

CRITICALLY ENDANGERED *Ceropegia odorata* NIMMO EX J. GRAHAM IN YAWAL WILDLIFE SANCTUARY, JALGAON, MAHARASHTRA

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ABSTRACT

Critically endangered *Ceropegia odorata* Nimmo ex J. Graham is recorded for the first time from Yawal Wildlife Sanctuary, Jalgaon, Maharashtra. Detailed morphological description along with colour photo plate, ecology, IUCN threat status, possible threats for declining population at present locality are discussed in present research note. Present communication is an additional record of this threatened species from Maharashtra.

Keywords: Fragrant *Ceropegia*; threatened plant; Satpuda hills; Khandesh region.

ABBREVIATION

YWLS: Yawal Wildlife Sanctuary

INTRODUCTION

Yawal Wildlife Sanctuary situated at the extreme northern periphery of Maharashtra state in Jalgaon district, separated from adjacent Madhya Pradesh state by mere longitudinal depression of River Aner, has rich floral and faunal diversity. Floral wealth of YWLS remained neglected and under-explored for longer period. With current floristic studies in the sanctuary, some interesting and significant species of plants have been discovered. 20 species of orchids and 4 species of *Ceropegia* are recorded recently in YWLS [1-3]. During our recent botanical exploration in YWLS, we

encountered a single individual of *Ceropegia* sp. growing amidst grasses on hill slope. After critical examination of all macro-morphological characters and perusal of relevant literature [4,5,6], the plant was identified as *Ceropegia odorata* Nimmo ex J. Graham. This species has not been recorded or documented in any significant floristic contributions pertaining to Jalgaon and Dhule districts [7,8,1,2]. Hence this is the first record of this species as a new distribution for the flora of Jalgaon, Dhule districts and new locality of this species in Maharashtra state.

MATERIALS AND METHODS

During our botanical explorations in Satpuda hill ranges of Jalgaon district, we encountered a twining herb amongst

grasses. Detailed morphological examination of the specimen observed, with the help of literature confirmed it as *Ceropegia odorata* Nimmo ex J. Graham. The precise geographical co-ordinates of the location were recorded using GPS enabled digital camera. All macro-morphological characters, such as vegetative and floral structures were recorded on the field. Owing to its threatened status and only single individual found from the locality, we refrained from taking any specimen for herbarium, instead we opted for photo documentation of this extremely rare species. All macro-morphological characters being analogous with the literature and as no ambiguity regarding proper identification of the plant, its visible floral characters were only considered for confirming its identity. The plant was identified with the following relevant literature [9,5,4,6].

Specimen Examined

Macro-morphological characters of the live plant specimen were scrutinized on the field [25th September 2022, Mandapnala, YWLS (N 21.3536, E 75.6116)]. Owing to its critically endangered IUCN status and only single individual observed at present locality, no plant specimen was collected from the field. As present locality is extremely inaccessible with steep hill slopes and heavy grass cover & Karvi thickets, we were unable to search this area thoroughly for other individuals. It is very much possible that some other plants of this species might be surviving away from human reach.

RESULTS AND DISCUSSION

Ceropegia odorata Nimmo ex J. Graham, Cat. Pl. Bombay 118. 1839; Hook, f., Fl. Brit. Ind. 4: 75. 1883; Santapau&Irani, Univ. Bombay Bot. Mem. (4): 29.1960; Sabnis&Bedi in Kew Bull. 25(1):57. 1971; Ansari in Fasc. Fl. India 16: 26. 1984; D.K.

Mishra &N.P.Singh,,Endem. Threat. Pl. Pl. Maha 145. 2001; Jagtap& Singh, Fasc. Fl. India 24: 234. 1999; N.P. Singh et al, Fl. Maha. State (2). 354. 2001; M.R.Almeida, Fl. Maharashtra. 3A. 236. 2001; Kamble& S.R. Yadav, Rheedeia. 29(1): 55. 2019.C. *blatteri* McCann in Journ. Bom. Nat. Hist. Soc. 45: 210. 1945. 'Fragrant Ceropegia', 'SugandhiKhantudi', 'Sulatyakand'.

Large perennial twining tuberous herbs. Stem mostly glabrous about 2 m in length. Leaves opposite, decussate, petiolate, 6-7 cmx0.5-1 cm, linear or narrowly lanceolate, hispidly pubescent above and along the nerves beneath, nerves prominent beneath, apex acuminate, margin ciliate, base narrowed into the petiole. Flowers bright yellow, fragrant, bracteate, in pedunculate umbellate cymes; peduncles 1-1.5 cm, terete, 6-10 flowered, hirsute with stiff hairs, purple; pedicels upto 5 mm long, hairy, calyx divided to the base, markedly recurved, 5-7 mm, linear, acuminate; corolla tubular, 3-4 cm, shortly inflated near base, yellowish green, sometimes with purplish tinge on tube; corolla lobes yellow, 10-12 mm, shorter than tube, connate at tips, forming an oval head. Follicles in pairs, upto 10 cm long, tapering towards apex.

Flowering and Fruiting: August-October

Elevation: 700 m.

