

A new variety of *Amorphophallus konkanensis* (Araceae) from Telangana, India

J. Swamy* and L. Rasingam

Botanical Survey of India, Deccan Regional Centre, Kendriya Sadan, Hyderabad -500095, Telangana, India

*Corresponding author: swamy.2706@gmail.com

भारत के तेलंगाना राज्य से *एमोर्फोफैलस कोणकानेन्सिस* (ऐरेसी) के नये प्रभेद का अन्वेषण जे. स्वामी एवं एल. रासिंगम

सारांश

प्रस्तुत शोध पत्र में भारत के तेलंगाना राज्य की किन्नरासानी वन्य जीव अभयारण्य से *एमोर्फोफैलस कोणकानेन्सिस* हेट्ट. एस. आर. यादव एवं के. एस. पाटिल (ऐरेसी) को अन्वेषित एवं वर्णित किया गया है।

ABSTRACT

A new variety of *Amorphophallus konkanensis* Hett., S. R. Yadav & K. S. Patil (Araceae) is described and illustrated here from the Kinnerasani Wildlife Sanctuary of Telangana state, India.

Keywords: Eastern Ghats, Kinnerasani, *Rhaphiophallus*, Wildlife Sanctuary

INTRODUCTION

The genus *Amorphophallus* Blume ex Decne. (Araceae) is distributed in tropical Africa, Madagascar, tropical and subtropical Asia, the Malay Archipelago, Melanesia and Australasia with c. 200 species (Mayo & al., 1997; Jaleel & al., 2011). Few species of the genus are important sources of wild food for tribal communities of India and Southeast Asia. The solitary petioles and the tubers are often cooked and eaten. In India, the genus is represented in three sections viz., *Candarum* Engl., *Conophallus* (Schott) Engl. and *Rhaphiophallus* (Schott) Engl. with 22 species and 4 varieties (Sasikala & al., 2019).

While exploring the floristic diversity of Kinnerasani Wildlife Sanctuary, Telangana, the senior author has collected few *Amorphophallus* specimens with tubers. The same has been introduced in the office garden of Botanical Survey of India, Deccan Regional Centre, Hyderabad for further studies. The tubers produce the flowers during the month of May 2020. On critical examination of the

specimens with relevant literature revealed that, the species is close to the *Amorphophallus konkanensis* Hett., S.R. Yadav & K.S. Patil, a species described from Konkan regions of Maharashtra (Hettterscheid & al. 1994) and widely reported from Goa, Karnataka, Andhra Pradesh and Madhya Pradesh (Mujaffar & al. 2012; Chorghe & al. 2017; Sasikala & al. 2019) but differs in the spathe characters. Hence, it has been described here as new variety under the *Amorphophallus konkanensis*.

TAXONOMY

Amorphophallus konkanensis Hett., S.R. Yadav & K.S. Patil var. ***kinnerasaniensis*** J. Swamy & Rasingam var. nov. (Figs. 1, 2)

Type:- India, Botanical Survey of India, Deccan Regional Centre, Hyderabad (introduced from Banjara Beat, Regulagudem Section, Yanambailu Range, Kinnerasani Wildlife Sanctuary, Telangana, 17.82468° N, 80.66724° E, 211 m.s.l.), 22. 05. 2019 [inflorescence], J. Swamy 009797 (Holotype BSID).



Fig. 1. *Amorphophallus konkanensis* Hett., S.R.Yadav & K.S.Patil var. *kinnerasaniensis* a. Habit; b. Tuber with roots; c. Petiole; d. Leaf; e. Portion of leaf. (photos: J. Swamy).

