



TAXONOMIC IDENTITY AND DISTRIBUTIONAL RECORD OF *SYNGONIUM PODOPHYLLUM* SCHOTT., IN NATURALISED CONDITION FROM INDIA

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ABSTRACT

During the floristic expedition of vascular epiphytes in Terai and Duars region of West Bengal, India, many aroid species were collected from wild habitat. All these species are critically examined and identified with the help of various taxonomic literatures and digital herbarium specimen of Kew. Out of that *Syngonium podophyllum* found to be no evidence of occurrence in India from wild habitat or naturalised condition. This is the first distributional record of this species from India in wild condition.

Key Words:

Identification,

New record, Morphology,

Syngonium podophyllum.

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INTRODUCTION

The very first description of *Syngonium* was provided by Linnaeus as *Arum auritum* in *Species Plantarum*, 1753. The specimen *S. podophyllum* was first used and described in series of reviews like *Synopsis Aroidearum complectans*, *Pro-dromus Systematis Aroidearum* etc (Schott 1829, 1851, 1856, 1860). At present all the species are synonymized under *S. podophyllum* except *S. auritum* (syn *S. plumierii*). Schott dealt with 20 taxa of *Syngonium* including *S. podophyllum*. Out of which 9 species at present are synonyms the wide spread genus *S. podophyllum*. The last revision on *Syngonium* was published on *Das Pflanzenreich* with presence of *S. podophyllum* (Engler & Krause 1920). Distributionally the species were reported from North America, South America, Oceania, China, Singapore, Malaysia, Peninsular Malaysia and South Africa (Croat 1981; Space et al, 2000; Wu 2001; Chong et al. 2010; Govaerts 2012; Henderson 2012). *Syngonium podophyllum*- a fast growing vine or hemi epiphytic plant has been extensively introduced as ornamental and decorative plants in tropical and sub-tropical regions of the world. The year of introduction of this species in India is very difficult to determine.

Probable migration is assumed to be from China or Singapore through horticulturist, amateur plant enthusiasts, by seed, by water or by stem segments during mowing and flooding to India (Croat, 1981; Space et al. 2000). Detailed literature studies were done but none of them describes *S. podophyllum* nor of its present synonyms from India (Burmanni, 1768; Hooker, 1875; Prain, 1903). Where there is a mention of *S. podophyllum* from Phuntsholing, Bhutan as a cultivar in nurseries (Noltie, 1994). According to the Plant list it includes 73 scientific plant names of species rank for the genus *Syngonium*. Of these 35 are accepted infraspecific names. Further it includes 22 synonyms under *S. podophyllum*. In India, different studies were performed on cultivars from nurseries like chromosomal analysis (Guha et al. 1987), in vitro mutation studies (A. M. Rajesh, 2009), in vitro micro propagation strategies using axillary shoots as explants (Kalimuthu et al. 2014).

Observation: In India there is no evidence of occurrence of this species in naturalised condition. Some scientist or researcher worked in micro propagation of this species but they did not mention their origin and introduction in India.

They collected materials from the planted plants. So this is the first attempt to report this species from India as naturalised condition. Authors collected this species from wild habitat and described its details morphology.

Morphological Characters

Character	Measurement	Description
Leaves (Young)	Leaves: Lamina length 15-18cm, petiole length: 17-19cm; lamina breadth 3.8-7.4 cm. Internodes 3cm	Young leaves alternate, hastate, green, prominent node and internodes present, clinging root and aerial roots present.
Leaves (mature)	Middle leaflet: lamina length 30-32cm; breadth 11-13cm, petiole length: 25-52cm, Internodes 7-12cm long.	3 – 7 leaflet; at first 3 lobed cordate leaf then 7 lobed pinnatifid leaf sometime 9 lobed, ovate lanceolate, entire sometime wavy, smooth, apex acute, mid leaflet free other united at the base; extreme leaflet smallest and curved, petiole green spongy, soft, ovoid at T.s, nodes having aerial roots.
Inflorescence	Single flower length 15-20cm Peduncle is 10-13cm long Spatheca 10cm long	Inflorescence 4 – 7 in group in descending order, peduncle slender, spathe convolute at base forming compact tubular structure. Spathe apex creamy white from inside and green outside, upper creamy part semicircular in shape.
Flower	Androecium 8 cm, Synandria 0.5cm, Gynoecium 2 cm	Staminate flowers white, synandria 4lobed, conical constricted at base dividing green pistillate flowers.
Fruit	Syncarp 6cm, fruit ca 5cm	Ovoid, red, fruit fleshy, soft, juicy, cup like covering of fruit.
Seed	Ca 0.5 cm	Black ovoid, smooth inside, many seeded.

