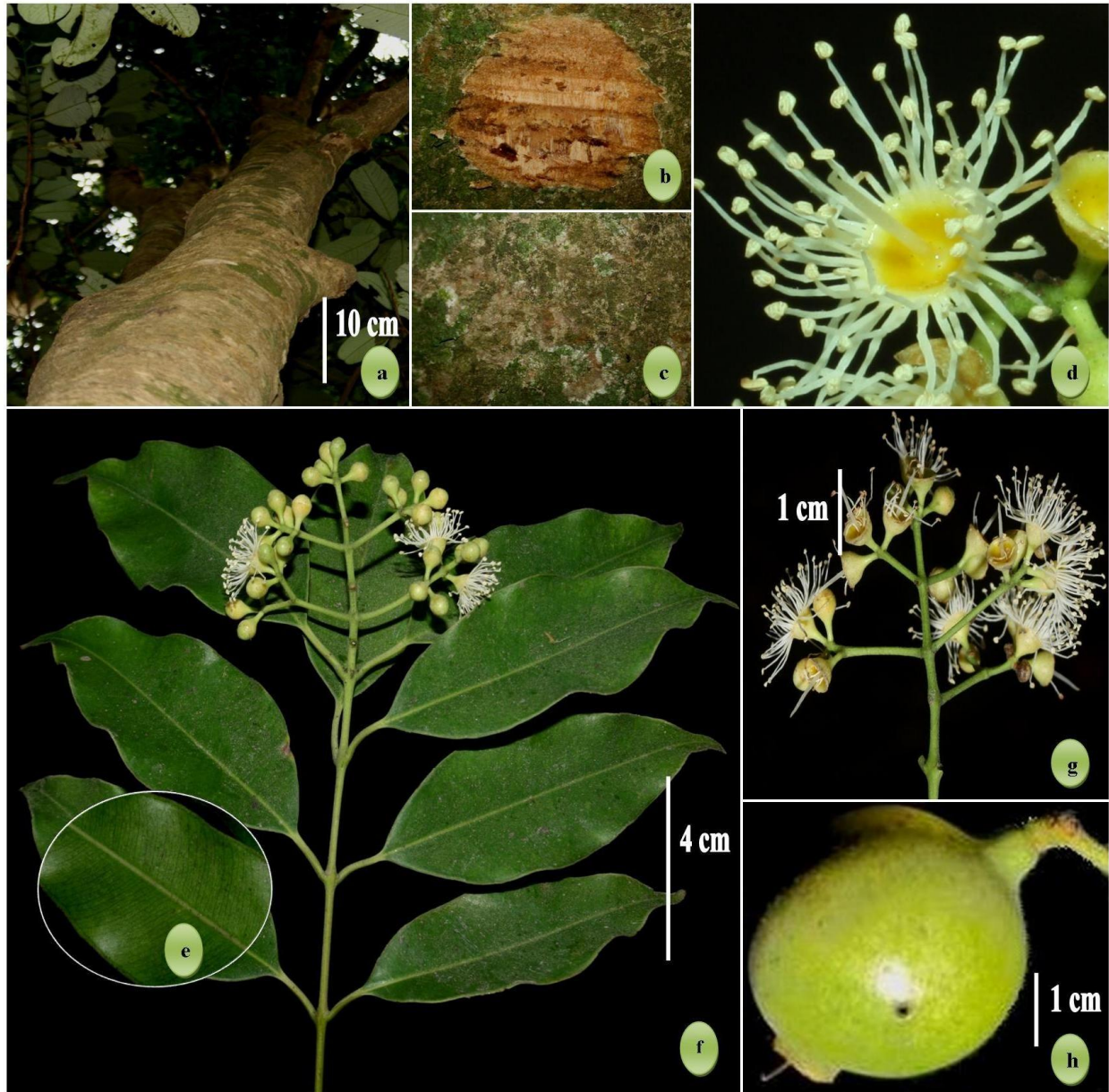


Plate 1: a. Bole, b. Bark, c. Blaze, d. Flower, e. Leaf- abaxial view showing secondary veins, f. Twig with terminal inflorescence, g. Inflorescence, h. Fruit.