

RESEARCH ARTICLE

Two New Addition to the Flora of Maharashtra state, India

Gadpayale Jagannath V¹, Somkuwar Subhash R^{2*} and Chaturvedi Alka³¹Dept. of Botany, S. N. Mor College of Arts, Commerce and Smt. G. D. Saraf Science College, Tumsar (M.S.), India²Dept. of Botany Dr. Ambedkar College, Deekshabhoomi Nagpur, India- 440 010³P.G. Department of Botany, RTM Nagpur University, Nagpur, India- 440 033*Corresponding author's E-mail: ssomkuvar@gmail.com

Manuscript details:	ABSTRACT
<p>Available online on http://www.ijlsci.in</p> <p>ISSN: 2320-964X (Online) ISSN: 2320-7817 (Print)</p> <p>Editor: Dr. Chavhan Arvind</p> <p>Cite this article as: Gadpayale Jagannath V, Somkuwar Subhash R and Chaturvedi Alka (2016) Two New Addition to the Flora of Maharashtra state, India, <i>Int. J. of Life Sciences</i>, A6: 89-92.</p> <p>Acknowledgement: We are obliged to Mr. D. L. Shirodkar, Botanical Survey of India, Industrial Section, Indian Museum, 1, Sudder Street, Kolkata for the opinion and for supply of certain literature.</p> <p>Copyright: © Author, This is an open access article under the terms of the Creative Commons Attribution-Non-Commercial - No Derives License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.</p>	<p>The present paper deals with the two new plant species additions to Angiospermic flora of Maharashtra state, India along with the detailed description, phenology and ecology. During the extensive exploration eastern Maharashtra, <i>Amorphophallus longiconnectivus</i> Bogner (Sect. - <i>Rhaphiophallus</i> family- Araceae) and <i>Phyllodium longipes</i> (Craib) Schindl., (tribe- <i>Desmodieae</i>, family- <i>Fabaceae</i>) are collected. After microscopic observation and critical review of the available references these two species are found to be new to the flora of Maharashtra state, India.</p> <p>Key Words: <i>Amorphophallus longiconnectivus</i>, <i>Phyllodium longipes</i>, New addition, Maharashtra.</p> <p>INTRODUCTION</p> <p>Many researchers during botanical explorations reported additions to the Flora, viz. Bhuskute (1989; 1990), Thakre and Srinivasu (2012a; 2012b), Kamble <i>et al.</i> (2013a; 2013b; 2013c; 2014, 2015), Gadpayale <i>et al.</i> (2014) and Somkuwar <i>et al.</i> (2014a, 2014b, 2015).</p> <p>There are 213 known species of <i>Amorphophallus</i> Blume ex Decne. (Hettterscheid 1996–2013) distributed in Asia, Africa, Madagascar, Malay Archipelago, Australia and Melanesia (Mayo <i>et al.</i> 1997; Magtoto <i>et al.</i> 2013). Presently it is studied in 10 sections, out of which in India the genus is represented by 3 sections, viz. <i>Candarum</i> Engl., <i>Conophallus</i> (Schott) Engl. and <i>Rhaphiophallus</i> (Schott) Engl. <i>Rhaphiophallus</i> now includes sect. <i>Synantherias</i> (Sivadasan, 1989). The <i>Rhaphiophallus</i> (Schott) Engl. is the largest section of the genus with 9 species in India (Shaikh <i>et al.</i>, 2012). In Maharashtra this genus is represented by seven species as <i>A. paeoniifolius</i> (Dennst.) Nicols., <i>A. bulbifer</i> (Sims) Blume, <i>A. bhandarensis</i> S. R. Yadav, Kahalkar & Bhuskute (2009), <i>A. commutatus</i> (Schott) Engl., <i>A. konkanensis</i> Hett., S. R. Yadav & K. S. Patil, <i>A. margaritifera</i> (Roxb.) Kunth, and <i>Amorphophallus sylvaticus</i> (Roxb.) Kunth., (Jaleel <i>et al.</i> 2011 & <i>Flora of Maharashtra state- Monocotyledons</i>, 1996).</p> <p><i>Phyllodium</i> Desvaux is a widespread legume genus of more than 350 species occurring throughout tropical and subtropical regions in open woodland and</p>

