



# Rediscovery of *Typhonium inopinatum* (Araceae) from India with notes on the identity of *T. khandwaense*

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## Abstract

*Typhonium inopinatum* Prain is rediscovered after a lapse of 115 years from Gautam Buddha Wildlife Sanctuary in Bihar. As the species is very rare and without sufficient details in any of the Indian Floras, a detailed taxonomic description, photoplates and note on distribution are provided to facilitate easy identification. A lectotype is also designated here. The identity of recently described *T. khandwaense* is deliberated and is reduced to the synonym of *T. inopinatum*.

**Keywords:** new synonym, rare, rediscovery, *Typhonium inopinatum*, *Typhonium khandwaense*

## Introduction

*Typhonium* Schott comprises c. 69 species, distributed in Mongolia to Tropical Asia and Australia (Govaerts *et al.*, 2014). Engler (1920) recognized 23 species in 2 sections while Sriboonma *et al.* (1994) recognized 37 species in 5 sections. The genus is represented by 10 species and 2 varieties in India (Karthikeyan *et al.*, 1989). During recent botanical exploration in Gautam Buddha Wildlife Sanctuary in Bihar, the first author collected specimens of *Typhonium* from Sabalpur in Gaya district. The specimens were identified as *T. inopinatum* Prain, which has been included under *Typhonium* sect. *Typhonium* by Sriboonma *et al.* (1994).

A perusal of the Floras of central, northern and northeastern India (Haines, 1921–1925; Duthie, 1929; Srivastava, 1996; Singh *et al.*, 2001; Vaish, 2001; Saini, 2005; Chowdhery *et al.*, 2009) showed that this species has not been recorded in any of the Floras and the ‘types’ remained as the only representation in Indian herbaria. *T. inopinatum* is rare in India with very restricted distribution. The present collections of the species by the first author in 2012 and 2013 form its rediscovery after a long gap of about 115 years. A specimen collected from Uttar Pradesh in 1898 is available at K.

In the protologue, Prain (King & Prain, 1898) cited a specimen collected by King’s Collector

from Myitkyina, Burma (presently Myanmar). He also had made a detailed note of its occurrence at erstwhile Royal Botanic Garden, Calcutta. Sriboonma *et al.* (1994) mentioned the type of the species as ‘Myanmar, Myitkynia, King’s Collector (CAL)’. The authors failed to trace the above specimen (King’s collector Myitkyina, Myanmar) cited by Prain but could trace collections from the ‘Royal Botanic Garden, Calcutta’ both at CAL and K, which were studied by Prain. All the referred specimens are syntypes and one of them has been designated here as the lectotype.

