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## New distributional record of the endemic plant *Dipcadi montanum* var. *madrasicum* (E. Barnes & C.E.C. Fisch.) Deb & S. Dasgupta (Asparagaceae) from Andhra Pradesh

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### ABSTRACT

The endemic taxon, *Dipcadi montanum* var. *madrasicum* (Asparagaceae) is reported for the first time from Narasimha Konda Sacred Grove in the Eastern Ghats of Andhra Pradesh. As most of the species of *Dipcadi* occurring in India are found in the Western Ghats hotspot area, this collection from a sacred grove in the Eastern Ghats is interesting from the phytogeographical and conservation point of view. Detailed description, photo plate, distribution map and relevant notes are provided.

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### 1. Introduction

Sacred groves often harbour diverse and sometimes unique assemblages of plant and animal species and, therefore, are important for biodiversity conservation. This is evident by the fact that surveys of these groves often yield species that are significant from the conservation point of view. While on a field exploration trip to assess the conservation status of the sacred groves of Nellore District, Andhra Pradesh, a collection of *Dipcadi* species from Narasimha Konda Sacred Grove (14°27'24.2"N, 079°52'51.8"E; alt. 111 m.s.l) was made, which on critical examination were identified as *Dipcadi montanum* (Dalz.) Baker var. *madrasicum* (Barnes & Fischer) Deb & Dasgupta. The plant *Dipcadi montanum* var. *madrasicum* is known so far from Madhya Pradesh, being found in Balaghat plateau, the northern most extension of its distribution in peninsular India, Eastern Ghats/coast of Tamil Nadu and Eastern Ghats of Odisha (Saxena & Brahmam, 1995). Perusal of relevant literature and consultation of major herbaria reveals that the genus *Dipcadi* was not reported from Andhra Pradesh (Pullaiah, 1997; Sudhakar Reddy *et al.* 2008) and hence is

now reported as a new distributional record for the state of Andhra Pradesh. Detailed description, distribution and photographs are provided to facilitate its easy identification.

*Dipcadi montanum* (Dalz.) Baker var. *madrasicum* (E. Barnes & C.E.C. Fisch.) Deb & S. Dasgupta in J. Bomb. Nat. Hist. Soc. 75: 59. 1978; Saxena, H. O. & Brahmam, Fl. Orissa 3: 1963. 1995. *Dipcadi madrasicum* Barnes & Fischer in Kew Bull. 1940: 301. 1941; Mathew, Mat. Fl. Tamilnadu Carnatic 360. 1981; Mathew, Fl. Tamilnadu Carnatic 1642. 1983.

*Ornithogalum turbinatum* var. *madrasicum* (E. Barnes & C.E.C. Fisch.) J.C. Manning & Goldblatt, Edinburgh J. Bot. 60: 552. 2003 (publ. 2004).

*Type:* Chingleput Dist., Tambaram, 70m, Nov. 1937, *E. Barnes* 1801 (Lecto - K); *ibid.* Jan 1939, *E. Barnes* 2085 (Para - K)

Small bulbous herbs, *c.* 46 cm high; bulbs ovoid, white, glabrous, 2.5-3 x 2-2.5 cm. Leaves 2 per bulb, linear, 10-18 x 0.2 cm long, green, slightly broader and white at base,

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entire, acute at apex, glabrous. Scapes *c.* 38 cm long, terete, glabrous. Inflorescence *c.* 8 cm long, racemose, loose 7-flowered. Flowers *c.* 12 x 3.5 mm, pedicellate, green or greenish white, glabrous; pedicel 3-4 mm long, filiform, glabrous; bracts deltoid, 5-8 mm long, acuminate at apex, 6-nerved. Perianth 3+3, unequal, green, mildly perfumed, glaucous or glabrous, slightly hooded, sparsely glandular pubescent at sub-apex; outer perianth united up to one-third of its length, campanulate; lobes oblong-obovate, *c.* 8 mm long, 2-2.5 mm wide, rounded or acute at apex, reflexed below the middle; inner perianth united up to two-thirds of their length, coherent to form a flask-shaped structure with apical parts spreading; lobes 3-4 mm long, 2-2.2 mm wide, obtuse at apex. Stamens 6, *c.* 4.1 mm long; filaments arising from the base of the perianth, adherent throughout the tube, slightly free above, *c.* 1 x 0.4 mm; anthers linear, *c.* 3.1 x 0.5 mm, dorsifixed, versatile, introrse, green-yellow. Gynoecium *c.* 9 mm long, glabrous; ovary sub-sessile, obovoid, narrowed at base, 4-4.5 mm long, trilobed; stipe *ca.* 0.4 mm long; style 4.5-5 mm long; stigma trifid, glandular pubescent. Fruit not seen. Fig.1.

