

## Critical notes on the occurrence of *Dipcadi montanum* (Dalz.) Baker (Hyacinthaceae) in South India

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### ABSTRACT

*Dipcadi montanum* (Dalz.) Baker is reported so far only from the Belgaum district of Karnataka in South India. The present collection of taxon from Madukkarai hills shows its extended distribution to the Tamil Nadu parts of southern Western Ghats of India. The paper provides some critical notes on *D. montanum* var. *madrasicum*. Detailed description, photographs, distributional and ecological details are provided.

**Key words:** *Dipcadi montanum*, Hyacinthaceae, Madukkarai hill, New record, South India, Tamil Nadu.

### INTRODUCTION

The genus *Dipcadi* was postulated by Medikus (1790) on the basis of *Hyacinthus serotinus* L. collected from Spain. He distinguished this genus from *Hyacinthus* L. on the basis of tubular, erect perianth lobes and numerous flat seeds. Ker-Gawler (1816) described a new genus *Uropetalon* on the basis of sixfid, tubular Perianth, lobes subduplicate to the tube and numerous flat seeds. Later Baker (1871) relegated *Uropetalon* Ker-Gawl to synonymy of *Dipcadi* (Deb and Dasgupta, 1981). In monographic studies, Baker subdivided bulbous liliaceae with racemose inflorescence into two groups, gamophyllous Hyacinthaceae and polyphyllous Scillaceae and placed *Dipcadi* Medik. in the former group. But further studies by Bentham (1883), did not lay any importance on such distinction, keeping all the genera under a single group without subdividing the tribe.

The genus *Dipcadi* Medik. was previously classified under the family Liliaceae but recently under Hyacinthaceae, subfamily Ornithogaloideae (Manning *et al.*, 2009) with about 30 species distributed in the Mediterranean region, Madagascar, Africa and South West Asia (Mabberley, 1997). In India the genus is represented by ten species including four varieties. They are *D. concanense* (Dalz.) Baker; *D. erythraeum* Webb & Berth; *D. goaense* A. Prabhugaonkar, U. S. Yadav & Janarth.; *D. maharshtrensis* Deb et Dasgupta; *D. minor* Hook. f.;

*D. montanum* (Dalz.) Baker var. *montanum*; *D. montanum* (Dalz.) Baker var. *madrasicum* (Barnes & Fischer) Deb et Dasgupta; *D. reidii* Deb et Dasgupta; *D. saxorum* Blatt.; *D. serotinum* (L.) Medik.; *D. ursulae* Blatt. var. *ursulae* and *D. ursulae* Blatt. var. *longiracemosaei* Deb et Dasgupta, of which seven species are present in Maharashtra (Ashish Prabhugaonkar *et al.*, 2009; Lakshminarasimhan, 2006) and only two taxa are present in South India viz. *Dipcadi montanum* (Dalz.) Baker var. *montanum* and *D. montanum* var. *madrasicum* (Barnes & Fischer) Deb et Dasgupta (Sharma *et al.*, 1984; Deb and Dasgupta, 1978).

During recent explorations in scrub jungles of Madukkarai hills in the states of Tamil Nadu, *Dipcadi montanum* was collected and it forms a new addition to the Hyacinthaceae flora of Tamil Nadu. Its identity has been confirmed by experts, comparing it with the herbarium specimens and relevant literatures. Detailed description, distribution, ecology, etc. along with photographs are provided to facilitate its easy identification.

***D. montanum*** (Dalz.) Baker in Journ. Linn. Soc. 11: 398. 1871; Hook. f. Fl. Brit. Ind. 6: 346. 1892; Cooke, Fl. Pres. Bomb. 2: 769. 1907; Bamber, Pl. Punj. 441. 1916; Lakshmi in Sharma *et al.*, Fl. Maharashtra St. Monocot. 131. 1996. Mooney, Suppl. Bot. Bih. Or. 201.1950; Sharma *et al.*, Fl. Karnataka 2:286. 1984; Yadav & Sardesai, Fl. Kolhapur Dist. 498. 2002. *Uropetalon montanum* Dalz. in Jour. Bot. 2:142.1850.

