



Research Communication

## *Eugenia kalamii* (Myrtaceae), a new species from Western Ghats, India

S M Shareef, E S Santhosh Kumar, T Shaju, R Prakashkumar

Jawaharlal Nehru Tropical Botanic Garden and Research Institute, Palode, Karimancode P.O., Thiruvananthapuram, 695562, India

**Article history**

Received: 24 September 2018  
Accepted: 28 October 2018  
Published: 21 November 2018

**Abstract**

A new species of *Eugenia* L. (Myrtaceae), viz. *E. kalamii*, is described and illustrated from the Western Ghats of India. It is morphologically allied to *E. mooniana* Wight, (Indo-Sri Lankan species) and *E. wynadensis* Bedd., (endemic species of southern Western Ghats).

**Editor**

Dr Maria Letizia Gargano  
University of Palermo  
Italy

**Keywords**

*Eugenia*; Myrtaceae; Western Ghats; Endemic.

**Publisher**

Horizon e-Publishing Group

**Citation**

Shareef SM, Santhosh Kumar ES, Shaju T, Prakashkumar R. *Eugenia kalamii* (Myrtaceae), a new species from Western Ghats, India. *Plant Science Today* 2018;5(4):196-200. <https://dx.doi.org/10.14719/pst.2018.5.4.429>

**Copyright:** © Shareef *et al.* (2018). This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited (<https://creativecommons.org/licenses/by/4.0/>).

**\*Correspondence**

S M Shareef  
✉ [smshariftbgri@gmail.com](mailto:smshariftbgri@gmail.com)

**Indexing:** Plant Science Today is covered by Scopus, CAS, AGRIS, CABI, Google Scholar, etc. Full list at <http://www.plantsciencetoday.online>

**Introduction**

*Eugenia* L. is the second largest genus in the family Myrtaceae with about 1125 species, 16 subspecies and 24 varieties distributed mainly in the tropical regions of the world [1]. In India, the genus is represented by 22 taxa (20 species, one subspecies and one variety) and all are represented in the Western Ghats, of which 15 are endemics to the region [2,3,4,5]. Kerala, the southwestern state of Peninsular India, houses 18 taxa, of which *E. annamaleinsis* E.S.S.Kumar *et al.*, *E. argentea* Bedd., *E. shettyana* Murugan & Gopalan and *E. terpnophylla* var. *keralensis* Shareef *et al.* are strict endemics to the state [4,5].

During a systematic study of the genus

*Eugenia* in the southern Western Ghats, the authors collected an interesting specimen of *Eugenia* from the forests of Periya in Wayanad district in Kerala. The specimen shows superficial similarities with *E. mooniana* Wight and *E. wynadensis* Bedd., but differed in many morphological characters (Table 1). After critical taxonomical studies, comparison with authentic herbarium specimens, review of relevant literature and on the basis of our field observations, it turned out to be a species new to science. It is described and illustrated here.

**Taxonomy**

*Eugenia kalamii* Shareef, E.S.S.Kumar, Shaju & Prakashkumar, *sp. nov.* (Figs. 1 and 2).

*Eugenia kalamii* is similar to *E. mooniana*, but differs in having subshrubby habit upto 1 m tall, thick dark brown branchlets, shorter petiole with silvery pubescent indumentum, shorter pedicels with silvery pubescent hairs, ovate-deltoid bracteoles, cup shaped calyx with unequal sub-orbicular to elliptic-oblong lobes, glabrous staminal disc, ovary cell with 1-3 pendulous ovules, globose to ellipsoid or obovoid glabrous fruits, seeds single, globose to ellipsoid in shape. It is also allied to *E. wynadensis* by the pendulous ovules, but remarkably distinct from it in having subshrubby habit, thick branchlets, shorter silvery pubescent petioles, terminal, axillary or rarely lateral flowers with shorter silvery pubescent pedicels, ovate-deltoid bracteoles, quite unequal and silvery pubescent calyx lobes, manifestly shorter bracteoles than calyx, glabrous staminal disc, ovules 1-3 per ovary cells, and the globose or ellipsoid or obovoid fruits and seeds.