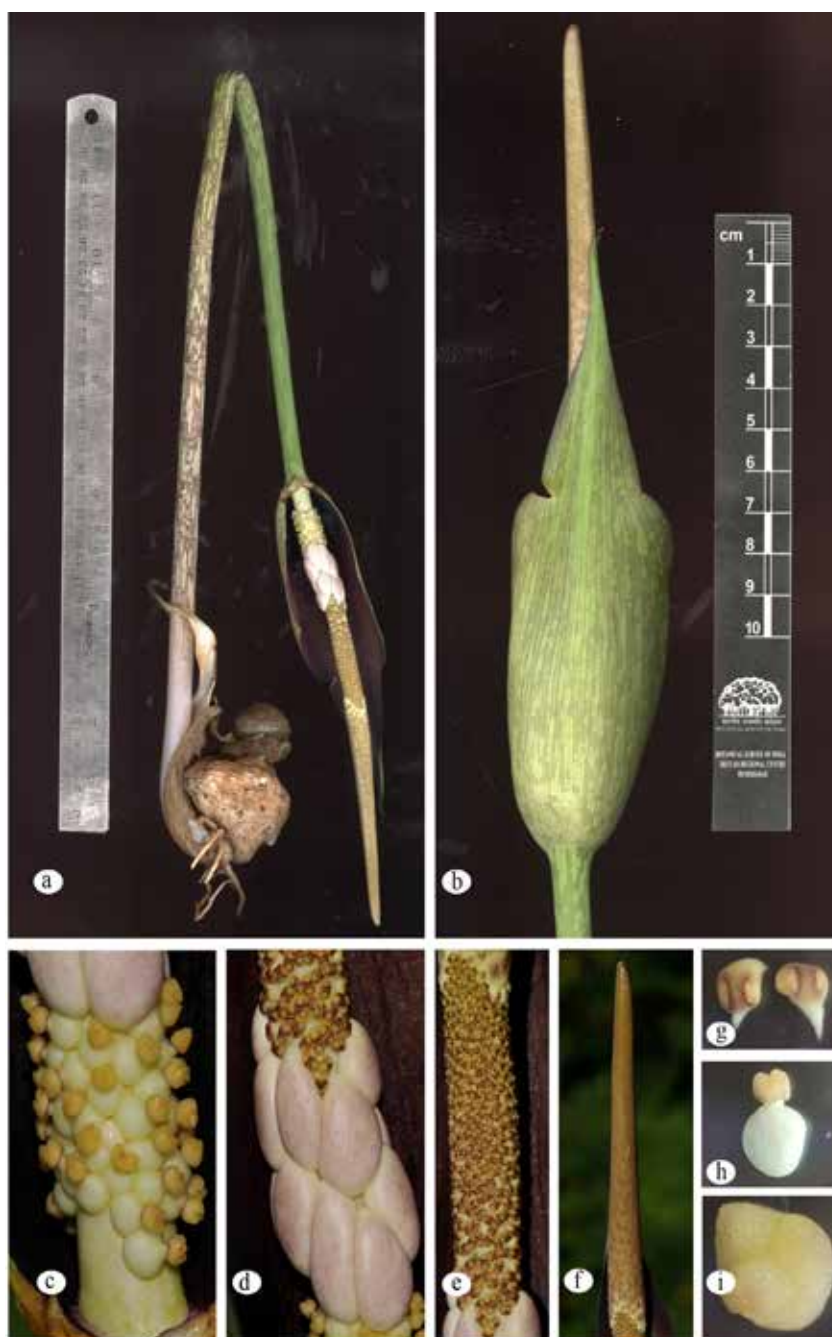


Fig. 2. *Amorphophallus konkanensis* Hett., S.R.Yadav & K.S.Patil var. *kinnerasaniensis* **a.** Habit; **b.** Inflorescence; **c.** Female zone; **d.** Neuter zone; **e.** Portion of leaf. (photos: J. Swamy).

Table 1. Morphological comparison of *A. konkanensis* var. *kinnerasaniensis* and its allied taxa *A. konkanensis* var. *konkanensis*

Characters	<i>A. konkanensis</i> var. <i>konkanensis</i>	<i>A. konkanensis</i> var. <i>kinnerasaniensis</i>
Spathe	6–8 cm long, not differentiated into a tube and limb	15.5 cm long, clearly differentiated into a basal convolute tube and an upper limb separated by a distinct shallow constriction
Stipe	up to 5 mm long	5– 10 mm long
Staminodial zone	0.8–1.2 cm long	2.5–3.2 cm long

Diagnosis: *Amorphophallus konkanensis* var. *kinnerasaniensis* is close to typical variety *A. konkanensis* var. *konkanensis* but differs in its spathe shape and size, as the spathe differentiated into a basal convolute tube and an upper limb separated by a distinct shallow constriction, whereas in *A. konkanensis* var. *konkanensis* the spathe is not differentiated into a tube and limb.