Distribution: Endemic to western India; it has been reported from Pavagarh and Panchamahar district [10], Sabarkantha district [11] Gujarat and Mount Abu, Rajasthan (Ansari 1984). From Madhya Pradesh it has been recently reported from Nepanagar, Burhanpur district [12]. From Maharashtra it has been reported from Toranmal forests [13], Kasara Ghat, Murbad and Karjat region [6], Melghat [14]. Recently it has also been reported from Bhoze Ghat (Khed), Matwan (Dapoli) and Hatiwale



Fig. 1. *Ceropegia odorata* Nimmo ex J. Graham A: Habit B: Leaves C: Buds D: Inflorescence E: Single flower

(Rajapur) in Ratnagiridistrict of Maharashtra (Singh et al 2014). It is therefore evident that, this species has sparse distribution in Rajasthan, Madhya Pradesh, Gujarat and Maharashtra.

IUCN status: *Ceropegia odorata* is sparsely distributed in western India (Kamble & Yadav 2008). Based on field observations and population assessment it has been proposed under Critically Endangered category (Singh et al. 2014).

Habitat and ecology: Only single individual was observed at present locality, which is a

tropical dry deciduous forest dominated by *Tectona grandis* L.f., *Garugapinnata* Roxb., *Lagerstroemia parviflora* Roxb. etc. *C. odorata* was seen growing amidst grasses like *Apluda mutica* L., *Themeda trindra* Forssk., *Capillipedium filiculme* (Hook.f.) Stap f growing on hill slope, under *Dalbergia latifolia* Roxb. tree.

CONCLUSION

On perusal of literature it is observed that *Ceropegia odorata* is not earlier reported from Jalgaon and Dhule districts of northern Maharashtra. Thus, this species

has been recorded for the first time from Jalgaon and Dhule districts of Maharashtra State. Its nearest records are from Melghat Tiger Reserve, dist. Amravati and Toranmal, dist. Nandurbar. It is evident from available literatures that this species is rare to flora of Maharashtra and even to the flora of India. Occurrence of this extremely rare species in YWLS adds one more location of its occurrence from Maharashtra and clearly highlights floral wealth of Satpuda hill ranges of Jalgaon district. Present locality is under heavy anthropogenic pressure and it is doubtful whether this species can survive here. Cattle grazing, forest clearing for encroachment are the major threats to this critically endangered species. In view of scanty population and rarity of this species, implementation of extensive conservation measures is necessary in YWLS.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Khan T. "Wild Flowers of Jalgaon District, A succinct field guide". Prashant Publication, Jalgaon. 2019; 33-76.
2. Khan T, Patil U. Diversity of *Ceropegia* L. from Jalgaon district, Maharashtra. Bioinfolet-A Quarterly Journal of Life Sciences. 2020;17(4b): 668-672.
3. Sonawane L, Prasad Sonawane, Aman Gujar, Gaurav Shinde. Report of four species of flowering plants from Satpuda hill Ranges of Jalgaon district, Maharashtra. Ela Journal of Forestry and Wildlife. 2020;9(1):629-633.
4. Almeida MR. "Flora of Maharashtra". The Blatter Herbarium Publications, St. Xavier's College, Mumbai. 2001;3A:236-237.
5. Singh NP, Lakshminarasimhan P, Karthikeyan S, Prasanna PV. "Flora of Maharashtra State". (Dicotyledones). Botanical Survey of India, Kolkata. 2001;2:354.
6. Kamble S, Yadav SR. Taxonomic revision of *Ceropegia* (Apocynaceae: Ceropegieae) in India. Rheedeia. 2019;29(1):55-57.
7. Patil DA. Flora of Dhule and Nandurbar District (Maharashtra) Bishan Singh Mahendra Pal Singh, Deharadun. 2003;370-378.
8. Kshirsagar SR, Patil DA. "Flora of Jalgaon District, Maharashtra" Bishan Singh Mahendra Pal Singh, Dehradun, India. 2008;200-204.
9. Hook JD. "Flora of British India" (L. Reeve and Co, London, UK). 1883; 4:75.
10. Sabnis SD, Bedi SJ. *Ceropegia odorata* Hook. f. (Asclepiadaceae): a little-known plant of Western India. Kew Bulletin. 1971;25(1):57-59.
11. Patel SK, Punjan BL, Desai PR, Pande VB, Chaudhary YS, Joshi PN. Additional record and conservation measures of *Ceropegia odorata* Nimmo ex J. Graham from Gujarat

- state, India. Journal of Threatened Taxa. 2017;9(8):10618-10622.
12. Shaikh M, Kamble S, Yadav SR. An extended distribution of *Ceropegia odorata* Nimmo ex J. Graham (Apocynaceae: Asclepiadoideae) to the state of Madhya Pradesh, India. Journal of Threatened Taxa. 2015;7(1): 6830-6832.
13. Jagtap S, Deokule S, Watve A. Occurrence of threatened fragrant *Ceropegia* in Toranmal forests, Maharashtra. Current Science. 2004; 87(5):553-554.
14. Londhe AN, Watve AV, Ansari MY. Additions to the flora of Melghat Tiger Reserve. J. Econ. Taxon. Bot. 2002; 26(2):385-395.