**Type:** INDIA. Kerala State: Wayanad district, Periya, 840 m, 20 July 2016, S.M.Shareef 92402 (holotype TBGT!; isotype TBGT,MH!)

**Under-shrubs**, 25–100 cm tall; branches brown, terete, glabrous; young shoots silvery pubescent, glabrous when mature. **Leaves** petiolate; petioles 1.5-4 mm long; lamina ovate-lanceolate, 2.5–9 × 2.5–3.5 cm, subcoriaceous, pellucid-punctate, acute at base, narrowly acuminate at apex, recurved along margin, greenish above, pale green beneath, silvery pubescent when young, glabrous on its maturity; lateral nerves 10–14 pairs, very slender, faint; intra-marginal nerve 1-tiered, slender, faint,

ca 1 mm within the margin; midrib channelled above, raised beneath; **Flowers** white, ca 1 cm across at anthesis, solitary or paired, rarely 3-together, terminal, axillary or rarely lateral on a 3 mm long silvery pubescent peduncles; pedicels 1.5–6 mm long, silvery pubescent; bracts 2, linear-lanceolate, ca 1.5 × 0.7–1 mm, silvery pubescent without, glabrous within; bracteoles 2, ovate-deltoid, 0.8–1 × 1 mm, silvery pubescent without. Sepals 4 (2+2), unequal, white; lobes suborbicular to elliptic-oblong, ca 1.5 × 1.2 mm, punctate, obtuse or rounded at apex, ciliate along margins, silvery pubescent without, persistent. Petals 4, ovate-elliptic, 3.8–4.6 × 3 mm, free, white, obtuse at apex, ciliate along margins, caducous after anthesis, glandulate, reflexed. Stamens many, unequal, white, glabrous; filaments slender, 3.5–4.5 mm long; anther lobes oblong, 0.4–0.6 mm long, dehiscent longitudinally; disc flat, square, glabrous, ca 2 mm across, greenish-white. Hypanthium cup-shaped, to 2 × 2 mm, greenish-white, silvery pubescent, bilocular; ovules 1-3 in each locule, on pendulous placentation; style ca 5 mm long, slender, white, glabrous; stigma simple. **Fruit** succulent, depressed-globose, ellipsoid or rarely obovoid in outline, 11–14 × 13–15 mm, smooth, crowned with persistent calyx lobes, crimson on ripening, glabrous. Seed 1, 8–11 × 9–10 mm., globose to ellipsoid, smooth.

