

## A new variety of *Cinnamomum mathewianum* (Lauraceae) from Kerala, India

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### Abstract

*Cinnamomum mathewianum* var. *ponmudianum* from Kerala, India is described as a variety new to science. It differs from the typical variety by the smaller ovate-lanceolate leaves with entire margins and long acuminate to caudate leaf apex. Further it can be distinguished by the shorter axillary or extra-axillary panicles with fewer number of flowers in the inflorescence, pink to dark maroon peduncle and the shorter pedicels.

**Keywords:** *Cinnamomum mathewianum* var. *ponmudianum*, endemic, Kerala, India

### Introduction

*Cinnamomum* Schaeffer (1760) consists of c. 350 species and is distributed from South East Asia to Australia and the New World [20, 16, 11, 23]. In India, the genus is represented by 46 species [1, 8, 7, 6, 5], of these 26 species are reported from southern India and 19 of them are endemic to this region [10, 12, 15].

During the course of a systematic study on the genus *Cinnamomum* of South India, the second author (ESSK) reported *C. alexei* Kosterm. [9] from the Ponnudi hills in Kerala in 2011. Meanwhile, Soh [21] treated *C. alexei* conspecific with *C. verum* J. Presl [14], hence Santhosh and Jabbar [18] reinstated *C. alexei* to its original status as a distinct species from *C. verum*. Soon after the publication of Santhosh and Jabbar [18], Soh (Pers. Comm.) reiterated that *C. alexei* Kosterm is nothing but *C. verum* and those species reported from India as *C. alexei* might be an undescribed entity. This prompted us for a detailed study on *C. alexei* sensu Santhosh et al. [19] reported from India. Based on literature, herbarium and field study, the concept of Soh [21] in treating *C. alexei* as conspecific with *C. verum* is supported here. The report of *C. alexei* sensu Santhosh et al. [19] from India proved to be an undescribed variety of *C. mathewianum*. Hence it is described here as a new variety based on fresh collection.

### Taxonomy

*Cinnamomum mathewianum* Remya Kr., E.S.S.Kumar, Radhamany, Valsaladevi et R. Jagad. var. *ponmudianum* Remya Kr., E.S.S.Kumar, Radhamany, et Valsaladevi, var. nov. (Fig.1)

Type: - INDIA: Kerala state; Thiruvananthapuram Distr., Ponnudi hills, c.700 m, 15 January 2013, Remya Krishnan 6901 (holotype: Herbarium, KUBH!, Department of Botany, University of Kerala!; Isotype: MH!).

Previously referred to as: *Cinnamomum alexei* auct. non Kosterm.: Santhosh et al. (2011, Fig.1 ). Voucher: c. 700 m a.s.l., 29.01.2003, M.P. Geethakumary, 48433 (TBGT!).

### Description

Trees, 3–5 m high; bark dark brown with strong smell of betel leaves; terminal buds densely sericeous outside; branchlets

slender, initially subquadrangular and later become subterete. Leaves opposite and sub-opposite or very rarely alternate, ovate to lanceolate, 4–12 × 1.5–5.0 cm, with strong smell of betel leaves, rounded to cuneate at base, long acuminate to caudate at apex, dark green above, glaucous beneath, margin entire, chartaceous; midrib and 2 sub-basal lateral nerves reach below the acumen or rarely extending almost at blade tip; secondary nerves ± prominent, closely reticulate; petioles 0.7–1.5 cm long, canaliculate above. Panicles axillary or extra-axillary, 2.5–5 cm long, with 3–5 branches, 5–14 flowered, glabrous; central peduncle slender, 2.0–3 cm, pink; pedicels to 4.5 mm long, gradually thickened at apex. Flowers c. 2.5–3.0 mm long, dark maroon, glabrous. Perianth lobes 6 in 2 whorls of 3 each, broadly ovate, to 1.5 mm long, acute to obtuse at apex, minutely sericeous at base, dark reddish tomentose within. Stamens 9, in 3 whorls of 3 each; whorls I & II with anthers elliptic to ovate, 1.0–1.5 mm long, 2-celled, introrse; filaments sericeous at the very base within; whorls III extrorse; anthers oblong, 2-celled, glands sub-sessile, attached near the basal portion of the filaments; staminodes shorter than anthers, hastate, on 0.5 mm long stipes with 1 or 2 hairs on either sides. Ovary ellipsoid, 1.0–1.5 mm long, glabrous; style as long as the ovary, rather thick with small peltate stigma. Fruits ellipsoid, to 15 × 11 mm, cupule cup-shaped, cup shallow, 1.5–2.0 × 9 mm, base conical, tepals persistent on fruit and then acute to subacute, indurate.

