

RESEARCH ARTICLE

## ***Flemingia praecox* var. *robusta* (Mukerjee) An. Kumar (Fabaceae) -An addition to the flora of Telangana**

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**Abstract:** *Flemingia praecox* var. *robusta* (Mukerjee) An. Kumar (Fabaceae) is an endemic variety reported from Andhra Pradesh, Chhattisgarh, Gujarat, Madhya Pradesh and Uttar Pradesh and for the present research work it is reported for the first time from the Bhadradi Kothagudem district of Telangana state. A detailed description, colour photographs and location map, is provided to facilitate easy identification.

**Keywords:** Eastern Ghats, Fabaceae, New record, Telangana, Variety

### **Introduction**

The genus *Flemingia* is thought to have originated from Indo-Burmese region (Mukerjee 1953). The genus is sub-divided into three sections, *Viz.*, *Ostryodium* DC., *Chalaria* Wight & Arn. and *Flemingiastrum* DC., (Bentham 1865). *Flemingia* species are grouped under five subgenera, namely *Chalaria*, *Flemingiastrum*, *Lepidocoma*, *Ostryodium* and *Rhynchosoides* (Baker 1876). The genus *Flemingia* consisting of 46 accepted species, distributed in Tropical & Subtropical Africa, Tropical & Subtropical Asia to N. Australia. (POWO 2022). In India the genus *Flemingia* is represented by 29 taxa (28 species, 01 varieties) (Gavade *et al.* 2020). In Telangana state, the genus *Flemingia* is represented by 6 species (Pullaiah 2015, Reddy and Reddy 2016) since then, one taxa *Flemingia nana* Roxb. ex W.T.Aiton was added to the Flora of the state (Swamy and Rasingam 2021). The present study resulted in the addition of one

endemic variety, *i.e.*, *Flemingia praecox* var. *robusta* to the Flora of Telangana state from Bhadradi Kothagudem district. Therefore, as of now, there are 06 species and 01 variety of *Flemingia*, including present addition, represented in Telangana state.

The genus *Flemingia* consisting of shrubs or herbs can be easily recognized by a combination of characters such as unifoliate or trifoliate leaves, gland-dotted beneath blades, winged or grooved petiole, stipels and rachis absent, flowers in racemes or capitula, 5-toothed calyx, small and turgid pod with 1 or 2 rounded or ellipsoid seeds. The genus *Flemingia* species are used for different purposes, *i.e.*, *Flemingia vestita* is a tuber crop in northern India. The tubers are sold in the local market and eaten raw as a source of starch. *Flemingia grahamiana* is used in skin diseases (Sornay 1916). The roasted tubers of *Flemingia tuberosa* are useful in curing dysentery and leucorrhoea (Dymock *et al.* 1890)

