

**FLORA  
OF  
BANGLADESH**

**No. 75**

**ARACEAE**

EDITORS

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**And**

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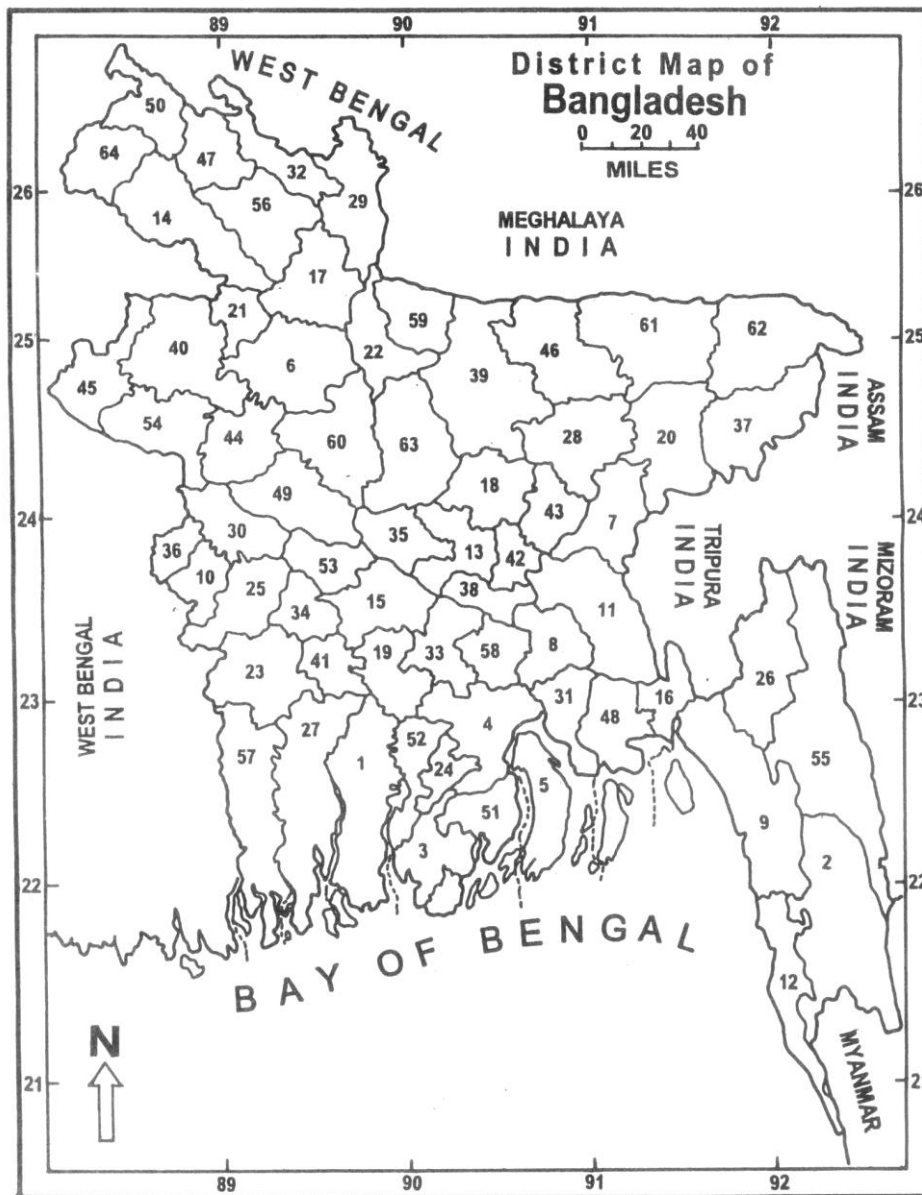
**By**

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MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE  
GOVT. OF THE PEOPLE'S REPUBLIC OF BANGLADESH**



### **List of Districts**

The serial numbers correspond to those given in the map.

1.	Bagerhat	33.	Madaripur
2.	Bandarban	34.	Magura
3.	Barguna	35.	Manikganj
4.	Barishal	36.	Meherpur
5.	Bhola	37.	Maulvibazar
6.	Bogura	38.	Munshiganj
7.	Brahamanbaria	39.	Mymensingh
8.	Chandpur	40.	Naogaon
9.	Chattogram	41.	Narail
10.	Chuadanga	42.	Narayanganj
11.	Cumilla	43.	Narsingdi
12.	Cox's Bazar	44.	Natore
13.	Dhaka	45.	Nawabganj
14.	Dinajpur	46.	Netrakona
15.	Faridpur	47.	Nilphamari
16.	Feni	48.	Noakhali
17.	Gaibandha	49.	Pabna
18.	Gazipur	50.	Panchagarh
19.	Gopalganj	51.	Patuakhali
20.	Habiganj	52.	Pirojpur
21.	Jaipurhat	53.	Rajbari
22.	Jamalpur	54.	Rajshahi
23.	Jashore	55.	Rangamati
24.	Jhalakati	56.	Rangpur
25.	Jhenaidaha	57.	Satkhira
26.	Khagrachhari	58.	Shariatpur
27.	Khulna	59.	Sherpur
28.	Kishoreganj	60.	Sirajganj
29.	Kurigram	61.	Sunamganj
30.	Kushtia	62.	Sylhet
31.	Lakshmipur	63.	Tangail
32.	Lalmonirhat	64.	Thakurgaon

## LIST OF FAMILIES PUBLISHED

	Fl. No.		Fl. No.		Fl. No.
Acoraceae	67	Dilleniaceae	56	Phytolaccaceae	1
Aizoaceae	34	Dipterocarpaceae	25	Plumbaginaceae	42
Alangiaceae	68	Elatinaceae	39	Polemoniaceae	2
Annonaceae	52	Flagellariaceae	3	Pontederiaceae	24
Araceae	75	Fumariaceae	3	Potamogetonaceae	40
Asclepiadaceae	48	Gesneriaceae	65	Punicaceae	22
Averrhoaceae	18	Haloragaceae	8	Rhamnaceae	61
Avicenniaceae	31	Hydrocharitaceae	28	Rhizophoraceae	7
Basellaceae	2	Hydrocotylaceae	44	Ruppiaceae	19
Bignoniaceae	70	Hydrophyllaceae	1	Sabiaceae	62
Bixaceae	35	Juncaceae	29	Salicaceae	20
Bromeliaceae	74	Lamiaceae	58	Sapindaceae	59
Buddlejaceae	13	Linaceae	26	Solanaceae	53
Burmanniaceae	38	Lecythidaceae	60	Sonneratiaceae	12
Burseraceae	36	Loranthaceae	33	Sphenocleaceae	5
Butomaceae	2	Martyniaceae	1	Stemonaceae	41
Cannabidaceae	14	Malvaceae	54	Stylidiaceae	32
Cannaceae	73	Meliaceae	71	Taccaceae	72
Capparaceae	57	Menispermaceae	51	Tiliaceae	64
Caricaceae	1	Menyanthaceae	49	Trapaceae	27
Cassythaceae	43	Molluginaceae	17	Tropaeolaceae	3
Casuarinaceae	1	Moringaceae	2	Turneraceae	3
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## ARACEAE A. L. de Jussieu

### **Hosne Ara<sup>1</sup> and Md. Abul Hassan<sup>2</sup>**

Perennial, slender or robust, usually terrestrial, climbing, sometimes epiphytic or floating aquatic herbs, pachycaul shrubs. Underground stem rhizomatous or tuberous or cormous, aerial stems variously produced or not, often evergreen, bulbils often produced for vegetative reproduction, e.g., on leaf or on special shoots. Leaves alternate or apparently basal, usually petiolate with sheathing bases, often subtended by cataphylls, blade very variable, linear, simple, sometimes peltate or variously compound, perforated, lobed. Inflorescence a spadix of sessile, bractless flowers subtended by a large bract (spathe), terminal or axillary. Spathe commonly with tube-like base and withering or deciduous limb, sometimes only persistent below. Spadix bearing bisexual or unisexual flowers, sometimes with a sterile, terminal appendix, when unisexual, the lower flowers pistillate (female) and the upper flowers staminate (male), sometimes various parts of the spadix naked or covered with sterile flowers, no perianth in unisexual flowers but present in bisexual flowers, tepals 0, 4 or 6, stamens usually 4-6 per flower, filaments free, anthers bilocular, ovary usually 3-loculed or more loculed. In unisexual flowers, male represented by a single stamen or synandria of 2 fused stamens, anthers often subsessile, usually dehiscent by apical pores or slits, female flowers consisting of single ovary, commonly unilocular (sometimes with 3 or 4 locules), ovules 1-numerous in each locule, placentation axile, parietal or central, basal or apical, style short or absent, stigma discoid, globose or lobed. Neuter flowers derived from male or female flowers sometimes present at the apex of the female and/or male section. Fruit usually a head of 1-many seeded berries, commonly red.

The family Araceae consists of about 144 genera and 3645 species (Boyce and Croat, 2011), the vast majority of them tropical or subtropical. In Bangladesh, it is represented by 27 genera, 104 species and 7 varieties.

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**Abbreviations used for the herbaria (other than the recognized acronyms)**

DUSH = Dhaka University Salar Khan Herbarium

HCU = Herbarium of Chittagong University

BCSIRH = Herbarium, Bangladesh Council for Scientific and Industrial Research

BFRIH = Herbarium, Bangladesh Forest Research Institute

JUH = Jahangirnagar University Herbarium

**KEY TO THE GENERA**

- |   |                      |
|---|----------------------|
| 1. Plants free-floating aquatic; leaves rosulate, hairy; flowers unisexual, naked; inflorescence with a single female flower and a few male flowers   | <b>Pistia</b>        |
| - Plants terrestrial or helophytes, climbing hemiepiphytes, epiphytes or lithophytes or other, but never floating   | <b>2</b>             |
| 2. Flowers with obvious perigone of free or fused tepals  | <b>3</b>             |
| - Flowers without perigone of free or fused tepals  | <b>7</b>             |
| 3. Flowers bisexual, spadix uniform in appearance with flowers of only one type   | <b>4</b>             |
| - Flowers unisexual, spadix clearly divided into basal female zone and apical male zone   | <b>Gonatopus</b>     |
| 4. Higher order leaf venation parallel-pinnate; tissues with abundant trichosclereids   | <b>Spathiphyllum</b> |
| - Higher order leaf venation clearly reticulated; tissues without trichosclereids or trichosclereids very few   | <b>5</b>             |
| 5. Stem aerial, not tuberous or rhizomatous, never aculate; plant usually a climbing hemiepiphyte or epiphyte, less often lithophyte or terrestrial, only very rarely helophytic (some spp. of <i>Anthurium</i> ) | <b>6</b>             |
| - Stem typically subterranean, tuberous or rhizomatous, sometimes aerial and creeping or scrambling but then aculeate; plant frequently a helotype  | <b>Lasia</b>         |
| 6. Neotropical plants; seeds with copious endosperm; pollen usually forate, never monosulcate   | <b>Anthurium</b>     |



- Palaeotropical plants; seeds without endosperm; pollen monosulcate or inaperturate **Pothos**
- 7. Flowers bisexual; spadix uniform in appearance with flowers of only one type (sometimes with sterile flowers at spadix base) **8**
- Flowers unisexual; spadix clearly divided into basal female zone and apical or intermediate male zone, flowers very nearly in longitudinal rows (*Spathicarpa*) **11**
- 8. Ovary 1-locular or incompletely 2-locular **9**
- Ovary 2-5 locular. Seeds globose to oblong, 6-22 mm long, the raphe s-shaped; endosperm absent; ovules 2 per locule; leaf blade variously shaped, often perforated or pinnatifid or both **Monstera**
- 9. Ovules anatropous, more than one **10**
- Ovules amphitropous to anatropous, solitary; basal, adult leaf blade entire palaeotropics **Scindapsus**
- 10. Ovules numerous, superposed on 2 (rarely 3) parietal placentas; seeds fusiform, straight, 1.3-3.2 mm long, 0.6-1.0 mm wide **Rhaphidophora**
- Ovules 2-4 (-6) at base of a single intrusive placenta; seeds curved, 3-7 mm long, 1.5-4.0 mm wide **Epipremnum**
- 11. Stamens of each male flower free or only the filaments connate **12**
- Stamens of each male flower entirely connate into a distinct synandrium **19**
- 12. Spadix never entirely enclosed by spathe in a basal "kettle" formed of connate spathe margins (if spathe margins basally connate then plant never aquatic) **13**
- Spadix entirely enclosed by spathe in a basal "kettle" formed of connate spathe margins, plants always helophytic or aquatic **18**

13. Higher order leaf venation parallel-pinnate **14**  
 - Higher order leaf venation reticulate **17**
14. Upper part of spathe persisting as long as lower part; petiole sheath lacking ligule; ovary 1-many thecae dehiscing by subapical pores or longitudinal slits; connective usually conspicuously thickened **15**  
 - Spathe constricted; ovules anatropous to hemianatropous petiole sheath usually not ligulate; upper part of spadix usually sterile **Schismatoglottis**
15. Plant always terrestrial, rarely aquatic, never climbing or epiphytic; inflorescences not secreting resin at anthesis; endothecium with cell wall thickenings; ovary 1 locular or incompletely 2-5 locular; most tropical Asian (except *Homalomena* sect. *Curmeria*) **16**  
 - Plant usually climbing or epiphytic; inflorescences secreting resin from spathe or spadix at anthesis; endothecium nearly always lacking cell wall thickenings; ovary completely 2-many locular, placenta axile to basal; tropical America **Philodendron**
16. Seed without endosperm, embryo large; ovule 1, placenta basal or parietal **Aglaonema**  
 - Seed with copious endosperm, embryo relatively small; ovules several to many, placenta basal, parietal or axile **Homalomena**
17. Leaf blade dracontoid, leaf solitary in each growth period **Amorphophallus**  
 - Leaf blade shape of various types but never dracontoid; usually several leaves present **Typhonium**
18. Female flowers spirally arranged (pseudo-whorl in *Lagenandra nairii*, whorled in *L. gomezii*) an free; spathe tube "kettle" with connate margins occupying entire spathe tube, spathe limb usually opening only slightly by a straight or twisted slit; berries free, opening from base; leaf ptyxis involute **Lagenandra**

- Female flowers in a single whorl, connate; spathe tube kettle occupying only lower part of the spathe tube, remainder also with connate margins (except *Cryptocoryne spiralis*), limb spreading or twisted; berries connate into a syncarp which opens from the apex; leaf ptyxis convolute **Cryptocoryne**
- 19. Laticifers simple **20**
- Laticifers anastomosing **21**
- 20. Synandria connate, thecae of adjacent synandria encircling pits in the spadix, each pit with a somewhat prominent upper margin; leaf peltate; Burma to India **Ariopsis**
- Synandria free; leaf not peltate; Africa, Madagascar or Americas **Dieffenbachia**
- 21. Plants climbing hemiepiphytes, sometimes creeping on ground in submature growth; internodes long; berries connate into a syncarp **Syngonium**
- Plants terrestrial or geophytic, rarely aquatic, not climbing; internodes very short; berries free from each other **22**
- 22. Spadix without an appendix (present in *Hapaline appendiculata*, included here, occasionally absent in *Colocasia esculenta*, excluded here) **23**
- Spadix with an appendix (occasionally absent in *Colocasia esculenta*); palaeotropical plants **26**
- 23. Ovary completely to incompletely 2- to several- locular with deeply intrusive parietal placentas (1-locular with basal placenta in *Jasarum*, *Scaphispatha* and a few species of *Caladium* and *Xanthosoma*); neotropical plants **24**
- Ovary clearly 1-locular, placentas not intrusive; palaeotropical plants **25**
- 24. Spathe tube subglobose, inflated; female zone of spadix free; styles normally discoid (laterally swollen) and coherent (except *Xanthosoma plowmanii*); synandrodies (sterile

- flowers) between male and female flowers well developed,  $\pm$  prismatic **Xanthosoma**
- Spathe tube always convolute; stylar region as broad as ovary (*Caladium paradoxum* has discoid, coherent stylar regions); synandrodes (sterile flowers) between male and female flowers well developed, prismatic; placenta 1-2(-3) parietal; seeds several (rarely 1-2) **Caladium**
  - 25. Female flowers with staminodes; spathe not constricted; stem trunk-like or creeping **Stuednera**
    - Female flowers without staminodes; spathe with 1 or 2 constrictions; stem tuberous, producing erect or spreading stolons bearing small tubercles covered in hooked scales **Remusatia**  - 26. Placentas parietal; ovules many; leaf blade always entire **Colocasia**
    - Placenta basal; ovules few; leaf blade entire or pinnatifid **Alocasia**

**Aglaonema** Schott in Wiener, Kunst 3: 892 (1829).

**Type species:** *A. oblongifolium* Schott, *nom. illeg.*  
 [*Arum integrifolium* Link, *Aglaonema integrifolium* (Link) Schott].

Evergreen herbs, sometimes robust; stem smooth, usually green, epigeal, erect and unbranched or creeping and often branched, internodes green, smooth, often rooting at the nodes. Leaves petiolate, petioles usually equalling or slightly shorter than the leaf blade and petiolar sheaths usually long, forming an apical crown; leaf blade ovate-elliptic, narrowly elliptic, rarely broadly ovate or sublinear, base often unequal, obtuse or cordate or attenuate, apex often apiculate, usually acuminate to acute, sometimes gradually or abruptly acuminate, variegation none or of various patterns, primary lateral veins pinnate, cataphylls usually subtending inflorescence, occasionally subtending petiole. Inflorescence 1-9 in each floral sympodium; peduncle shorter or longer than the petioles, erect, often deflexing in fruit. Spathe ovate, erect, boat-shaped to convolute, not differentiated into tube and limb, often apiculate, green to whitish, slightly to strongly decurrent, marcescent. Spadix cylindrical to clavate, shorter or longer than the spathe, usually stipitate, stipe long to almost absent, female zone few-flowered, contiguous with

and much shorter than the male zone. Flowers unisexual, perigone absent. Pistillate (female) flower zone below, ovary subglobose, 1-locular, ovule-1, anatropous, shortly ovoid, funicle very short, placenta basal, style short and thick, stigma broad and disk-like, concave centrally. Staminate (male) flower zone white to cream coloured, stamen solitary and compact, filaments usually distinct, anthers attached basally, locules dehiscent by an apical pore. Fruit a berry, ellipsoid, outer layer fleshy, at first green, later turning yellow and finally ripening red. Seed ellipsoid, solitary, erect, almost as large as the berry, testa very thin, smooth.

About 21 species are distributed throughout tropical Asia, Malay Archipelago and Papuasia (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 7 species.

#### KEY TO THE SPECIES

- |   |                      |
|---|----------------------|
| 1. Leaf blade variegated  | 2                    |
| - Leaf blade not variegated   | 5                    |
| 2. Leaf blade usually ovate, rarely lanceolate, usually variegated with scattered spots on both sides of the leaf | <b>costatum</b>      |
| - Leaf blade elliptic to narrowly elliptic or narrowly oblong-elliptic to lanceolate with silvery variegation     | 3                    |
| 3. Leaf blade with silvery variegation covering most of the upper surface of each half of the leaf blade          | <b>crispum</b>       |
| - Leaf blade with silvery variegation along the primary lateral veins   | 4                    |
| 4. Spadix shorter than the spathe   | <b>commutatum</b>    |
| - Spadix equalling or slightly exceeding the spathe   | <b>nitidum</b>       |
| 5. Leaf blade lanceolate, rarely narrowly elliptic or ovate to elliptic   | 6                    |
| - Leaf blade narrowly oblong or narrowly oblanceolate   | <b>marantifolium</b> |
| 6. Leaf blade with a central white midrib   | <b>brevispathum</b>  |
| - Leaf blade without a central white midrib   | 7                    |
| 7. Leaf-acumen elongate, over 2.5 cm long from point of 1 cm blade width; peduncle shorter                        | <b>modestum</b>      |
| - Leaf-acumen shorter, less than 2.5 cm long from point of 1 cm blade width; peduncle longer                      | <b>hookerianum</b>   |

**Aglaonema brevispathum** (Engl.) Engl. in Engl., Pflanzenr. 64 (IV. 23Dc): 32 (1915). Gagnep. in Lecomte, Fl. Indo-Chine 6: 1125 (1942); Hu, Dansk Bot. Ark. 23: 423 (1968); Nicolson, Smithsonian Contr. Bot. 1: 19-23 (1969); Boyce *et al.*, Fl. Thailand 11(2): 112 (2012); *Schismatoglottis siamensis* W. Bull, Cat. 1885: 15 (1885); *Homalomena brevispatha* Engl., Bot. Tidsskr. 24: 274 (1902); *Aglaomena hospitum* F.N. Williams, Bull. Herb. Boissier, II, 4: 226 (1904); *A. ridleyanum* Engl. in Engl., Pflanzenr. 64 (IV. 23Dc): 28 (1915); *A. hospitum* var. *obtusatum* Engl. in Engl., Pflanzenr. 64 (IV. 23Dc): 29 (1915); *A. brevispathum* f. *hospitum* (F.N. Williams) Nicolson, Baileya 15: 124 (1968); *A. costatum* var. *viride* sensu Gagnep, Fl. Indo-Chine 6: 1124 (1942) [non Engl. 1915]; *A. costatum* var. *brevispathum* (Engl.) Jervis, Aglaonema: 25 (1980); *A. costatum* f. *obtusatum* (Engl.) Jervis, Aglaonema: 25 (1980). Pl. I.

