

Notes on *Polyalthia malabarica* (Bedd.) I.M. Turner and *Polyalthia suberosa* (Roxb.) Thwaites
(Annonaceae).

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Abstract

Taxonomic notes on two closely allied species of *Polyalthia* viz. *P. malabarica* and *P. suberosa* are provided with detailed descriptions and photographs to facilitate its easy identifications.

Keywords: *Polyalthia malabarica*, endemic, *P. suberosa*, taxonomic notes.

1. Introduction

Polyalthia malabarica was originally described by Richard Henry Beddome ^[1] as *Phaeanthus malabarica*, based on his own collection from the Thambracherry Ghats in the Erstwhile Malabar in Kerala. This threatened species is endemic to the southern Western Ghats region of the peninsular India. In their revision of the *Phaeanthus*, Mols and Kessler ^[2] excluded *Phaeanthus malabarica* from the genus and suggesting it should be considered a synonym of *Polyalthia suberosa*. Turner ^[3] studied both taxa and admitted its exclusion from the genus *Phaeanthus*, but strongly argued its inclusion as a separate species in the genus *Polyalthia* viz *P. malabarica*. He, further emphasized that “*Polyalthia malabarica* is clearly allied to *P. suberosa* with its markedly unequal petal whorls, but it is definitely distinct lacking the corky bark, bearing acuminate leaves and red rather than yellow petals.” It is a profusely branched shrub but often has reached to the size of a small tree when undisturbed. They grow as an understory element in evergreen forests and also seen in sacred groves of Kerala state. The absence of corky bark, rusty tomentose young branchlets, narrowly oblong or oblong-lanceolate long acuminate shining leaves, etc are the characteristic feature of this species. Flowers are flesh coloured (reddish according to Beddome) which are solitary either axillary or extra axillary in position. Outer petals are like the sepals, but inner petals twice larger than the outer with inflexed tip often connivent at their tips.

Polyalthia malabarica (Bedd.) I.M. Turner, Nord. J. Bot. 33(3): 284.2015. *Phaeanthus malabaricus* Bedd., Ic. Pl. Ind.Or. 16.t.76.1874. Type (Lectotype) India: Kerala, Malabar, Tambracherry Ghat, 2000ft, R.H. Beddome s.n. (MH!) (Fig. 1, A-F).

Large shrubs or small trees, 1-4 m tall; bark lenticellate; branchlets rusty tomentose. Leaves 10-16 × 3.5-5.5 cm, narrowly oblong, oblong-lanceolate, glabrous on both sides, base rounded to subcordate, gradually acuminate at apex; secondary veins 8-12, on either side of midvein, spreading, conspicuous on both surfaces, arching and looping near the margins; petiole 2-3 mm long, puberulent. Flowers usually solitary or rarely two together, axillary or extra-axillary, leaf-

opposed; pedicel 1.5 cm long, sparsely strigose; bracteoles 2, ovate, at the base of pedicel, minute. Sepals 2.5-3 mm long, ovate, acute, rusty tomentose, spreading. Petals flesh coloured, rarely slightly reddish; outer petals to 9 × 5 mm, ovate, acute at apex, shorter than inner petals, fleshy, flat and spreading, outside slightly pubescent, inside glabrous; inner petals 12 × 8 mm, ovate, concave, acute at apex. Stamens many, ca. 1 mm long; connectives truncate at apex. Carpels many, pubescent; ovules 1 or 2 per carpel. Infructescence stalk to 1.5 cm long, thick; monocarps globose, ca. 8 mm in diam., sparsely strigosely, shortly pointed. Seed 1 per monocarp.

Specimens examined: India: Kerala, JNTBGRI Campus, 06.04.2016, E.S.Santhosh Kumar 82823 (TBGT).

Polyalthia suberosa was first published as *Uvaria suberosa* by William Roxburgh in 1795. He described this species from the Coromandel Coast of the Indian subcontinent. The specific epithet ‘suberosa’ alluding to the ‘corky’ stem and branches of the plant that is one of the peculiar characteristic features of this species. It is distributed from Sri Lanka and India into southern China and Hainan and Southeast Asian mainland (Indochina), Peninsular Malaysia and the Philippines. Thwaites ^[4] transferred *Uvaria suberosa* to *Polyalthia* making a new combination *P. suberosa*. Miquel ^[5] published *Phaeanthus cumingii*, based on Cuming collection (*Cuming n.525, 1084*) from Philippines. Later, Naves ^[6] described another species of *Phaeanthus* from Philippines, viz. *P. malabaricus*, which was a later homonym of *P. malabaricus* Bedd. But both *P. cumingii* and *P. malabarica* Naves proved conspecific with *P. suberosa*. This is a small shrubby species with very characteristic ridged corky bark on mature stem, but the young twigs are reddish brown with faint white dots. Leaves are distichously arranged, of varying shapes from oblong, elliptic-oblong or narrowly obovate-oblong. Flowers are yellowish green, solitary or two together, extra axillary, leaf opposed or slightly below the leaves.