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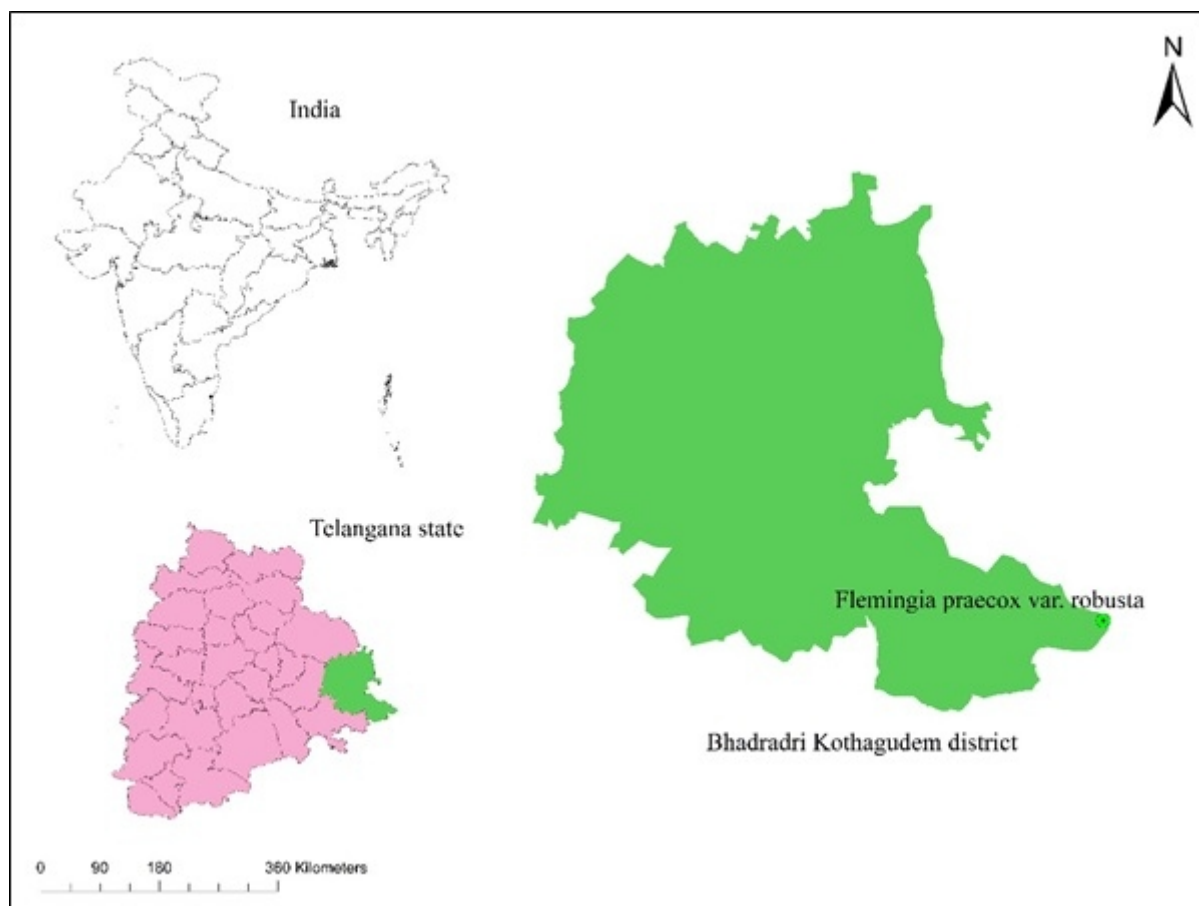
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### **Material and methods**

While exploring the flora of Bhadradi Kothagudem district, Telangana state (Fig 1). A interesting taxon belonging to genus *Flemingia* was observed in Katkur Reserve Forest and a few specimens were collected from the existing



**Figure 1:** Map showing the location of *Flemingia praecox* var. *robusta* in Bhadrachalam district of Telangana state, India.

population by the first author. After a critical study, the specimens were identified as *Flemingia praecox* var. *robusta*., based on Mukerjee (1953), Gavade *et al.* (2020) and Pullaiah and Chennaiah 1997. Scrutiny of the literature revealed that this endemic variety has not been listed so far in the Flora of Telangana by Pullaiah 2015, Reddy and Reddy 2016 and the recent Floral checklist by Reddy 2018 or recorded by others. Therefore, the present collection of endemic variety establishes a new distributional record for the Flora of Telangana state. The detailed descriptions with photographs and occurrence map were provided to facilitate easy identification. The voucher specimens are deposited at the Kakatiya University, Warangal (KUW), Telangana.

### Observations and results

***Flemingia praecox* var. *robusta*** (Mukerjee) An. Kumar, Nation. Acad. Sci. Lett. 5(8): 249. 1982.

Lectotype (designated by Gavade *et al.* 2020): India, Maharashtra, Gadchiroli district, Yenkatapur (19 January 1890), *J.F. Duthie* 9408 (lectotype DD!; iso lectotype DD!). Syntypes: India, Maharashtra, Thana district, Thana Forest, s.d., *L.J. Sedgwick & T.R.D. Bell* 3634 (BLAT) (not found).

