



**Short communication**

## **Rediscovery of *Amorphophallus margaritifer* (Roxb.) Kunth (Araceae) from Bangladesh**

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Five species of genus *Amorphophallus* (Araceae) are recorded from Bangladesh, namely *Amorphophallus bulbifer* (Roxb.) Bl., *A. longituberous* (Engl.) Engl. & Gehrm., *A. margaritifer* (Roxb.) Kunth, *A. napalensis* (Wall.) Bogn. & Mayo, and *A. paeoniifolius* (Dennst.) Nicholson. Among of the five species, *A. margaritifer* was first collected from Dhaka in 1893 by Sir J.D. Hooker (Siddiqui *et al.* 2007). The species seems to be rare in Bangladesh and recommendations for immediate identification of the habitat preference is needed for undertaking ex-situ and in-situ conservation measures (Siddiqui *et al.* 2007). This paper reports the rediscovery of *A. margaritifer* after more than 120 years from Bangladesh.

On 13<sup>th</sup> June 2009, the second author while watching the grassland bird at Godagari Upazila of Rajshahi district of Bangladesh has photographed an unusual *Amorphophallus* plants with mature spadix (Fig. 1C) which growing in swampy place associated with tall grass. After five years gap, on 27<sup>th</sup> June 2014, the first author was conducted filed visit to explore the plant habitat and he has found five individuals of *Amorphophallus* growing in the same location of Godagari (Fig. 2) beside an agriculture land associated with grass, wild herbs, shrubs and climbers. Among the five single species plants, one plant was at flowering stage and another one just post-flowering with a dried spadix and partially damaged spathe. Remaining individuals were in vegetative stage with lamina in its natural habitat (Fig. 1). One plant was collected to prepare voucher specimen. Later, the pictures and specimen were studied by *Amorphophallus* experts and were identified as *A. margaritifer*. The specimens of the same are deposited at Bangladesh National Herbarium (DABC). The detailed description and illustration of the species based on herbarium material is below.

