

***TYPHONIUM KHANDWAENSE* (ARACEAE: AREAE), A NEW SPECIES FROM MADHYA PRADESH, INDIA**

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ABSTRACT

Typhonium khandwaense Mujaffar, Yasin & Mustakim, a new species of *Typhonium* from Khandwa district in Madhya Pradesh, India is described and illustrated. The new species resembles *Typhonium roxburghii*, *Typhonium trilobatum* & *Typhonium inopinatum* in its ovate-reniform, hastate or triangular lamina and spathe-limb twisted at tip. But the new species differs from these in having subcylindric tubers, with male zone yellow, sterile flowers filiforms and decurved covering female zone partially.

KEY WORDS: *Typhonium*, Araceae, Khandwa district, Madhya Pradesh, India.

INTRODUCTION

Typhonium Scott (Araceae:Areae) is a genus containing about 60 (44) species (Schott, 1832; Airy & Willis, 1973; Sriboonma & Iwatsuki, 1994; Hay, 1993-1997; Mayo & Boyce, 1997; Hetterscheid & Boyce, 2000; Hetterscheid & Nguyen, 2001; Wang & Bian, 2002 & Dao & Heng, 2007), excluding *Sauromatum* Schott species which was removed from *Typhonium* by Hetterscheid & Boyce (2000). The genus *Typhonium* Schott is generally distributed in South, Southeast and East Asia and extends throughout the pacific area to Australasia. In India the genus is represented by nine species. Of these are *Typhonium listeri* Prain, *T. diversifolium* Wall; *T. bulbiferum* Dalziel; *T. flagelliforme* (Lodd.) Blume; *T. blumei* Nicolson; *T. roxburghii* Schott; *T. trilobatum* (L.) Schott; *T. inopinatum* Prain & *T. gracile* (Roxb.) Schott (Nicolson, 1981; Karthikeyan et al, 1989).

During intensive botanical studies of Flora of East Nimar region Madhya Pradesh, India, the authors collected an interesting specimens from Babri forest at about 5 km. south of Khandwa city. This turned out to be a new species of *Typhonium* of which description, illustration, photographs and distributional details are :

Typhonium khandwaense Mujaffar, Yasin & Mustakim sp. nov. (Figs 1 & 2). *Typhonium roxburghii* et *T. trilobatum* similis in foliis ovatis, reniformibus, hastatis vel triangularibus, spatheae limbo apicaliter torto. A. *T. roxburghii* differt tuberibus subcylindricis, spatheae limbo extus viridi

intus viridulo pallide purpureo 3.5 cm longa, zona foeminea viridula c. 0.5 mm longo, zona sterili lutea c.0.4 mm longa. A. *T. trilobatum* et *T. inopinatum* differt zona mascula lutea, floribus sterilibus filiformibus decurvatis zona foeminea partim tegetibus. Typus. India, Madhya Pradesh, Khandwa district, Babri forest, open wet area, 21°48'53.0" N, 76°21'34.4" E, 318 m, 25 July 2012, S. Mujaffar -4578. Tubers subcylindric, 2-6 cm long. and 1-3 cm in diam, developing several small oblong offsets, with roots 3-10 cm long, c. 1 mm diam. Leaves 2-8; petioles 14-30 cm long, and 0.1-1cm diam. greenish, sheath 3-5 cm long; lamina ovate, varying to hastate, reniform or triangular forms, 5-12 cm long, 5-16 cm broad. Anterior lobes narrowly ovate, acuminate, posterior ones spreading obliquely ovate-oblong. Inflorescence spadix appearing with leaves; peduncle hidden in the soil, smooth, 1-1.5 cm long, 0.3-0.5 mm diam. greenish, shorter than petiole; tube ovate, 1.2-2 cm long ss and 0.5-1 cm broad, greenish. Spathe broadly ovate-lanceolate, 8-10 cm long, 2-3.5 cm broad, limb sgreenish outside, light greenish-purple inside; revolute, purplish marginally, twisted-acuminate at apex. Floral axis shorter than spathe, with greenish stipe c. 0.2 mm long; pistillate flowers at base, sterile ones in the middle, preceded by naked zone and than by staminate flowers towards apex; pistillate zone conical, 0.4 mm x 0.2 mm in daim; naked zone, 0.6 cm long, staminate zone 0.5-1cm long and 0.2-0.3 cm in diam., cylindrical. Pistillate flowers:



Figure 1. *Typhonium khandwaense* Mujaffar, Yasin & Mustakim sp. nov. **1** whole plant with flowering branch; **2**. leaves; **3**. tuber; **4**. open spathe; **5**. remove spathe; **6**. portion of spadix; **7**. lowers part of spadix; **8**. male zone.