Bengali: *Bahari Kachu*

An evergreen, small to medium-sized herb; stem repent and often branching, 0.5-1.0 cm thick, internodes 0.3 cm long, very rarely 1.5 cm long. Leaves few together, each subtended by a pale green membranaceous cataphyll, petiolate; petiole 7-33 cm × 0.5-1.6 mm, petiolar sheath very short, c 1 cm long, open; leaf blade lanceolate, rarely narrowly elliptic, 10-24 × 3.9-8.0 cm, base rounded or broadly acute, often unequal, apex usually acute to acuminate, coriaceous, variegation none, in the form of a central white stripe, or in the form of scattered spots on both sides of the leaf, primary lateral veins 4-7 per side, higher order venation striate. Inflorescence solitary; peduncle 5.5-15.5 cm long, usually 1/3 – 3/4 the petiole length, erect. Spathe ovate, spreading at staminate anthesis, then closing, 1.5-3.5 cm long, apex apiculate, base decurrent for 0.5-1.3 cm, white, marcescent late in fruit development. Spadix ellipsoidal, 1.2-2.5 cm long, c 8 mm in diameter, equalling to slightly exceeding spathe, stipitate, stipe 0.2-1.0 cm long; pistillate (female) flower zone 0.2-0.5 cm long, pistils less than 10; staminate (male) flower zone 1-2 cm long, 0.3-0.6 cm in diameter. Fruits ellipsoidal, 1.2-1.7 × 0.5-1.0 cm, ripening deep red. *Fl. & Fr.*: 3-7. *Shady and damp places in forests, at side of streams.*

**Dhaka:** Dhaka University Botanical Garden, 10 iv 2019, *Hosne Ara* HA. 2903 (DACB).

Myanmar, Cambodia, Laos and Vietnam.

This species is widely used for ornamental purposes in public places and homesteads.

**Aglaonema commutatum** Schott, Syn. Aroid.: 123 (1856). Engler, Pflanzenr. 64 (IV. 23 Dc): 27 (1915); Bailey, Manual Cult. Pl.: 182 (1949); Nicolson, Smithsonian Contr. Bot. 1: 49 (1969); Graf, Exotica, edn. 8: 119 (1976); Tropica, edn. 5: 87, 936 (1978-reprint 2003); Jervis, *Aglaonema* Grower's Hand b. 11 (1980); Walters *et al.*, European Gard. Fl. 2 (2): 95 (1984-reprint 2003); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 45 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 5 (1989); Noltie, Fl. Bhutan 3 (1): 131-132 (1994); A. Hay *et al.*, Blumea Supplement 8: 3 (1995); Govaerts & Frodin, World Checkl. Biliog. Araceae: 55 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 21-22 (2007); *Aglaonema oblongifolium* sensu Alston in Trimen, Handb. Fl. Ceylon 6: 296 (1931), *non* Schott (1829). Pl. II.

Neotype: Unpubl. drawing: Schott, Aroideae 38 (W), designated by Nicolson, 1969.

Bengali: *Bahari Kachu*

English: Chinese Evergreen, Philippine Evergreen

An evergreen herb; stem erect, becoming decumbent in older and larger specimens, 20-150 cm tall, 0.5-6.0 cm thick, internodes 0.4-2.5 cm long. Leaves petiolate, petiole 6-25 cm long, sheathing for more than half its length, margins of sheath membranous but occasionally scarious; leaf blade usually narrowly oblong-elliptic to lanceolate, 10-30 × 2.5-12.0 cm, slightly asymmetric, shortly acuminate, base oblique to rounded, silvery variegation along the primary lateral veins, venation differentiated into 4-7 primary lateral veins, texture coriaceous. Inflorescence 1-3 together; peduncle solitary to 3 together, 4-20 cm long. Spathe 3-7 × 2.8-5.0 cm, light green, shorter than the petiole, decurrent for 0.4-1.2 cm. Spadix shorter than spathe, stipitate for 0.4-1.0 cm, completely free from spathe, 2-6 cm long, usually at least 1 cm short of the spathe apex; pistillate (female) flower zone 0.3-1.0 cm long, pistils 10-18; staminate (male) flower zone 1.5-6.0 × 0.4-0.6 cm. Ovary ovoid or subglobose, 1-locular, ovule 1, anatropous, placentation basal, stylar region short, thick, stigma broad, discoid, concave centrally. Fruit turning yellow, then bright red, ellipsoidal to obovoid, 1.5-2.0 × 0.4-1.5 cm. *Fl. & Fr.*: 6-9. *Shady places in forests, near streams.*

**Bandarban:** Udalbunia, Sapchari hill, 20 ix 2004, *Hosne Ara* HA. 1164 (DACB).  
**Chattogram:** CRB and Tigerpass, 04 ix 2016, *Tajul, Wahid & Kawsar* 444 (DACB).  
**Dhaka:** Bangladesh National Herbarium garden (Cultivated), 25 ii 2008, *Hosne Ara* HA. 2731 (DACB) [Originally collected from Bandarban district]. **Moulvibazar:** Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1767 (DACB). **Sherpur:** Samaschura beat, Madhutila Eco Park, 23 vi 2004, *Hosne Ara* HA. 1068 (DACB).

India, the Philippines and northeastern Celebes.

This species is widely grown as an ornamental plant (Nicolson, 1969).

**Aglaonema costatum** N.E. Brown, Gardn. Chron. III: 426 (1892). Hook. f., Fl. Brit. India 6: 531 (1893-reprint 1954); Engl. in Engl., Pflanzenr. 64 (IV. 23 Dc): 17 (1915); Ridley, Fl. Malay Penins. 5: 10 (1925); Bailey, Manual Cult. Pl.: 182 (1949); Birdsey, Cultivat. Aroid.: 15 (1951); Nicolson, Smithsonian Contr. Bot. 1: 23-25 (1969); Graf, Exotica, edn. 8: 114, 118 (1976); Walters *et al.*, European Gard. Fl. 2 (2): 95 (1984-reprint 2003); A. Hay *et al.*, Blumea Supplement 8: 4 (1995); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 400 (1998); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 55 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 22 (2007); Boyce *et al.*, Fl. Thailand 11 (2): 113-114 (2012). Pl. III.

Holotype: England, Hort. Veitch, introduced from Langkawi Island by Curtis n. 2813, 26 March 1892.

Bengali: *Bahari Kachu*

English: Spotted Evergreen

An evergreen herb; stem creeping and branching, 0.6-1.3 cm thick, internodes 0.1-0.5 cm long. Leaves several together, often dense, each subtended by a pale green cataphyll that soon deliquesces, petiolate; petioles 5-19 cm long, petiolar sheaths 1 cm long; leaf blade usually ovate, rarely lanceolate, 9.5-22.0 × 4.7-10.0 cm, base often unequal, sub-cordate to rounded, apex often apiculate, acute to sub-acuminate, occasionally abruptly acuminate, usually variegated with scattered spots on both sides of the leaf and with a white midrib, rarely not variegated, primary lateral veins 7-15 per side, diverging from the midrib, cataphylls 5-8 cm long. Inflorescence solitary; peduncle



3-20 cm long. Spathe ovate, apiculate, 2.5-4.0 cm long, decurrent for 0.5-2.0 cm, stipe 0.2-0.6 cm long. Spadix ellipsoidal to cylindrical, as long as or longer than the spathe; pistillate (female) flower zone 0.2-0.5 cm long, pistils 6-13; staminate (male) flower zone 1.5-3.3 cm long, 0.5-0.8 cm thick. Fruit bluntly ellipsoidal, 1-2 × 0.5-1.0 cm, ripening deep red. *Fl. & Fr.*: 8-10. *Shady places near streams* (Nicolson, 1969).

**Dhaka:** Mirpur Botanical Garden, 02 x 2004, *Hosne Ara* HA. 1438 (DACB); *ibid.*, 11 xii 2013, *Emdadul Hoque Khokan* EHK. 87 (DACB).

Continental Southeast Asia from Langkawi Island to Vietnam.

As an ornamental plant, this species is widely grown both in public places and homesteads.

**Aglaonema crispum** (Pitcher & Manda) Nicolson, *Baileya* 15: 126 (1968). Birdsey, *Cultivat. Aroid.*: 17 (1951); Nicolson, *Smithsonian Contr. Bot.* 1. 54 (1969); Graf, *Exotica*, edn. 8, 119 (1976); *Tropica*, edn. 5: 87, 936 (1978-reprint 2003); Walters *et al.*, *European Gard. Fl.* 2 (2): 95 (1984-reprint 2003); A. Hay *et al.*, *Blumea Supplement* 8: 5 (1995); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 55 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 22-23 (2007); *Schismatoglottis crispa* Pitcher & Manda, *Gen. III. Cat. U.S. Nurseries*: 95 (1892); *Aglaonema roebelinii* Pitcher & Manda, *Pl. Cat. U. S. Nurs.*: 31 (1894); *Schismatoglottis roebelinii* (Pitcher & Manda) Pitcher and Manda, *Gen. III. Guide Pl.*: 141 (1895). *Pl. IV.*

Neotype: Photograph labelled *Schismatoglottis roebelinii* on page 141 of Pitcher and Manda, *General Illustrated Catalogue of Plants* (1895).

Bengali: *Bahari Kachu*

English: Painted Drop-Tongue

A herb; stem erect, 40-120 cm tall, 0.8-3.0 cm thick, internodes about 1 cm long. Leaves petiolate; petiole 8-25 cm long, sheaths 4-18 cm long; leaf blade elliptic to narrowly elliptic, 14-32 × 5-12 cm, base obtuse, sub-rounded or broadly acute, apex acuminate, silvery variegation covering most of the upper surface of each half of the leaf blade, leaving the midrib and marginal areas free, venation rather weakly differentiated into 4-8 primary lateral veins diverging from the midrib, texture coriaceous.

Inflorescence 2-5 together; peduncle 4-14 cm long. Spathe fading from green to yellow, then black, 4-7 × 2.0-2.5 cm, stipe 0.3-1.0 cm long. Spadix 2-3 cm long, 0.7-2.0 cm shorter than the spathe; pistillate (female) flower zone 0.2-0.4 cm long (-1 cm in fruit), pistils 10-17; staminate (male) flower zone 1.6-2.6 cm long, 0.2-0.3 cm thick. Fruits becoming yellow, then red, 1.5-2.0 cm long, 0.9-1.5 cm thick. *Fl. & Fr.*: 6-10. *Damp and well-shaded places*.  $2n = 60$  (Petersen, 1989).

**Dhaka** : Mirpur Botanical Garden, 02 x 2004, *Hosne Ara* HA. 1439 (DACB).

Native to the Philippines (Nicolson, 1969).

The plant is widely used for ornamental purposes in public places and homesteads.

**Aglaonema hookerianum** Schott, *Bonplandia* 7: 30 (1859). Hook. f., *Fl. Brit. India* 6: 529 (1893-reprint 1954); Prain, *Beng. Pl.* 2: 1114 (1903-reprint 2004); Engler, *Pflanzenr.* 64 (IV. 23Dc): 25 (1915); Heing, *List Chittagong*: 75 (1925); Sinclair, *Bull. Bot. Soc. Beng.* 9 (2): 110 (1956); Mitra, *Fl. Pl. E. India* 1: 76 (1958); Hu, *Dansk Bot. Arkiv* 23 (4): 423 (1968); Nicolson, *Smith. Contr. Bot.* 1: 28-29 (1969); Rao and Verma, *Bull. Bot. Surv. India* 18 (1-4): 29 (1976); Deb, *Fl. Tripura State* 2: 395 (1983); Karthikeyan *et al.*, *Fl. India Enum.* in *Fl. India ser.* 4: 5 (1989); Noltie, *Fl. Bhutan* 3(1): 131 (1994); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 55 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 23-24 (2007); *Aglaonema clarkei* Hook. f., *Fl. Brit. India* 6: 529 (1893-reprint 1954); Prain, *Bang. Pl.* 2: 1114 (1903-reprint 2004); Heinig, *List Chittagong*: 74 (1925); Mitra, *Fl. Pl. E. India* 1: 76 (1958); Karthikeyan *et al.*, *Fl. India Enum.* in *Fl. India ser.* 4: 5 (1989). Pl. V.

Type: India, Churra (Cherrapunji), 2000 ft, 15 June (1850), Hooker and Thomson s.n. (holotype: K).

Bengali: *Horina Sak*

A herb; stem erect, 40-50 cm or more tall, 1.5-2.0 cm thick, internodes 1.5-3.0 cm long. Leaves petiolate; petiole up to 24 cm long, sheaths membranous, up to 15 cm long; leaf blade up to 27 × 7-12 cm, ovate to elliptic or lanceolate to narrowly elliptic, base often unequal, rounded, obtuse or broadly acute, rarely acute, apex often apiculate,

acuminate, not variegated, leaf-acumen less than 2.5 cm long from point of 1 cm blade width, venation weakly to strongly differentiated into 7-13 primary lateral veins diverging from the midrib. Inflorescence 1-3 together; peduncle up to 21 cm long. Spathe 3-7 cm long, decurrent for 1.5 cm, stipe absent. Spadix 2.5-4.0 cm long, thin, cylindrical; pistillate (female) flower zone 0.3-0.6 cm long, attached to the spathe, pistils 10-15; staminate (male) flower zone 2.0-3.7 cm long, 0.3-0.6 cm thick. Ovary ovoid, narrowed into the short, stout style, stigma disc-like. Stamens free, filaments very short. Fruit up to 3 cm long and 1.4 cm broad, red. *Fl. & Fr.*: 6-7. *Shady areas in deep forest.*

**Bandarban:** Hatimata para, Ruma, 26 ii 1988, *M.K. Alam* EB 77 (BFRIH); On the way of Betchari, 22 ix 2004, *Hosne Ara* HA. 1218 (DACB); Bolipara, 24 ix 2004, *Hosne Ara* HA. 1356 (DACB); Maurchora, Poly forest range, Ruma, 25 i 2017, *Khandaker Kamrul Islam* KKI. 989 (DACB); Chingiryhiri, Keokradong road, 27 iii 2019, *Khandaker Kamrul Islam* KKI. 3576 (DACB). **Chattogram:** Locality, Collection date & number unknown, *Hooker & Thomson* (K); Locality unknown, 10 vi 1869, *C.B. Clarke* 8266 (K); Locality & Collection number unknown, June 1874, *R.L. Keenan* (K); Hazarikhil, 11 x 1905, *D. Avoper* 25974 (CAL); 02 iv 1998, *Rahman et al.* 2782 (HCU); Chunati Sanctuary, Napora, 30 xii 1989, *Khan, Huq & Alam* K. 8195 (BNH, BFRIH); Dhopachari, Gondamara, Chandanaish, 02 ix 1999, *Boyce, Toha & Rahman* 5538 (HCU, K); Goalmara, Chunati, 09 vi 2001, *Sarder Nasir Uddin* N. 921 (DACB); Hazarikhil forest, 27 ix 2005, *Hosne Ara* HA. 2300 (DACB); Bashkhali coastal area, 06 xii 2016, *Tajul et al.* TOK. 2418 (DACB); Haidgaon, Patia, 26 xii 2017, *Moniruzzaman et al.* MAK. 7053 (DACB). **Chittagong Hill Tracts:** Locality unknown, 28 ii 1879, *J.S. Gamble* 6766 A (K); Locality unknown, March 1980, *J.S. Gamble* 7888 (K). **Cox's Bazar:** Signal Hill & Kalatali, 08 x 1943, *Sinclair* 3263 (E 00075391); Dailyachara, 03 iv 1945, *Sinclair* 4071 (E 00075392); Teknaf, 22 xi 1978, *Alam & Womesley* 3128 (BFRIH); Barachara, Bhangamura, 20 iii 1996, *Rahman & Uddin* 82 (HCU); Kutupalong, 25 xii 1996, *Mia, Rahman & Zashim* M. 3663 (DACB). Teknaf Game Reserve, Whykeon range, Rhykong beat, 29 ix 2005, *Hosne Ara* HA. 2351 (DACB); Himchhari, 30 ix 2005, *Hosne Ara* HA 1524 (DACB). **East Bengal:** Bangladesh, Locality, Collection date & number unknown, *Griffith* 5902 (K). **Khulna:** Sundarban, 29 vi 1973, *A.M. Huq* 976 (DACB). **Moulvibazar:** Adampur beat, Kalengi, 03 v 2003, *Hosne Ara*

HA. 231 (DACB); Kawargola forest, 18 v 2005, *Hosne Ara* HA. 1627 (DACB); Muraichara beat, 19 v 2005, *Hosne Ara* HA. 1670 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1719 (DACB); 06 vii 2005, *Hosne Ara* HA. 1834 (DACB); Madhabkundo, Baralekha, 20 v 2014, *Sarder Nasir Uddin* N. 5243 (DACB); Juri forest, 01 xii 2014, *Hosne Ara* HA. 286 (DACB). **Rangamati** : Burkul, 03 iii 1876, *J.L. Lister* 135 (CAL); Near Burkul, 07 iv 1986, *J.L. Lister* (CAL, K); Pablakhali, 02 iv 1965, *Das* (BFRIH); Barkal, 12 vi 1983, *Huq, Rahman & Mia* H. 5756 (DACB); Kaptai reserve forest, Kamellachara, 12 iv 1986, *M.S. Khan* 7685 (DACB); Kaptai, Kamailyarchari, 26 iv 1988, *M.K. Alam* 6144 (BFRIH); Jamaichari of Sitapahar West, 25 iv 1997, *Khan, Yusuf, Alam & Nasir* K. 9881 (DACB); Kaptai, Sitapahar, 17 viii 1998, *Rahman & Toha* 3283 (HCU); Sitapahar forest, 04 vi 1999, *Huq & Mia* H. 10637 (DACB); Kaptai, Rampahar, 06 ix 1999, *Boyce, Toha & Rahman* 5757 (HCU, K); Kaptai Lake, Shubalong, 10 ix 1999, *Boyce, Toha & Rahman* 5651 (HCU, K); Sitapahar forest, 22 ix 2002, *Sarder Nasir Uddin* N. 1422 (DACB); Rampahar, Kaptai, 02 x 2002, *Sarder Nasir Uddin* N. 1772 (DACB); Sitapahar forest, 08 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 416 (DACB); Farua reserve forest, 16 i 2009, *Sarder Nasir Uddin* N. 3194 (DACB); *ibid*, Bilichari, 17 iv 2009, *Sarder Nasir Uddin* N. 3419 (DACB). Karnafuli Sadar beat, Kaptai, 22 iii 2010, *Sarder Nasir Uddin* N. 4127 (DACB). **Sylhet**: Locality, Collection date & number unknown, *J.D. Hooker & Thomson* (K); Khadim Nagar National Park, 14 iii 2019, *Mahabuba Sultana & Sayedur Rahman* MS. 2707 (DACB).

Northeastern India (Khasia Hills and Cachar) and Myanmar (Arakan). It is grown as an ornamental plant.

**Aglaonema marantifolium** Blume, Rumphia 1: 153 (1837). Engler in Engler, Pflanzenr. 64 (IV. 23 Dc): 26-27 (1915); Nicolson, Smithsonian Contr. Bot. 1: 47-49 (1969); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 56 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 24 (2007); *Calla oblongifolia* Roxburgh, Fl. Ind. 3: 516 (1832); Wight, Icon. Pl. Ind. Or. 3: t. 806 (1844); *Aglaonema oblongifolium* (Roxb.) Kunth, Enum. Pl. 3: 55 (1841), [not Schott, 1829]; *Scindapsus erectus* Presl, Epimel. Bot.: 242 (1851); *Aglaonema novoguineense* Engler, Bot. Jahrb. Syst. 25: 22 (1898). Fig. 1.