Type: Bombay, Sahyadri Mt., Dalzell s.n. K;



**Fig. 1: *Dipcadi montanum* (Dalz.) Baker A. Habitat; B.**

A bulbous scapose herb, 20 – 40 cm high. Bulbs ovoid, white glabrous, 3-4.5 cm long. Leaves in a rosette, 2-5 per bulb, linear, 14-24 x 0.2-0.3 cm long, deeply channelled, green, slightly broader and white at base, margins entire, narrowly acute at apex, glabrous. Inflorescence is a raceme, 15-35 cm long, 14 – 26 flowered. Flowers pedicellate, greenish white, glabrous, 1.2 – 1.3 cm long; pedicel 0.1-0.3 cm. Bracts 0.5-0.7 cm long, much longer than pedicel, ovate - lanceolate, acuminate. Perianth tube 4.8 – 5 mm long, sparsely pubescent at upper part. Outer perianth lobes elliptic to oblong, 0.7 - 0.8 x 0.2 – 0.25 cm long, glabrous, obtuse to rounded at apex, glandular hairs at apex; inner lobes constricted in the middle, 6.8– 7.2 x ca. 2.5 mm long, coherent to form a flask-shaped structure with apical parts spreading, round to obtuse, glandular hairs at apex. Stamens 6, 5.2 – 5.4 x ca. 3 mm long, filaments 5 – 5.4 mm long, originating at the mouth of the perianth tube; anthers ca. 3 mm long, yellow. Ovary 3.8 – ca. 4 x

1.6 – 1.8 mm long, trilocular, obovoid; style 9-13 mm; stigma trifid, glabrous, but appearing simple to begin with. Capsule distinctly 3-lobed, elliptic, green coloured at mature stage. Fig. 1.

**Flowering and Fruiting:** June - September

**Distribution:** Karnataka (Sharma *et al.*, 1984), Maharashtra, Orissa, Punjab, Himachal Pradesh and rarely in western Himalayas, 1160-1300 m (Deb & Dasgupta, 1978).

**Habitat & Ecology:** In Tamil Nadu state, the taxon seen in the slopes of rocky crevices in scrub jungles of Madukkarai hills. Madukkarai, located at 10.9°N 76.97°E along the hill sides of the Southern Western Ghats of Coimbatore, Tamil Nadu, is a part of Nilgiri Biosphere Reserve. The name “Madukkarai” originated from the colloquial use of the words “Mathil” (means Great wall in Tamil) + “Karai” (means Shore in Tamil). The temperature ranges from 47.5°C and 16°C respectively (Jayanthi *et al.*, 2011).