**Description:** Erect shrub, up to 45-55 cm high, with branched stem; mature stem terete, smooth and shiny. Leaves digitately trifoliolate, 10.5 – 17.2 × 3.5 – 4.6 cm, elliptic, linear lanceolate, rough, papery like nature, glandular hairy along mid veins, many nerved, base cuneate, acuminate at apex mucronate, entire margin, petiolate, stipulate; petioles 0.2 × 2.1 mm long, hairy. Stipules 2, 18-20 × 2.5-3 mm, lanceolate, acuminate with equal tips, fused when young, splitting at maturity, caducous, basifixed, many nerved, hairy. Inflorescences an axillary or terminal raceme; racemes solitary, 6.7 cm long, shorter than the petiole. Flowers 0.5–2.1 cm long, pedicellate; pedicels 0.1–0.7 mm long,



**Figure 2:** *Flemingia praecox* var. *robusta* A. Habitat, B. Leaf, C, D & E. Stem, F & G. Inflorescence, H. Infructescence.

hairy; Calyx 0.8–12 mm long, hairy, gland dotted; campanulate, hairy. Corolla pale yellow with bluish striations; standard 1 × 1.44 cm long, rounded, apex blunt, glabrous, clawed with 2 auricles; claw 1–1.5 mm long, auricled; auricles 1 mm or less than 1 mm; wing petals 6–6.5 × 1.5–2 mm, oblong, falcate; claw 2–2.2 mm long; black with purple striations; pubescent, keel petals 2–6 mm long; boat shaped, fused at apex at lower side; claw 1.8–2 mm long. Stamens 10, diadelphous (9+1); staminal tube

4.8–5 × 1 mm, anthers uniform, less than 1 mm long, basifixed, filaments of united stamens 1–2 mm long, that of free stamens 6–6.2 mm long. Ovary 1.9 × 3.9 mm long, pubescent; orange black at the tip; ovules 2; style 0.3 × 6.1 mm long, glabrous, swollen at middle; stigma globose, hairy. Pod, 4.6 × 9.4 mm, long, pubescent; beaked, turgid, may be slightly septate between seeds, hairy, sparsely gland-dotted; beak 0.5 mm long; glands black, withering post maturity. Seeds 2, 2.8





**Figure 3:** *Flemingia praecox* var. *robusta* A. Calyx, B. Flower and standard petal, C. Gynoecium, D. Unopened pod, E. Opened pods, F. Immature Seeds.

×3.1mm, green to brown, rounded, mottled, shiny, hilum granular. (Fig 2 & 3)

**Distribution:** *Flemingia praecox* var. *robusta* was known from Andhra Pradesh, Chhattisgarh,

Gujarat, Madhya Pradesh and Uttar Pradesh. Now the present reports from Bhadradi Kothagudem district, Telangana state.

**Flowering & Fruiting:** March - June

**Habitat and Ecology:** This variety was found in a deep forest, growing in sandy like soils with rocky association in moist deciduous forests. It grows in association with *Clerodendrum infortunatum* L. and *Xylia xylocarpa* (Roxb.) W. Theob.

**Specimen examined:** Telangana, Bhadrachalam district, Katkur Reserve Forest, Near Gubbala Mangamma temple, 17°22'2.07"N, 81°18'35.80"E, 295 m, 19<sup>th</sup> March 2022, G. Ravi, 730 (KUW).

**Note:** *Flemingia praecox* var. *robusta* is allied to *Flemingia praecox* var. *praecox* but differs from it in its large leaflets and robust habit.

**Conservation status:** Field observations in Telangana state revealed that the population had approximately 05 mature individuals, growing in sandy-like soils with rocky habitats adjacent to a small water stream. The species is very close to a famous historical Gubbala Mangamma temple, which was visited by nearly 2000 to 3000 devotees on weekdays, so the species may be threatened due to the overflow of devotees.

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