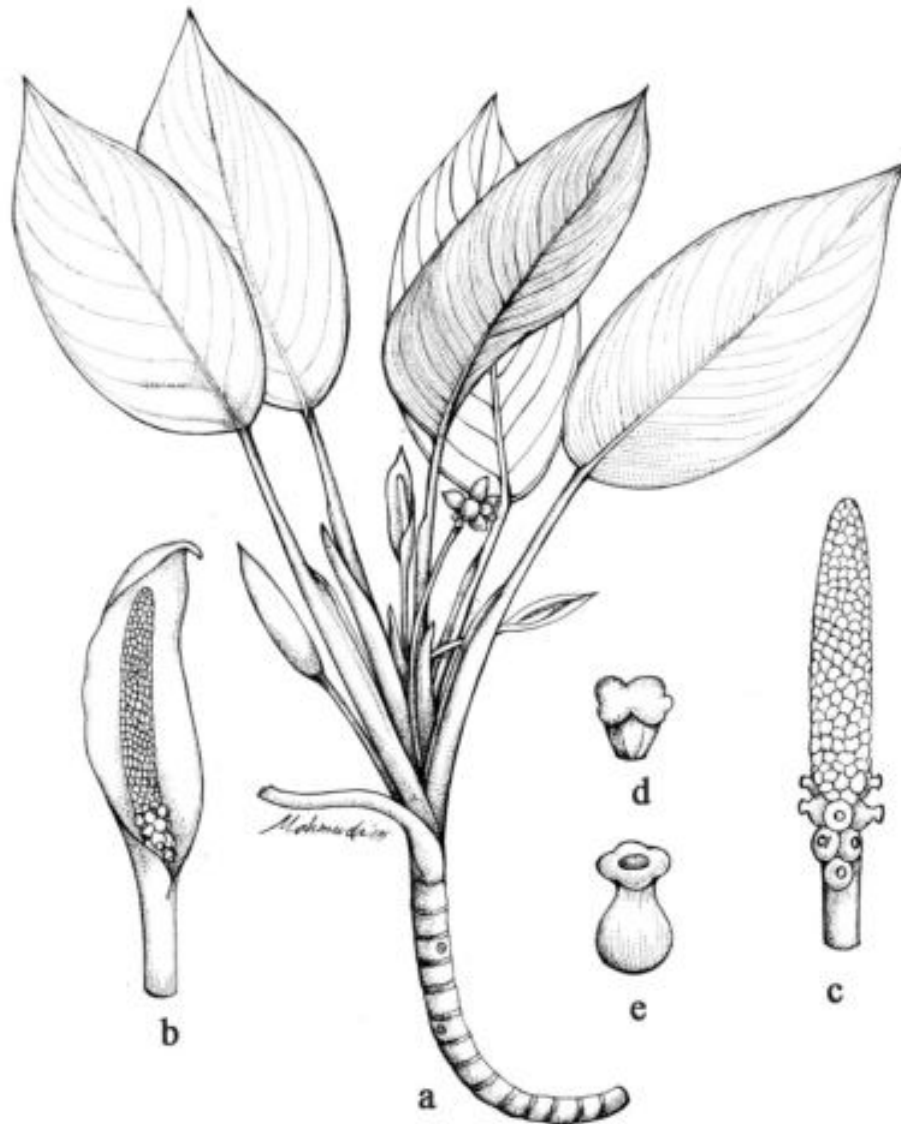


Figure 1. *Aglaonema marantifolium* Blume, a) habit sketch of a flowering plant; b) inflorescence; c) spadix; d) top view of synandrium; e) gynoecium.

Lectotype: Amboina., *Zippel s.n.*- Herb. Leiden.

Bengali: *Ban Kachu*

An evergreen herb; stem erect, 1-3 cm thick, internodes c 2 cm long. Leaves petiolate; petiole 18-25 cm long, sheaths with membranous margins, 11-20 cm long; leaf blade narrowly oblong or narrowly oblanceolate, 22-35 × 7.5-15.0 cm, base obtuse to subrounded, apex acuminate, often apiculate, variegation none, venation undifferentiated to weakly differentiated into 5-8 primary lateral veins diverging from the midrib, texture coriaceous. Inflorescence 2-5 together, rarely solitary; peduncle 10-15 cm long. Spathe green, turning yellow with age, not differentiated into a tube and limb, 4-7 cm long, stipe 0.7-1.5 cm long. Spadix shorter than the spathe; pistillate (female) flower zone 0.2-0.8 cm long, pistils 10-20; staminate (male) flower zone 1.2-2.7 cm long. Ovary subglobose, 1-locular, ovule-1, anatropous, placentation basal, style short, stigma broad, discoid, yellow. Stamens free, filaments usually distinct. Fruits 1.5-3.0 × 0.7-1.7 cm, becoming bright red. *Fl. & Fr.*: Apparently non seasonal. *Shady and damp places in forests as an undergrowth.*

**Mymensingh:** Madhupur forest, 25 v 2000, *Hosne Ara* HA. 45 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 15 iv 2005, *Hosne Ara* HA. 1462 (DACB) [originally collected from Madhupur forest under Mymensingh district].

Moluccas through New Guinea.

This species is widely grown as an ornamental plant.

**Aglaonema modestum** Schott *ex* Engler, Engl. in DC. Monogr. Phan. 2: 442 (1879). Engler, in Engler, Pflanzenr. 64 (IV. 23 Dc): 29-30 (1915); Bailey, Manual Cult. Pl.: 182 (1949); Birdsey, Cultivat. Aroid.: 17 (1951); Nicolson, Smithsonian Contr. Bot. 1: 26-28 (1969); Graf, Exotica, edn. 8: 119 (1976); Tropica, edn. 5: 87, 936 (1978-reprint 2003); Everett, Encyclopedia Horticult. 1: 86 (1980); Walters *et al.*, European Gard. Fl. 2 (2): 95 (1984-reprint 2003); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 56 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 24-25 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 23 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 114-115 (2012); *Aglaonema acutispathum* N.E. Brown, Gard. Chron. 24: 39 (1885); *A. costatum* var. *viride* Engl., in Engl., Pflanzenr. 64 (IV, 23 Dc): 17 (1915); *Aglaonema laoticum* Gangnepain, Notul. Syst. (Paris) 9: 117 (1941). Pl. VI.

Holotype: Philippines, Manila, Guadichaud in Herb. Mus. Paris.

Bengali: *Jongle Kachu*

English: Malayan Sword, Japanese-leaf

An evergreen herb; stem erect to eventually decumbent, 40-70 cm tall, 1.5-2.0 cm in diameter, internodes 0.4-3.0 cm long. Leaves mostly crowded at stem apex, petiolate; petiole 5-24 cm long, green, upper portion flattened, sheaths broad and membranous, 2.5-11.0 cm long; leaf blade entire, ovate to elliptic or lanceolate to narrowly elliptic, 27 × 10 cm, base often unequal, obtuse to rounded, apex gradually long acuminate, over 2.5 cm long from point of 1 cm blade width, variegation none, venation weakly to strongly differentiated into 4-6 primary lateral veins diverging from the midrib. Inflorescence 3 together; peduncle 5.0-12.5 cm long, usually more than half as long as the petiole. Spathe ovate, erect, not differentiated into a tube and limb, convolute at the base, open above, 4.0 × 1.5 cm, green, turning yellow with age, stipe none. Spadix thin-cylindrical, sessile, 1.5-4.3 cm long, shorter than the spathe apex; pistillate (female) flower zone 0.3-1.0 cm long, attached to the spathe, pistils 9-13; staminate (male) flower zone 2.3-3.5 cm long, 0.3-0.6 cm thick, white. Ovary subglobose, 1-locular, ovule 1, anatropous, placentation basal, style short, stigma broad, discoid. Stamens free, filaments usually distinct, anthers dehiscent by a pore. Fruits ellipsoid, 2-3 cm long, 1.0-1.3 cm thick, green, ripening to dark orange. *Fl. & Fr.*: 3-4. *Shady hill slopes adjacent to chhara in deep forests.*

**Moulvibazar:** Adampur forest, Kalengi hill, 16 iv 2004, *Hosne Ara* HA. 717 (DACB); 18 v 2004, *Hosne Ara* HA. 1626 (DACB); 03 vii 2005, *Hosne Ara* HA. 1766 (DACB); *Pavel Partha* 650 (JUH). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 25 ii 2008, *Hosne Ara* HA. 2732 (DACB) [Originally collected from Kawargola forest under Moulvibazar district]. **Rangamati:** Sitapahar forest, 08 i 1995, *Mezanul Hoque* 7360 (BFRIH); Jamaichari, Sitapahar, 25 x 1995, *Mohiuddin & Mezanul Hoque* 7518 (BFRIH); 12 v 1996, *Alam & Mohiuddin* 7616 (BFRIH); Kaptai, Kamailyarchari, 26 iv 1988, *M.K. Alam* 6144 (BFRIH); Chunati reserve range, Goalmara, 28 vi 1997, *Rahman's collector Ullah* 1292 (HCU).

Southern China, northern Laos and northern Thailand.

It is grown as an ornamental plant.

**Aglaonema nitidum** (Jack) Kunth, Enum. Pl. 3: 56 (1841). Schott, Syn. Aroid.: 122-123 (1856) & Prodr. Syst. Aroid.: 302-303 (1860); Engl. in A. DC. & C. DC. Monogr. Phan. 2: 438 (1879); Birdsey, Cultivat. Aroid.: 19 (1951); Nicolson, Smithsonian Contr. Bot. 1: 33-37 (1969); Graf, Exotica edn. 8: 117 (1976); Walters *et al.*, European Gard. Fl. 2 (2): 96 (1984-reprint 2003); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 56 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 25-26 (2007); *Calla nitida* Jack, Malayan Misc. 1 (1): 24 (1820); *Arum interifolium* Link, Enum. Pl. Hort. Regel. Berol.: 394 (1822). Pl. VII.

Type: Malay, Penang, August 1822, Wallich, E. India Co. 8965A (neotype: K).

Bengali: *Ban Kachu*

A herb; stem erect or with lower part reclining on the ground in larger plants, 1 m or more in height, 0.5-5.0 cm thick, internodes 0.5-2.0 cm long. Leaves several to rather many together, petiolate; petioles 8-30 cm long, sheaths with scarious margins, 5-25 cm long; leaf blade narrowly elliptic to narrowly oblong or oblanceolate, 15-50 × 7-16 cm, base acute to attenuate, rarely broadly acute, apex often apiculate, acuminate to broadly acute or shortly acuminate, silvery variegation along the primary lateral veins, venation usually undifferentiated in dry material but sometimes weakly differentiated into 5-9 or more primary veins diverging from the midrib at an angle of 35-55°, texture coriaceous. Inflorescence rarely solitary, 2-5 together; peduncle 5-20 cm long, commonly equalling or surpassing the subtending petiole. Spathe oblong, light green but frequently turning white with age, eventually withering, 3-8 cm long, stipe 0.2-0.9 cm long. Spadix cylindrical, equalling or slightly exceeding the spathe, 1-7 cm long; pistillate (female) flower zone 0.2-1.0 cm long (-2 cm in fruit), pistils 16-37, scattered at anthesis; staminate (male) flower zone 1-6 cm long, 1.5 cm thick. Stigma yellowish, up to 0.3 cm broad, the style weakly constricted. Fruits ellipsoid, green, changing to white then pink and finally red. *Fl. & Fr.*: Non seasonal. *Damp and well-shaded places*. 2n = 40 (Petersen, 1989).

**Dhaka:** Banani area, 04 x 2004, *Hosne Ara* HA. 1449 (DACB).

Southern Myanmar, Malaysia, Indonesia and southwestern Thailand.

As an ornamental plant, it is commonly grown both in public places and homesteads.



**Alocasia** (Schott) G. Don in Sweet,Hort. Brit.: 631 (ed. 3, 1939) *nom. cons.***Type species:** *A. cucullata* (Loureiro) G. Don

Medium-sized to rarely arborescent and gigantic, perennial evergreen or very rarely seasonally dormant herbs; stem thick, often hypogeal, sometimes stoloniferous and tuberiferous, when epigeal then stem usually erect, with short internodes, rarely elongated and creeping, with milky latex. Leaves few to several in the terminal crown, rarely solitary, sometimes each leaf subtended by a cataphyll; petiole long, sheathing below, sheath persistent, sometimes deciduous; leaf blade variable, usually cordate-sagittate at the base, glabrous, margin entire, sometimes peltate, venation pinnately reticulate, the secondary veins are arching and form collective veins parallel to and in between the primary veins, higher order venation reticulate. Inflorescence 2-many in each floral sympodium, appearing with the leaves; peduncle usually shorter than the petiole, erect, occasionally declinate at fruiting. Spathe strongly constricted between the tube and the limb, tube with convolute margins, shorter than limb, ovoid or oblong, persistent and then splitting irregularly in fruit, spathe limb oblong, usually boat-shaped, rarely hooded, at anthesis at first erect, then reflexing and later usually deciduous. Spadix sessile, sometimes shortly stipitate, shorter than the spathe, divided into a basal pistillate (female) flower zone, a short sterile portion, a staminate (male) flower zone and a terminal sterile smooth or roughened, conoid to cylindrical appendix. Flowers unisexual, perigone absent. Female (pistillate) flowers with ovoid or oblong ovary, unilocular or partially 3-4 locular at the apex, ovules few, orthotropous, placentation basal, style very short or absent, stigma depressed-capitate, distinctly 3-4 lobed. Male (staminate) flower 3-12 androus, stamens united into an obpyramidal, subhexagonal, truncate synandrium, anthers dehiscing by apical pore. Sterile male flowers synandrodia, shallow, obpyramidal, compressed, truncate. Fruit a berry, orange to red, ellipsoid or obconic-ellipsoid or subglobose, 1-5 seeded. Seed subglobose to ellipsoid, testa thick, smooth or scabrous.

About 60-70 species are distributed throughout tropical Asia, Australasia, Malay Archipelago and Melanesia (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 13 species.

**KEY TO THE SPECIES**

- |     |   |                       |
|-----|---|-----------------------|
| 1.  | Leaf blade deeply pinnatifid or sub-pinnatifid  | <b>2</b>              |
| -   | Leaf blade simple, not pinnatifid or not sub-pinnatifid   | <b>3</b>              |
| 2.  | Upper surface of leaf blade deep glossy green and lower surface purple                          | <b>sanderiana</b>     |
| -   | Upper and lower surfaces of leaf blade dark bright green  | <b>portei</b>         |
| 3.  | Leaf blade very shortly peltate or not peltate  | <b>4</b>              |
| -   | Leaf blade distinctly peltate   | <b>6</b>              |
| 4.  | Tuber edible, leaf blade not peltate  | <b>macrorrhizos</b>   |
| -   | Tuber not edible, leaf blade very shortly Peltate   | <b>5</b>              |
| 5.  | Leaves small, pointed, deep green with prominent veins  | <b>cucullata</b>      |
| -   | Leaves large with deeply depressed veins, dark metallic and shining green, lower surface purple | <b>cuprea</b>         |
| 6.  | Apical lobe of the leaves with 3-4 pairs of lateral nerves                                      | <b>navicularis</b>    |
| -   | Apical lobe of the leaves with 5-9 pairs of lateral nerves                                      | <b>7</b>              |
| 7.  | Leaf blade broadly ovate  | <b>odora</b>          |
| -   | Leaf blade not broadly ovate  | <b>8</b>              |
| 8.  | Style short, not stout  | <b>9</b>              |
| -   | Style distinct, stout   | <b>10</b>             |
| 9.  | Leaf blade elongate-rhombic, caudate-acuminate  | <b>acuminata</b>      |
| -   | Leaf blade oblong-sagittate   | <b>decipiens</b>      |
| 10. | Tip of the cataphylls pointed   | <b>11</b>             |
| -   | Tip of the cataphylls not pointed   | <b>12</b>             |
| 11. | Sterile male zone present above the sterile interstice  | <b>fallax</b>         |
| -   | Sterile male zone absent above the sterile interstice   | <b>hararganjensis</b> |
| 12. | Petiole and peduncle dark purple, inflorescence in groups of up to 3                            | <b>salarkhanii</b>    |
| -   | Petiole and peduncle green, inflorescence in groups of up to 25 (usually 12)                    | <b>fornicata</b>      |

**Alocasia acuminata** Schott, Bonplandia 7(3): 28 (1859). Prodr. Syst. Aroid.: 154 (1860); Hook. f., Fl. Brit. India 6: 527 (1893-reprint 1954); Prain, Beng. Pl. 2: 1111 (1903-reprint 2004); Krause in Engler Pflanzenr. 71 (IV. 23E): 94-95 (1920); Heinig, List Chittagong: 74 (1925); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 110 (1956); Mitra, Fl. Pl. E. India 1: 79 (1958); Deb, Fl. Tripura State 2: 396 (1983); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 5 (1989); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 26-27 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 79 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 120-121 (2012). Pl. VIII.

Type: Chittagong (Hooker f. *et* Thomson-Herb. Kew); Saluan River (Wallich n. 8946-Herb. Kew).

Bengali: *Bannyo Kachu*

An evergreen herb; stem stout, rhizomatous, generally elongate, later decumbent, erect, 8-75 cm long, 2.5-6.0 cm in diameter, older parts covered with remains of old leaf bases and cataphylls. Leaves c 5-8 together, subtended by conspicuous lanceolate papery-membranous cataphylls; petioles 15-80 cm long, glabrous, bright green; leaf blade simple, 20-50 cm long, 8-20 cm in diameter, membranous, distinctly peltate, elongate-rhombic, caudate-acuminate, contracted opposite the basal lobes which are half as long as the anticus and connate for three-fourths of their length, apical lobe with 5-9 pairs of lateral nerves, sinus narrow. Inflorescence paired at the leaf bases; peduncle shorter than the petiole, green, 9-20 cm long, subtended by cataphylls. Spathe 12-16 cm long, moderately constricted between the tube and the limb, tube shorter than the limb, ovoid, green, 3.0-4.5 cm long, persistent, limb 9.0-11.5 cm long, lanceolate, canoe-shaped, whitish or pale green. Spadix subequaling the spathe, 10-12 cm long, sessile; pistillate (female) flower zone 1.0-1.5 cm long, 1.1 cm in diameter; sterile interstice 3.5 cm long, 0.5 cm in diameter, whitish; staminate (male) flower zone 2.5 cm long, 0.9 cm in diameter, subcylindrical, narrowed at the base and apex, ivory white, the base corresponding with the spathe constriction; appendix narrow conical, 2.5-5.0 cm long, whitish, demarcated from male zone by a strong constriction, pointed. Ovary pale green, subglobose 1.5-2.0 mm diameter, style short, not stout, stigma capitate and very slightly 3-lobed, white, placentation basal. Synandria rhombo-hexagonal, c 0.1 cm in diameter.

Fruiting spathe ovoid, c 3-4 cm long, green. Fruit a berry, c 0.75 cm diameter, green, ripening orange-red. Seed subglobose. *Fl. & Fr.*: 5-8. *Shady moist hill slopes*.  $2n = 28$  (Petersen, 1989).

**Bagerhat:** Kachua, 17 ii 1986, *Huq & Mia* H. 7404 (DACB). **Bandarban:** On the way of Betchari, 22 ix 2004, *Hosne Ara* HA. 1217 (DACB). **Bogura:** Beltola, 06 ii 2003, *Hosne Ara & Rezia Khatun* HA. 143 (DACB). **Barishal:** East Narayanpur and Dostani village, 22 ii 2008, *Hosne Ara* HA. 2666 (DACB); Kashipur, Lakaotta, 23 ii 2008, *Hosne Ara* HA. 2684, 2685, 2686, 2687 (DACB). **Chattogram:** Sitakunda, 10 i 1851, Collection number unknown, *Hooker & Thomson* (K); Chunati Reserve Range, 27 iii 1998, *Rahman, Wilcock and others* 2579 (HCU); Dhopachari, Chamachari, 04 vi 1998, *Rahman et al.* 3065 (HCU); Dhopachari, Chandanaish, Gondamara, 02 ix 1999, *Boyce, Toha & Rahman* 5539 and 5541 (HCU, K); Kalapanichara, Hajarikhil, Fatikchhari, 22 v 2017, *Tajul et al.* TAK. 5072 (DACB). **Cox's Bazar:** Panerchara, Tulabagan, 30 iii 1998, *Rahman & Toha* 2716 (HCU); Teknaf, Whykeong, 29 iii 1998, *Rahman, Wilcock and others* 2636 (HCU); 11 ix 1999, *Boyce, Toha & Rahman* 5880 (HCU, K); Teknaf Game Reserve, Whykon Range, Rhykong beat, 29 ix 2005, *Hosne Ara* HA. 2354 (DACB); Upper Rezu range, 29 ix 2005, *Hosne Ara* HA. 2405 (DACB). **Dhaka:** Keraniganj, 17 i 1978, *Huq & Rahman* H. 3752 (DACB); Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1917 (DACB). **Faridpur:** Bagat, Magura-Faridpur road, 06 i 1976, *Huq, Rahman & Mia* H. 2033 (DACB); Faridpur-Goalanda, on the way, 08 i 1976, *Huq, Rahman & Mia* H. 2119 (DACB). **Habiganj:** Satchari, 17 v 2005, *Hosne Ara* HA. 1574 (DACB). **Kushtia:** Munshiganj, 11 vi 1974, *Khan & Huq* K. 3935 (DACB); Munshiganj thana, on way to Mominpur, 25 ix 1978, *Khan & Huq* K. 5070 (DACB). **Moulvibazar:** Madhabkundo, 05 vi 1998, *Hosne Ara* HA. 37 (DACB); Lawachara National Park, 12 v 2009, *Sarder Nasir Uddin* N. 3634 (DACB); Madhabkundo, 05 vii 2002, *Hosne Ara & Sarder Nasir Uddin* HA. 88 (DACB); Kulaura, Gazipur beat, Hararganj reserve forest, 06 vii 2002, *Hosne Ara* HA. 93 (DACB); Lawachara reserve forest, 02 v 2003, *Hosne Ara* HA. 208 (DACB); 15 v 2005, *Hosne Ara* HA. 1466 (DACB); Adampur beat, Kawargola forest, 18 v 2005, *Hosne Ara* HA. 1621 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1706 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1780 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1823 (DACB); Satchari forest area, 07 vii 2005, *Hosne Ara*

HA. 1865 (DACB); Muraichara beat, Ichachara forest, 07 v 2010, *Hosne Ara* HA. 2754 (DACB); Madhabkundo, 03 xii 2014, *Hosne Ara* HA. 2871 (DACB); Madhabkundo, Baralekha, 20 v 2014, *Sarder Nasir Uddin* N. 5244 (DACB). **Mymensingh:** Nogua, 13 i 1979, *Mahbuba Halim* 352 (DACB). **Narayanganj:** Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1917 (DACB). **Noakhali:** Momarijpur (P.S. Dagonbhuia), 18 xi 1981, *Huq, Rahman, Halim & Begum* H. 5264 (DACB); Sadar, Ram Sankar Gopai, 13 i 1992, *Akram Hossain* 231 (BFRIH). **Patuakhali:** Kalapara, Baliatoli, 01 ix 2007, *M. Sultana* 1630 (DUSH); Galachipa, Noluabaghi 11 xii 2008, *M. Sultana* 1720 (DUSH). **Rangamati:** Kaptai, Sitapahar, 27 vi 1998, *Rahman, Toha* 3232 (HCU); Sitapahar forest, Kaptai, 04 vi 1999, *Huq & Mia* H. 10638 (DACB); Kaptai Lake, Pablakhali, 04 ix 1999, *Boyce, Toha & Rahman* 5645 (HCU & K); Kaptai, Rampahar, 06 ix 1999, *Boyce, Toha & Rahman* 5756 (HCU & K); Kaptai, Shapchari, Sita Pahar, 17 vi 2001, *Sarder Nasir Uddin* N. 1030 (DACB); Opposite to the forest office, Kaptai, 17 vi 2001, *Sarder Nasir Uddin* N. 1045 (DACB). **Sherpur:** Rangtia range, Gazni beat, 09 x 2003, *Hosne Ara* HA. 640 (DACB). **Tangail:** Madhupur forest area, 20 ix 1980, *Mia, Huq & Rahman* M. 424 (DACB); Modupur, Rasulpur, 06 x 2003, *Hosne Ara* HA. 543, 544 (DACB).