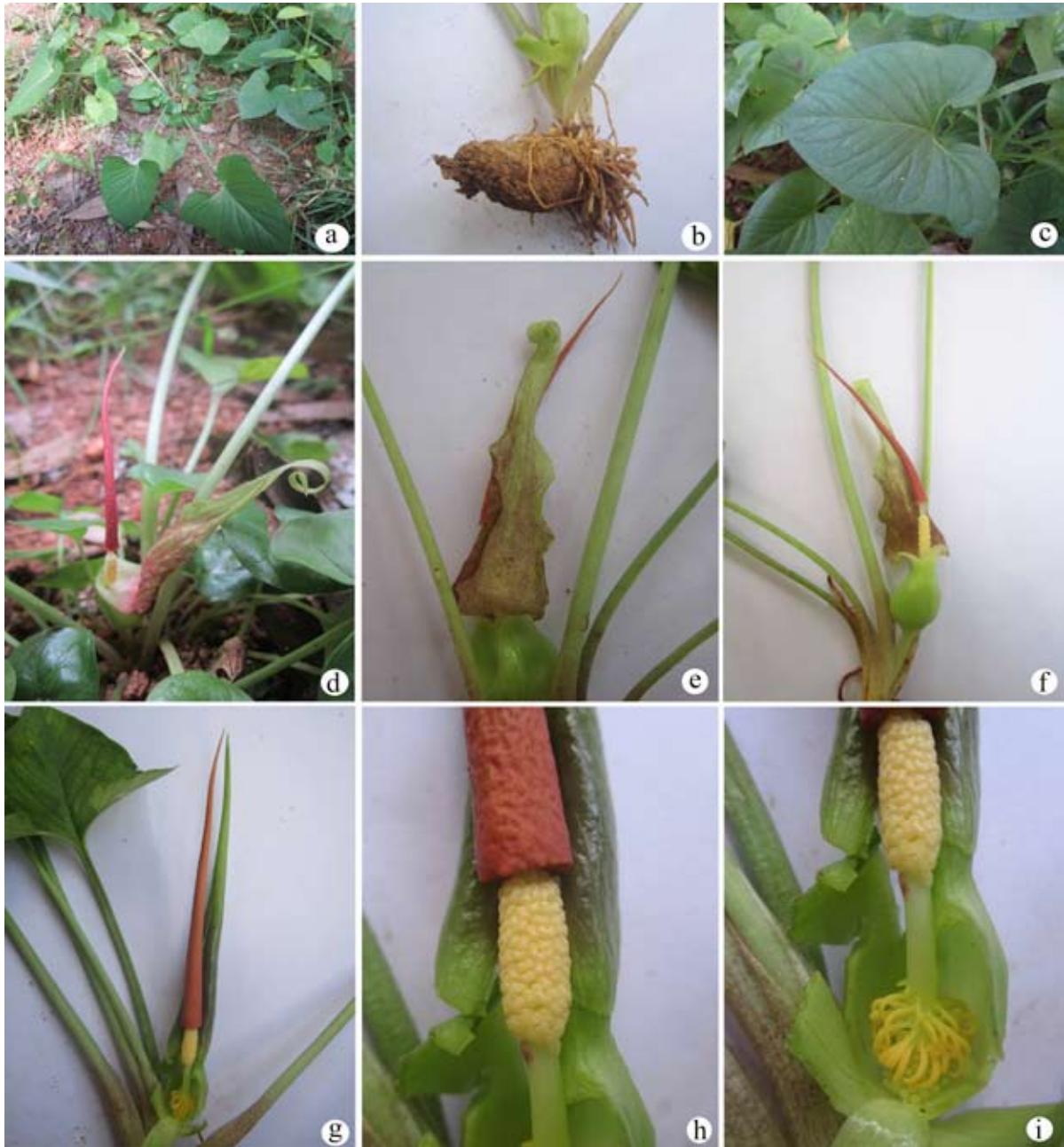
***Typhonium inopinatum*** Prain in King & Prain, J. Asiat. Soc. Bengal Pt. 2. Nat. Hist. 67: 301. 1898 & Bengal Pl. 1107. 1903; Engl., Pflanzenr. 73 (IV. 23F): 116. 1920.

**Lectotype:** INDIA, West Bengal, Royal Botanic Garden, Calcutta, Oct. 1895, D. Prain s.n. (CAL0000001321, CAL!, designated here). **Figs. 1, 2**

*T. inopinatum* var. *trisectum* Engl., Pflanzenr. 73 (IV. 23F): 117. 1920.

*T. khandwaense* Mujaffar, Yasin & Mustakim, Biosci. Disc. 4: 25. 2013, *syn. nov.*

**Type:** INDIA, Madhya Pradesh, Khandwa district, Babri forest, open wet area, 25.07.2013, S.K. Mujaffar 4578 (CAL0000026087, Holotypus, CAL!) **Fig. 2b**



**Fig. 1.** *Typhonium inopinatum* Prain: **a.** Habit; **b.** Tuber; **c.** Leaf; **d.** Plant with inflorescence showing coiled spathe-apex; **e & f.** Inflorescence showing basal tube and apical limb of spathe – abaxial and adaxial view; **g.** Inflorescence with spathe partially removed showing spadix; **h.** A portion of spadix showing staminate zone and base of appendix; **i.** A portion of spadix with pistillate zone, neuteriflorous zone, interstice and staminate zone.