**Flowering and fruiting:** July- September

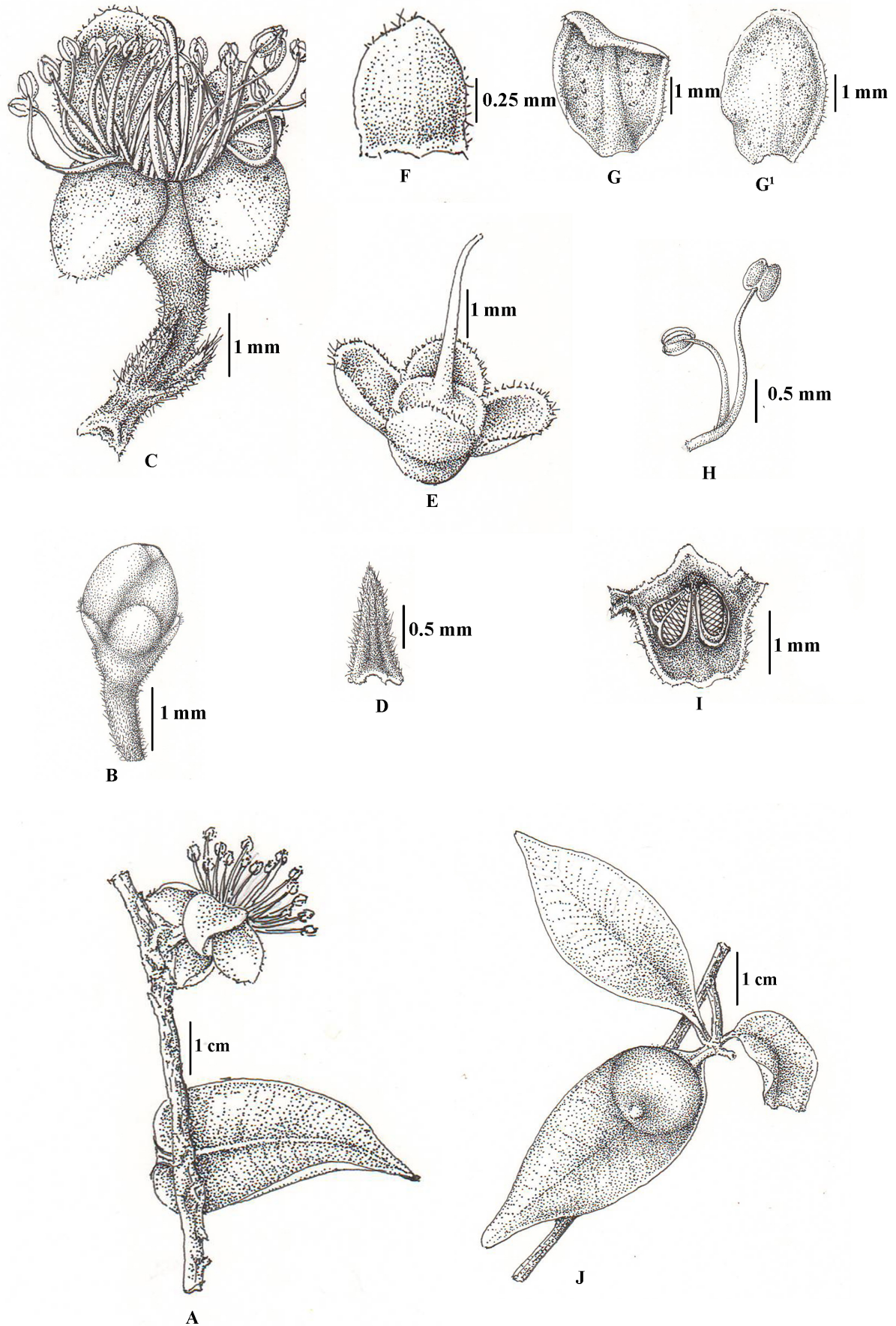
**Paratypes:** INDIA. Kerala State: Wayanad district, Periya, 840 m, 18 August 2017, S.M.Shareef 92434 (TBGT!).

**Table 1. Diagnostic morphological differences of *Eugenia kalamii* with *E. mooniana* and *E. wynadensis***

Characters	<i>E. kalamii</i> , sp. nov.	<i>E. mooniana</i>	<i>E. wynadensis</i>
Habit	Undershubs, up to 1 m tall	Shrubs or small trees, 3- 7 m tall.	Large shrubs or small trees, up to 2 m tall
Lateral nerves	10–14 pairs	6–10 pairs.	6–10 pairs
Branchlets	Dark brown, woody	Greyish brown, slender.	Brown, slender
Petioles	1.5– 4 mm long, silvery pubescent	6–8 mm long, brown pubescent.	6-10 mm long, fulvous tomentose
Flowers	1-3, terminal, axillary or rarely lateral	1-2, axillary, extra axillary, lateral or rarely terminal.	1-2, axillary or supra axillary
Bracteoles	Ovate-deltoid, shorter than calyx	Subulate, shorter than calyx	Linear, longer than calyx
Pedicels	0.2– 0.6 cm long, silvery pubescent	1–2.5 cm long, brown pubescent	1-1.5 cm long, rusty tomentose
Calyx lobes	Unequal, suborbicular to elliptic-oblong, silvery-pubescent	Equal, oblong, brown-pubescent	Equal, lanceolate, rusty-tomentose
Petals	Ovate-elliptic	Broadly ovate, elliptic or ovate-lanceolate	Elliptic-ovate
Disc	Glabrous	Brown-pubescent	Hairy
Ovules and placentation	1–3 per cell, pendulous	Many per cell, axile	4 per cell, pendulous
Fruits	Depressed-globose, ellipsoid or obovoid, glabrous	Globose, pyriform or oblongoid, glabrous or sparsely fulvous-tomentose.	Globose or urn-shaped, sparsely fulvous-hairy
Seeds	1, globose to ellipsoid	1-2, globose or plano-convex	1-4, globose or plano-convex



