



***Belosynapsis vivipara* (Dalzell) C.E.C. Fisch. (Commelinaceae), a vulnerable spiderwort, rediscovered after sixteen decades from Maharashtra, India**

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Chandoli National Park (previously Chandoli Wildlife Sanctuary) is a part of recently declared Sahyadri Tiger Reserve situated in the heart of

the northern Western Ghats of Maharashtra, ear-marked as a future UNESCO World Heritage site. The study area spreads over an area of 317.67km<sup>2</sup> along the backwaters of Varana River across the Sahyadri range. Chandoli National Park (CNP) lies between 17°3'29"N–17°17'00"N and 73°41'55"E–73°51'55"E. The altitude ranges from 589 to 1044 m. During a study to assess the floristic diversity of CNP, we collected and identified *Belosynapsis vivipara* (Dalzell) C.E.C. Fisch. after a lapse of 160 years from Maharashtra. The genus *Belosynapsis* Hassk. is represented by five species distributed from South Asia to New Guinea (e-Floras, Digital Flora of Taiwan 2009). In India, it is represented by three species, namely, *B. epiphytica* (Blatt.) C.E.C. Fisch., *B. kewensis* Hassk. and *B. vivipara* (Dalzell) C.E.C. Fisch. (Karthikeyan et al. 1989). After Dalzell's collection in 1851 from Parva Ghat (Fig. 1), Maharashtra (at the junction of Maharashtra, Goa and Karnataka State), this species could not be collected from any other place in Maharashtra and it is treated as nearly vanished from the state (Lakshminarasimhan 1996; Mishra & Singh 2001). Apart from Maharashtra, this endemic (Ahmedullah & Nayar 1986) species is distributed in Karnataka (Katilekan, Jog Falls, Yedur, Agumbe, Shimoga, Hulical-Hosgadda, Shirur Ghat, Talacavery) (Sundararaghavan 1970), Kerala (Wayaaad) (Sharma et al. 1984) and Tamil Nadu (Anamalai Hills) (Gamble 1931). In the present investigation, a total of about 100 individuals were seen growing as epiphytes on large tree trunks at about 1.52–3.04 m from the ground in the riparian forest patches of Male and Patharpunj villages in Chandoli National Park, which in fact forms the northernmost distribution of this vulnerable taxon (Kammathy 1987).

**Materials and Methods:** The present work is based on intensive floristic survey of CNP in the period 2005 to 2010. During the field study four specimens of this species were collected and plant specimens were identified using Gamble (1967), Sundararaghavan, (1970), Kammathy (1987), Lakshminarasimhan (1996) and deposited in the herbarium of the Department of Botany, University of Pune and Herbarium of Botanical Survey of India, Western Regional Centre, Pune (BSI) with collection number SPK 645.

A detailed description, ecological observations,

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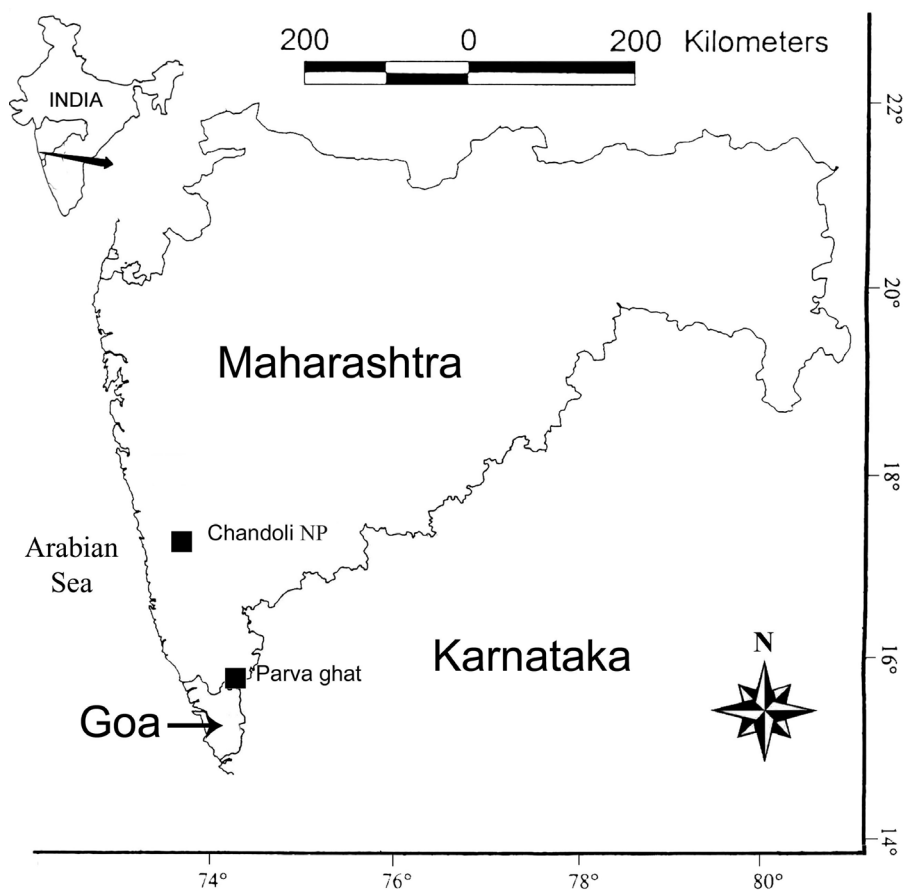
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**Figure 1. Distribution map of *Belosynapsis vivipara* showing the type locality (Parva Ghat) and Chandoli National Park.**

photographs (Image 1a-c) and distribution map (Fig. 1) of the species are provided for easy identification.