forest clearings (Imrie *et al.*, 1983) of the tribe Desmodieae (Leguminosae - Papilionoideae) with eight species that is distributed southeastern and eastern Asia and few species in northern Australia (W. Saisorn & P. Chantaranothai, 2015). The genus was first described by Desvaux (1784–1856), later the genus was placed in its own section under *Dicerma* by de Candolle (1825) and under *Desmodium* by Bentham and Hooker (1865), while Baker (1879) placed it under the genus *Desmodium* as subgenus *Phyllodium*. This genus has recently been reported from Myanmar by Kress *et al.* (2003) and from Lao PDR by Newman *et al.* (2007). In India the sporadic literature is available for this genus in ethnomedicine and pharmacognosy concern with the *P. pulchellum* (L.) Benth. (Velmurugan *et al.* 2014), but no any information found in the distribution of *Phyllodium longipes* (Craib) Schindl., in the floras of central India.

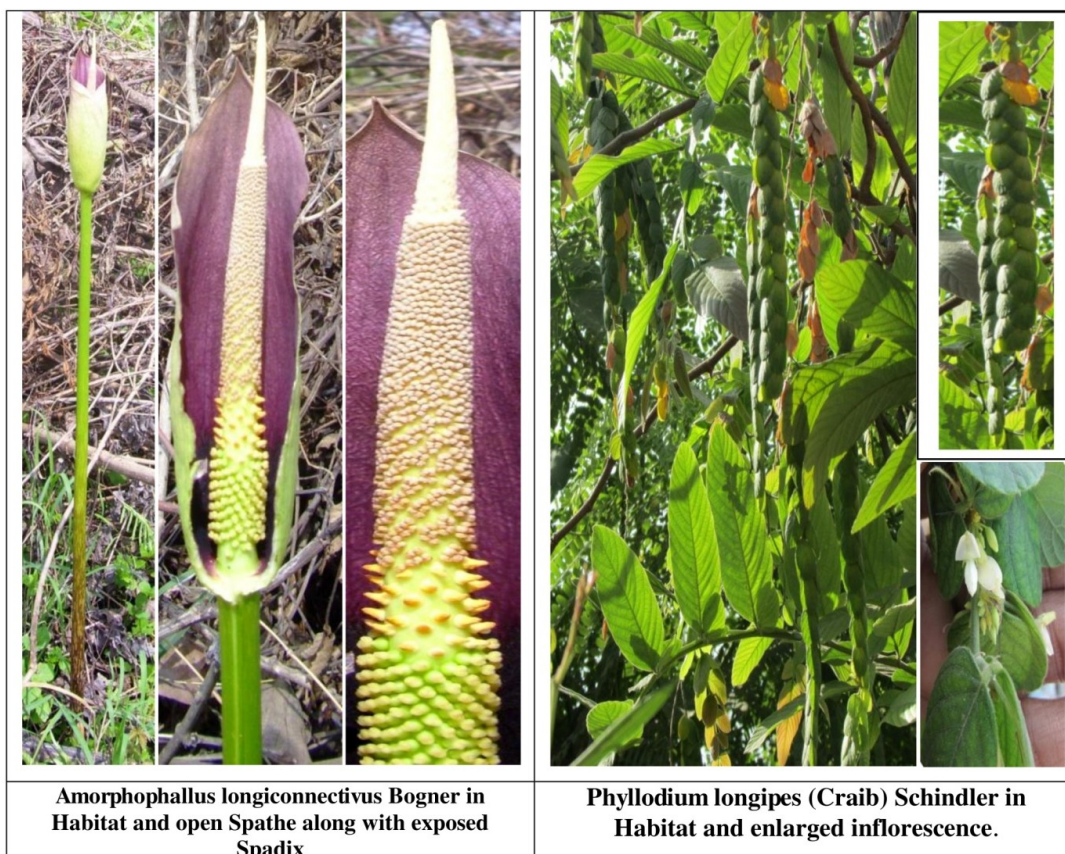
There is no any relevant literature found in the flora of Maharashtra state with reference to the occurrence of these two collected plant samples, hence these two collected specimen's i.e. *Amorphophallus longiconnectivus* Bogner for the sect.- *Rhaphiophallus* (Schott) Engl., and *Phyllodium longipes* (Craib) Schindl., (tribe- *Desmodieae*, family- *Fabaceae*) are reported first time for the flora of Maharashtra state.

