Species

Lindernia tamilnadensis (Linderniaceae), a new record to the flora of Odisha state, India from Mahanadi River areas of Cuttack

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ABSTRACT

A new distributional habitat of *Lindernia tamilnadensis* M.G.Prasad & Sunojk. has been found from the banks of Mahanadi River areas of Cuttack, Odisha. The recorded species shows some similar characteristics with *L. rotundifolia* (L.) Alston and *L. parviflora* (Roxb.) Haines. The brief taxonomic description, illustration and field data information are specified here.

Keywords: Endemic, new record, Linderniaceae, Cuttack, Odisha

1. INTRODUCTION

The genus *Lindernia* All. belonging to the family Linderniaceae has a complex taxonomy and has recently been segregated from the family Scrophulariaceae on the basis of molecular analysis (Rahmanzadeh et al., 2005; Devi et al., 2021). *Lindernia* comprises about 68 species, distributed in tropical and subtropical regions of the world.

In India, it is represented by 10 species, namely *L. dubia* (L.) Pennell., *L. hyssopioides* (L.) Haines, *L. madayiparensis* Ratheesh, Sunil & Nandakumar, *L. manilaliana* Sivar., *L. minima* (Benth.) Mukerjee, *L. parviflora* (Roxb.) Haines, *L. procumbens* (Krock.) Philcox, *L. rotundifolia* (L.) Alston, *L. srilankana* L.H.Cramer & Philcox and *L. tamilnadensis* M.G.Prasad & Sunojk., of which *L. madayiparensis*, *L. manilaliana*, *L. minima* and *L. tamilnadensis* are endemic. *L. tamilnadensis* was described from Tamil Nadu, India by Prasad & Sunojkumar in 2014 and later recorded from other parts of the country Bihar, Chhattisgarh, Gujarat, Jharkhand Maharashtra, Uttar Pradesh and West Bengal (Khan et al., 2024; Nayi et al., 2024). Earlier, literature mentioned the similar characteristics between *L. tamilnadensis* and *L. rotundifolia* but differentiated by blue colour blotches at each corolla lobe, absence of trichomes at the anterior corolla lobe, ovate and slightly serrate leaf (Prasad and Sunojkumar, 2014; Khan et al., 2024; Nayi et al., 2024).

2. METHODOLOGY

A floristic survey was conducted along the Mahanadi River areas of Cuttack during February 2024. During the survey, an interesting herb of the genus *Lindernia* All. was encountered at the banks of Mahanadi River bank of Badamba Range, Athagarh, Cuttack. The species was collected and preserved using standard procedures (Jain and Rao, 1977). Herbarium specimens are deposited at herbarium of Ambika Prasad Research Foundation, Odisha, India. After detailed study of *Lindernia* species in India and neighbouring countries, including protologues, type specimens and relevant literature Mukherjee, (1945), Sivarajan and Mathew, (1983), Mety et al., (2022), Khan et al., (2024), it is identified as *L. tamilnadensis* M. G. Prasad & Sunojk.

3. TAXONOMIC TREATMENT

Lindernia tamilnadensis

Prasad and Sunojk, (2014) Phytotaxa 162(1):57.

Holotype: India, Tamil Nadu, Tirunelveli district, Vijayanarayanam, 40 m, 18 March 2012, *M.G. Prasad & P. Sunojkumar CU117880* (CALI); isotypes CALI, MH00002693!).

Small, annual herb, branched, erect or prostrate 10–15 cm high, rooting at basal nodes. Stem quadrangular, slender, glabrous, branching from the base; internodes 1–2.5 cm long. Leaves 0.5–1.2 × 0.5–1 cm, ovate, sessile, glabrous, opposite, apex acute or rounded, base sub-cordate, margins dentate towards the apex and entire towards the base, older leaves less dentate or entire, 3–5 nerved basally, glandular and punctate. Flower solitary, axillary, pedicellate, alternately on leaf axils, one per node; pedicel hairy, slender, 0.5–1 cm long. Calyx deeply 5-lobed, 1.5–2.5 × 0.2–0.5 mm, apex acute, glandular hairy outside, glabrous inside.

Corolla 0.5–7 mm long, 2-lipped, white with blue blotches on lower lip; tube 4–5 mm long, cylindrical, glabrous; upper lip 1–1.5 mm across, with a notch, lower lip 1–1.5 mm across, 3-lobbed. Perfect stamens 2, coherent below the upper lip; filaments 1–1.5 mm long. Staminodes 2, linear, glandular hairy, yellow hairs at the base of the filament, distinct spur below the staminoidal apex. Ovary 0.8–1.2 × 0.4–0.6 mm, bicarpellary, syncarpous, ovate-acute, sub-globose, glabrous; style 1.5–2 mm long, glabrous; stigma 2-lobed. Fruit globose capsule, 1.8–2.5 × 1.5–2.5 mm, glabrous. Seeds minute, numerous, 5-ridged (Figure 1).

Flowering & Fruiting

October to February.

Habitat

It prefers moist or semi aquatic areas including river banks and wetlands.

