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MURDANNIASPIRATA SUBSP. *PARVIFLORA*: A RECENT FIND IN JHARKHAND'S GANGA RIVER BASIN

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ABSTRACT

Murdannia is the largest Genus in Commelinaceae family, with 29 species, 11 subsp. and 3 varieties found in India. Among these, *Murdanniaspirata* is a highly polymorphic species, encompassing five distinct subspecies. The paper records the occurrence of *Murdanniaspirata* subsp. *parviflora* from the Indo-Gangetic belt, specifically Jharkhand state. It is the second published report of the taxon from India after Mujaffar *et al.*, in 2018, from the Balaghat region of Madhya Pradesh.

Key words: Ajay River, Commelinaceae, Flora, Range extension, Semi-aquatic, Wetlands

Introduction

Jharkhand, nestled in eastern India, is renowned for its scenic landscapes and abundant natural resources. The state forms part of the Indo-Gangetic plains and the Deccan Peninsula, and is characterized by the Chhota Nagpur Plateau and its dense forests. Covering about 2.42% of India's geographical area, Jharkhand boasts of rich biodiversity with two major forest type groups and eight subtypes (Champion & Seth, 1968). Its numerous rivers, including the Ganga, Ajay, Damodar, Son, Rupnarayan, and Baitarni, contribute to the state's lush riparian vegetation and wetlands. The Ganga River flows through Jharkhand, spanning approximately 80 kilometres, enriching the land before heading towards West Bengal. River Ajay, tributary of Ganga, traverses through the state, supporting a diverse range of plant species along its banks.

According to the FSI 2019 report, Jharkhand's forest cover is around 29.62%, with wetlands constituting 0.87% of this area. Wetlands of Jharkhand have not been extensively explored for their macrophytic floral diversity except few sporadic investigations (Singh& Kumar, 2014; Mukherjee & Ghosh, 2015; Jha *et al.*, 2015; Mukherjee& Kumar, 2017; Mukherjee& Kumar, 2019; Mukherjee& Kumar, 2020). These wetlands are crucial for the state's ecological balance. Under the National Mission for Clean Ganga (NMCG), Wildlife Institute of India conducts multiple field surveys to study the riparian flora along the River Ganga and its tributaries. These efforts significantly contribute to the understanding and preservation of the state's riparian and terrestrial flora.

The family *Commelinaceae* Mirb. (clade: Commelinoid monocots; order: Commelinales), commonly known as the day flower or spider wort family, consists of herbaceous or semi-succulent plants. Currently, the family has 36 accepted genera (POWO, 2024) whereas in India the family is represented by 12 genera (Nandikar & Gurav, 2024). Bhattacharya (2021) published an account of family Commelinaceae for Bihar and Jharkhand states of India, reporting 07 genera, 25 species and two varieties. In the account, seven species for the Genus *Murdannia* have been mentioned; 1. *Murdanniavaginata*, 2. *Murdannianudiflora*, 3. *Murdannia edulis*, 4. *Murdanniablumei*, 5. *Murdanniadivergens*, 6. *Murdannia japonica* and 7. *Murdanniaspirata*. Later, Mastakar (2023) reported one more species, *Murdanniasemiteres*, from Jharkhand. This paper adds *Murdanniaspirata* subsp. *parviflora* to the family Commelinaceae of Jharkhand.

During a biodiversity assessment along the River Ajay in Jharkhand in February 2024, notable populations of