Northeastern India, Myanmar, Nepal, Laos and northern Thailand.

**Alocasia cucullata** (Lour.) G. Don in Sweet, Hort. Brit. ed. 3: 631 (1839) ('*cucullatum*'). Schott, Syn. Aroid.: 48 (1856); Prodr. Syst. Aroid.: 155-158 (1860); Hook. f., Fl. Brit. India 6: 525 (1893-reprint 1954); Prain, Beng. Pl. 2: 1111 (1903-reprint 2004); Krause in Engler Pflanzenr. 71 (IV. 23E): 77 (1920); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 100 (1953); Mitra, Fl. Pl. E. India 1: 79 (1958); Hu, Dansk Bot. Arkiv 23 (4): 430-432 (1968); Hotta, Mem. Fac. Sci. Kyoto Imp. Univ., Ser. Biol. 4: 94 (1970); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 27-28 (1976); Graf, Exotica, edn. 8: 127 (1976); Graf, Tropica, edn. 5: 88, 937 (1978-reprint 2003); Nicolson, Fl. Vitiensis Nova 1: 454-455 (1979); Deb, Fl. Tripura State 2: 396 (1983); Walters *et al.*, European Gard. Fl. 2 (2): 101 (1984-reprint 2003); Burnett, Aroideana 7 (3 & 4): 112-113 (1984); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 56 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 5 (1989); A. Hay *et al.*, Blumea Supplement 8: 13 (1995); Liu & Huang, Fl. Taiwan: 799 (1996); Govaerts & Frodin, World Checkl. Bibliog.

Araceae: 65 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 27-28 (2007); Heng & Boyce in Heng *et al.*, *Fl. China* 23: 78 (2010); Boyce *et al.*, *Fl. Thailand* 11 (2): 121-122 (2012); *Arum cucullatum* Lour., *Fl. Cochinch* 2: 536 (1790); ed Willd., 656 (1793); Roxb., *Fl. Ind.* 3: 501 (1832); Wight, *Icon. Pl. Ind. Or.* 3: 6, t. 787 (1844); *Caladium cucullatum* (Lour.) Pers., *Syn. Pl.* 2: 575 (1807); *Colocasia cucullata* (Lour.) Schott in Schott & Endl., *Melet. Bot.*: 18 (1832). Fig. 2 & Pl. IX.

Type: Canton, China, specimens unknown but to be sought at BM and P.

Bengali: *Bish kachu*

English: Chinese Taro, Chinese Ape, Buddha's Hand,  
Hooded Dwarf Elephant Ear

An evergreen herb; erect, above-ground stem distinct, stout, 50-80 × 5-15 cm, basally much branched, base with many stolons. Leaves many; petioles up to 75 cm long, sheathing for 30 cm, green; leaf blade small, simple, pointed, broadly ovate-cordate, 10-40 × 7-28 cm, sub-leathery, apex acute, base shallowly cordate, very shortly peltate (fused for 1-2 cm), about as long as broad, posterior lobes very short, deep green with prominent veins, primary veins 4 on each side, radiating from the petiole, arching. Inflorescences rarely produced, usually solitary, sometimes paired, axillary, subtended by membranous cataphylls; peduncle up to 35 cm long. Spathe 9-15 cm long, green, the lower spathe 5-6 cm darker, limb narrowly cymbiform, 5-10 × 3-5 cm, margins convolute. Spadix 8-14 cm long; pistillate (female) flower zone cylindrical, 1.5-2.5 cm × c 7 mm; sterile zone 2-3 cm × c 3 mm; staminate (male) flower zone c 3.4 cm × 8.0 mm, yellow; appendix narrowly conic, c 3.5 cm × 5 mm, yellowish. Fruit a berry, rarely produced, subglobose, 6-8 mm in diameter, 1-seeded, ripening red. *Fl. & Fr.*: 5-7. *Shady and damp places in the forests and village thickets.* 2n = 28 (Petersen, 1989).

**Bandarban:** Lama Upazila, Shabitchari, 19 xii 1990, *Mia, Rahman & Mahfuz* M. 2617 (DACB). **Chattogram:** Fatiqchari, 27 ix 2005, *Hosne Ara* HA. 2312 (DACB). **Cox's Bazar:** Himchari, 30 ix 2005, *Hosne Ara* HA. 2525 (DACB). **Dhaka:** BNH Office, Originally collected from Kishoreganj district, 15 v 1981, *Mahbuba Halim* 930 (DACB). **Kishoreganj:** Kishoreganj to Mohilontho, 13 i 1979, *Mahbuba Halim* 334 (DACB). **Khagrachari:** Jamtoli, 12 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 485 (DACB). **Moulvibazar:** Adampur, 05 ii 1979, *A.M. Huq* 4242 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1745 (DACB); 07 ix 2005, *Hosne Ara*

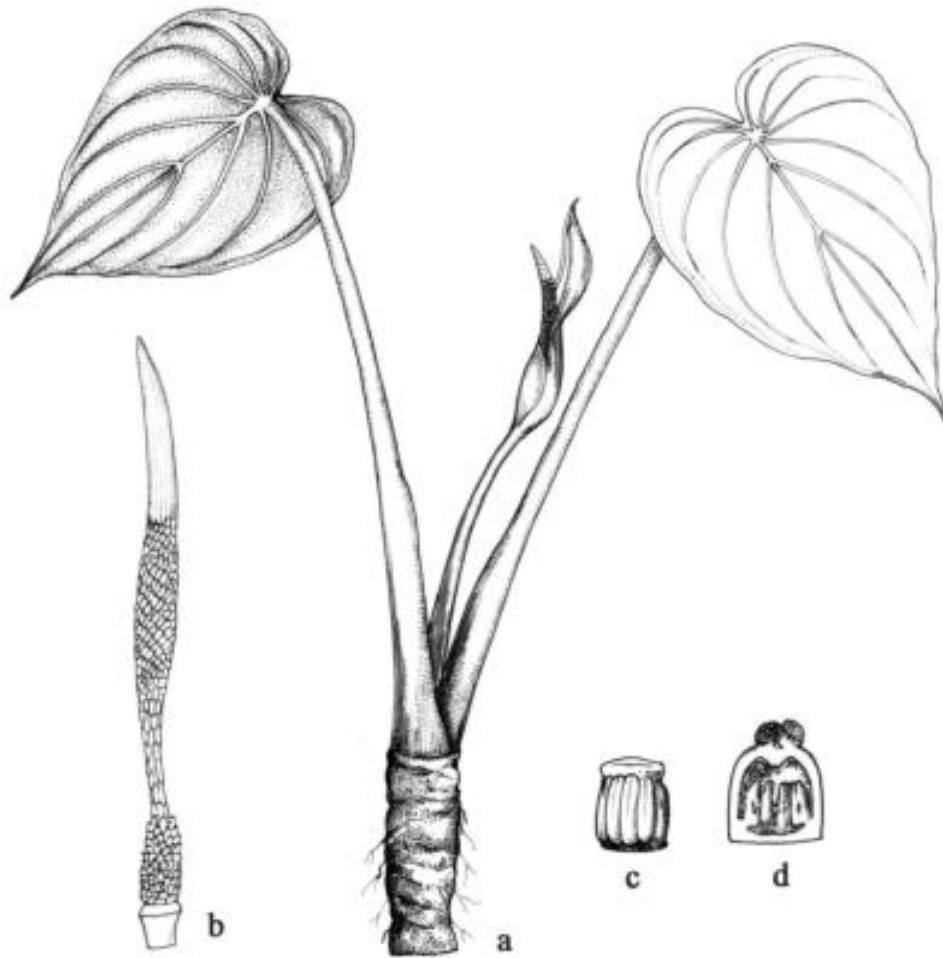


Figure 2. *Alocasia cucullata* (Lour.) G. Don, a) habit sketch of a flowering plant; b) spadix; c) lateral view of synandrium; d) gynoecium, longitudinal section.

HA. 2216 (DACB). **Narayanganj:** Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1910 (DACB). **Patuakhali:** Patuakhali Sadar, Lohalia, 14 v 2005, *M. Sultana* 724 (DUSH). **Sylhet:** Locality, Collection date and number unknown, *J.D. Hooker & Thomson* (K).

Southeastern Asia.

The plant is crushed and the paste is applied externally on the body for curing the pain of viper bites, abscesses, rheumatism and arthritis (Heng, 1979). The plant is used for medicinal purposes by the indigenous people of Bangladesh.

***Alocasia cuprea*** (C. Koch & Bouché) C. Koch, Wochenschr. Vereines Befoerd. Gartenbanes Koenigl. Preuss. Staaten 4: 141 (1861). Krause in Engler Pflanzenr. 71 (IV. 23E): 110 (1920); Bailey, Manual Cultivat. Pl.: 189-190 (1949); Bridsey, Cultivat. Aroid.: 23 (1951); Graf, Exotica, edn. 8: 124 (1976); Graf, Tropica, edn. 5: 88, 937 (1978-reprint 2003); Walters *et al.*, European Gard. Fl. 2 (2): 103 (1984-reprint 2003); Burnett, Aroideana 7 (3 & 4): 76-77 (1984); A. Hay *et al.*, Blumea Supplement 8: 13 (1995); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 65 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 28 (2007); *Caladium cupreum* C. Koch & Bouché in Ind. Sem. Hort. Berol.: 6 (1854). Pl. X.

Type: Borneo (Sabah).

Bengali: *Bahari Kachu*

Herb; stem decumbent, 80 × 6 cm. Leaves several together; petiole c 70 cm long, green, faintly mottled-brown or greenish-brown throughout, sheathing in the lower one-fifth; leaf blade simple, large with deeply depressed veins, coriaceous, hanging, ovate, c 60 × 40 cm, very shortly peltate, adaxially glossy bronze-green, darker near the primary veins, abaxially purple, anterior lobe with the tip obtuse and abruptly and shortly acuminate, anterior costa with 8-11 primary lateral veins on each side, posterior lobes completely united except for a shallow retuse notch, rounded. Inflorescences paired, not forming multiple series, subtended by cataphylls; peduncle similar to the petiole, c 22 cm long. Spathe green to greenish-purple, c 10 cm long, tube oblong-ovoid, c 4.5 × 2.0 cm, limb about equalling the lower spathe, at first erect and cucullate, then sharply deflexed, separated from the lower spathe by an abrupt constriction. Spadix considerably shorter



than the spathe, c 6 cm long, very shortly stipitate, cylindrical except the appendix; pistillate (female) flower zone narrowly cylindrical, c 2 cm long, 8 mm wide; sterile interstice not attenuate, isodiametric with male and female zones, synandrodia rhomboid, in 2 whorls; staminate (male) flower zone cylindrical, c 2 cm long; appendix c 2 cm long, white, spindle-shaped, blunt, faintly irregularly channelled, constricted at the union with the male zone. Ovary subglobose, longitudinally 3-4 ribbed, stigma raised on a very short slender style, conspicuously 2-4 lobed. Synandria rhomboid, 4-6 merous. *Fl. & Fr.*: 5-10. *Slopes in the rain forest, sandstone and limestone, at c 1000-1500 m altitude* (Hay, 1998).  $2n = 28$  (Fedorov, 1969).

**Dhaka :** Mirpur Botanical Garden, 02 x 2004, *Hosne Ara* HA. 1440 (DACB).

Malaysia and Borneo (Indonesia).

As an ornamental plant, this species is commonly planted both in public places and homesteads.

***Alocasia decipiens*** Schott, *Bonplandia* 7: 28 (1859) *et in Prodr.* 151 (1860). Engler in *DC. Mon. Phan.* 2: 504 (1879); Hook. f., *Fl. Brit. India* 6: 626 (1893-reprint 1954); Krause in *Engler Pflanzenr.* 71 (IV. 23E): 92 (1920); Karthikeyan *et al.*, *Fl. India Enum. in Fl. India ser.* 4: 5 (1989); Parmar in *Shetty & Singh, Fl. Rajasthan* 3: 869 (1993); Pullaiah, *Fl. Andhra Pradesh* 3: 1020-1021 (1997); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 66 (2002); Ara in *Siddiqui et al., Encycl. Fl. Fauna Bangladesh* 11: 29 (2007); *Arum fornicatum* Wight, *Icon. Pl. Ind. Or.* 3. t. 789 (1844), non Roxb., (1832), nec Wight, t. 792 (1844). Fig. 3.

Type: Myanmar, Andaman: Port Blair (S. Kurz-Herb. Calcutta).

Bengali: *Jangli Kachu*

A stout herb; stem decumbent or erect, up to 62 cm long. Leaves c 6 together; petiole up to 87 cm long, sheathing in lower third to half; leaf blade simple, 40-57 × 20.0-28.5 cm, distinctly peltate, oblong-sagittate, apical lobe acuminate-cuspidate, with 6-9 pairs of lateral nerves, sinus c 16.5 cm long, broad open, basal lobes about half as long as the apical lobe, subacute. Inflorescence paired among the leaf bases, subtended by cataphylls

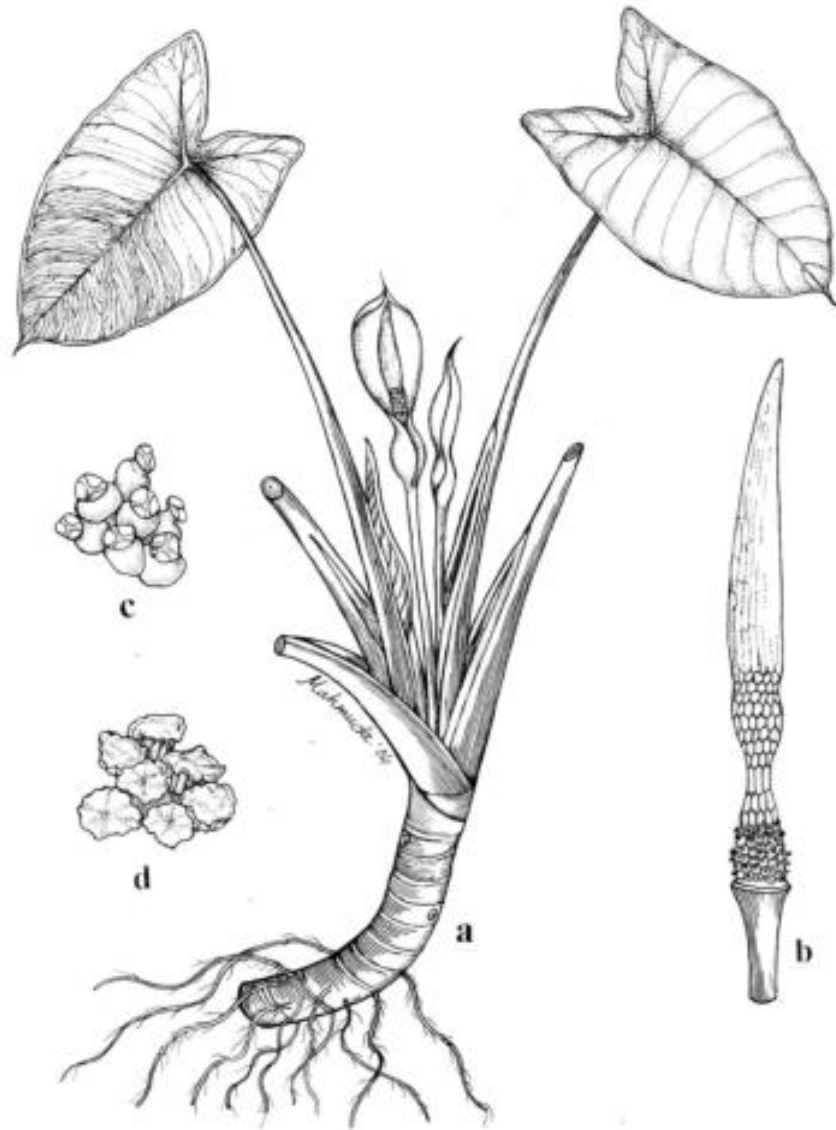


Figure 3. *Alocasia decipiens* schott., a) habit sketch of a flowering plant; b) spadix, c) pistils; d) synandria.

up to c 27.5 cm long; peduncle shorter than the petiole, 30-40 cm long. Spathe c 17 cm long, strongly constricted between the tube and the limb, tube shorter than the limb, ovoid, green, c 4 cm long, persistent, limb c 13 × 5 cm, oblong-cymbiform, acuminate, whitish or yellowish-green. Spadix shorter than the spathe, 13 cm long; pistillate (female) flower zone 2 cm long, 1.5 cm in diameter; sterile interstice 3 cm long, 0.8 cm in diameter, whitish; staminate (male) flower zone 2 cm long, 1.4 cm in diameter, subcylindrical, narrowed at the base and the apex, the base corresponding with the spathe constriction; appendix narrow conical, 6 cm long, whitish, slightly thicker than the male zone at the base. Ovary pale green, globose, 0.2 cm long, 0.2 cm in diameter, style short, not stout, stigma capitate and 3-lobed, the lobes conic, yellow, ovules 4, placentation basal. Synandria rhombo-hexagonal, c 0.1 cm in diameter. Fruit a berry, red when ripe. Seed subglobose. *Fl. & Fr.*: 6-7. *Shady hill slopes adjacent to chhara in hilly areas in deep forests*.  $2n = 24$  (Petersen, 1989).

**Netrakona:** Durgapur thana, Khalikpur, 17 vi 2004, *Hosne Ara* HA. 775, 776 (DACB); Pavel Partha 667 (JUH).

The Andaman and Nicobar Islands (India).

**Alocasia fallax** Schott in *Bonplandia* 7: 28 (1859). Hook. f., *Fl. Brit. India* 6: 527 (1893-reprint 1954); Krause in *Engler Pflanzenr.* 71 (IV. 23E): 94 (1920); Mitra, *Fl. Pl. E. India* 1: 79 (1958); Rao & Verma, *Bull. Bot. Surv. India* 18 (1-4): 29 (1976); Karthikeyan *et al.*, *Fl. India Enum. in Fl. India ser.* 4: 5 (1989); Noltie, *Fl. Bhutan* 3 (1): 138 (1994); Hajra & Verma, *Fl. Sikkim* 1: 185 (1996); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 66 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 29-30 (2007). Pl. XI.

Type: Sikkim Himalaya to Assam. Sikkim (D. Prain-Herb. Calcutta).