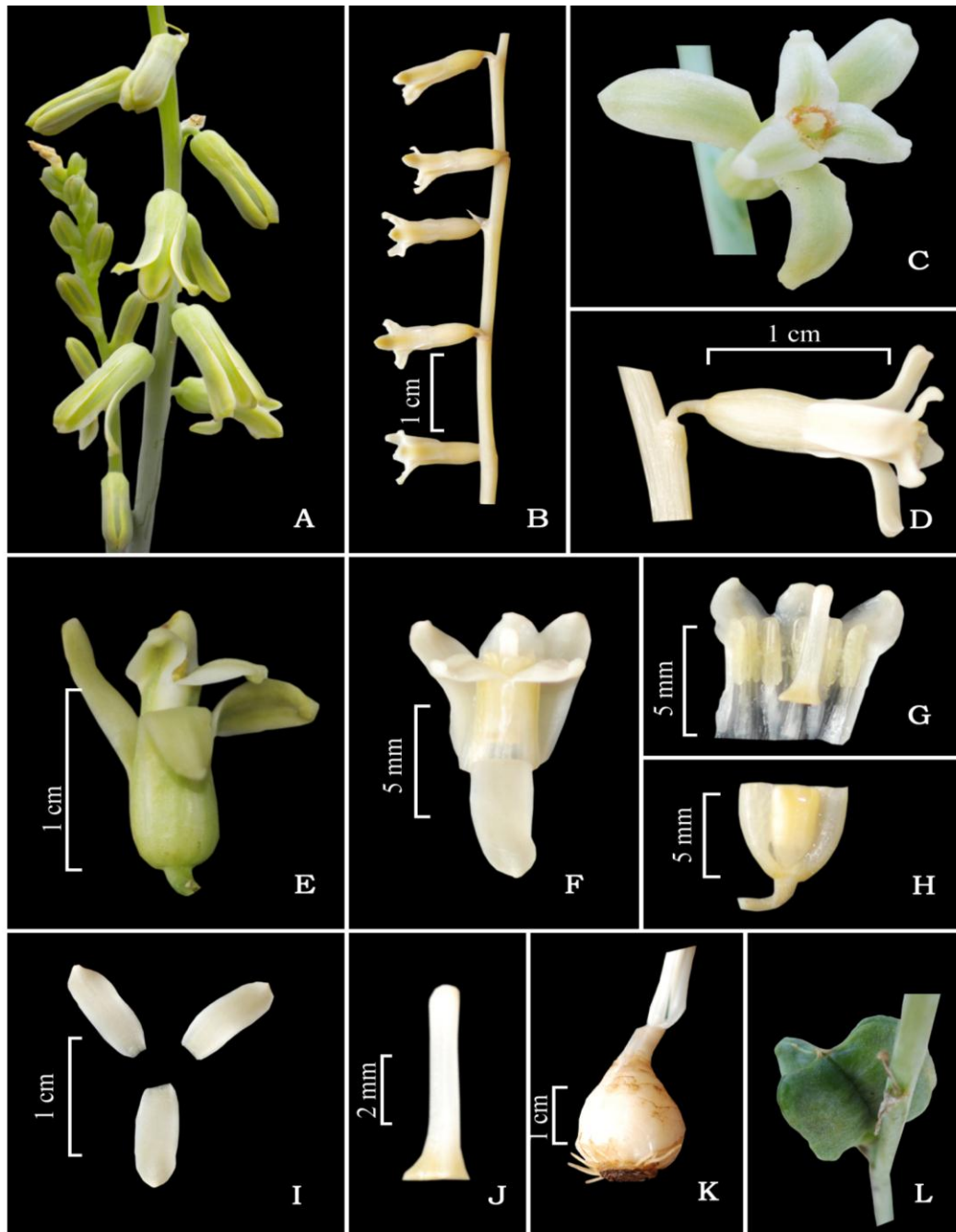


Figure 2. *Dipcadi montanum* (Dalz.) Baker A. & B. Inflorescence; C., D. & E. Single flower; F. Perianth lobes; G. Inner perianth lobes with style and sigma; H. Ovary; I. Outer perianth lobes; J. Stigma; K. Tuber; L. Fruit.

**Notes:** From south India *D. montanum* is reported only from Belgaum district in 1984 (Sharma *et al.*). But in his report, he didn't mention any more details regarding its proper locality, voucher specimen number or herbaria where it has deposited. A taxonomic revision in Indian *Dipcadi* has been done by Deb & Dasgupta (1981) and 2 new species, one variety and one new combination were reported. Based on their reports, *D.*

*montanum* var. *montanum* is closely allied to *D. montanum* var. *madrasicum* but differs in its stipitate with narrowly obovoid ovary and very short pedicel. But our present collection of *D. montanum* with obovoid ovary and very short pedicel (1-3 mm) shows that the variations are continuous. There is no more report regarding the current status and existence of var. *madrasicum* after its type collection.

Hence cytological studies are essential for confirming the present taxonomic status of *D. montanum* var. *madrasicum*. The present study of *D. montanum* from Madukkarai hills is also a new record to Tamil Nadu state.

**Conservation status:** Rare (Bikash Rath & Pallavi Priyadarshini, 2005).

**Economic importance:** The plants belonging to the family Hyacinthaceae have received attention as a potential source of unique alkaloids, such as bufadienolides and homoisoflavanones, steroidal compounds that may have a range of medicinal properties (Pohl *et al.*, 2000 & 2001).

**Uses:** Leaves are used as vegetables (Yadav & Sardesai, 2002).

**Specimen examined:** India, Tamil Nadu, Coimbatore District, Madukkarai Hills, 06 June 2011, Prabhu Kumar K. M. & Sreeraj V. 7076; 21 June 2011, Prabhu Kumar K. M. 7092 (BUH,

Bharathiar University Herbarium); 10 August 2012, Prabhu Kumar K. M. & Binu Thomas 7272 & 7273(CMPR).

#### ACKNOWLEDGEMENT

The authors are thankful to Dr. S.R. Yadav, Department of Botany, Shivaji University, Kolhapur and Dr. Pankaj Kumar, Conservation Officer, The Orchid Conservation Section, Flora Conservation Department, Kadoorie Farm and Botanic Garden (KFBG), Hong Kong for their valuable comments on the identity of the taxa. We are also indebted to 'efloraindia' for giving a good platform for identification of unknown plants. We express our sincere gratitude to the authorities of Arya Vaidya Sala, Kottakkal for giving facilities. Thanks are also due to Mr. Sharad Kambale, Research Scholar, Department of Botany, Shivaji University for his help.

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