**Fig. 1.** *Eugenia kalamii* Shareef, E.S.S.Kumar, T. Shaju & Prakashkumar. **A.** Twig showing young leaves, **B.** Leaf bud, **C.** Leaf-under surface, **D.** Twig with flower buds, **E.** Flower bud, **F.** Flower, **G.** Flowering twig, **H.** Bract, **I.** Bracteole, **J.** Stamens, **K.** Petal, **L.** Anther lobes, **M.** Hypanthium- l.s., **N.** Hypanthium showing calyx lobes, disc and style, **O.** A Fruiting twig (Photos by S.M.Shareef, from the type locality).



**Fig. 2.** *Eugenia kalamii* Shareef, E.S.S.Kumar, T. Shaju & Prakashkumar. **A.** Flowering twig, **B.** Flower bud, **C.** Flower, **D.** Bract, **E.** Hypanthium showing calyx lobes and style, **F.** Calyx lobe, **G.** Petal in abaxial view, **G'**. Petal in adaxial view, **H.** Stamens, **I.** Hypanthium l.s., **J.** Fruiting twig. (All drawn from *S.M. Shareef 92402* by T.Shaju).

**Habitat, Ecology, Distribution and Conservation:** *Eugenia kalamii* is so far known only from the type locality in Chandanathodu Reserve Forests of Periya Forest Section under Wayanadu Forest Division in Kerala. It is a common forest undergrowth found in the evergreen forests at elevations between 700-900 m a.s.l. and found growing along with *E. wynadensis* Bedd., *E. argentea* Bedd., *Salacia gambleana* Whiting & Kaul, *Syzygium grande* (Wight) Walp., *Ixora elongata* B.Heyne ex G.Don, *Thottea sivarajanii* E.S.S.Kumar, A.E.S.Khan & Binu, etc. It is apparently endemic and is having more than 100 different aged individuals in the type locality. We have successfully introduced this new species in the Field Gene Bank of Jawaharlal Nehru Tropical Botanic Garden and Research Institute for further studies.

**Eponymy:** The specific epithet honors Dr. A.P.J. Abdul Kalam, a renowned Indian space scientist, for his contributions to science, technology and education. He served as the 11<sup>th</sup> President of India from 2002 to 2007. Dr. Kalam was honoured with several awards including the top three highest civilian awards of India, namely 'Bharat Ratna', 'Padma Vibhushan' and 'Padma Bhushan'.

#### Competing interest

The authors declare that they have no competing interests.

#### Authors contributions

All authors contributed equally to the work presented in this paper.

#### Acknowledgement

The authors are thankful to the Kerala Forest Department for permission to conduct field studies.

#### References

1. WCSP. World Checklist of Selected Plant Families. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; <http://wcsp.science.kew.org/> Retrieved 9 September 2018.
2. Duthie JF, Myrtaceae. In: Hooker JD (ed.), Flora of British India. Vol. 2 Reeve and Co., pp. 470-506. 1879.
3. Nayar TS, Rasiya Beegam A, Sibi M. Flowering Plants of the Western Ghats, India Vol.1, i-x +19-934. JNTBGRI, Palode, Thiruvananthapuram, 2014.
4. Kumar ESS, Veldkamp JF, Shareef SM. Notes on *Eugenia gracilis*, *Eugenia mooniana* and *Eugenia phillyreoides* (Myrtaceae). *Webbia: Journal of Plant Taxonomy and Geography* 2014; 69 (1): 101-103. <https://doi.org/10.1080/00837792.2014.895890>
5. Gopalan R, Murugan C. *Eugenia agasthiyamalayana* (Myrtaceae), a new species from the southern Western Ghats of India. *Indian Journal of Forestry* 2008; 31: 641-642.
6. Byng J, Wilson P, Snow N. Typifications and nomenclatural notes on Indian Myrtaceae, *Phytotaxa* 2015; 217(2): 101-116. <https://doi.org/10.11646/phytotaxa.217.2.1>