Tubers globose or depressed globose, 4.5–9 cm in diam. and 3–5 cm in thickness, skin pale brown; roots up to 19 cm long, c. 2 mm in diam. Petiole 38 cm long, 1.5 cm in diam. at base, pale brown or greenish-brown with pale yellowish-green to white stripes and dots. Lamina 58 cm in diam., rachises winged, leaflets narrowly lanceolate, 15 – 25 × 2 – 3.5 cm, acuminate at apex, green above and paler below. Peduncle smooth, c. 53 cm long, 1.4 cm in diam. at base, pale pinkish with white stripes from base to 10 cm up of the peduncle; pale brownish-purple or greenish-brown with white stripes from above 10 cm to 40 cm of the peduncle and pale green with pale yellowish-green to white stripes at the top. Spathe broadly ovate in outline, when spread flat, completely convolute throughout the length with an opening at the top, 15.5 cm long, acuminate at apex, limb distinctly differentiated into tube and limb; tube 9 × 11 cm; limb 6.5 × 3 cm at base, brownish-pink within, greenish with purple-brown without; veins more than 60, dark purple brown. Spadix longer than the spathe, 15 – 20 cm long, stipitate; stipe c. 1 × 0.8 cm, pale green; female zone 1.6 – 2.0 × 1.6 cm, cylindric, pale green; staminodial zone 2.5 – 3.2 × 1.7 cm, whitish to pale purple; male zone 4 – 5.2 × 1.1 cm, olive green-brown; spadix appendage c. 10.2 cm long and 1 cm diam. at base, olive green. Pistillate flowers: ovary depressed globose, c. 4 mm in diam., 4 mm long, pale greenish-white, 3 – 4-locular; style very short, c. 0.3 mm long, 1.4 mm in diam., pale greenish-white with purplish at apex; stigma c. 2.5 mm in diam., 1.5 – 2 mm long, 3 or 4-lobed; lobes very shallow, conical or rounded, obtuse, separated by shallow grooves, covered with unicellular papillae. Neuter flowers: 1.3 – 1.5 × 0.5 – 0.9 cm, rhomboid or oblong-rhomboid, slightly convex, whitish to pale purple. Staminate flowers: closely arranged, each composed of 3–6 stamens borne on a white cushion like tissue of 0.4 – 0.8 mm thickness; each c. 1.5 – 2 × 1.2 – 1.5 mm, inconspicuously 2-lobed; thecae whitish to brown, dehisce by narrow apical horizontal slits; connective brownish. Appendage cylindric, apically tapering, olive green.

Flowering and fruiting: May – June.

Distribution, habitat and ecology: The species is so far known from type locality. It is usually found in shady places along streams of dry deciduous forests in association with *Ampe-locissus latifolia* (Roxb.) Planch. and *Leea indica* (Burm. f.) Merr.

Etymology: The species is named after the Kinnerasani Wildlife Sanctuary from where it is collected and described.

Additional specimen examined: India, Botanical Survey of India, Deccan Regional Centre, Hyderabad (introduced

from Banjara Beat, Regulagudem Section, Yanambailu Range, Kinnerasani Wildlife Sanctuary, Telangana, 17.82468° N, 80.66724° E, 191 m.s.l.), 01. 07. 2020 [leaf], J. Swamy 009798 (Paratype BSID).

Conservation status: As per the IUCN guidelines (IUCN 2019), the species is Data Deficient (DD), as only few individuals were noticed during the floristic survey. Further explorations in the adjacent forest areas are necessary to ascertain the correct status of the species.

ACKNOWLEDGEMENTS

The authors are grateful to The Director, Botanical Survey of India, Kolkata for facilities and Dr. P. V. Prasanna, Scientist G, Botanical Survey of India, Deccan Regional Centre, Hyderabad for encouragement and to the officials of Telangana State Forest Department for permission and logistic support.

REFERENCES

- CHORGHE, A. R., L. RASINGAM, P. V. PRASANNA AND M. SANKARA RAO. 2017. Three additions to the flora of Eastern Ghats, *Nelumbo* 59(1): 66–70.
- HETTERCHEID, W. L. A., S. R. YADAV AND K. S. PATIL. 1994. Notes on the genus *Amorphophallus* (Araceae) -5. *Amorphophallus konkanensis*, a new species from India, and taxonomic reflections on *Amorphophallus* section *Rhaphiophallus*. *Blumea* 39: 289–294.
- IUCN STANDARDS AND PETITIONS COMMITTEE 2019: *Guidelines for Using the IUCN Red List Categories and Criteria*. Version 14. Prepared by the Standards and Petitions Committee. Available from: <http://www.iucnredlist.org/documents/RedListGuidelines.pdf> (accessed 7 September 2020).
- JALEEL, V. B., M. SIVADASAN, A. H. ALFARHAN, J. THOMAS AND A. A. ALATAR. 2011. Revision of *Amorphophallus* Blume ex Decne. Sect. *Rhaphiophallus* (Schott) Engl. (Araceae) in India. *Bangladesh Journal of Plant Taxonomy* 18 (1):1–26.
- MAYO, S. J., J. BOGNER AND P. C. BOYCE. 1997. *Amorphophallus*. In: *The genera of Araceae*. Royal Botanic Gardens, Kew, pp. 235–239.
- MUJAFFAR, S., S. MISHRA AND C.M. SOLANKI 2012. *Amorphophallus konkanensis* Hett. Yadav & Patil. A new record from Madhya Pradesh, India. *Science Research Reporter* 2(3): 298–301.
- SASIKALA, K., E. VAJRAVELU AND P. DANIEL. 2019. Araceae. In: Nair, V.J. & P. Singh (Eds.), *Fascicle of Flora of India*, Fascicle 29: 29–63. Botanical Survey of India, Kolkata.