Bengali: *Bara Jongle Kachu*

Evergreen perennial herb; stem stout, erect to decumbent, c 106 cm long and 8 cm in diameter. Leaves several together; petiole up to 89 cm long, sheathing for c 1/3 from the base of petiole; leaf blade simple, c 64.5 × 49 cm, anterior lobes c 38.5 cm long with

round tip, posterior lobes c 26 cm long, distinctly peltate for c 3 cm, round and crisped, cuspidate, base cordate, margin entire, sinus 8-14 cm long, apical lobe with 5-9 pairs of lateral nerves, basal lobes strongly angled, slightly curving in outline. Inflorescence up to 5 in centre of the leaf crown, bloom one after another, subtended by cataphylls; cataphylls c 46 cm long, tip of the cataphylls shortly pointed, c 2.8 cm long; peduncle shorter than the petiole, up to 30-46 cm long and 1.0-1.5 cm in diameter at the base, green. Spathe membranaceous, up to 19 cm long, strongly constricted between the tube and the limb, tube green, c 3 cm long, oblong-ellipsoid, shorter than the limb, persistent, limb ovate, cuspidate, open, up to 16 cm long, light greenish-yellow. Spadix shorter than the spathe; pistillate (female) flower zone short, c 1.5 × 1.5 cm, with 100-160 close-packed pistils; sterile interstice c 1.3 cm long, sterile male zone present above the sterile interstice, c 0.6 cm long and c 1.1 cm in diameter; staminate (male) flower zone cylindrical, c 1.8 × 0.7 cm, creamy; appendix stout, conical, 1.7-6.5 cm long, 1.5 cm in diameter at the base, tip blunt. Ovary ovoid, c 2.5 × 2 mm, green, ovules about 5, large, on basal placentation and erect funicles, style distinct, stout, brown, stigma depressed-capitate, 3-cleft. Fruits c 6 mm in diameter, globose, 1-seeded. *Fl. & Fr.*: 5-12. *Shady areas of hill slopes and foot hills in rain forests.* 2n=28 (Sultana *et al.* 2011).

**Habiganj** : Chunarughat thana, Rema-Kalenga wild life sanctuary, Kalenga beat, 06 viii 2000, *Md. Zashim Uddin* 1090 (DUSH). **Netrakona**: Durgapur thana, Bijoypur, 16 vi 2004, *Hosne Ara* HA. 746 (DACB); Utrail bazar, Vabanipur, 18 vi 2004, *Hosne Ara* HA. 836 (DACB). **Tangail**: Madhupur, Dokhola, 06 x 2003, *Hosne Ara* HA. 537 (DACB). **Dhaka**: Bangladesh National Herbarium garden (Cultivated), 22 vi 2015, *Hosne Ara* HA. 2884 (DACB) [Originally collected from Bijoypur under Netrokona district].

Bhutan and India (Darjeeling, Sikkim Himalaya and Khasia Hills).

**Alocasia fornicata** (Roxb.) Schott, Oesterr. Bot. Wochenbl. 4: 410 (1854). Schott, Syn. Aroid.: 47 (1856); Schott, Prodr. Syst. Aroid.: 151-152 (1860); Hook. f., Fl. Brit. India 6: 526 (1893-reprint 1954); Prain, Beng. Pl. 2: 1111 (1903-reprint 2004); Krause in Engler, Pflanzenr. 71 (IV. 23E): 94-95 (1920); Haines, Bot. Bihar and Orissa: 869-871 (1924-reprint 1978); Heinig, List Chittagong: 74 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 100 (1953); Mitra, Fl. Pl. E. India 1: 79 (1958); Balakrishnan, Bull. Bot. Surv.

India 6: 91 (1964); Nicolson in Saldanha & Nicolson, Fl. Hassan Dist.: 783 (1976); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 27-28 (1976); Bennet, Fl. Howrah Dist.: 96 (1979); Deb, Fl. Tripura State 2: 396 (1983); Balakrishnan, Fl. Jowai 2: 564 (1983); Bakshi, Fl. Murshidabad Dist.: 335 (1984); Sharma *et al.*, Fl. Karnataka: 296 (1984); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 56-58 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 5 (1989); Islam, Fl. Majuli: 335 (1990); Pullaiah, Fl. Andhra Pradesh 3: 1020-1021 (1997); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 66 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 30-31 (2007); Boyce *et al.*, Fl. Thailand 11 (2): 122-123 (2012); *Arum fornicatum* Roxb., Fl. Ind. 3: 501 (1832); Wight, Icon. Pl. Ind. Or. 3: 6, t. 792 [prob. also t. 789] (1844); *Colocasia fornicata* (Roxb.) Kunth, Enum. Pl. 3: 41 (1841); Thw., Enum. Pl. Zeyl. 432 (1864). Pl. XII.

Lectotype: Bengal & Chittagong. Roxb. drawing [reproduced by Wight, Ic. Pl. Ind. Or. 3: 6, t. 792 (1844)].

Bengali: *Salu Kachu*

An evergreen herb; erect or inclined stem, up to 1 m long, c 4 cm thick with short internodes. Leaves several together; petiole green, 20-80 cm long, petiolar sheath somewhat membranous; leaf blade simple, several together, distinctly peltate, ovate-lanceolate, sagittate, hastate, 20-60 × 10-25 cm, apical lobe acute or obtuse with 5-9 pairs of lateral nerves, slightly wavy at the margin, basal lobes about half or less as long as the apical, obtuse or subacute, connate for one-tenth to half its length. Inflorescence in groups of up to 25 (usually 12) in the centre of the leafy crown, bloom one after another subtended by cataphylls, tip of the cataphylls not pointed; peduncle stout, green, 12-40 cm long, elongating during maturation. Spathe 10-12 cm long, with a basal persistent portion (tube) of about 4 cm long, convolute, ellipsoid, dark green, and an upper portion of deciduous limb c 6-8 cm long, cymbiform, broad-ovate, abruptly cuspidate, light greenish-yellow. Spadix slightly shorter than the spathe, shortly stipitate, male and female floriferous zones separated by about 2 cm long neuter zone; pistillate (female) flower zone c 1 cm long; staminate (male) flower zone 1.5-1.8 cm long; appendix conoid, 4 cm long, base of the appendix wider than the male zone, white. Ovary ovoid, 3 mm in

diameter, style distinct, stout, c 1 mm long, stigma sessile, capitate, weakly 3-4 lobed, the lobes blunt, ovules 3-5. Synandrium with a flat crenulate top, rhombo-hexagonal. Fruit a subglobose berry, 3.2-4.0 mm in diameter, when ripe orange-red or scarlet-red. *Fl. & Fr.*: 5-10. *Shady damp places in the forests and also in village thickets.*  $2n = 28, 42, 56$  (Petersen, 1989).

**Barishal:** East Narayanpur and Dostani village, 22 ii 2008, *Hosne Ara* HA. 2665 (DACB); Kashipur, Lakaotta, 23 ii 2008, *Hosne Ara* HA. 2681, 2682, 2683 (DACB). **Bogura:** Mohastangarh, 05 ii 2003, *Hosne Ara & Rezia Khatun* HA. 140 (DACB); Beltola, 06 ii 2003, *Hosne Ara & Rezia Khatun* HA. 144, 154 (DACB); Beltola, 06 ii 2004, *Hosne Ara & Rezia Khatun* HA. 156 (DACB); Shibgonj area, 19 viii 2005, *Hosne Ara* HA. 2190 (DACB); Dhunot upazilla to Sherpur, 19 iii 2011, *Hosne Ara* HA. 2800 (DACB). **Dhaka:** Dhanmandi area, 20 v 1968, Mozahar 124 (DUSH); Bangladesh National Herbarium garden (Cultivated), 10 v 2015, *Hosne Ara* HA. 2879 (DACB) [Originally collected from Beltola village under Bogura district]. **East Bengal:** Bangladesh, Locality, Collection date & year unknown, Griffith 5960 (K). **Jashore:** Jashore town area, 26 v 2012, *Hosne Ara* HA. 2840 (DACB). **Netrakona:** Farangpara, 18 vi 2004, *Hosne Ara* HA. 869 (DACB). **Noakhali:** Amanatpur, 3 miles off from Chaumohani, 19 xi 1981, *Huq, Rahman, Halim & Begum* H. 5307 (DACB). **Patuakhali:** Bauphal thana, Vill. Indrakool, 16 iii 1973, *Khan & Huq* K. 2884 (DACB); Galachipa, Rangabali, 24 iii 2006, *M. Sultana* 1209 (DUSH); Kalapara, Kuakata, 04 ii 2007, *M. Sultana* 1622 (DUSH). **Rajbari:** Rajbari area, 26 v 2012, *Hosne Ara* HA. 2823 (DACB). **Sherpur:** Rangtia range, Gazni beat, 21 vi 2004, *Hosne Ara* HA. 922 (DACB). **Sirajganj:** Kazipur upazilla to Charkhada village, 18 iii 2011, *Hosne Ara* HA. 2789 (DACB).

Northeastern India, northern Myanmar and southeastern Thailand.

In India, people of the Konda Reddis and Savaras tribes use rhizome paste to treat wounds and kill worms in domestic animals. Khonds and Nuka Doras people also apply the rhizome paste for curing their heel cracks and wounds (Rao and Henry, 1996).

***Alocasia hararganjensis*** H. Ara & M.A. Hassan, Bangladesh J. Plant Taxon. 25 (2): 228-231 (2018). Fig. 4 & Pl. XIII.

*Holotype*: Bangladesh, Moulvibazar district, Gazipur beat, Hararganj reserve forest, 21 v 2005, Hosne Ara HA 1740 (DACB).

Bengali: *Ban Kachu*

Massive sub-arborescent pachycaul herb, c 3.5 m high; stem erect to decumbent, to c 10 cm in diameter, c 2.3 m long, clothed in the brown remains of old leaf bases. Leaves several together, in terminal crown, held almost erect or slightly curved; petiole c 1.2 m long, sheathing c 1/2 from the base of petiole, eglandular, light green, wing of sheath out-rolled; leaf blade narrowly sagittate to ovate-sagittate, slightly glossy, leathery, glabrous, dark-green adaxially, pale green abaxially, usually bullate, 40-50 cm long, 40-48 cm in diameter, margin entire to slightly sinuate; anterior lobes 35-42 cm long with apiculate tip c 1 cm long; anterior costa prominent on both surfaces, glabrous on both surfaces, primary veins 7-11 on each side, prominent on both surfaces, diversing at 45<sup>0</sup>-70<sup>0</sup>; secondary veins flush on both surfaces; interprimary collective veins well-defined; submarginal vein, c 3 mm from the margin; glands in the axils of primary veins absent or extremely inconspicuous; posterior lobes 30-35 cm long, rounded; petiole for c 1.9 cm; posterior costae straight. Inflorescences 10 in the centre of the leafy crown, bloom one after another, subtended by cataphylls; cataphylls 66-68 cm long, tip of the cataphylls pointed, c 8 cm long, green; peduncle smooth, 50-64 cm long, 1.0-1.5 cm in diameter at the base, green. Spathe 18.5-21.0 cm long, constricted at level of sterile zone of spadix, lower spathe (tube) 4.5-5.0 cm long, light green, broadly ovoid-cylindrical, limb 14-16 cm long, 6.5-7.0 cm in diameter, light greenish yellow, thinly leathery. Spadix shorter than spathe, 12-15 cm long, sessile; pistillate (female) flower zone 1.8-2.0 cm long, 1.5-2.0 cm in diameter at the base, with 120-200 close-packed pistils; sterile interstice 2.0-2.5 cm long, with 7-8 whorls of rhombo-hexagonal synandrodia, the lowermost whorls isodiametric with female zone and resembling connate staminodes; sterile male zone absent above the sterile interstice; staminate (male) flower zone creamy, 2.5-3.5 cm long, 1.0-1.5 cm in diameter; appendix ivory, 5.5-7.5 cm long, slightly thicker than the male zone at the base, then tapering gradually to a fine point, smooth to faintly rugose. Ovary

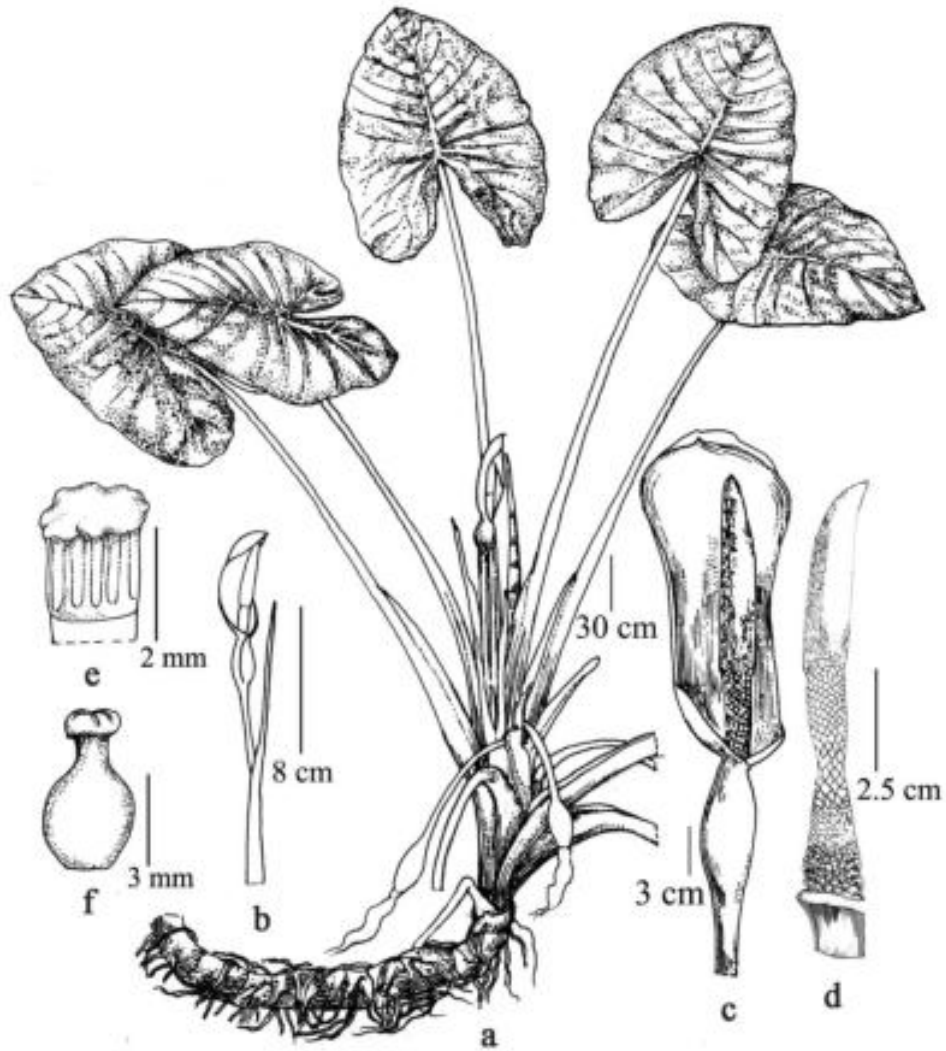


Figure 4. *Alocasia hararganjensis* H. Ara & M.A. Hassan, a) habit sketch of a flowering plant; b) cataphyll; c) Inflorescence; d) spadix; e) synandrium; f) gynoecium.



green, ovoid to subglobose, 2-3 x 2.0-2.3 mm, unilocular, with basal placenta; style distinct, stout, 0.5-0.8 mm long, 0.6 mm in diameter, cream coloured; stigma subglobose, shallowly 3-4 lobed, the lobes rounded, creamy. Synandria creamy, rhombo-hexagonal, 2.0-2.3 mm in diameter, opening through apical slits. Fruits yellowish (usually does not mature), rather small, 3-4 mm in diameter; fruiting peduncle 40-59 cm long, bend, fruiting spathe whitish, pendulous, 5-6 cm long, the spathe dehiscing longitudinally. *Fl. & Fr.*: 3-10. *Grows on the hill slopes as under growth.*  $2n = 30$  (Sultana *et al.*, 2011).

**Habiganj:** Kalenga beat, Kalenga, 03 vii 2005, *Hosne Ara* HA. 1771 (DACB). **Moulvibazar:** Gazipur beat, Hararganj reserve forest, 07 v 2003, *Hosne Ara* HA. 315 (DACB); Sreemongal, Lawachara reserve forest, 15 v 2005, *Hosne Ara* HA. 1468 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1707 (DACB); Gazipur beat, Hararganj reserve forest, 21 v 2005, *Hosne Ara* HA. 1740 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1779 (DACB); Gazipur beat, Hararganj forest, 05 vii 2005, *Hosne Ara* HA. 1804 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 22 vi 2015, *Hosne Ara* HA. 2885 (DACB) [Originally collected from Hararganj reserve forest under Moulvibazar district].

Northeastern part of Bangladesh, Moulvibazar district (within greater Sylhet).

The major morphological differences between the two species *Alocasia hararganjensis* H. Ara & M.A. Hassan and its closely allied species *Alocasia fallax* Schott are outlined in Table 1.

**Table 1. Morphological comparison of *Alocasia hararganjensis* H. Ara & M.A. Hassan with its closely related *Alocasia fallax* Schott.**

Characters	<i>Alocasia hararganjensis</i> H. Ara & M.A. Hassan	<i>Alocasia fallax</i> Schott
Leaf shape	Narrowly ovate to ovate sagittate, tip acute	Round and crisped, tip round
Cataphyll	Tip of the cataphylls long pointed, c 8 cm long	Tip of the cataphylls shortly pointed, c 2.8 cm long
Spadix	Male zone 2.5-3.5 cm long	Male zone c 1.8 cm long
Sterile male zone	Absent above the sterile interstice	Present above the sterile interstice
Chromosome number (2n)	30	28

**Alocasia macrorrhizos** (L.) G. Don in Sweet, Hort. Brit. ed. 3: 631 (1839) ('macrorrhizon'). Schott, Syn. Aroid.: 45 (1856) ('*macrorrhiza*') & Prodr. Syst. Aroid.: 146-147 (1860) ('*macrorrhiza*'); Hook. f., Fl. Brit. India 6: 526 (1893-reprint 1954); Krause in Engler, Pflanzenr. 71 (IV. 23E): 84 (1920); Haines, Bot. Bihar and Orissa: 869-870 (1924-reprint 1978); Heinig, List Chittagong: 74 (1925); Fischer in Gamble, Fl. Pres. Madras: 1103-1104 (1931-reprint 1967); Furtado, Gard. Bull. Straits Settlem. 11: 252 (1941); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 100 (1953); Mitra, Fl. Pl. E. India 1: 79 (1958); Hu, Dansk Bot. Arkiv 23 (4): 432 (1968); Nasir, Fl. Pakistan 120: 8 (1978); Graf, Tropica, edn. 5: 85, 937 (1978-reprint 2003); Nicolson, Fl. Vitiensis Nova 1: 455-456 (1979); Bakshi, Fl. Murshidabad Dist.: 335 (1984); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 58 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 5 (1989); Parmer in Shetty & Singh, Fl. Rajasthan 3: 869 (1993); Noltie, Fl. Bhutan 3(1): 139 (1994); A. Hay, Blumea Supplement 8: 17 (1995); Hajra & Verma, Fl. Sikkim 1: 186 (1996); Liu & Huang, Fl. Taiwan: 799-800 (1996); Pullaiah, Fl. Andhra Pradesh 3: 1020-1021 (1997); A. Hay, Gard. Bull. Singapore 51: 19-22 (1999); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 67-87 (2002); Sarma & Sarkar in Singh & Rao, Fl. Palamau Dist. Jharkhand: 625-626 (2002); Acevedo-Rodriguez and Nicolson in Acevedo-Rodriguez & Strong, Contr. U.S. Nat. Herb. 52: 23 (2005); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 31-32 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 77-78 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 126-127 (2012); *Arum macrorrhizos* L., Sp. Pl. 965 (1753); *Colocasia macrorrhiza* (L.) Schott in Schott & Endlicher, Melet. Bot. 1: 18 (1832); *Arum indicum* Lour., Fl. Cochinch. 536 (1790); Willdenow ed. 2: 655 (1793); Roxb., Fl. Ind. ed. 2. 3: 498 (1832); *Colocasia indica* (Lour.) Kunth, Enum. Pl. 3: 39 (1841); *Alocasia indica* (Lour.) Spach, Hist. Nat. Vég. Phan. 12: 47 (1846); Prain, Beng. Pl. 2: 1111 (1903-reprint 2004); Krause in Engler, Pflanzenr. 71 (IV. 23E): 87 (1920); Heinig, List Chittagong: 74 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1&2): 100 (1953); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 27-28 (1976); Deb, Fl. Tripura State 2: 395-396 (1983). Pl. XIV.

Lectotype: Sri Lanka. Hermann, Parad. Bat. t. 73 (1698).