***Amorphophallus margaritifer* (Roxb.) Kunth, Enum. Pl. 2: 34, 1837.**

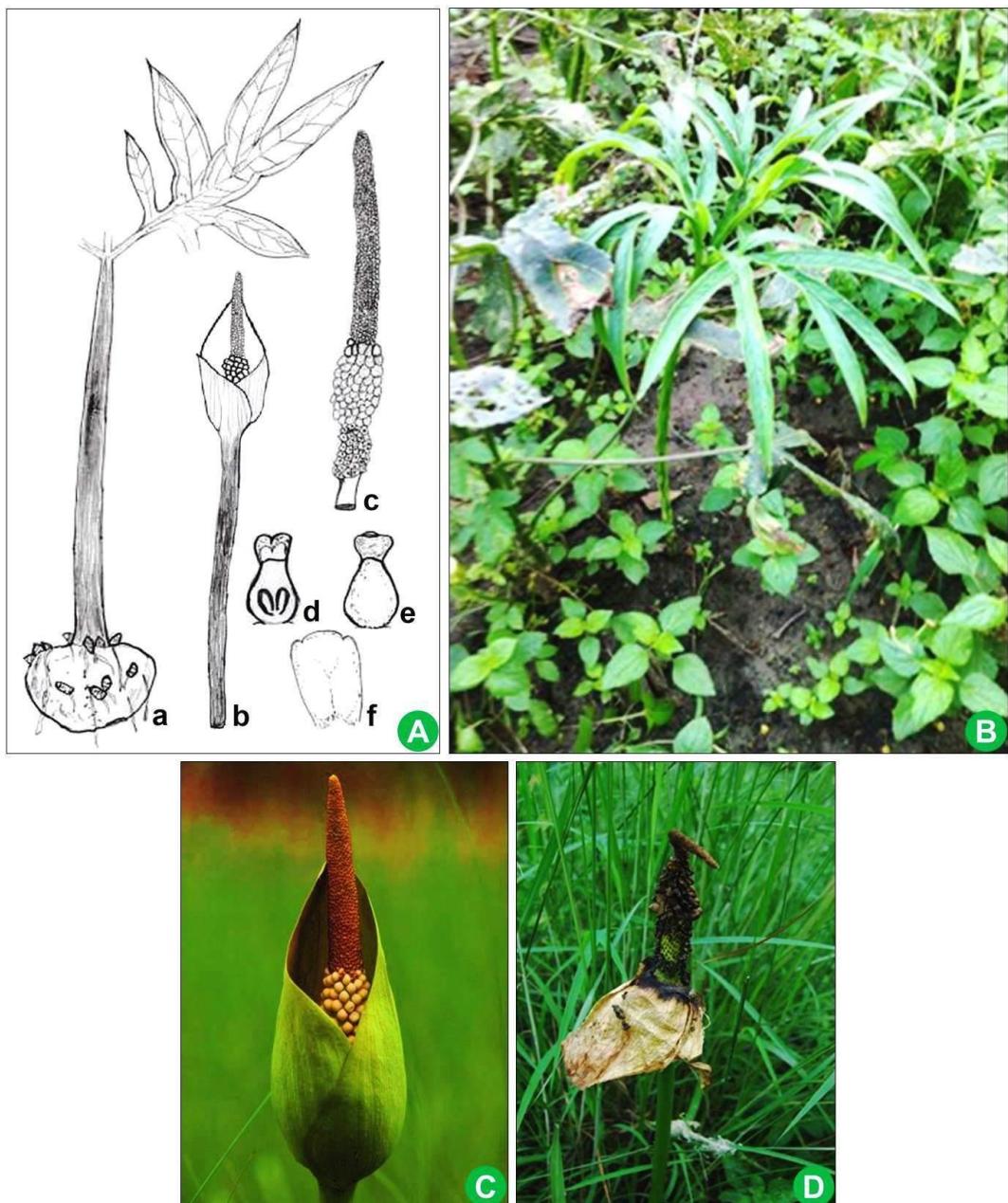
**(Fig. 1)**

Tuber is nearly globose, 3–6 cm diam with roots. Immature offsets present but differ in size and associated with mature tuber, each 4–6 mm diam. and around 8–13 mm long. Skin is muddy pale brown to yellowish brown. Tuber found around 10–20 cm down from the surface substrate soil. Petiole is soft and smooth, 10–40 cm long, green with numerous narrowly elongated black-margined pale green stripes. Lamina is 25–60 cm diam., dark green and smooth. Peduncle is soft, 20–60 cm long, 2–4 cm diam., colour dark green with some brownish spot. Spathe is broadly ovate or broadly triangular, 10–18 cm long, 14–20 cm broad, tip acute, pale greenish outside. Spadix is not fully open if not mature and longer than the spathe at mature stage, 12–20 cm long with, greenish; female zone 1.1–3.0 cm long, 9–18 mm diam.; male zone elongate-conoidal, 6–9 cm long, 1.0–1.5 cm diam. at base. Female flowers: each 5–6 mm high, ovary pale green; style very short, 0.5–1.0 mm long, ca. 1 mm diam., colour as like ovary; stigma yellowish. Male flowers: each 2–3 mm high, 1.4–2.1 mm broad, pale yellow. Terrestrial seasonal herb, survive around 7–8 months only. These characteristics observed both nature and horticulture. Inundation and high precipitation is risk to survive in nature. Over watering is also harmful.

**Flowering & Fruiting:** June to July.

**Specimen Examined:** BANGLADESH, Rajshahi, Godagari, 27.06.2014, M.S. H. Sourav 01 (DABC).

**Habitat:** *Amorphophallus margaritifer* was found in moist and shady places, and mixed with undergrowth and grass vegetation adjacent to agriculture land and associated with wild shrubs (*Ficus hispida*, *Lippia alaba*); herbs (*Alocasia macrorrhizos*, *Amorphophallus paeoniifolius*, *Boerhavia diffusa*, *Chrozophora rotteieri*,