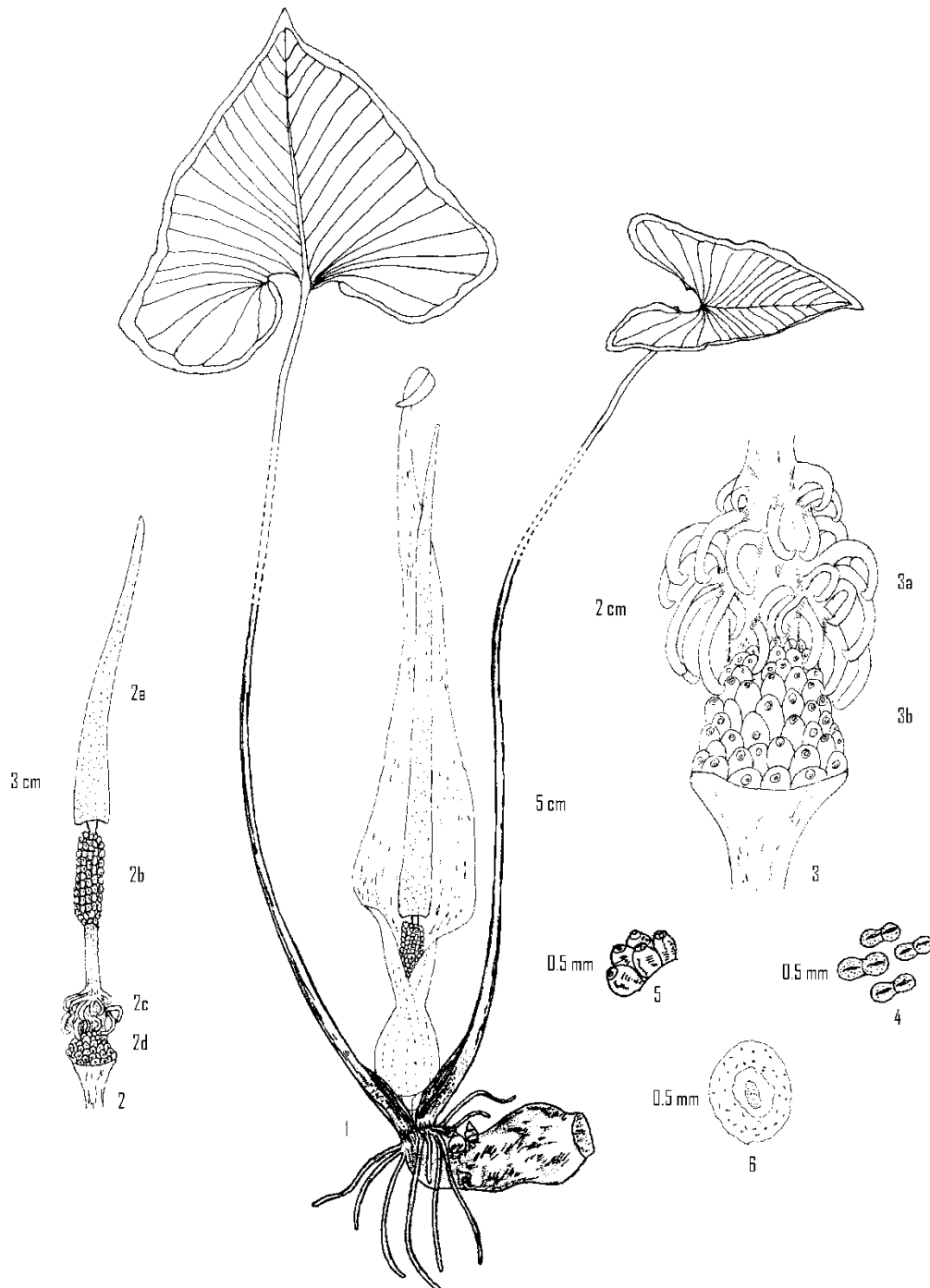


Figure 2. *Typhonium khandwaense* Mujaffar, Yasin & Mustakim sp. nov. 1. whole plant with flowering branch; 2. portion of spadix; 2a. upper appendage; 2b. staminate flowers; 2c. sterile flowers; 2d. pistillate flowers; 3. lower part of spadix; 3a. sterile zone; 3b. female zone; 4. staminate flowers; 5. pistillate flowers; 6. T.S. ovary.

purplish-white; sterile zone ca. 0.3-0.4 mm long; ovary sessile, sub-globose or oblong, greenish, c. 0.2 mm long, 1-locular, 1-ovuled; style very short, cylindrical, stigma sessile, punctate, greenish; sterile flowers 1-4 rows, yellowish, distinctly filiform, 3.5 mm long, flat, decurved, covering

female zone partially. Staminate flowers: yellow, free, sessile, anthers dehiscent by apical pores. Spadix appendix cylindrical, 6.5 cm long, c. 0.2-0.4 mm diam., narrowly conical, light purplish, smooth, base truncate.

Table 1: Diagnostic morphological characters of *Typhonium khandwaense* and related species.

Characters	<i>T. roxburghii</i>	<i>T. trilobatum</i>	<i>T. inopinatum</i>	<i>T. khandwaense sp. nov</i>
Tubers	subglobose or globose	subglobose	subglobose	subcylindric
Spathe-limb	outside purplish mixed with dirty greenish flush inside deep rich purple	outside green, inside dark purple to reddish	outside brownish-purple, inside dark purple	outside green, inside greenish-light purple
Spathe-limb spreading	10 cm wide	10 cm wide	4 cm wide	3.5 cm wide
Female zone	pinkish, 0.5 mm long	pinkish, 1 cm long	pinkish, 0.4-0.5 mm long	greenish, 0.4 mm long
Sterile zone	yellow, 1.5-2.2 cm long	white, 2-3 cm long	pinkish, 0.3 mm long	yellow, 0.3-0.4 mm long