Bengali: *Man Kachu*, *Fan Kachu*

English: Giant Taro, Elephant Ear Taro

Very robust, evergreen herb with slightly milky latex; stem caulescent, erect to c 1.5 m, then decumbent, 15-18 cm thick, edible. Leaves several to rather many together, petiolate; petiole 0.5-1.2 m long, green, stout, sheathing in the lower third; leaf blade simple, not peltate, erect, broadly ovate-sagittate, large, 60-120 × 50-65 cm, margin entire or subundulate, abruptly acute, bright green adaxially, pale abaxially, basal lobes rounded, incurved, 30 × 30 cm, veins very prominent on both sides of the limb. Inflorescences 2 or more in each axil, subtended by membranous cataphylls; peduncle usually shorter than the petioles, 15-30 cm long. Spathe constricted, up to 35 cm long, lower spathe (tube) 3-5 cm long, convolute, persistent and green, limb 20-30 cm long, cymbiform, narrowly oblong, later reflexed, cream-coloured and withering. Spadix shortly stipitate, almost equal or slightly shorter than the spathe; basal pistillate (female) flower zone conical-cylindrical, 2.0-2.5 cm long; sterile interstice 3.0-3.5 cm long; staminate (male) flower zone 3-7×2 cm, with an apical, sterile, tapering, cylindrical, 11.5-15.5 cm long appendix, slightly thicker than the staminate zone at the base, then tapering, yellowish. Pistillate flowers naked, numerous, ovary more or less ovoid, pale green, c 3 mm in diameter, unilocular, ovules orthotropous, style very short, stigma sessile, distinctly 3-5 lobed, the lobes conical, yellow. Sterile interstice slightly shorter than to equalling the pistillate zone, whitish, very slightly narrowed, corresponding to the spathe constriction. Synandrodia rhombo-hexagonal, c 2.5 mm diameter. Synandria 5-9-merous, rhombo-hexagonal, c 2 mm in diameter, dehiscence by apical pores. Fruits of ellipsoid berries, orange, 1-few seeded. *Fl. & Fr.*: 7-10. *Village shrubberies, banks of flowing streams, low-lying marshy areas and shades of trees and plantations.* 2n = 28 (Petersen, 1989).

**Barishal:** East Narayanpur and Dostani village, 22 ii 2008, *Hosne Ara* HA. 2661 (DACB), Kashipur, Lakaotta, *Hosne Ara* 2716 (DACB). **Bogura:** Beltola, 18 iii 2001, *B.M. Rezia Khatun* 2877 (DACB); 06 ii 2003, *Hosne Ara & Rezia Khatun* HA. 156 (DACB); Dhunot upazilla to Sherpur, 19 iii 2011, *Hosne Ara* HA. 2791 (DACB). **Bandarban:** On the way of Betchari, 22 ix 2004, *Hosne Ara* HA. 1252 (DACB). **Chattogram:** Chunati, 26 ix 2005, *Hosne Ara* HA. 2222 (DACB); Herbang, 26 ix 2005, *Hosne Ara* HA. 2268 (DACB); Baramashi, teastate area, on the way of Hazarikhil, 27 ix 2005, *Hosne Ara* HA. 2303 (DACB); Fatiqchari, 27 ix 2005, *Hosne Ara* HA. 2308

(DACB); Hathazari, Nandirkir, 27 ix 2005, *Hosne Ara* HA. 2316 (DACB); Chittagong University area, 28 ix 2005, *Hosne Ara* HA. 2334 (DACB); BCSIR Campus area, 28 ix 2005, *Hosne Ara* HA. 2344 (DACB); Bariadhala, 01 x 2005, *Hosne Ara* HA. 2573 (DACB); Bara Kumira, 01 x 2005, *Hosne Ara* HA. 2580 (DACB); Sitakundo, 01 x 2005, *Hosne Ara* HA. 2593 (DACB); Mirsarai, 01 x 2005, *Hosne Ara* HA. 2600 (DACB); Town area, 01 x 2005, *Hosne Ara* HA. 2612 (DACB); Foyage lake area, 01 x 2005, *Hosne Ara* HA. 2616 (DACB). **Cumilla:** Jashpur, 26 ix 2004, *Hosne Ara* HA. 1392 (DACB). **Cox's bazar:** Ramu, 26 ix 2005, *Hosne Ara* HA. 2283 (DACB); Punnagram, 26 ix 2005, *Hosne Ara* HA. 2288 (DACB); Taknaf Game Reserve, Whykeon Range, Rhykong beat, 29 ix 2005, *Hosne Ara* HA. 2359 (DACB); Upper Rezu range, 29 ix 2005, *Hosne Ara* HA. 2403 (DACB); Chota Inani, 30 ix 2005, *Hosne Ara* HA. 2435 (DACB); Bara Inani, 30 ix 2005, *Hosne Ara* HA. 2465 (DACB); Swankhali, 30 ix 2005, *Hosne Ara* HA. 2502 (DACB); Himchari, 30 ix 2005, *Hosne Ara* HA. 2526 (DACB); Cox's bazar town area, 30 ix 2005, *Hosne Ara* HA. 2563 (DACB); Eidgah, 01 x 2005, *Hosne Ara* HA. 2566 (DACB). **Dhaka:** Khilgaon area, 15 iv 1988, *Hosne Ara* HA. 1 (DACB); 12 viii 1990, *Hosne Ara* HA. 16 (DACB); Malibagh Chowdhury para, 26 viii 1999, *Hosne Ara* HA. 40 (DACB); Bangladesh National Herbarium garden (Cultivated), 15 iii 2009, *Hosne Ara* HA. 2746 (DACB) [Originally collected from Khulna district]; Savar, 26 v 2012, *Hosne Ara* HA. 2806a (DACB). **Dinajpur:** Town area, 17 viii 2005, *Hosne Ara* HA. 2030 (DACB); Ramsagar, 17 viii 2005, *Hosne Ara* HA. 2065 (DACB); Kantazir, Mandir area, 18 viii 2005, *Hosne Ara* HA. 2106 (DACB); Near Birganj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2128 (DACB); Near Nawabganj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2138 (DACB); Raniganj, 19 viii 2005, *Hosne Ara* HA. 2165 (DACB); Fultala, 19 viii 2005, *Hosne Ara* HA. 2174 (DACB). **Gazipur:** Burulia village, 25 vii 2004, *Hosne Ara* HA. 1080 (DACB); Kaliakair, 19 viii 2005, *Hosne Ara* HA. 2206 (DACB). **Habiganj:** Kalenga beat, Kalenga, 16 v 2005, *Hosne Ara* HA. 1539 (DACB); Satchari, 17 v 2005, *Hosne Ara* HA. 1585 (DACB); 07 vii 2005, *Hosne Ara* HA. 1868 (DACB). **Jashore:** Jashore town area, 26 v 2012, *Hosne Ara* HA. 2837 (DAVB). **Khagrachari:** Jamtoli, 12 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 490 (DACB); Narikal Begun College road, 12 vii 2003, *Hosne Ara* HA. 502 (DACB). **Kurigram:** Singhimari village, 20 v 2013, *Hosne Ara* HA. 2847 (DACB); Baruitari village, 24 viii 2013, *Hosne Ara* HA. 2854 (DACB). **Magura:** Magura area, 26 v 2012, *Hosne Ara* HA. 2830 (DACB).

**Manikganj:** Manikganj area, 26 v 2012, *Hosne Ara* HA. 2815 (DACB). **Moulvibazar:** Sreemongal, Lawachara, 15 v 2005, *Hosne Ara* HA. 1475, 1495 (DACB); Adampur beat, Kawargola forest, 18 v 2005, *Hosne Ara* HA. 1622 (DACB); Muraichara, 19 v 2005, *Hosne Ara* HA. 1673 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1720 (DACB); Gazipur beat, Hararganj reserve forest, 21 v 2005, *Hosne Ara* HA. 1741 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1750 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1787 (DACB); Gazipur beat, Hararganj forest, 05 vii 2005, *Hosne Ara* HA. 1805 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1827(a) (DACB); Muraichara beat, Awolachara punji, 07 v 2010, *Hosne Ara* HA. 2766 (DACB); Town area, *Hosne Ara* HA. 2770 (DACB). **Mymensingh:** Haluaghat thana, Koroitoli, 20 vi 2004, *Hosne Ara* HA. 908 (DACB). **Narayanganj:** Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1911 (DACB). **Narsingdi:** Narsingdi Sadar, 07 vii 2005, *Hosne Ara* HA. 1881 (DACB). **Netrakona:** Durgapur thana, Bijoypur, 16 vi 2004, *Hosne Ara* HA. 753 (DACB); Attrakhali, 17 vi 2004, *Hosne Ara* HA. 780 (DACB); Durgapur thana, Vabanipur, 18 vi 2004, *Hosne Ara* HA. 849 (DACB); Farangpara, 18 vi 2004, *Hosne Ara* HA. 868 (DACB). **Patuakhali:** Kalapara, Dhankhali, 12 iii 1999, *M. Sultana* 336 (DUSH); Patuakhali Sadar, Lobalia, 18 xi 2004, *M. Sultana* 479 (DUSH); Galachipa, Basbunia, 01 iii 2005, *M. Sultana* 670 (DUSH); Kalapara, Kuakata, 08 i 2006, *M. Sultana* 1065 (DUSH); Bauphal, Bogha, 03 vi 2006, *M. Sultana* 1378 (DUSH); Dasmina, Ranggopaldi, 02 ii 2007, *M. Sultana* 1553 (DUSH). **Panchagarh:** Banglabanda, Tetulia upazilla, 17 viii 2005, *Hosne Ara* HA. 1978 (DACB). **Rajbari:** Rajbari area, 26 v 2012, *Hosne Ara* HA. 2820 (DACB). **Rangamati:** Tourist spot, Hanging bridge area, 18 ix 2004, *Hosne Ara* HA. 1091 (DACB); Rangamati, DC Bangloo area, 20 ix 2004, *Hosne Ara* HA. 1159 (DACB). **Sherpur:** Rangtia range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 699 (DACB); Rangtia range, Gazni beat, 21 vi 2004, *Hosne Ara* HA. 923 (DACB). **Sirajganj:** Kazipur upazilla to Charkhadah village, 18 iii 2011, *Hosne Ara* HA. 2782 (DACB). **Sunamganj:** Town area, 06 vi 1998, *Hosne Ara* HA. 40 (DACB). **Sylhet:** Locality, Collection date, year & number unknown, *J.D. Hooker & Thomson* (K). **Tangail:** Mirzapur, 19 viii 2005, *Hosne Ara* HA. 2194 (DACB); Modupur, Dokhola, 06 x 2003, *Hosne Ara* HA. 547 (DACB). **Thakurgaon:** Dharmagar, 17 viii 2005, *Hosne Ara* HA. 2008 (DACB).

India through Southeast Asia and the Pacific Islands.

*Mankachu* is used as a vegetable for its large edible tuber. It is commercially cultivated in some places of Barishal, Patuakhali, Jashore and Khulna districts of Bangladesh. It is also cultivated for its ornamental and medicinal values. Leaf juice is astringent and is used against tumours and insect stings. Tuber is used in rheumatism, anasarca, jaundice, leprosy and diseases of the abdomen and spleen. It also acts as a mild laxative and diuretic. Ash obtained by burning the tuber is applied in a thin layer to cure lacerations and infections of the tongue and the mouth (Ghani, 2003).

In Chapai Nawabganj district, people insert an infected finger inside the petiole of the plant for about a day as a cure for infection.

***Alocasia navicularis*** K. Koch & Bouche' in Index Seminum. Hort. Berol. 1855 (App.): 2 (1855). Schott, Syn. Aroid.: 47-48 (1856); Prodr. Syst. Aroid.: 152-153 (1860); Hook. f., Fl. Brit. India 6: 527 (1893-reprint 1954); Krause in Engler, Pflanzenr. 71 (IV. 23E): 92 (1920); Mitra, Fl. Pl. E. India 1: 79 (1958); Hu, Dansk Bot. Arkiv 23(4): 432-433 (1968); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 27-29 (1976); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 6 (1989); Hajra & Verma, Fl. Sikkim 1: 186 (1996); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 68 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 32 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 77 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 127-128 (2012); *Colocasia navicularis* K. Koch *et* Bouche' in Index Seminum. Hort. Berol. 1853. App. 3, 1853; *et* in Ann. Sci. Nat. Paris 4, 1: 338 (1854). Fig. 5.

Type: Khasia (Hooker f. *et* Thomson-Herb. Berlin).

Bengali: *Ban Kachu*

An evergreen herb with a stout caudex, up to 1.5 m long with milky latex; stem erect to decumbent. Leaves several together; petiole up to 1.5 m long, petiolar sheath margins membranous; leaf blade distinctly peltate, 30-120 × 20-100 cm, broadly oblong sagittate, narrowed opposite the basal lobes, pale green, apex short acuminate, with 3-4 pairs of lateral nerves, sinus 10-15 cm long, basal lobes triangular, diverging, about half as long



Figure 5. *Alocasia navicularis* C. Koch et Bouche, a) habit sketch of a flowering plant; b) spadix; c) lateral view of synandrium; d) gynoecium.

as the apical lobe, connate for about one-fourth to half its length. Inflorescence 2-3 together among the leaf bases; peduncle shorter than the petiole, 20-40 cm long, 1.0-1.5 cm broad. Spathe 11-20 cm long, strongly constricted between the tube and the limb, tube green, 4-5 cm long, ovoid-globose, shorter than the limb, persistent, limb 7-15 × 4-5 cm, cymbiform, cuspidate, dark yellow. Spadix shorter than the spathe, shortly stipitate, 9.5-13.0 cm long; pistillate (female) flower zone 1.5-2.5 cm long, male and female zones separated by a 2-3 cm long neuter zone, staminate (male) flower zone c 2 cm long, appendix conoid, sinuously sulcate, white, 4.0-5.5 cm long. Ovary ovoid, green, c 3 mm in diameter, ovules 4 or 5, on the basal placentation, style very short, stigma sessile, 3 or 4 lobed, lobes blunt, pale green. Sterile interstice equalling the male zone, ivory, narrowed corresponding to the spathe constriction. Synandria rhombo-hexagonal, c 2.5 mm in diameter, whitish. Fruiting spathe ellipsoid, 5-11 cm long. Fruit dark red while ripening, ellipsoid, c 10 × 6 mm. *Fl. & Fr.*: 6-8. *Shady and moist areas at foothills*.  $2n = 28$  (Petersen, 1989).

**Moulvibazar:** Kulaura, Gazipur beat, Hararganj reserve forest, 06 vii 2002, *Hosne Ara & Sarder Nasir Uddin* HA. 118 (DACB).

Northeastern India, eastwards to southwestern Thailand, Nepal, southwestern China, Myanmar, Laos and Vietnam.

***Alocasia odora*** (Lindl.) K. Koch, *Index Seminum Hort. Berol.* 1854 (App.): 2 (1854). Schott, *Syn. Aroid.*: 45-46 (1856); *Prodr. Syst. Aroid.*: 148-149 (1860) (sub. *A commutata*); Krause in Engler, *Pflanzenr.* 71 (IV. 23E): 90 (1920); Haines, *Bot. Bihar and Orissa*: 869-870 (1924-reprint 1978); Hotta, *Mem. Fac. Sci. Kyoto Imp. Univ., Ser. Boil.* 4: 94-95 (1970); Rao & Verma, *Bull. Bot. Surv. India* 18 (1-4): 27-28 (1976); Graf, *Exotica*, edn. 8: 125 (1976); *Tropical*, edn. 5: 937 (1978-reprint 2003); Deb, *Fl. Tripura State* 2: 396 (1983); Walters *et al.*, *European Gard. Fl.* 2 (2): 101-102 (1984-reprint 2003); Karthikeyan *et al.*, *Fl. India Enum.* in *Fl. India ser.* 4: 6 (1989); Noltie, *Fl. Bhutan* 3(1): 139 (1994); Hajra & Verma, *Fl. Sikkim* 1: 186 (1996); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 69 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 32-33 (2007); Heng & Boyce in Heng *et al.*, *Fl. China* 23: 76-77 (2010); Boyce *et al.*, *Fl. Thailand* 11 (2): 128-129 (2012); *Caladium odorum* Lindl., *Bot. Reg.* 8: t. 641 (1822);



*Arum odorum* Roxb., Fl. Ind. 3: 499 (1832); *Colocasia odora* (Lindl.) Brongn., Nouv. Ann. Mus. Hist. Nat. 3: 145 (1834); *Alocasia commutata* Schott, Oesterr. Bot. Wochenbl. 4 (51): 409 (1854); *Alocasia tonkinensis* Engl., Krause in Engler Pflanzenr. 71 (IV. 23E): 91 (1920). Pl. XV.

Type: Silhet (Wallich no. 420-Herb. Kew).

Bengali: *Bara Jongle Kachu*

Large evergreen perennial herb with slightly milky latex; above-ground stem stout, erect to decumbent, 0.3-1.0 m high, 5-15 cm thick, unbranched, base with stolons. Leaves several together, clustered at the tips of stems of larger plants; petioles stout, up to 1.5 m (or more) long, petiolar sheath membranous; leaf blade coriaceous, distinctly peltate, broadly ovate, cordate-sagittate, 50-130 × 40-100 cm, bright green, apical lobe short acuminate at the apex, with a stout midrib, margins undulate and with 5-12 pairs of lateral nerves, basal lobes broadly ovate, very much rounded in outline. Inflorescences 2-3 together, subtended by membranous cataphylls; peduncle 2-3 together, stout, cylindrical, green, 12-35 cm long. Spathe constricted, 13-25 cm long, tube inrolled, green, ovoid, 3-5 cm long, limb initially inrolled, afterwards during anthesis navicular, coriaceous, cymbiform, cuspidate, 10-30 × 4-8 cm, pale green or greenish white. Spadix shorter than spathe, shortly stipitate, white, fragrant; pistillate (female) flower zone 1-2 × c 1.5 cm; male and female floriferous zones separated by a 2.5-4.0 cm long neuter zone; staminate (male) flower zone whitish, cylindrical, 3-5 × c 2 cm; appendix white, narrowly conoid, sinuous, c 3.0-5.5 × 1-2 cm, markedly thicker than male zone at base, slowly tapering toward apex. Ovary pale green, c 2 mm in diameter, stigma almost sessile, weakly 3-lobed, very pale green. Synandria rhombo-hexagonal, c 1.5 mm in diameter; Fruit a berry, ovoid, ripening red, c 1 cm diameter, seeds 1-2. *Fl. & Fr.*: 1-12. *Shady and moist places in forests and village thickets.* 2n = 28 (Petersen, 1989).

**Bogura:** Beltola, 06 ii 2003, *Hosne Ara & Rezia Khatun* HA. 153 (DACB). **Mymensingh:** Mymensingh, 10 ix 2002, *Hosne Ara* HA. 137 (DACB); Khalbola, Ishwarganj, 17 ii 2003, *Hosne Ara & Ruhul Amin Fakir* HA. 161 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 25 ii 2008, *Hosne Ara* HA. 2730

(DACB); 27 iv 2008, *Hosne Ara* HA. 2741 (DACB) [Originally collected from Khalbola, Ishwarganj under Mymensingh district].

Assam and Meghalaya of eastern India, southwestern Thailand, China, Myanmar, Laos, Cambodia and Japan.

The rhizomes of the plant possess medicinal value in curing stomach ache, abdominal pain, cholera and hemia. The same is crushed into a paste and applied externally on the human body to cure abscesses and insect or snake bites (Heng, 1979). The plant is used for medicinal purposes by the village people of Bangladesh.

***Alocasia portei*** Schott, *Bonplandia* 10: 148 (1862). Walters *et al.*, *European Gard. Fl.* 2 (2): 102 (1984-reprint 2003); Burnett, *Aroideana* 7 (3 & 4): 126-127 (1984); A. Hay, *Gard. Bull. Singapore* 51: 25-27 (1999); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 69 (2002); *Ara* in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 33-34 (2007); *Schizocasia portei* (Schott) Engl., in Beccari, *Malesia* 1: 295 (1883); Krause in Engler, *Pflanzenr.* 71 (IV. 23E): 117 (1920); *Schizocasia regnieri* L. Linden & Rodigas, *III. Hort.* 34: 17 (1887). Pl. XVI.

Neotype: Schott *Icones* no. 3085.

Bengali: *Bahari Kachu*

Massive arborescent herb, 6 m tall; stem erect, 40 cm in diameter at the base (thickening with age), distally to c 15 cm in diameter, older parts developing tessellated 'bark'. Leaves several together, more or less erect; petiole 1.5 m long, chocolate, sheathing in the lower third; leaf blade sagittate and deeply pinnatifid, dark bright green on both sides, coriaceous, anterior lobe 1.5 m long, with up to 10 linear-lanceolate, round-tipped segments, margins strongly crispate, primary veins prominent abaxially. Inflorescences in numerous pairs clustered in the centre of the leaf crown, subtended by a conspicuous brown-mottled, lanceolate cataphylls, peduncle 30 cm long. Spathe 40 cm long, lower spathe subcylindrical, dark brownish-green, 5 cm long, limb linear to oblong-lanceolate, at first erect and canoe-shaped and cucullate, thence reflexed at the constriction, pale brownish, mottled and streaked chocolate-brown, membranous. Spadix

somewhat shorter than the spathe, 32 cm long; pistillate (female) flower zone sessile, 4.0 × 1.5 cm; sterile interstice c 2 cm long, narrowed, corresponding with spathe constriction, white; staminate (male) flower zone whitish, 8.0 × 1.5 cm, cylindrical; appendix basally slightly thicker than the male zone, the subcylindrical and distally tapering. Ovary subglobose, c 2.5 mm in diameter, style very short, stigma weakly lobed. Synandria rhombo-hexagonal, 1.2 mm in diameter (dry). Fruiting spathe ovoid, c 10 × 5 cm. *Fl. & Fr.*: 5-10. *Secondary forests at low to medium elevations*. 2n = 28 (Petersen, 1989).

