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First Record of *Allmania Nodiflora* in Jharkhand, India.

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ABSTRACT

Jharkhand is one of the most diversified states of India. It is renowned for its rich floral diversity. The state's unique geography and climate support a wide range of plant species, including numerous wildflowers, herbs, shrubs, and trees, that are integral to its ecosystem. Jharkhand is blessed with natural resources such as metals, heavy metals, Minerals, and floral diversity. Jharkhand is also blessed with Seasonal & perennial riverine sources, with the additional support of natural water streams & aquifers. The Satbakhra forest in the Musabani range is part of the larger Jamshedpur Forest division in the East Singhbhum district of Jharkhand. Its environment is characterised by a tropical deciduous forest ecosystem, rich biodiversity, and significant human-wildlife conflict, particularly involving elephants. The dominant vegetation is a tropical moist deciduous forest, characterised by tall trees that shed their leaves seasonally. However, the specific conditions vary with topography. Drier, exposed hills feature dry thorny vegetation, while protected valleys can have a more semi-evergreen character. The diversity of flora in Jharkhand is a testament to the state's rich biodiversity, making it a haven for nature lovers and researchers alike. Conservation efforts are necessary to preserve these natural wonders for future generations. ¹

Keywords: *Allmania nodiflora*; Jharkhand; Satbakhra; Antioxidant; Antidiabetic; first report

Introduction:

The flora of the Jharkhand state geographically situated in the provinces of Chotanagpur plateau region depicts a transition zone between Indo-Gangetic plains and the Deccan plateau which is well documented for its rich floral diversity which is the result of varied climate, topography, soil types, temporal and phenological adaptation of the plants. However, despite numerous national and regional level surveys conducted in the near past in the region there are multitudinous micro-habitats which still remains under explored. The current discovery of *Allmania nodiflora* in this region consequently add and attach new comprehension into the floristic composition, understanding, and biogeographical dispensation of Amaranthaceae in the eastern region of the country, particularly in Jharkhand. The present communication supplies an inclusive and detailed account of the 1st established occurrence of *Allmania nodiflora* from Jharkhand, India. Morphological recognition was established subsequently after following standard taxonomic keys and later authenticated with the help of floral experts and internet sources. To support the identification, the note also encompasses recently clicked pictures, habitat description and related vegetation. Phenological aspects were also kept in mind during nascent reporting of the new plant species. This new report for this area not only expands the geographical range of the *Allmania nodiflora* but also put equal weightage and emphasizes the need for continual exploration of the field and wilderness for exploration and documentation of the fewer and lesser-known taxa of the mixed deciduous ecosystems of the region and country to aid researchers and environmentalists with updated knowledge and resources.

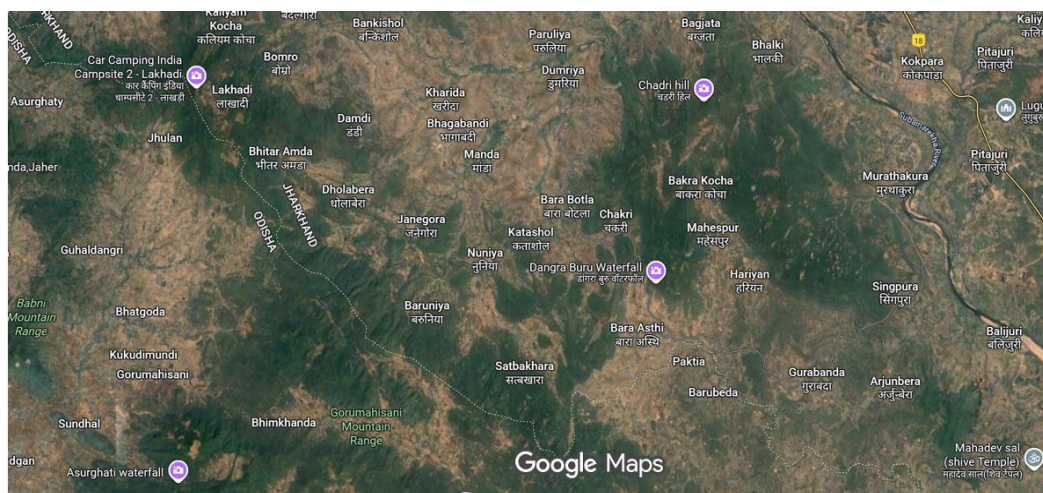


Fig 1: Georeferenced location of *Allmania nodiflora* in the study area.