*Flowering /Fruiting period:* April- September/July-November

*Distribution:* Endemic to peninsular India (Ahmedullah & Nayar, 1987), Madhya Pradesh, Tamilnadu (Deb &

Dasgupta, 1981), Odisha (Saxena & Brahmam, 1995) and now from Andhra Pradesh.

*Habitat:* The plant is found in sandy/marshy places/rock crevices along dry stream beds in scrub forests. The plant is found from the coastal plains to elevations of about 1500 m altitude.

*Uses:* The bulb serves as an alternate food source for local communities during drought conditions (Deb & Dasgupta, 1981).

*Specimen examined:* India: Andhra Pradesh, Nellore District, Narasimha Konda, 14°27'24.2"N, 079°52'51.8"E, 111 m.s.l., 17.07.2016, J. Swamy & S. Nagaraju 007902 (BSID).

*Additional specimen images seen:* Coimbatore district, Perumal mudi shola, 5000 ft (1524. m.s.l.), 29.7.1930, V. Narayanasamy 3961 (MH, Acc. No. 80012); Coimbatore District, Mangarai area, 500 m.s.l., 5.4.1980, R. Maruthan 46083 (MH, Acc. Nos. 127483, 127484).

*Conservation status:* The taxon has so far been recorded from about six far-flung localities in the peninsular Indian region. However, not much information/data is available on recent collections, except the present one, to assess the status of the plant. The population observed at Narasimha Konda sacred grove is very small with barely 3-4 individuals. There is a strong possibility of the taxon located in its area of occurrence, if extensively searched. Considering this, the taxon is categorised as Data Deficient for the present.

#### Notes

The genus *Dipcadi* comprises *c.* 41 species (The Plant List, 2013), distributed in the Mediterranean region, Madagascar, Africa and South West Asia (Mabberley, 1997; 2008 rev.ed). In India, the genus is represented by 11 species (including four varieties), distributed from the Western Himalayas to Peninsular India (Deb and Dasgupta, 1978; Deshpande *et al.*, 2015). *Dipcadi erythraeum* is a native of Arabia-Egypt-Baluchistan region having its eastern extremity of distribution in Sind, Pakistan, and NW Rajasthan (Jodhpur, Barmer), India. *Dipcadi serotinum* is found to occur in the Western Himalaya (including Pakistan & Nepal) extending southwards to Central India (Madhya Pradesh). *Dipcadi reidii* is endemic to the W. Himalaya (Uttarakhand). Ahmedullah & Nayar (1987) reported 7 taxa (4 species and 3 varieties) of *Dipcadi* as endemic to peninsular India; these are *Dipcadi concanense*, *D. maharashtrense*, *D. minor*, *D. montanum* var. *madrasicum*, *D. saxorum*, *D. ursulae* var. *ursulae* and *D. ursulae* var. *longiracemosum*. Subsequently, another species, *Dipcadi goaense*, was described from Goa (Prabhugaonkar, Yadav & Janarthnam, 2009). More