**Dhaka** : Mirpur Botanical Garden, 02 x 2004, *Hosne Ara* HA. 1441 (DACB).

Endemic to the Philippines (Hay, 1999).

As an ornamental plant, it is commonly planted both in public places and homesteads.

***Alocasia salarkhanii*** H. Ara & M.A. Hassan, *Bangladesh J. Plant Taxon.* 25 (2): 231-234 (2018). Fig. 6 & Pl. XVII.

*Holotype*: Bangladesh, Moulvibazar district, Lawachara reserve forest, 15 v 20005, *Hosne Ara* HA 1467 (DACB).

Bengali: *Ban Kachu*

Small to moderately robust herb; stem erect to decumbent, to 3-4 cm in diameter; to over c 60 cm long, clothed in the brown remains of old leaf bases. Leaves several together, held almost erect or slightly curved; petiole 35-52 cm long, sheathing c1/3 from the base of petiole, eglandular, deep purple, wings of the sheath out-rolled; leaf blade hastato-sagittate, rather narrowly triangular, margin entire to slightly undulate, glossy, leathery, dark green, glabrous adaxially, pale green and pubescent abaxially, 31-51 cm long, 14.0-21.5 cm in diameter at the base; anterior lobes 18-33 cm long with apiculate tip 0.6-1.0 cm long; anterior costa prominent on both surfaces, glabrous on both surfaces, primary veins 6 on each side, prominent on both surfaces, diverging at 45°-90°, secondary venation flush on both surfaces, mostly arising from the primary veins at a wide angle, then deflected towards the margin, forming variously well-defined interprimary collective veins or these absent, interprimary collective veins when present

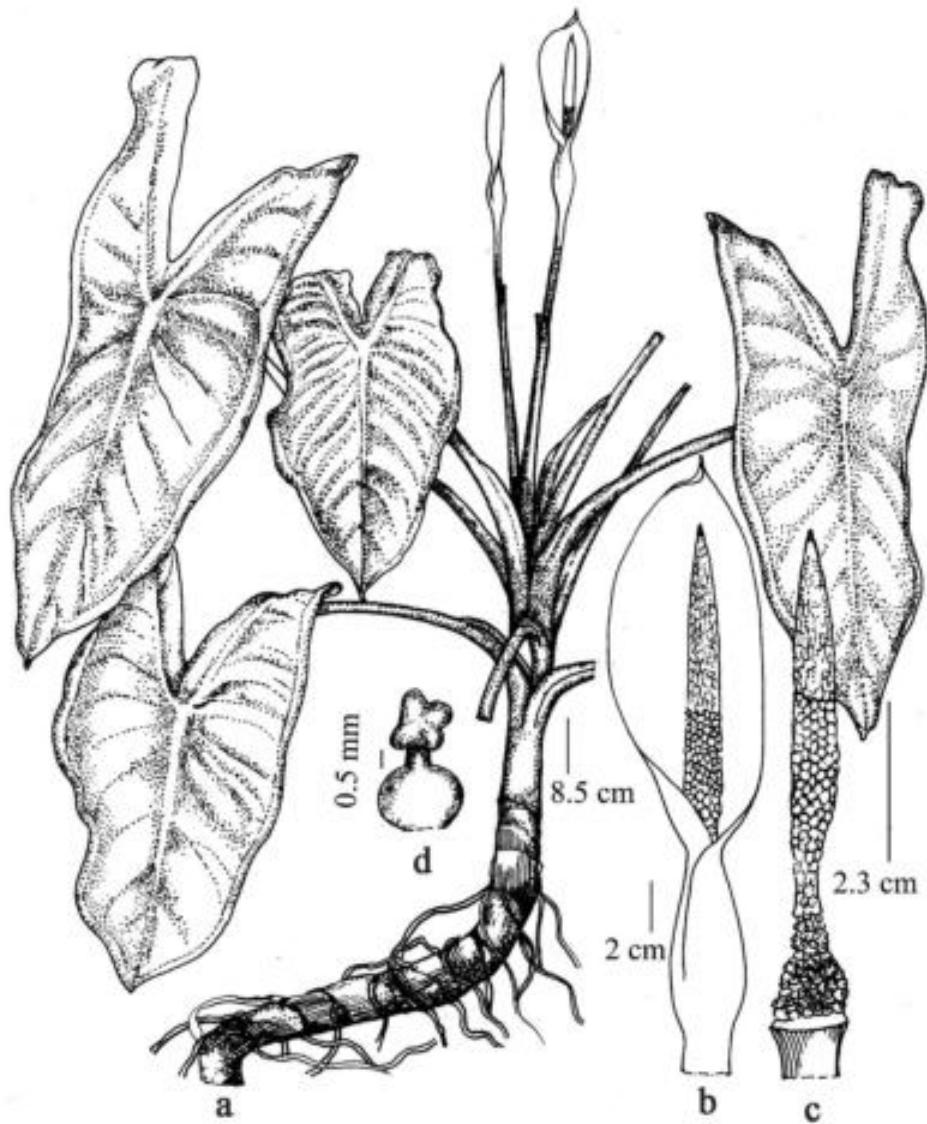


Figure 6. *Alocasia salarkhanii* H. Ara & M.A. Hassan, a) habit sketch of a flowering plant; b) inflorescence; c) spadix; d) gynoecium.

weakly undulating to strongly zig-zag at base broad acute angles; submarginal vein 0.8-1.0 cm from the margin; glands in the axils of primary veins absent or extremely inconspicuous; posterior lobes 13-18 cm long, acute, peltate for 2.3-3.0 cm; posterior costae straight to incurved. Inflorescences 3 in the center of the leaf crown, bloom one after another, subtended by a cataphyll, cataphyll up to 25 cm long, deep purple, tip of the cataphylls not pointed; peduncle deep purple, smooth, 26-31 cm long, 0.7-1.3 cm in diameter at the base. Spathe c 15 cm long, lower spathe (tube) convolute, c 4.2 cm long, green, limb c 11.7 cm long, c 4.8 cm in diameter, light yellowish with violet or pink mixed on both sides. Spadix shorter than spathe, c 11.5 cm long, lower fertile pistillate (female) flower zone c 1 cm long; sterile female zone ca. 0.5 cm long, c 1.3 cm in diameter at the base; sterile interstice c 2 cm long, narrower than the fertile zones, corresponding with the spathe constriction; lower synandrodia often with incompletely connate staminodes, the rest elongate rhombo-hexagonal, flat-topped; staminate (male) flower zone cylindrical, somewhat tapered at the base, c 2.3 cm long, c 0.8 cm thick, ivory in colour; appendix c 3.5 cm long, c 0.8 cm thick at the middle, about the same thickness at the male zone, gradually tapering to a pointed tip, cream coloured. Pistils closely packed; ovary subglobose, green, 2 x 2 mm, unilocular, with basal placenta; style distinct, stout, c 0.5 mm long, c 0.8 mm in diameter, light yellow; stigma 3-4 lobed, lobes acute, light yellow. Synandria more or less hexagonal, c 2 mm in diameter, androus. Fruit orange-red; fruiting peduncle 33-35 cm long, fruiting spathe ovoid, 4-6 cm long. *Fl. & Fr.*: 5-8. *Grows on the hilly area as under growth. 2n = 28 (Afroz et al. 2013).*

**Moulvibazar:** Lawachara reserve forest, 15 v 2005, *Hosne Ara* HA. 1467 (DACB); 04 vii 2005, *Hosne Ara* HA. 1781 (DACB). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 07 v 2006, *Hosne Ara* HA. 2630 (DACB); Bangladesh National Herbarium garden (Cultivated), 30 v 2006, *Hosne Ara* HA. 2651 (DACB) [Originally collected from Lawachara reserve forest under Moulvibazar districts].

Northeastern part of Bangladesh, Moulvibazar district (within greater Sylhet).

The major morphological and cytological differences between *Alocasia salarkhanii* H. Ara & M.A. Hassan and its closely allied species *Alocasia fornicata* (Roxb.) Schott are outlined in Table 2.

**Table 2. Morphological and cytological comparison of *Alocasia salarkhanii* H. Ara & M.A. Hassan with its closely related *Alocasia fornicata* (Roxb.) Schott.**

Characters	<i>Alocasia salarkhanii</i> H. Ara & M.A. Hassan	<i>Alocasia fornicata</i> (Roxb.) Schott
Petiole & peduncle	Deep purple	Green
Leaf blade	Long elliptic	Hastate
Inflorescence	In groups of up to 3	In groups of 12, up to 25
Style	c 0.5 mm long	c 1.0 mm long
Male zone	c 2.3 cm long	1.5 cm long
Appendix	Base of the appendix equal to the male zone	Base of the appendix wider than the male zone
Chromosome number	28 (22m+6sm)	28 (18m+10sm)
CMA and DAPI	CMA-band and DAPI band absent	CMA-band and DAPI band present

m = metacentric chromosome, sm = submetacentric chromosome.

**Note:** Although the two species bear same chromosome number, they differ by the karyotype formulae and DAPI characters.

***Alocasia sanderiana*** W. Bull, Retail List: 11 (1884). Merr., Fl. Manila: 132 (1912); Krause in Engler, Pflanzenr. 71 (IV. 23E): 104 (1920); Bailey, Manual Cult. Pl.: 189-190 (1949); Birdsey, Cultivat. Aroid.: 27 (1951); Graf, Exotica, edn. 8: 127 (1976); Tropica, edn. 5: 88, 937 (1978-reprint 2003); Burnett, Aroideana 7 (3 & 4): 100-102 (1984); Walters *et al.*, European Gard. Fl. 2(2): 102 (1984-reprint 2003); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 70 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 34-35 (2007); *Schizocasia sanderiana* (W. Bull) Engl., Bot. Jahrb. Syst. 25: 26 (1898). Pl. XVIII.

Type: W. Bull, Retail List (1884) un-numbered, fig. P. 3 (sterile).

Bengali: *Bahari Kachu*

English: Kris Plant

A moderately robust, c 60 cm tall herb; stem decumbent to creeping, 15 × 2 cm. Leaves solitary to few together, interspersed with cataphylls, cataphylls papery, narrowly lanceolate; petiole up to 60 cm long, sheathing in the lower one-fifth to a quarter; leaf blade sagittate, deep glossy green adaxially, purple abaxially, deeply undulate to sub-

pinnatifid, anterior lobe up to 24 cm long, primary veins and costae white to yellowish, secondary veins emerging from the primary at a wide angle. Inflorescence mostly paired; peduncle slender, 14-18 cm long. Spathe 6-10 cm long, lower spathe (tube) 1.5-2.0 cm long, ovoid; limb 4-8 cm long, more or less canoe-shaped. Spadix somewhat shorter than half the length of the spathe, stipitate for 5 mm; pistillate (female) flower zone 1 cm long; sterile interstice corresponding to the spathe constriction, 5 mm long, tapering distally; staminate (male) flower zone c 1.2 cm long, 4-5 mm thick (dry); appendix short, equalling the male zone. Ovary c 2 cm in diameter, subglobose, stigma sessile, sharply 3-4 lobed. Synandria rhombo-hexagonal. *Fl. & Fr.*: 6-8. *Partially shady and damp places*.  $2n=28$  (Petersen, 1989).

**Dhaka** : Mirpur Botanical Garden, 02 x 2004, *Hosne Ara* HA. 1442 (DACB).

Endemic to the Philippines (Hay, 1999).

The plant is widely used for ornamental purposes in public places and homesteads.

### **Amorphophallus** Blume *ex* Decaisne in Nouv.

Ann. Mus. Hist. Nat. 3: 366 (1834), *nom. cons.*

**Type species:** *A. campanulatus* Decaisne (= *A. paeoniifolius* (Dennstedt) Nicolson).

Seasonally dormant or rarely semi-evergreen herbs; stem usually a depressed-globose tuber, sometimes irregularly elongate-cylindrical, napiform or carrot-shaped, rarely rhizomatous or stoloniferous. Leaves usually solitary, rarely paired or several; petiole stout, long, usually smooth, rarely verrucose to rough, sometimes very thick, usually conspicuously spotted and marked in a variety of patterns, rarely plain green, sheath very short; leaf blade decompund, divided into 3 segments, segments commonly once to several times pinnately divided into leaflets, secondary veins of leaflets diverging obliquely from midrib, highest order divisions (leaflets) entire, never fenestrate or lobed and only ever with one tip, oblong-elliptic to linear, acuminate, decurrent, sometimes bulbils present at the junction of divisions, higher order venation reticulate. Inflorescence solitary, rarely several together, subtended by a membranous cataphylls, usually flowering without leaves, rarely with the leaves; peduncle very short or long, similar to the petiole. Spathe variously coloured, marcescent and finally deciduous, boat-shaped,

clearly differentiated into the tube and the limb, tube convolute, campanulate to cylindrical; limb erect to spreading, smooth. Spadix sessile or shortly stipitate, shorter or much longer than the spathe; pistillate (female) flower zone cylindrical, shorter, equalling or longer than the staminate (male) flower zone; male zone usually contiguous with the female, sometimes separated by a sterile zone; terminal appendix usually present, rarely absent or reduced to a stub, very variable in shape, surface smooth, rugulose, or with distinct, variously-shaped staminodes, often only at the base, apex acute or obtuse, inside a narrow canal or a large cavity. Flowers unisexual, perigone absent. Female flowers consisting of one pistil, ovary sessile or shortly stipitate, 1-4-locular, 1 ovule per locule, anatropous, basifixed, or rarely axillary about halfway up the ovary, placentation axile to basal, style present or absent or very long, conoid or cylindrical, stigma terminal or rarely subterminal, concave or flattened, 2-4 lobed, during anthesis covered with a sticky fluid. Male flower 1-6 androus, pores apical, rarely lateral or subterminal, filaments absent or distinct. Fruit a berry, ellipsoid to globose, sometimes very large, 1-few seeded, orange-red, white and yellow, rarely blue. Seed globose, subglobose, ovoid or ellipsoid, testa smooth, thin.

About 170 species are distributed throughout tropical Africa, Madagascar, tropical Asia, Malay Archipelago, Melanesia and Australasia (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 7 species.

#### KEY TO THE SPECIES

- |  |                       |
|--|-----------------------|
| 1. Leaves bulbiferous at the forks                     | <b>2</b>              |
| - Leaves not bulbiferous at the forks                  | <b>3</b>              |
| 2. Tuber globose, 5-10 cm in diameter, brown, warty    | <b>bulbifer</b>       |
| - Tuber elongate, usually unbranched, about 12 cm long | <b>longituberosus</b> |
| 3. Spathe broadly campanulate                          | <b>paeoniifolius</b>  |
| - Spathe not broadly campanulate                       | <b>4</b>              |
| 4. Tip of the spadix covered with sterile flowers      | <b>margaritifer</b>   |
| - Tip of the spadix naked forming a sterile appendix   | <b>5</b>              |
| 5. Spadix appendix tuberculate, yellowish              | <b>napalensis</b>     |
| - Spadix appendix smooth, whitish                      | <b>6</b>              |



6. Spathe ovate-lanceolate, acuminate, a few staminode present  
at the base of appendix **krausei**
- Spathe erect, cymbiform, staminode not present at the base of  
appendix **excentricus**

**Amorphophallus bulbifer** (Sims) Blume in Rumphia 1: 148 (1837). Kunth, Enum. Pl. 3: 34 (1841); Hook. f., Fl. Brit. India 6: 515 (1893-reprint 1954); Prain, Beng. Pl. 2: 1110 (1903-reprint 2004); Cooke, Fl. Pres. Bombay: 825 (1908); Engler, Pflanzenr. 48 (IV. 23C): 98 (1911); Haines, Bot. Bihar and Orissa: 862 (1924-reprint 1978); Heinig, List Chittagong: 74 (1925); Fischer in Gamble, Fl. Pres. Madras: 1587 (1931), repr. ed. 3: 1106 (1967); Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 26-27 (1931); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 100 (1953); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 110 (1956); Mitra, Fl. Pl. E. India 1: 75 (1958); Spring, Fl. Sikim Himal.: 394 (1966); Hara, Fl. Eastern Himalaya: 394 (1966); Nicolson in Saldanha & Nicolson, Fl. Hassan Dist.: 783 (1976); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 20-22 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 88 (1978); Graf, Tropica, edn. 5: 939-940 (1978-reprint 2003); Bennet, Fl. Howrah Dist.: 93 (1979); Deb, Fl. Tripura State 2: 397 (1983); Balakrishnan, Fl. Jowai 2: 562 (1983); Bakshi, Fl. Murshidabad Dist.: 336 (1984); Sharma *et al.*, Fl. Karnataka: 296 (1984); Mukherjee, Fl. Pachmarhi & Bori Reserves: 312 (1984); Walters *et al.*, European Gard. Fl. 2 (2): 89-90 (1984-reprint 2003); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 6 (1989); Henry *et al.*, Fl. Tamil Nadu, ser. 1, 3: 55 (1989); Vajravelu, Fl. Palghat Dist.: 531 (1990); Roy *et al.*, Fl. Madhya Pradesh: 449 (1992); Noltie, Fl. Bhutan 3(1): 132 (1994); Saxena & Brahmam, Fl. Orissa 4: 2034 (1996); Hajra & Verma, Fl. Sikkim 1: 186 (1996); Pullaiah, Fl. Andhra Pradesh 3: 1022 (1997); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 35-36 (2007); *Arum bulbiferum* Roxb. [Hort. Beng. 65 (1814), *nom. nud.*] *ex* Sims, Curtis's Bot. Mag. 46: t. 2072 (1819), *Ibid.* 51: t. 2508 (1824); Roxb., Fl. Ind. 3: 510 (1832); Wight, Icon. Pl. Ind. Or. 3: 783 (1844); *Pythonium bulbiferum* (Sims) Schott in Schott & Endl., Melet. Bot. 18 (1832); *Conophallus bulbifer* (Sims) Schott, Syn. Aroid.: 34 (1856); *Conophallus tuberculiger* Schott, Bonplandia 7: 28 (1856); *Amorphophallus tuberculiger* (Schott) Engl. in DC., Monogr. Phan. 2: 317 (1879); Hook. f., Fl. Brit. India 6: 517 (1893); *Amorphophallus*

*bulbifer* var. *marmoratus* Engl., Pflanzenr. 48 (IV. 23C): 99 (1911); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 6 (1989); *Amorphophallus bulbifer* var. *atroviridimaculatus* Engl., Pflanzenr. 48 (IV. 23C): 99 (1911); *Amorphophallus bulbifer* var. *tuberculiger* (Schott) Engl., Pflanzenr. 48 (IV. 23C): 99 (1911); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 6 (1989). Pl. XIX.

Type: Illustration of *Arum bulbiferum*, t. 2072, Published by Sims in Bot. Mag. Vol. 46 (1819).

Bengali: *Amla-bela, Jongle Ol*

English: Voodoo Lily

Tuber globose, 5-10 cm in diameter, brown, warty. Leaf solitary; petiole 30-120 cm long, 2-5 cm in diameter, smooth, greenish or pinkish-white or mauve, with deep green or greenish-brown stripes or blotches, a bulbil arises at the junction of the three petiolules (initially it appears as a convex point), more bulbils arise at other intersections and rarely along the main veins above on the leaflets; leaf blade 30-50 cm in diameter, tripartite, the lateral parts sometimes again bifurcating, all ultimately divided into oblong-obovate, acuminate, 5-20 cm long decurrent lobes, margins with a translucent pink colouration, especially when young, conspicuously pinnately veined and with sub-marginal veins. Inflorescence solitary; peduncle 13-50 cm long, 1-2 cm in diameter, coloured like the petiole. Spathe convolute at the base, spreading above into an ovate, obtuse limb, 8-30 cm long, 5-22 cm broad, outside pale pink-mauve with green blotches, inside pale pink-mauve with numerous red papillae towards the base, upper portion yellowish-cream in colour, ultimately reflexed. Spadix usually longer or shorter than the spathe, stipitate for 5-8 mm; pistillate (female) flower zone 1.5-5.0 × 1.2-2.0 cm; staminate (male) flower zone cylindrical, 2.5-7.0 × 1.5-3.5 cm; appendix oblong or narrowly conoid, obtuse, 4-14 × 2.0-3.5 cm, flesh-coloured. Pistillate flowers numerous, ovary subglobose, 1-2 locular with 1 ovule in each locule, stigma very short-styled, discoid, inconspicuously 2-3 lobed. Anthers sessile, dehiscence by the apical pores. Fruit a berry, usually 1-seeded. *Fl. & Fr.*: 5-10. *Shady and moist areas of hill slopes and foothills of the forest.* 2n = 26, 36, 39 (Petersen, 1989).