Fig 2: *Allmania nodiflora* plant in its natural habitat (photos are subjected to copyright @Raja Ghosh)

Classification of *Allmania nodiflora*

Kingdom: Plantae

Order: Caryophyllales

Family: Amaranthaceae

Genus: *Allmania*

Species: *Allmania nodiflora*

Characteristics and Distribution

The plant species known as *Allmania nodiflora* is a herbaceous plant that belongs to the family Amaranthaceae. The leaves are small and green in colour. It is alternate & lanceolate with a smooth texture. With small plant body and branching stems *Allmania nodiflora* is herbaceous plant. The leaves of the plant are tipped and elongated in oval shape alternate phyllotaxy, where there is a single leaf at each node on the stem, and can have different shades of purplish tint. It produces miniature flowers which are of different shades prominently red or pinkish when fully matured and yellowish when immature. Flowers are cleistogamous. The flowering season of the plant is during the late monsoon season and early onset of winters. *Allmania nodiflora* is prominently distributed across the tropical countries of the Asian continent, such as Philippines, Sri Lanka, Thailand, India and Indonesia. It flourishes in the damp and moist areas along the forest land or fallow fields and also along the roadsides with nearby water resources that keep the land moist.

Medicinal Value

Lakshmi Devi and Vishnu Mohana Raddy et al., (2020) reported that the water extract of *A. nodiflora* leaf has high amount of phenolic, flavonoids and alcoholic content that strongly checks the action of DPPH. Their study suggests that water extract of leaves of the plant can be utilised as a potent source of natural antioxidants. Kokila et al., (2025) suggests that *Allmania nodiflora* is an essential medicinal plant and they provide crucial plant-based proteins, carbohydrates and β -carotene. Hoor-Ul-Aeen et al., (2024) based on their study suggested that *Allmania nodiflora* has anti-diabetic activity in Wistar Albino Rats subjected to Streptozotocin-Induced Hyperglycaemia when prepared in ethanolic extract blend.

Significance of the First Record

The current documentation of *Allmania nodiflora* expands the previously recorded and known geographical dispensation and distribution to encompass the state of Jharkhand, filling an important blank in distributional data of Amaranthaceae in Eastern part of India. Its discovery emphasises the biogeographical continuum between plain and plateaus of Chotanagpur region, as well as significance of continuous and systematic surveys of the field and documenting the floral jewels and marvels of lesser-known taxa. Given the fact that the floristic compositions and constituents are still incomplete and less explored, particularly in the zones of transitions, and forest edge, this discovery underlines the importance and need for continued explorations, verification documentation and micro habitat monitoring to establish updated flora of the regions. Although the plant *Allmania nodiflora* is often failed to observed and overlooked as a common roadside herb, its ecological responsibilities and duty are significant in nurturing the functional integrity between tropical and subtropical ecosystems. Their functions as early coloniser of rocky land with less soil, are known to stabilise the soil and prevent the soil from easy run-off. They are also seen to play pivotal role in supporting pollinators species and work as biodiversity enhancers. The documentation of *Allmania nodiflora* in region of Jharkhand extends the understanding and knowledge of its known and documented ecological range into dry-deciduous and mixed deciduous landscapes of the Chotanagpur plateau and underlines the significance of conserving and maintaining even the seemingly minor ecological ingredient of herbaceous flora in, sustaining healthy ecosystem.

References

1. A. Lakshmi Devi, P. Vishnu Mohana Raddy and K. Venkata Ratnam (2020) ANTI-LIPID PEROXIDATION ACTIVITY OF *ALLMANIA NODIFLORA* (L.) R. BR.: A TRADITIONAL LEAFY VEGETABLE.
2. K. Kokila, S. Deepika Priyadarshini, N. Elavarasan and V. Sujatha (2025). Phytochemical profile of *Allmania nodiflora* through *in vitro* antioxidant assays and GC-MS analysis
3. Hoor-Ul-Aeen, Pinki Verma, Down V Tomy (2024.) Evaluation of the Antidiabetic Activity of the Ethanolic Extract of *Allmania nodiflora* Leaves in Wistar Albino Rats Subjected to Streptozotocin-Induced Hyperglycaemia