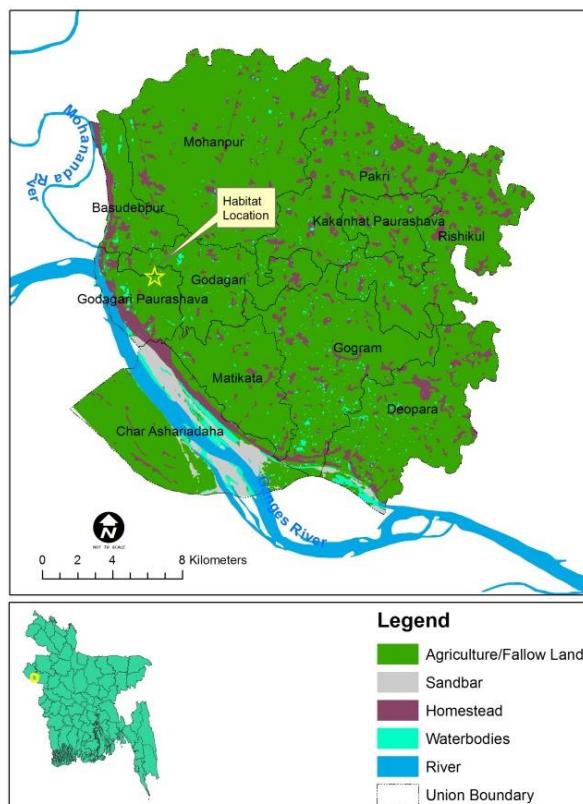
**Figure 1.** *Amorphophallus margaritifer*: **A**, Illustrations (**a**, Tuber with leaf; **b**, A mature peduncle with inflorescence; **c**, Inflorescence showing spadix, spathe removed and male and female flower zone; **d**, Female flower (L.S.); **e**, Single female flower; **f**, Male flower); **B**, A mature peduncle with lamina in natural habitat; **C**, Spadix at mature stage; **D**, Inflorescence showing spadix. (Illustrations by: MSH Sourav; Photographs by: MSH Sourav & Ronald Halder)

*Colocasia esculenta*, *Commelina benghalensis*, *Croton bonplandianus*, *Cyanoglossum* sp., *Cyanotis cristata*, *Cyperus* sp., *Digera muricata*, *Eclipta laba*, *Euphorbia hirta*, *Hedyotis* sp., *Imperata cylindrica*, *Leucas lavandulifolia*, *Lindernia* sp., *Mitracarpus hirtus*, *Parthenium hysterophorus*, *Phyllanthus virgatus*, *Physalis minima*, *Saccharum spontaneum*, *Solanum villosum*, *Uraria picta* etc.) and climbers (*Cayratia trifolia* and *Mikania cordata*). The Godagari Upazila is within the Barind tract, which is mostly higher in altitude compare to other floodplains. These areas are normally free from floods except some lower patches inundated to shallow depth. The soil texture of the higher part is mainly loam, but lower part is clay loam.

**Distribution:** Genus *Amorphophallus* Blume ex Decne. (Araceae) is distributed in tropical Africa, Madagascar, tropical and subtropical Asia, the Malay Archipelago, Melanesia and Australasia (Mayo *et al.* 1997). Perusal of the related literature revealed that the species distribution encompasses Indian states of Maharashtra, Madhya Pradesh, Uttar Pradesh, Rajasthan, Bihar, West Bengal, Sikkim and Assam (Jaleel *et al.* 2011), Myanmar (Govaerts & Frodin 2002) and Dhaka of Bangladesh (Siddiqui *et al.* 2007).

**Uses:** The green and soft peduncle are cooked and eaten as a vegetable, informed by local peoples.

**Population status and conservation measures:** A total of six field visits were conducted in 2014 and 2015 to observe the current habitat and to find more plants on other locations adjacent to its current habitat, but failed to find any plant from newly surveyed location. Local peoples were interviewed to know details of this plant. The people explained that the species was not so much available even in the past and known as locally *Shakrol*. The frequency of occurrence of the species was found to be very low at its current habitat and likely to be very rare in other part of Godagari area. Further exploration is needed to determine the population status of the species within the Barind Tracts. The species was found in a very vulnerable location with a high chance of conversion to agriculture land. Habitat destruction and conversion of land for agriculture are therefore major threats to this species. *In-situ* conservation step has been taken through local people's involvement at its current site. In 2015, one plant was collected for ex situ conservation and to note the plant growth in horticulture.



**Figure 2.** Current habitat location of *Amorphophallus margaritifer* at Godagari, Rajshahi, Bangladesh.

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