



Recollection of Critically Endangered plant *Ceropegia odorata* Nimmo ex J. Graham (Asclepiadaceae) after 128 years from Mount Abu Wildlife Sanctuary, Rajasthan, India

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ABSTRACT

Critically endangered plant *Ceropegia odorata* Nimmo ex J. Graham is recollected after 128 years from Mount Abu Wildlife Sanctuary, Rajasthan. A detailed description along with colored photo plate, distribution map, associates and IUCN threat status is provided. Threats facing by species are discussed and conservation strategies suggested.

Key words: *Ceropegia odorata*, Critically Endangered, Mount Abu Wildlife Sanctuary, recollection, threats

INTRODUCTION

The genus *Ceropegia* L. is represented by about 244 taxa worldwide (Singh et al. 2015; Kamble & Yadav 2019), distributed mainly in Africa, Australia, Canary Islands (Bruyns 2014), India (Sri Rama Murthy et al. 2012), Madagascar, New Guinea, Southeast Asia, and tropical Arabia. Presently, 53 species, 2 subspecies and 6 varieties are found in India (Kamble & Yadav 2019) of which 37 are endemic to Peninsular India (Ahmedullah & Nayar 1987). Thus genus *Ceropegia* is highly economic and botanically curious which is

native to India having greatest number of species concentration in Western Ghats which may be designated as the ‘cradle of *Ceropegia*’ (Diwakar & Singh 2011, Singh 2015a).

Many *Ceropegia* species have been included in Red Data Book. One such critically endangered species, *Ceropegia odorata* Nimmo ex J. Graham (1839) was collected by Colo. Powlett during August, 1891 from Mount Abu, Rajasthan (296563, CNH, CAL). Singh et al (2014) conducted field surveys to assess current status of *C. odorata* in different parts of India where this species was reported, but was not

able to locate at Mount Abu, Rajasthan. While field visit during first week of August, 2019, collected *C. odorata* from Mount Abu Wildlife Sanctuary (near sunset point, Fig.1). The population was very small

having only 9 individuals on slope mixed with the *Flueggea virosa* (Roxb. ex Willd.) Royle, *Lantana camara* L., *Strobilanthes callosa* Nees., *Euphorbia nerifolia* L., *Carissa carandas* L. population (Fig.2).

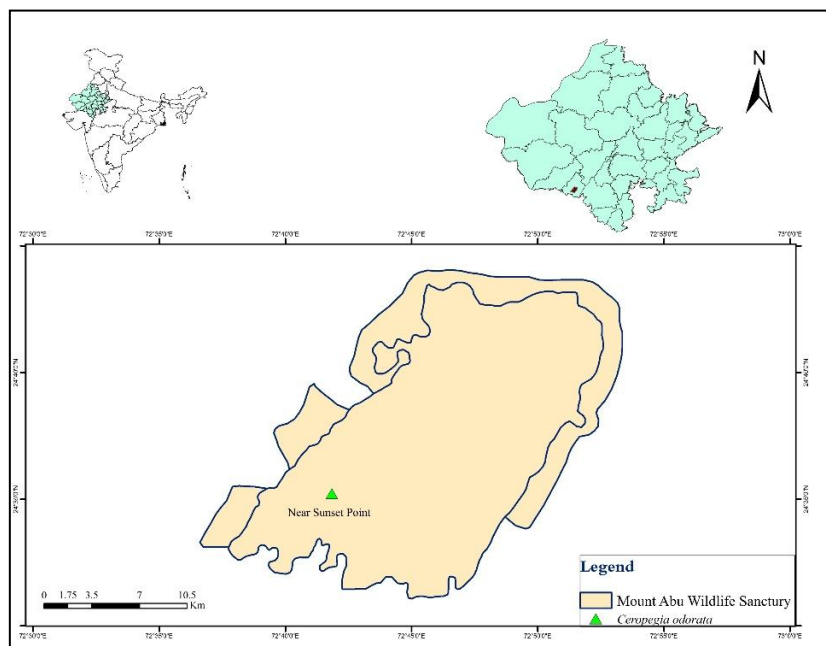


Fig. 1. Distribution map of *C. odorata* in Mount Abu Wildlife Sanctuary, Rajasthan

Species has wide distribution range Maharashtra, Gujarat, Rajasthan and Madhya Pradesh (Mujaffar et al. 2015) having narrow population with >20 individuals at each locations.