Polyalthia suberosa (Roxb.) Thwaites, Enum. Pl. Zeyl. 398.1864. *Uvaria suberosa* Roxb., Pl. Coromandel 1: 31.1795. *Guatteria suberosa* (Roxb.) Dunal, Monogr. Anonac. 128.1817.

Phaeanthus cumingii Miq., Fl. Ned. Ind. 1(2):51.1859. *Phaeanthus malabaricus* Naves, Fl. Filip. ed.3.t.193.1880. (Fig.1, G-L).

Large shrubs or small trees, 2-5 m tall; bark corky, ridged; branchlets densely rusty pubescent, glabrescent. Leaves 4-13 × 1.8-4.5 cm, oblong, elliptic-oblong, or narrowly obovate-oblong, membranous to papery; secondary veins 8-10 on each side of midvein, spreading, inconspicuous on both surfaces, reticulate veins lax and inconspicuous, base narrowly acute, slightly oblique, apex subobtuse to rounded, retuse, sometimes abruptly shortly acuminate; petiole 2-4 mm long, puberulent. Flowers solitary or two together, extra-axillary, leaf-opposed, or slightly below leaf; pedicel 0.8-3 cm long, sparsely strigose; bracteole near on the base of pedicel, minute, ovate-triangular, acute at apex. Sepals 2-2.5 mm long, ovate-triangular, glabrous within and pubescent outside. Petals yellowish green; outer petals to 5 × 3 mm, oblong-lanceolate, shorter than inner petals, leathery, flat and spreading, outside slightly pubescent, inside glabrous, apex acute; inner petals 7-10 × 2.5-3.5mm, oblong, erect and curved, apex obtuse. Stamens many, ca. 1 mm long; connectives apically convex. Carpels many, ca. 2 mm, pubescent; ovules 1 or 2 per carpel. Infructescence stalk to 0.8-3 cm long, slender; monocarps globose, ca. 5 mm in diam., sparsely appressed pubescent or glabrescent. Seeds 1 or 2 per monocarp.



Fig 1: A-F. *Polyalthia malabarica* (Bedd.)I.M. Turner; G-L. *Polyalthia suberosa* (Roxb.) Thwaites. A. a twig with flower; B. a twig with fruits; C. a flower; D. a leaf; E & F. leaf base and apex respectively; G. a twig with flowers; H. a leaf; I & J. leaf apex and base; K. a flower; L. infructescence.

Specimens examined: India: Kerala, JNTBGRI Campus, 06.04.2016, E.S.Santhosh Kumar 82824 (TBGT). *Polyalthia malabarica* and *P. suberosa* can be further distinguished by the following characters, which are tabulated below (Table-1).

Table 1: Comparative morphological characters of *P. malabarica* and *P. suberosa*.

Characters	<i>Polyalthia malabarica</i>	<i>Polyalthia suberosa</i>
Bark	Not corky, smooth	Corky, ridged
Branchlets	Sparsely tomentose	Densely rusty tomentose
Leaves	Narrowly oblong, oblong-lanceolate, 10-16 × 3.5-5.5 cm	Oblong, elliptic-oblong or narrowly obovate-oblong, 4-13 × 1.8-4.5 cm
Secondary veins	8-12 pairs, conspicuously looped below the margins	8-10 pairs, inconspicuous, no visible looping near the margins
Leaf base	Rounded-subcordate	Narrowly acute and oblique
Leaf apex	Gradually acuminate	Subacute to rounded, retuse, or sometimes abruptly short acuminate
Pedicels	1.5 cm long, hispid	1-3 cm long, sparsely strigose.
Bracteoles	Ovate, 1 mm long, attached near the base of pedicels.	Ovate-triangular, 2-2.5 mm long, attached on pedicels nearly 1/3 from the base.
Outer petals	Ovate, acute at apex, 9 × 5 mm	Oblong-lanceolate, 6 × 4 mm
Inner petals	Ovate, acute, concave, to 8-12 × 7-8 mm	Oblong, erect and curved, to 7-10 × 2.5-3.5mm
Stamens	Truncate at apex	Convex at apex
Styles	Obovoid	Cylindrical-triangular
Monocarps	Spherical, to 8 mm diam.	Spherical, to 5 mm diam.

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