Tuberous perennial herbs, 10–45 cm high; tubers subcylindric, 1–3 × 0.8–1.5 cm. Leaves ovate to triangular or hastate, 5–11 × 4–11 cm; basal lobes orbicular, margin entire, acuminate at apex; secondary veins 6–10 pairs, brochidodromous; petioles 5–30 cm long, tinged with purple streaks and spots at base. Inflorescence solitary, monoecious; peduncles much shorter than

petioles, 1–2 cm long. Spathes with basal globose to ovoid, convolute tube and an apical limb with a constriction between the two, mostly greenish outside; tube 0.8–2 cm long; limb narrowly ovate to lanceolate, 5.5–9 × 1.2–2 cm, margins entire, acuminate, recurved and coiled apically, glabrous, greenish with light purple externally, green with dark purple streaks and spots internally. Spadix



**Fig. 2.** a. Lectotype of *Typhonium inopinatum* Prain; b. Holotype of *T. khandwaense* Mujaffar Yasin & Mustakim

4.3–9 cm long, shorter than spathe limb with a basal pistillate zone followed by a zone of sterile flowers, a naked zone or interstice, a staminate zone and a terminal barren appendix. Both pistillate and sterile flower zones are enclosed by basal tube. Pistillate zone conical, 3–3.5 mm long, greenish; flowers sessile, 1–1.5 mm long; ovary ellipsoid, 1–1.3 mm long, glabrous; style very short; stigma disc-shaped, c. 0.3 mm diam., glabrous. Sterile flower zone yellow, 2–4.5 mm long; sterile flowers filiform, decurved with entire or bifurcated pointed tip, each 2.5–4 mm long, yellow, partially covering pistillate flower zone. Naked zone 6–9 mm long. Staminate zone cylindrical, 5–9 × 2–3 mm, pale yellow; flowers sessile, 0.5–1 mm long with 2 thecae; dehiscence by apical short slits or pores.

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

**Habitat:** *T. inopinatum* was found growing in moist, shady places and open wet sandy soils in association with *Spermacoce articularis* L.f., *Sida acuta* Burm.f. and *Commelina longifolia* Lam., at an altitude of 192 m. About 20 individuals were noticed in the area of occurrence.

**Distribution:** India (Bihar, Madhya Pradesh, Uttar Pradesh, West Bengal), Myanmar and Thailand.

**Specimens examined:** INDIA. **Bihar**, Gaya district, Gautam Buddha Wildlife Sanctuary, Sabalpur, 24°27'13.9" N and 85°08'48.7" E, 192 m, 31.08.2012, Anand Kumar 57100; 18.09.2013, Anand Kumar 57516 (CAL). **Uttar Pradesh**, Bahraich district, 20.06.1898, Harsukh 22849 (K). **West Bengal**, Lower Bengal, Wild in H.B.C., 06.1896, D. Prain s.n.; 16.07.1896, D. Prain s.n.; Hort. Calcutta, wild, 10.1896, D. Prain s.n.; 11.05.1897, Davies s.n.; wild in H.B.C., 25.05.1896, Davies s.n.; Royal Botanic Garden, wild, 25.07.1898, D. Prain s.n. (CAL).

**Notes:** Among the six specimens collected by Prain from the 'Royal Botanic Garden, Calcutta', available at CAL, CAL0000001321 is chosen here as the lectotype for being a whole plant with tuber, mature inflorescence and an annotation by Prain. It was also annotated as 'Typus' by D.H. Nicolson on 19<sup>th</sup> February 1962.

Mujaffar *et al.* (2013) described *T. khandwaense* based on specimens collected by S.K. Mujaffar from

Khandwa district of Madhya Pradesh. Detailed study of the type at CAL and the protologue revealed that it is conspecific to *T. inopinatum* and hence the name is treated here as a synonym of the latter.

The holotype of *T. khandwaense*, though mentioned in the protologue was collected by Mujaffar, but on the label, Shaikh Mustakim has been mentioned as collector. The field number tag affixed on the top left corner of the type indicates that it is a collection of S.K. Mujaffar bearing field number 4578.

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