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RESEARCH ARTICLE

A NEW SPECIES OF ROTALA L. (LYTHRACEAE) FROM THE LATERITIC HILLS OF THRISSUR DISTRICT, KERALA, INDIA.

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Abstract

A new species of the family Lythraceae (*Rotala cheruchakkiensis*) collected from the lateritic plateau at East Mangad, Kerala, India is described and illustrated here. It is closely allied to *Rotala malambuzhensis* R. Vasudevan Nair and *R. illecebroides* (Arn. ex Clarke) Koehne, but it differs in having small size, terrestrial habitat, colourless calyx, pink coloured, outwardly curved appendages and seeds red coloured, rugose, hemispherical, up to 10 numbers and ventrally located single projection from the concave surface.

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Introduction

Rotala is a comparatively large amphibious genus with 44 species distributed mainly in tropical and subtropical regions of world (Cook, 1979; Mabberley, 2008). In India this genus is represented by 29 species of which 24 are found in peninsular India as this is the eighth discovery after its revision (Joseph and Sivarajan, 1989) for peninsular India (Anto *et al.*, 2014). During floristic exploration in the lateritic hillocks of central Kerala, India, Anto collected an interesting specimen from spongy soil above the flat laterite rock at Mangad, Thrissur district. On critical analysis, it turned out to be quite different from any of the known taxa and is described here as a new species with illustration.

Taxonomical position: *Rotala cheruchakkiensis* Anto P. V., Devikrishna C. S., Jacob Abraham Pulickal, Varghese C. D. and Ignatius Antony. sp. nov. Fig. 1 and Fig. 2.

Type: India, Kerala, Thrissur District, Mangad, 10° 42' 30" N, 76° 11' 43" E, alt. 200 m, 15/07/2014, Anto P. V. 1001 (Holotype: CAL. Isotypes: BSI, MH, CATH).

A terrestrial ephemeral herb, Stem erect, unbranched, rarely branched when apical bud disturbed, up to 3 cm. long, stem succulent, terete with distinct lines and nodal, inter nodal regions. Leaves simple sessile, decussate, obovate to ovate, 2.5 mm × 1 mm. Mature leaves with orange colour and young leaves green with brown spot or notch at tip. Flowers axillary, solitary, sessile, slightly rose coloured, each node with two flowers one large and another smaller. Small and large flowers alternate the side with successive nodes. Large flowers only produce fertile seeds. Growth of one fruit pushes the main stem another side and suppresses the other flower. Bracts absent. Bractlet narrow colourless, subulate, not upto calyx lobe, 0.5 mm long. Calyx tube campanulate, colourless, translucent, 3 lobed, obovate acute, lobes upto 0.9 mm long. Calyx appendages alternate with calyx lobes, pink, outwardly curved and tips pointed. Petals absent. Stamens 3, sometimes 2 sterile filaments with one fertile, inserted at the base of calyx tube, 0.7 mm long. Anther yellowish brown, dorsifixed. Ovary subglobose, slightly trilobed, rose coloured, turned red after fertilization, stigma tripartite. Seeds red, upto 10, 0.1 mm × 2 mm across, varying in size, dorsally convex, rugose and ventrally concave smooth. A small projection from ventral concave surface.

Flowering and fruiting:-The plants only found during the first rainy season, July- August.

Habitat and Ecology:- The plant was collected from the spongy soil above the laterite rock. The plant was only exist for continuously rainy day. Plant is very ephemeral. It grows in association with *Erioclonum*, *ophioglossum*, *Hoppea*, *Phyllanthus*, etc.

Note:-*Rotala cheruchakkiensis* Anto *et al.* sp. nov. is similar to *R. malampuzhensis* R. Vasudevan Nair and *R. illecebroides* (Arn. ex Clarke) Koehne, but it differs from the latter two by the characters given in the table 1. It is the smallest species known in this genus.

Etymology:- The new species is collected from near the Cheruchakki water falls at Mangad, Thrissur district. So the name *cheruchakkiensis* was given to new species.

Table 1. Distinguishing features of *R. malampuzhensis*, *R. illecebroides* and *R. cheruchakkiensis*

characters	<i>R. malampuzhensis</i>	<i>R. illecebroides</i>	<i>R. cheruchakkiensis</i>
Habitat	Hydrophytic, amphibious	Terrestrial, erect and creeping, profusely branching	Terrestrial, erect, branching when terminal bud disturbed
Size	More than 30 cm.	Up to 10 cm, more than 10 internodal region.	Upto 3 cm, less than 10 internodal region
Leaves	Linear lanceolate	Broadly ovate, cordate	Small obovate or oblong
Bracts	Leaf like	Leaflike	absent
Bractioles	Red, above the calyx tube	Colourless, below calyx tube	Colourless, below calyx tube
Calyx tube	3, Red, bellshaped.	4, triangular, acuminate	3, Colourless, translucent, obovate, acute.
Appendages	Red, erect, obovate, not longer than calyx lobe.	Narrow, not longer than calyx lobe.	Colourless, outwardly bent, narrow, pointed, not longer than calyx lobe.
Stamens	Fertile 3 and 3 sterile alternate	4, at the middle of calyx tube	Fertile 3, or 2 sterile filament with 1 fertile, base of calyx tube.
Seeds	Semi ovoid, red, more than 10		Semi ovoid, red, less than 10.
Flower	Monomorphic	Monomorphic	Each node with small and large flowers
Ovary	Globose, stigma capitate	Globose, stigma capitate	Subglobose, stigma tripartiate

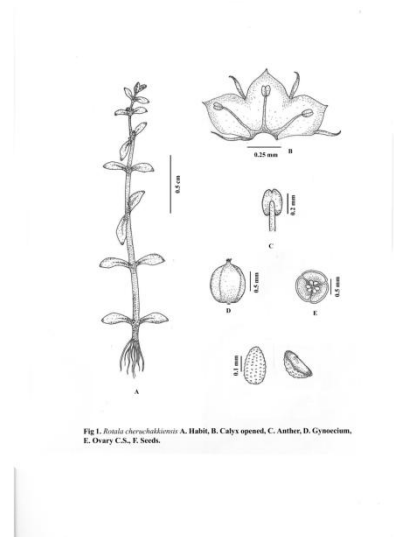


Fig. 1. *Rotala cheruchakkiensis*: A. Habit, B. Calyx opened, C. Anther, D. Gynoecium, E. Ovary C.S., F. Seeds.



Fig 2. *Rotala cheruchakkiensis* A. Habit, B. Stem with flower, C. Flower magnified, D. Seeds, E. Gynoecium,

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