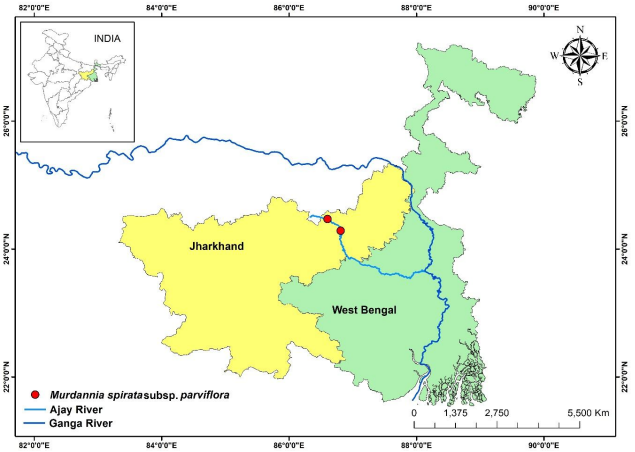

Fig 1: Location map of *Murdanniaspirata* subsp. *parviflora*

the genus *Murdannia* were encountered by the authors. Detailed field observations revealed that the specimens exhibited contrasting colour striations on their petals, unlike other specimens of the same species collected earlier, which displayed uniformly coloured petals. For identification, photographs of the specimen were circulated to concerned workers and relevant literature (Bhattacharya, 2021; Faden, 2001; Mujaffar *et al.*, 2018; Nandikar & Gurav, 2024) was consulted, confirming the identity of the species as *Murdanniaspirata*subsp. *parviflora* (Faden) Nandikar. The taxon was first reported as new to India under the name *Murdanniaspirata* var. *parviflora* Faden by Mujaffar et al. from Balaghat region of Madhya Pradesh in 2018.

Taxonomic Description

Murdanniaspirata (L.) G. Brückn. subsp. *parviflora* (Faden) Nandikar

Murdanniaspirata var. *parviflora* Faden, Novon 11(1): 2225. 2001; Kamble *et al.*, Webbia 71;49. 2016; Shaikh *et al.*, Nelumbo 60 (2), 18-22:2018. Type- SRI LANKA, Jaffna District, Mulamana, milepost 35/1 on Mannar-Jaffna Road, 11.01.1977, Faden & Faden 77/ 133.

Annual, prostrate, trailing, herbaceous plants without vegetative regeneration, rooting at the nodes; roots fibrous. Stem much branched, puberulent, green when young; nodes inconspicuous; sparsely hairy. Leaves alternate, with sheathing base, ciliate at fused edges and margins, ovate to linear-lanceolate, with cordate or rounded base and acute apex. Inflorescence terminal and axillary, in lax thyrses, cincinni single in axillary and 2-3 in terminal thyrses. Flowers trimerous.

Photoplate 1: *Murdanniaspirata*subsp. *parviflora* (Faden) Nandikar
A. Habit; B. Flowering branch; C. Flowering with spreading stamens, white antherodes and petals faintly striated; D. Fruits

Petalsalternisepalous, always less than 8mm wide, lavender coloured, with faint lilac striations. Stamens 3, about 4mm long, covered with dense lavender hairs, spreading. Staminodes 3, antisepalous, with filaments glabrous or hairy sometimes. Antherodes 3, white. Style erect. Fruits capsules, ellipsoid, oblong-ellipsoid, trilocular, apex with persistent style base; seeds 3-4 per locule, uniseriate; testa brown to grey, quadrangular, reticulate, pitted, rugose or verrucose.

Flowering and Fruiting: December to March.

Habitat: Generally found growing in semi-aquatic conditions along sandy river beds.

Distribution: India; Jharkhand, Madhya Pradesh. Sri Lanka

Specimen examined: The authors recorded the species (photographic evidence) from two sampling locations along the River Ajay, Jharkhand, India

India, Jharkhand, Deoghar district, Pandedih, River Ajay, 24°28’8.61"N; 86°36’16.17"E, 251 m, 18 February, 2024; Deoghar district, Basbriya, River Ajay, 24°17’4.56"N; 86°48’39.49"E, 211 m, 18 February, 2024.

Associated flora: Plant shares its habitat with *Murdanniavaginata* var. *vaginata*, *Bacopa monnieri* (L.) Pennell, *Ecliptaprostrata* (L.) L., *Alternanthera sessilis* (L.) R.Br. exDC., etc.

Note: This sub-species is allied with *Murdanniaspirata* subsp. *flavanthera* (Nandikar & Gurav, 2024) but can be differentiated on the basis of antherodes colour i.e. yellow in subsp. *flavanthera* and white in subsp. *parviflora*.

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