***Belosynapsis vivipara* (Dalzell) Sprague ex C.E.C. Fisch.**

in Bull. Misc. Inform. Kew 1928: 254. 1928 & in Gamble, Fl. Madras 1551. 1931 [3: 1082. 1967 (Repr.)]; Kammathy in M.P. Nayar & Sastry (eds.), Red Data Book Indian Pl. 1: 124, f. 1987; Karthik. et al., Fl. Ind. Enum. Monocot. 24. 1989; Lakshmin. in B. D. Sharma et al., Fl. Maharashtra State, Monocot. 147. 1996; D.K. Mishra & N.P. Singh, Endemic & Threat. Fl. Pl. Maharashtra 241. 2001. *Cyanotis vivipara* Dalzell in Hooker's J. Bot. Kew. Gard. Misc. 3: 226. 1851; Hook. f., Fl. Brit. India 6: 388. 1892; T. Cooke, Fl. Bombay 3: 305. 1967 (Repr.).

Epiphytic, subscapigerous herbs, 10–25 cm long, covered with scattered rufous spreading hairs or glabrescent in the tender plants; rootstock small. Leaves radical and cauline; radical leaves 3–8 x 1–2 cm, sessile, linear or linear-lanceolate, base narrowed, apex acute or acuminate, covered with pilose hairs; cauline

leaves 1–2 x 0.2–0.5 cm, sessile, ovate or elliptic, apex acute, pilose. Scape 8–25 cm long, slender, viviparous at the apex with several small oblong-lanceolate acute leaves. Peduncle with 2–4 flowers in umbel, arising from the leaf axils, pilose, 2-bracteate. Sepals 3, 2–3 mm long, oblong, villous. Petals 3, white, connate to the middle. Stamens 6; filaments naked. Capsules oblanceolate, ca. 3mm long, obtuse, hairy, recurved after dehiscence, 3-celled, 2-seeded. Seeds cylindric, smooth.

Specimens examined: 1851, Parva Ghat, Maharashtra, India, coll. Dalzell, s.n. (K), 30.xi.1961, Katlekan, on way to Gerusoppa from Jog, coll. Ansari and Kammathy, 78707; 04.x.1962, Yedur, Shimoga District, coll. Raghavan, 82972; 08.x.1962, Hulical, Shimoga District, coll. Raghavan, 83069; 09.x.1962, same locality, coll. Raghavan, 83088 A; 16.x.1962, Agumbe, Shimoga District, coll. Raghavan, 83267; 24.viii.1963, Hulical-Hosgadda area, Shimoga District, coll. Raghavan, 9196; 01.ix.1963, Shirur Ghat, Shimoga District, coll. Raghavan, 90372 A; 23.x.1963, Bhimanagundi, Coorg District, coll. A.S.



**Image 1. *Belosynopsis vivipara* (Dalzell) C.E.C. Fisch.**  
**a - Habitat; b - Vegetative habit; c - Reproductive habit**

Rao, 95014; 26.x.1963, Talacauvery, Coorg District, coll. A.S. Rao, 95144 (All in BSI); 21.vii.2007, Chandoli National Park, Sangali District, SPK 645 (Department of Botany, University of Pune; BSI) (Image 2).

**Flowering & Fruiting:** July–October.

**Distribution:** Endemic to Western Ghats. Maharashtra (Sangali); Karnataka (Chikmagalur, Coorg, Hassan, Mysore, N. Kanara, Shimoga), Kerala

(Wayanad) and Tamil Nadu (Anamalai Hills).

**Ecology:** Growing at an elevation of ca. 992m (17°16'22.79"N & 73°45'15.20"E) as an epiphyte on densely moss covered tree trunks and branches of *Flacourtia montana*, *Memecylon umbellatum* and *Syzygium cumini* in shady, semi-evergreen riparian forests (Image 1a) in association with *Begonia crenata*, *Bryum* sp., *Hoya wightii*, *Hymenophyllum* sp., *Lycopodium hamiltonii*, *Pogonatum* sp. and *Remusatia*



Image 2. Herbarium of *Belosynapsis vivipara*

*vivipara*.

We suggest that total protection should be given to the riparian forests areas of Chandoli National Park for the conservation of this vulnerable and endemic taxon. Ex situ conservation and domestication of this species in greenhouses and gardens for future survival, besides its re-introduction into the wild in similar habitats is the need of the hour.

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