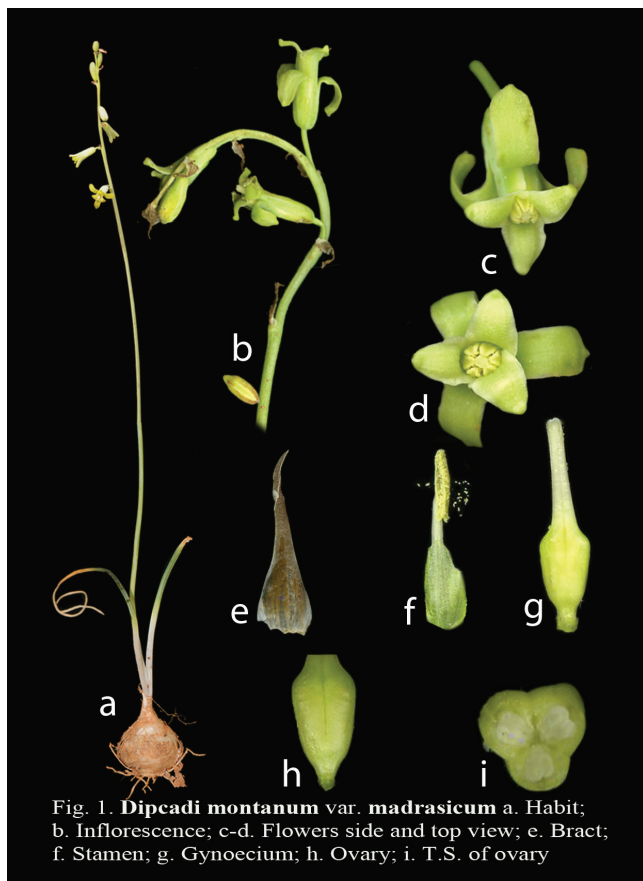
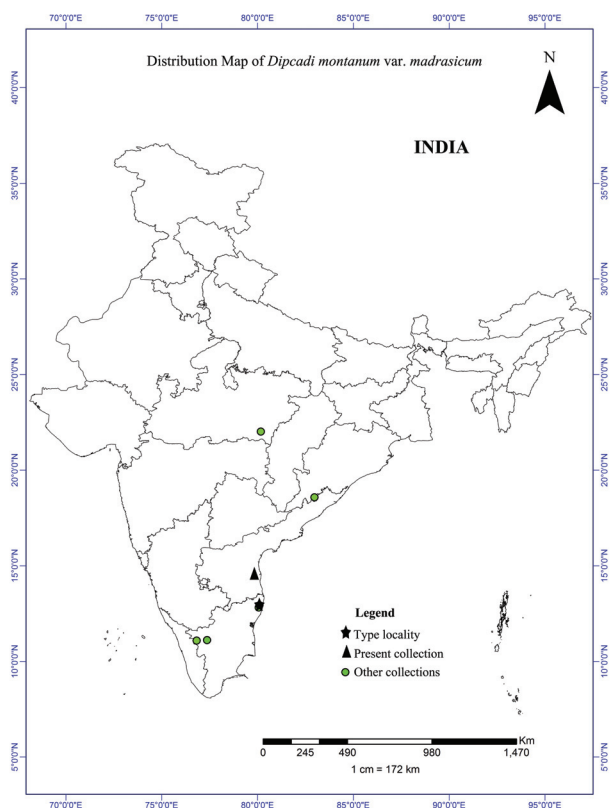


Fig. 1. *Dipcadi montanum* var. *madrasicum* a. Habit; b. Inflorescence; c-d. Flowers side and top view; e. Bract; f. Stamen; g. Gynoecium; h. Ovary; i. T.S. of ovary



recently, the species *Dipcadi krishnadevarayae* was described from Anantapuram, Andhra Pradesh (Rao, *et al.*, 2016). The typical *Dipcadi montanum*, which is endemic to India, is distributed from peninsular India to W. Himalaya in the north. As such, there are now 8 taxa of *Dipcadi* that are known to be strictly endemic to peninsular India; most of these, except for *D. montanum* var. *madrasicum*, are confined to W. Ghats. *D. montanum* var. *madrasicum* is endemically restricted to the Deccan region, including Balaghat plateau (fig.2); it is reported here for the first from the Eastern Ghats of Andhra Pradesh. The report of *D. montanum* var. *madrasicum* (Saxena & Brahmam, 1963) from Odisha (Koraput Dist., Pottangi-Sunki) could not be confirmed through field/herbarium studies. However, this taxon may well be found in other localities in the eastern region of peninsular India.

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