Sterile flowers	papillose, densely covered, curved downward	filiform, densely covered, curved	filiform, partially covered, slightly horizontal or some time with curved, bifurcate tip	filiform, partially covered, decurved

Distribution India

Specimens examined India : Madhya Pradesh: Khandwa district, Babri forest, open wet area, 21°48'53.0" N, 76°21'34.4" E, 318 m, 25 July 2012, S. Mujaffar-4578 (holotypus: CAL!; Isotypi: BSI! and Gujarati Science College, Indore, M.P.).

Habitat: Grows in open wet area and in grassland at altitudes of 318 m in association with *Alternanthera sessilis* (L.) R. Br., *Sida cordifolia* L., and *Oplismenus burmannii* (Retz.) P. Beauv etc.

Conservation status: Known only from Khandwa district in open wet area and grassland. Following IUCN (2001) criteria this taxon should therefore be treated as Data Deficient.

Phenology: Flowering July-September.

Etymology: The specific epithet *khandwaense* indicates the place of collection Khandwa district, a part of Madhya Pradesh.

Typhonium khandwaense resembles *T. roxburghii* Schott, *Typhonium trilobatum* (L.) Schott and *Typhonium inopinatum* Prain in having leaf blade

ovate, reniform, hastate, or triangular and spathe-limb twisted at tip, but differs from *T. roxburghii* by its tubers subcylindric, spathe-limb greenish outside, light greenish-purple inside, 3.5 cm wide; female zone greenish, ca 0.5 mm long and sterile zone yellow, 0.4 mm long. It differs from *T. trilobatum* & *T. inopinatum* in having male zone yellow, sterile flowers filiform and decurved covering female zone partially and tip pointed in *T. khandwaense* (Table 1).

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