Morphological Characters: *Syngonium podophyllum* is a fast growing exotic vine which escaped from cultivation areas to natural areas. It has capability to forming dense colonies in both degraded and non degraded forest that engulf native vegetation.

Climbing from the forest floor to top canopies of the mature trees. This species has potential competence to displace the native flora by engulfing or by shading. The white milky latex of this species is mild poisonous to child and pets. This species is dangerous for the destruction of wild habitat of some ferns and others endangered angiospermic plants, ferns like *Asplenium sp.*, *Microsorium sp.*, *Pyrrosia sp.* etc.

Host Species: Favourable host plants of this species are: *Ficus religiosa*, *Areca catechu*, *Albizia chinensis*, *Albizia alebeck*, *chukrasia tabularis*, *Swietenia amahagoni* etc.

Local Distribution: This species has been collected and recorded from the fringe area of Sursuti Reserve Forest, Lataguri; West Bengal. It has also observed and recorded from the roadside trees, Jalpaiguri, Haldibari; trees of different tea gardens of Terai and Duars Kamalpur Tea Estate, Batabari Tea Estate.

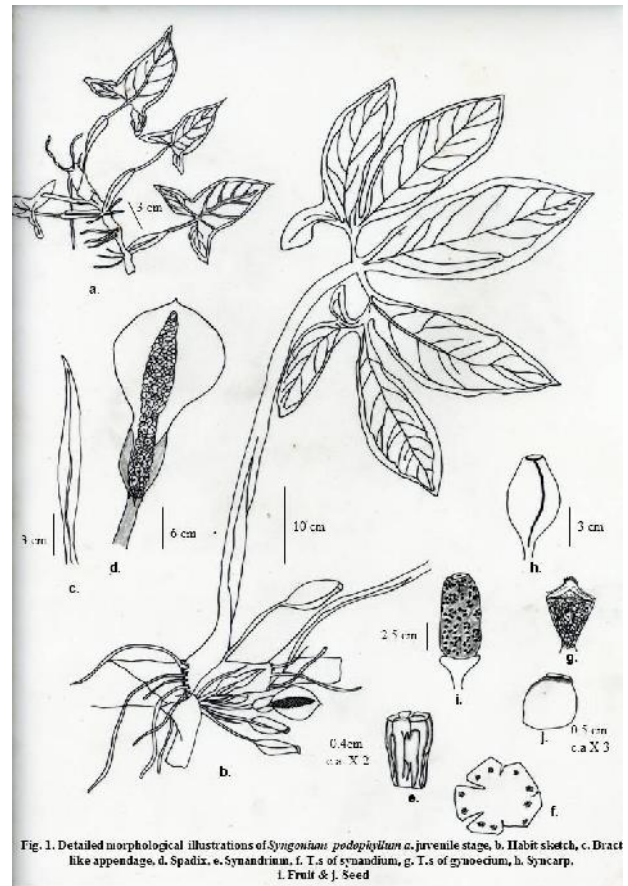


Fig. 1. Detailed morphological illustrations of *Syngonium podophyllum* a. juvenile stage, b. Habit sketch, c. Bract like appendage, d. Spadix, e. Synandrium, f. T.s of synandrium, g. T.s of gynoecium, h. Syncarp, i. Fruit & j. Seed



Fig. 2. A. *Syngonium podophyllum* at Sursuti Reserve Forest, B. Inflorescence, C. Spadix, D. Syncarp, E. Fruit, F. T.s of gynoecium, G. Synandrium, H. T.s of synandrium, I. Seed

Global Distribution: Native to Mexico, Central America (i.e. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama), parts of the Caribbean (i.e. Trinidad and Tobago), tropical South America (i.e. French Guiana, Guyana, Surinam, Venezuela, Brazil) and Tropical Asia (i.e. Malaysia, China, Peninsular Malaysia and Singapore) and now the new distributional record for India.

Conclusion

This species extensively dispersed by its viable seed and mostly stem cutting. We documented and recorded this species as a naturalised invasive plant in India. This species is growing quite aggressively in cultivated as well as in forest areas. Therefore, development of new cultivars will be more feasible for Indian horticulturist. Availability of wild species proofs to be a boon to scientific researchers as it opens up new route to experiments. It has been also recommended that necessary eradication is needed from those areas where it affecting economically important, threatened, endangered species.

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