Distribution

Endemic to India (Bihar, Chhattisgarh, Gujarat, Jharkhand Maharashtra, Tamil Nadu, Uttar Pradesh, West Bengal and presently in Odisha).

Specimens Examined

India, Odisha, Cuttack district, moist area along the bank of Mahanadi River at Gopinathpur, Badamba Range, Athagarh, N 20º 22'800″, E 85º 22'426″, 35 m, 9 February 2024, Sugimani Marndi 143 (herbarium of Ambika Prasad Research Foundation).

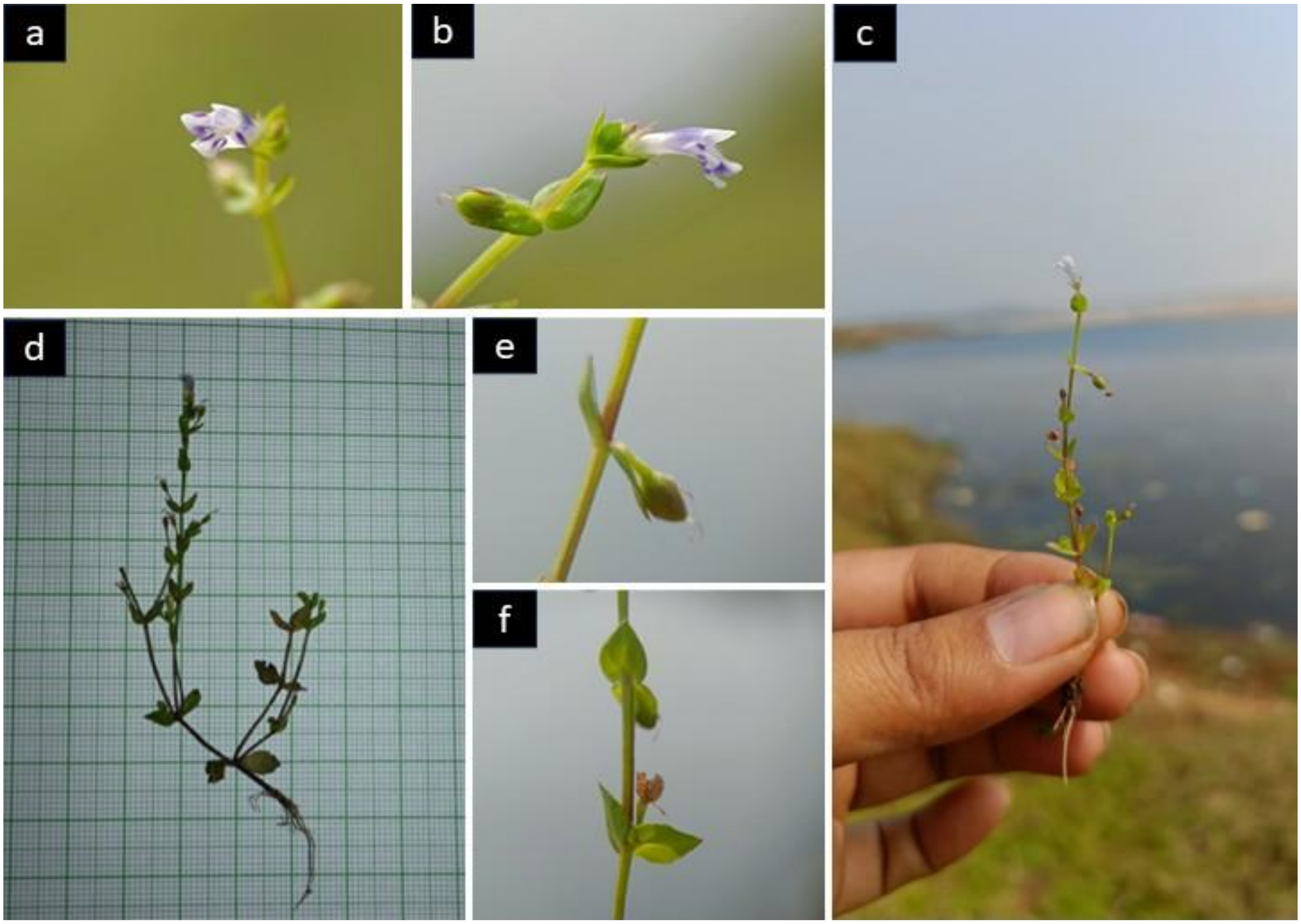

Figure 1 *Lindernia tamilnadensis* a) vertical view b) lateral view c & d) whole plant e) fruit f) pattern of leaves

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Informed consent

Not applicable.

Conflicts of interests:

The authors declare that there are no conflicts of interests.

Ethical approval & declaration

In this article, as per the plant regulations followed in the Botanical Survey of India, Arid Zone Regional Centre, AIIMS Road, Jodhpur, Rajasthan, India the authors observed & recorded a new flora *Lindernia tamilnadensis* (Linderniaceae), to the Odisha state, in India from Mahanadi River areas of Cuttack. The ethical guidelines for plants & plant materials are followed in the study for species collection & identification.

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Data and materials availability
All data associated with this study are present in the paper.

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