### Phenology

Flowering and fruiting was observed from January to March.

### Etymology

The varietal epithet “*ponmudianum*” refers to the type locality, the Ponnudi hills in Kerala, India.

### Habitat and ecology

This species grows as a member of the third storey in evergreen forests at altitude between 700–1000 m. In the present locality, we could locate only 2 reproductively mature individuals and a few seedlings of various ages. Later, the taxon was located from Chemungi hills, Thiruvananthapuram,

Kerala, India. They are associated with *Actinodaphne wightiana* (Kuntze) Noltie [13], *Antidesma montanum* Blume [3], *Aporosa acuminata* Thwaites [22], *Cinnamomum malabratrum* (Burm.f.) Bl. [2], *Syzygium mundagam* (Bourd.) Chithra [4] and *Xanthophyllum flavescens* Roxb. [17].

**Discussion**

This new variety is allied to the typical variety by the betel

smelled leaves and bark, 2 celled anthers and the ellipsoidal fruits (Table 1). It differs from *C. mathewianum* by the smaller ovate-lanceolate leaves with long acuminate to caudate apex, entire or slightly undulating margin; shorter axillary or extra-axillary panicles with fewer flowers, pink to dark maroon peduncle and the shorter pedicel in flowers. Further, these two taxa can be distinguished by the following characters mentioned in Table-1.

**Table 1:** Comparison of morphological characters of *Cinnamomum mathewianum* var. *mathewianum* and var. *ponmudianum* var. *nov.*

Characters	<i>Cinnamomum mathewianum</i> var. <i>mathewianum</i> (Fig.2)	<i>Cinnamomum mathewianum</i> var. <i>ponmudianum</i>
Leaves shape size texture apex margins	Elliptic 11-15.5 × 4.5-6.2 cm Coriaceous Caudate Undulate	Ovate to lanceolate 4-12 × 1.5-5.0 cm Chartaceous Long acuminate-caudate Entire-undulate
Inflorescence	5-9 cm	2.5-4.5 cm
No. of flowers	8-18	5-12
Colour of peduncle	Light green	Pink
Flower colour	Greenish with red at the top	Dark pink
Flower length	1.2-1.6cm	0.9-1.4cm
Length of pedicel	1-1.4 cm	0.7-1.2 cm
Stamens	2-locular rarely 4 locular	Always 2-locular
Shape of stamens	ovate to narrowly ovate	Elliptic to ovate
Shape of staminodes	Deltoid	Hastate



**Fig 1:** *Cinnamomum mathewianum* var. *ponmudianum* A) Flowering twig, B) Flower, C) Fruit, D) Terminal bud scale, E & F) Outer and inner perianth tepals, G) Ovary, H, I & J) Stamens of whorl I, II & III, K) Staminode.



**Fig 2:** *Cinnamomum mathewianum* var. *mathewianum* A) Flowering twig, B) Inflorescence C) Flower, D) Mature & ripened fruits.

**Additional specimens examined**

INDIA: Kerala, Thiruvananthapuram district, Chemungi Hills, 850 m, 07.12.2013 Remya Krishnan 6932 (Paratype: Herbarium, KUBH! Department of Botany, University of Kerala).

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