MATERIALS AND METHODS

During the conservation of Threatened plant species of Rajasthan, field survey was undertaken to Mount Abu Wild life Sanctuary during first week of August,

2019. Live plant photographs were taken in the field and herbarium specimens were deposited in the herbaria of Botanical Survey of India, Arid Zone Regional Centre (BSJO) at Jodhpur, Rajasthan. Literature was consulted to assess its distribution, population status, IUCN threat category (Rama Murthy et al. 2012; Singh et al. 2015a; Kamble & Yadav 2019). Herbarium specimens were studied in the herbaria of BSJO, BLAT, CAL and virtual images from herbaria we page (<http://apps.kew.org/herbcat/>).



Fig. 2. Habitat of *C. odorata* at Mount Abu wildlife sanctuary, Sirohi, Rajasthan

SYSTEMATIC ACCOUNTS

Ceropegia odorata Nimmo ex J. Graham, 1839 Cat. Pl. Bombay: 118. Jun-Dec 1839. (Fig. 3)

Description

Perennial twining herbs; tuberous rootstock; tubers subglobose, flat, 1-3 cm in diameter. Stems usually glabrous, sometimes sparsely pubescent about 2 m in length. Leaves 2–12 × 0.5–5 cm, opposite; sessile, petioles 0.5–2 cm long, glabrous; blades linear-lanceolate or lanceolate-narrowly ovate, acuminate at apex, rounded or acute at base, ciliate along margins, usually puberulous above and along the nerves beneath, sometimes glabrous on both

surfaces; nerves prominent beneath. Inflorescence lateral umbellate pedunculate, 6-10 flowered cyme, peduncles 0.5–3 cm long, hirsute, greenish yellow and sometimes with a purplish tinge. Flowers 3–8 cm long, yellowish green, fragrant, bracteate; pedicels 0.5–1 cm long, usually glabrous, rarely pubescent; bracts 0.5–1 cm long, linear. Calyx 0.5–0.8 cm long, linear, acuminate, glabrous. Corolla 3–7 cm long, yellowish green, sometimes with purplish tinge on tube; tube 1.5–4 cm long, inflated near base; lobes 1.5–3 cm long, equal or shorter than tube; outer corona of five entire lobes, glabrous; inner corona linear-oblong, erect, divergent at apex. Gynostegium ca. 2 mm long; pollinium yellow, ovate-oblong, corpusculum brown, caudicle short.



Fig. 3. *Ceropegia odorata* Nimmo ex J. Graham: **A-** Habit; **B-** Ventral view of leaf; **C-** Dorsal view of leaf; **D-** Bud; **E-** Calyx; **F-** Flowers; **G-** L.S. of flower; **H&I-** Views of Corona; **J-** Ovary (Photo: Kulloli R.N. & C.S. Purohit)

Fl. and Fr.: August-October

Distribution: Rajasthan (Shetty & Singh 1991), Gujarat (Singh et al. 2014) Maharashtra (Singh et al. 2014), Madhya Pradesh (Singh et al. 2014).

Habitat: Lateritic platues, gravelly soil on moist slopes.

Threats:1. The attractive flowers catch the attention of people hence face anthropogenic disturbances; 2. The flower structure is highly complicated which drives off the pollinators, coupling their scanty flower density in small population size; 3. Its tubers having edible and medicinal properties so dug out by local people for their routine use; and, 5. Seed germination is very low and fruit production is very low only few flowers produced follicles (Singh et al. 2014).

IUCN Threat category

Singh et al.(2014) assigned threat category of *C. odorata* is Critically Endangered [B2b (i,ii,iii,v) c (i,ii,iv)] and Kambale & Yadav (2019) assigned Vulnerable [VN: B2 a, b (iii, iv, v)] Further it need more study to confirm its exact IUCN threat category. This species needs species recovery programme in which it is reintroduced in its native habitats and monitored for establishment and also conserved in botanical gardens to promote its *ex-situ* conservation.

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