TAXONOMIC TREATMENT OF COLLECTED SPECIMENS IS AS FOLLOWS

1. *Amorphophallus longiconnectivus*

Bogner, Kew Bull. 50(2): 397 (1995); Sivad. & Jaleel, *Rheedea* 8 (2): 243 (1998).

Tubers subglobose or depressed globose, roots numerous; offsets small, globose or fusiform. Petiole 35-77 cm long, 1.2-2.3 cm in diam., at base, smooth, light green with dark brownish, narrow-elongated stripes, paler towards the upper portion; leaflets sessile, linear-lanceolate, acuminate at apex, base unequal and decurrent on rachis, pale green below; margin slightly undulate. Peduncle smooth, 62 - 110 cm long, 1.2-1.7 cm diam., at base identical with petiole in color and pattern. Spathe broadly ovate to broadly triangular, usually broader than long, 10-14 cm long, tip acute, completely convolute, not differentiated into basal tube and upper limb, pale green outside, pale purplish within with a dark purplish verrucose base. Spadix as long as or slightly shorter than the Spathe, with a pale green stipe; female zone 1.3-2.5 cm long, staminodial zone 8-9 mm long and male zone 3.2-4.0 cm long, upper sterile zone 1.5-3.0 cm long, clothed with sterile flowers and rarely with a few scattered fertile stamens; without or (usually) with a stipitate appendix. Female flowers:



***Amorphophallus longiconnectivus* Bogner in Habitat and open Spathe along with exposed Spadix**

***Phyllodium longipes* (Craib) Schindler in Habitat and enlarged inflorescence.**

ovary subglobose, c. 2 mm high, c. 2.5 mm diam., greenish, 2-3-locular; style very short, c. 1 mm long; stigma 2-3-lobed, 1-2 mm diam., papillate. Staminodial zone with loosely arranged thick-based echinate fleshy sterile flowers, each 3-5 mm long, c. 1 mm broad at base, rarely a few with forked tips. Male flowers: golden-yellow, each 2-3 mm long, 1-2 mm broad, filaments short, flat, thecae lateral, ellipsoid, 1.5-2.5 mm long; connective elongated to 1.0-1.5 mm above the level of the thecae tips. Sterile flowers more or less subulate, cream. Spadix appendix stipitate, stipe 3-8 mm long, 2.5-4.0 mm diam., green, terminal part 7-8 mm long, c. 3 mm diam., bearing irregularly formed cream-colored rudimentary male or female flowers or irregular protuberances. Fruits ellipsoid, Seeds 2-3, ellipsoid.

Phenology: Flowering: June-July; **Fruiting:** August-September.

Distribution: Known only from Kothurna and its vicinity area (Bhandara), Maharashtra state, India.

Notes: *Amorphophallus longiconnectivus* Bogner, is unique in various aspects and is highly variable in its Spadix structure and so far known only from Piparia, Madhya Pradesh state in India (Sivadasan and Jaleel, 1998).

2. *Phyllodium longipes* (Craib) Schindler, Repert. Spec. Nov. Regni Veg. 20: 270. 1924. *Desmodium longipes* Craib, Bull. Misc. Inform. Kew 1910: 20. 1910; *D. tonkinense* Schindler.

Shrub 1 to 3 m high; Branchlets densely brown pubescent. Petiole ca. 3 mm; terminal leaflet blade lanceolate or oblong, 13-20 × 3.7-6 cm, lateral ones obliquely ovate, 3-4 × 1.5-2 cm, abaxially densely brown soft hairy, adaxially sparsely pubescent or glabrescent, lateral veins 8-15 on each side of midvein, distinctly reticulate veined. Flowers (5-)9-15, enclosed by pair of leaf like bracts; bracts obliquely ovate, 2.5-3.5 × 2-2.7 cm. Pedicel 4-6 mm. Calyx 4-5 mm, white tomentose. Corolla white or pale yellow; standard obovate, 3-9 mm, clawed; wings 7-8 mm, base auriculate, clawed; keel arcuate, 8-8.5 mm. Ovary 3.5-4 mm, 7- or 8-ovuled. Legume narrowly oblong, 0.8-1.5 cm × ca. 3.5 mm, lower suture more deeply undulate, upper suture slightly undulate, both surfaces downy, 2- 5-jointed; articles broadly oblong to nearly quadrangular. Seed broadly elliptic, 3 × 2.3 mm.

Phenology: - Flowering August -September. & **Fruiting:** October-November.

Distribution: Seminary hills Nagpur, Maharashtra state, India.

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