**Bandarban:** On the way of Betchari, 22 ix 2004, *Hosne Ara* HA. 1219, 1220 (DACB). **Chattogram:** Chattogram, Oct. 1940, *S.K. Sen, N.L. Pal & R. Khan* (DUSH); Ichamak, 20 ix 1986, *Alam* 5651 (BFRIH); Baramashi tea state area, on the way of

Hazarikil, 27 ix 2005, *Hosne Ara* HA. 2305 (DACB); Fatiqchari, 27 ix 2005, *Hosne Ara* HA. 2307 (DACB); Sitakundo, 01 x 2005, *Hosne Ara* HA. 2595 (DACB); Mirsarai, 01 x 2005, *Hosne Ara* HA. 2604 (DACB); Town area, 01 x 2005, *Hosne Ara* HA. 2611 (DACB); Foiage lake area, 01 x 2005, *Hosne Ara* HA. 2615 (DACB); Dhopachari, Chandanish, 18 ix 2017, *Moniruzzaman, Al Amin & Kawsar* MAK. 5706 (DACB); Boroiyadhala, Sitakunda, 28 xi 2017, *Moniruzzaman et al.* MAK. 6633 (DACB). **Cumilla:** Dargatilla, 26 ix 2004, *Hosne Ara* HA. 1417 (DACB). **Cox's Bazar:** Signal Hill and Kelatali, 08 x 1943, *Sinclare* (E 00075390), Jilamja, 14 v 1945, *Sinclare* 4314 (E 00075389); Teknaf, 23 x 1963, *Khan* 723 (DUSH); Teknaf Game Reserve, Whykeon Range, Rhykong beat, 29 ix 2005, *Hosne Ara* HA. 2357 (DACB); Chota Inani, 30 ix 2005, *Hosne Ara* HA. 2434 (DACB); Bara Inani, 30 ix 2005, *Hosne Ara* HA. 2463 (DACB); Swankhali, 30 ix 2005, *Hosne Ara* HA. 2506 (DACB); Himchari, 30 ix 2005, *Hosne Ara* HA. 2527 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 30 v 2006, *Hosne Ara* HA. 2630 (DACB) [Originally collected from Kawargola forest under Moulvibazar district]. **Dinajpur:** Singra forest, 18 viii 2005, *Hosne Ara* HA. 2074 (DACB). **Habiganj:** Kalenga beat, Kalenga, 05 v 2003, *Hosne Ara* HA. 275, 276, 277, 278, 280 (DACB); 06 v 2003, *Hosne Ara* HA. 306, 307, 308 (DACB); Kalengi beat, 17 viii 2004, *Hosne Ara* HA. 1087, 1088 (DACB); Kalenga beat, Kalenga, 16 v 2005, *Hosne Ara* HA. 1530, 1531, 1532, 1533, 1535, 1543, 1544, 1545 (DACB); Satchari forest 17 v 2005, *Hosne Ara* HA. 1579, 1580, 1581 (DACB). **Khagrachari :** Dighinala, Bagaichari, Marisha road, 30 viii 1997, *Rahman et al.* 1882 (HCU), Matiranga, Muslimpara, 29 viii 1998, *Rahman et al.* 1842 (HCU); Matiranga, 11 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 451, 452, 453, 454, 455, 456, 457, 458 (DACB); Allutilla, 11 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 474, 475, 476, 477 (DACB). **Moulvibazar:** Madhabkundo, 05 vii 2002, *Hosne Ara & Sarder Nasir Uddin* HA. 89, 90 (DACB); Lawachara reserve forest, 02 v 2003, *Hosne Ara* HA. 200 (DACB); Adampur beat, Kawargola forest, 03 v 2003, *Hosne Ara* HA. 237, 238, 239, 240, 241, 242, 243, 244, 245 (DACB); Madhabkundo, 04 v 2003, *Hosne Ara* HA. 269, 270 (DACB); Adampur beat, 17 viii 2004, *Hosne Ara* HA. 1089 (DACB); Sreemongal, Lawachara reserve forest, 15 v 2005, *Hosne Ara* HA. 1482, 1483, 1484, 1485 (DACB); Adampur beat, Kawargola forest, 18 v 2005, *Hosne Ara* HA. 1630, 1632, 1631, 1633 (DACB); Muraichara, 19 v 2005, *Hosne Ara* HA. 1679 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1716 (DACB); Hararganj reserve forest, Gazipur, 21 v 2005, *Hosne Ara* HA. 1734 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara*

HA. 1748, 1768 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1774 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1840, 1841, 1842 (DACB); Satchari forest area, 07 vii 2005, *Hosne Ara* HA. 1863 (DACB); Adampur beat, Kawargola forest, 06 x 2005, *Hosne Ara* HA. 2621 (DACB). **Netrakona:** Durgapur thana, Bijoypur, 16 vi 2004, *Hosne Ara* HA. 748, 749, 750 (DACB). **Panchagarh:** Dabiganj, Bak dur jhula, 01 vii 1998, *Mia, Nasir, Mosharaf & Haroon* M. 3984 (DACB). **Rangamati:** Kaptai, Sitapahar, Jamaichari, 25 x 1995, *Mohiuddin & Mezanul* 7544 (BFRH); Kaptai, Sitapahar, 16 vi 2001, *Sarder Nasir Uddin* N. 1021 (DACB); Kaptai, Sitapahar, Sitarghat, 24 ix 2002, *Sarder Nasir Uddin* N. 1522 (DACB); Kaptai, Bangchari, 06 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 318, 319, 320, 321, 322, 323, 324, 325 (DACB); Kaptai, Rampahar, 07 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 351, 353, 354, 355, 356, 357, 358 (DACB); Kaptai, Shilsori village, Velbapara, 08 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 384, 385, 386, 387, 388, 389 (DACB); Kaptai, Shilsori, 09 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 439, 440, 441, 442 (DACB); Pharu Reserve forest, Bilaichari, 21 vii 2009, *Sarder Nasir Uddin* N. 3740 (DACB). **Sherpur:** Gajni forest, 06 v 1982, *Mia et al.* M. 787 (DACB); Rangtia Range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 647, 685, 686 (DACB); Rangtia range, Gazni beat, 21 vi 2004, *Hosne Ara* HA. 920 (DACB); Jhenaigati thana, Rangtia hill, 22 vi 2004, *Hosne Ara* HA. 1027, 1031 (DACB); Gazni, 28 x 2007, *Ershad Tutul* 300 (DUSH); Runtia, 31 x 2009, *M. Khatun* 539 (DUSH). **Thakurgoan:** Sadar thana, Debipur, 08 viii 1998, *Khan, Haroon, Nasir & Zashim* K. 10095 (DACB).

India (Sikkim and Khasia Hills) and Myanmar.

The petiole and young leaves are used as a vegetable by the indigenous and local people. The juice extracted from the leaf and petiole of the plant is applied externally as a medicine to cure warts of the human body.

**Amorphophallus excentricus** Hett., *Blumea* 39 (1-2): 254-257 (1994). Hetterscheid and Ittenbach, *Aroideana* 19: 67 (1996); Boyce *et al.*, *Fl. Thailand* 11 (2): 151 (2012). Pl. XX.

Type: Hetterscheid H. AM. 154-T (L holo; spirit coll.), 19-viii-1992, cult. Hort. Bot. Leiden *ex* Thailand.

Bengali: *Ban Ol Kachu*

Tuber subglobose, c 11 cm in diameter and c 11 cm in high. Leaf solitary; petiole c 120 cm long and c 4 cm in diameter at base and tapering towards the tip, smooth, creamy with bottle green mottlings and pale towards the tip; leaf blade c 160 cm in diameter; leaflets elliptic-lanceolate, acuminate, 2-20 cm long, 2-5 cm in diameter, marginal surface slightly undulate, dark green adaxially and pale abaxially. Inflorescence solitary, long pedunculate; peduncle 98 cm long, 2.5 cm in diameter, smooth, cream with bottle green mottlings, covered by cataphylls, cataphyll c 23 cm long, c 7 cm in diameter. Spathe erect, cymbiform, not differentiate into tube and limb, c 33 cm long, c 10.5 cm in diameter at base, cream colour, small wart at the base. Spadix shorter than spathe, c 29.5 cm long; pistillate (female) flowers below in a zone, cylindrical, c 4 cm long, c 2 cm in diameter; no sterile region between male and female zone; staminate (male) flowers in a zone c 8 cm long, c 2 cm in diameter; appendix elongate, smooth, top acute or slightly rounded, base constricted, staminode absent at the base of appendix, c 17 cm long, c 3 cm in diameter, at the middle, tapering towards the tip, light yellow. Ovary subglobose, c 1 mm long, c 2 mm in diameter, greenish, unilocular with a single basal anatropous ovule, style very short, 0.5 mm long; stigma 1.5-2.5 mm in diameter, 0.5-1.0 mm high, inconspicuously 4-lobed with a bigger medium lobe, yellowish to brownish in colour. Male flowers pale yellowish, consisting of 3-5 stamens; stamens 2 mm long and 1.5 mm in diameter, anthers truncate. Fruit not seen. *Fl. & Fr.*: 6. *Grows in shady places of forest.*

**Moulvibazar:** Madhabkundo forest, 05 vi 1998, *Hosne Ara* HA. 35 (DACB).  
**Dhaka:** Bangladesh National Herbarium garden (Cultivated), 26 vi 2004, *Hosne Ara* HA. 1075 (DACB) [Originally collected from Madhabkundo forest under Moulvibazar district].

Peninsular Thailand and Malaysia.

**Amorphophallus krausei** Engl., Engler, Pflanzenr. 48 (IV. 23 C): 94 (1911). Hettterscheid and Ittenbach, Aroideana 19: 92-93 (1996); Heng & Hettterscheid in Heng *et al.*, Fl. China 23: 30 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 157 (2012); *Amorphophallus ximengensis* H. Li, Journ. Wuhan Bot. Resear. 6 (3): 212-214 (1988). Pl. XXI.

Type: Sheik Mokim in June 1901-Herb. Hort. Calcutta.

Bengali: *Ban Ol Kachu*

Tuber globose, c 9 cm in diameter, c 6.5 cm in high, no branching. Leaf solitary; petiole smooth, 20-120 cm long, 1-2 cm in diameter, dark rich reddish green with a few small dark elongated or pale green spots, the intensity of colours and the extension of the pattern variable; leaf blade solitary, cataphylls 3, lamina 60-80 cm in diameter; leaflets elliptic-lanceolate, acuminate, base decurrent, 11-48 cm long, 2-11 cm in diameter, adaxially green, abaxially pale green. Inflorescence solitary, cataphylls 3; peduncle 34-45 cm long, 1.3 cm in diameter at the base, smooth, dark rich reddish green with a few small dark elongated green spots near the base and at the middle of the peduncle, covered by about two cataphylls, each cataphyll 3.0-16.5 cm long and 2 cm in diameter at the base, outside brown with green spots, inside white. Spathe erect, ovate lanceolate, acuminate, 19.0-21.5 cm long, c 6 cm in diameter at the middle, c 7 cm in diameter at the base, basally convolute for 3.5-4.0 cm, remainder flattened, erect, greenish purple with light green spot outside, inside at the middle light greenish yellow and smooth, very light pinkish purple area at the base within, no distinct warts present, upper side of the spathe twisted, light purple colour, the margin of the spathe reflexed at maturity, top acute, twisted for 5 cm long. Spadix stipitate to 2-3 mm; 17.5-21.0 cm long, shorter or longer than spathe; pistillate (female) flower zone cylindrical, 2-3 cm long, 1.4-1.5 cm in diameter, flowers congested; a few staminode present between male and female zone, 2-3 mm long; staminodes ovate shaped, semiglobose, 1.0-4.5 × 1.0-3.1 mm, ivory white; staminate (male) flower zone elongate, 4.5-6.5 cm long, 1.3-1.7 cm in diameter, flowers congested; appendix elongate, conical, 10.5-12.0 cm long, 2.1-2.8 cm diameter at the middle, base slightly widened, surface smooth, dark yellow, a few staminode present at the base of appendix. Ovary subglobose, c 2 mm in diameter, c 1.5 mm long, pale green, unilocular, style, c 0.8 mm long, c 0.6 mm diameter, cream colour, stigma c 1.3 mm diameter, c 0.5 mm high, with a shallow irregular central depression, yellowish or orange. Male flowers having 1 or 2 stamens, stamens 1.0-2.1 mm high, filaments thick, 1-2 mm high, 1.0-1.4 mm in diameter, orange, anthers subtruncate, 0.1 mm high, 0.7-1.5 mm in diameter. Infructescence cylindrical, c 10 cm long, fruits c 1 cm long, ripening bright red.

*Fl. & Fr.*: 5-7. Grows in shady, moist places of hill slope, damp places of forest under growth and often mixed with bamboo.

**Moulvibazar:** Lawachara reserve forest, 02 v 2003, *Hosne Ara* HA. 202 (DACB); 15 v 2005, *Hosne Ara* HA. 1477, 1478, 1479, 1480, 1481 (DACB); Adampur beat, Kawargola forest, 18 v 2005, *Hosne Ara* HA. 1634, 1635, 1636, 1637 (DACB); Gazipur beat, Hararganj reserve forest, 21 v 2005, *Hosne Ara* HA. 1733 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1769 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1775, 1776 (DACB); Gazipur beat, Hararganj reserve forest, 05 vii 2005, *Hosne Ara* HA. 1808, 1809 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 28 v 2006, *Hosne Ara* HA. 2645 (DACB); 30 v 2006, *Hosne Ara* HA. 2646 (DACB); 25 vi 2008, *Hosne Ara* HA. 2744 (DACB) [Originally collected from Hararganj reserve forest under Moulvibazar district].

Northern Thailand, northern Myanmar and southwestern China.

**Amorphophallus longituberosus** (Engl.) Engl. *et* Gehrm., in Engler, Pflanzenr. 48 (1V. 23C): 73-74 (1911). Hu, Dansk Bot. Arkiv 23(4): 434-436 (1968); Hettterscheid and Ittenbach, Aroideana 19: 96-97 (1996); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 36-37 (2007); Boyce *et al.*, Fl. Thailand 11 (2): 159-160 (2012); *Hydrosme longituberosa* Engl. in Bot. Tidsskr. 24: 273 (1902); *Amorphophallus viridis* Ridl., J. Straits Branch Roy. Asiat. Soc. 61: 63 (1912); Fl. Malay Penins 5: 93 (1925). Fig. 7.

Type: J. Schmidt n. 541-Herb. Berlin, Copenhagen.

Bengali: *Huchi*

Tuberous herb, tuber elongate, usually unbranched, about 12 cm long, top part about 4 cm in diameter. Leaf solitary; petiole c 10-120 cm long, c 0.5-2.0 cm in diameter at the base, smooth, with a whitish waxy cover, dark greenish-black, mottled or covered with irregular cream-white spots on the surface; leaf blade highly dissected, tripartite, leaflets elliptic, elliptic-lanceolate, c 5-20 × 1-4 cm, short or long acuminate, base decurrent, adaxially green and abaxially pale green. Inflorescence solitary, long peduncled;

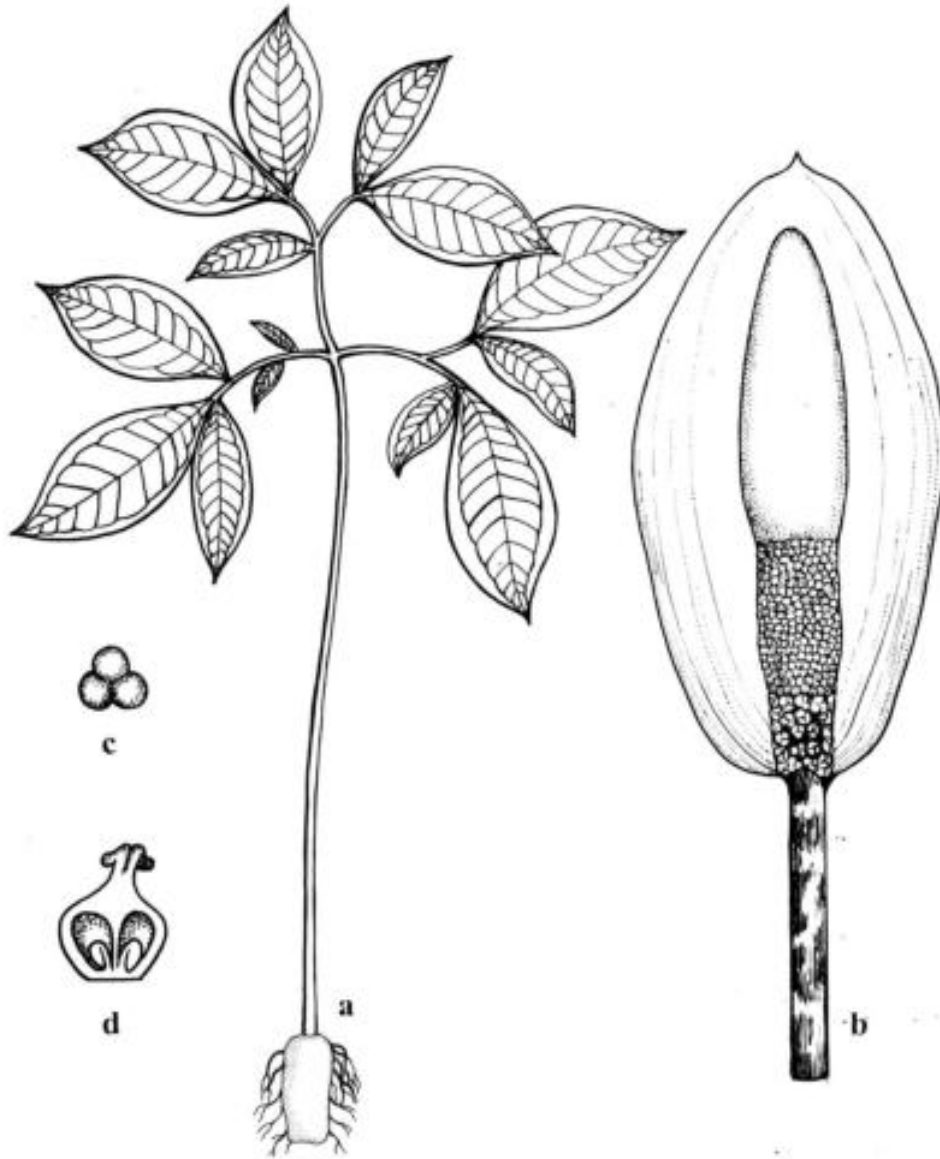


Figure 7. *Amorphophallus longituberosus* (Engl.) Engl. et Gehrm., a) habit sketch of a plant; b) spadix with a spathe; c) stigma; d) longitudinal section of gynoecium.



peduncle appearance as petiole, 10-60 × 0.8-1.5 (base). Spathe erect, about 4-15.5 × 2-10 cm, not differentiated into the tube and the limb, erect, elliptic to elongate triangular, tip acute, base convolute, widening at male anthesis, base inside nearly smooth, with few, scattered, shallow warts and pale to dark maroon in colour, outside pale grey with several dark grey spots/stripes and small white dots or uniformly green or greenish-white. Spadix sessile, slightly shorter than the spathe, c 4-12.5 cm long. Pistillate (female) flowers below, cylindrical, 0.5-2.0 × 0.5-1.5 cm, flowers congested; staminate (male) flowers in a zone c 2.5 cm long, c 1 cm in diameter, flowers congested; appendix cylindrical to conical, c 5.5 cm long, c 2 cm in diameter, smooth, ivory-white. Ovary globose, 1.0-1.3 × 2-5 mm, 2-, 3- or 4-locular, one basal ovule, anatropous, style c 1.5 mm long, stigma capitate, 3-4 lobed. Stamens 2.5-3.0 mm long, off-white, filament 1.5-2 mm long, anthers subglobose, 1.0 × 1.3 mm. Infructescence cylindrical, 2-8 cm long with a few or many berries. Fruits elliptic or rounded, c 1 cm long, 1-, 2-, 3-, or 4- seeded, at first green, ripening red. Seeds c 7 mm long. *Fl. & Fr.*: 5-6. *Village thickets in shady areas*. 2n = 28 (Petersen, 1989).

**Bogura:** Gabtoli thana, Beltola village, 08 v 2002, *B.M. Rezia Khatun* 3603 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 07 v 2006, Hosne Ara HA. 2636 (DACB); 16 v 2015, *Hosne Ara* HA. 2880 (DACB) [Originally collected from Beltola village under Bogura district]. **Kurigram:** Singhimari village, 20 v 2013, *Hosne Ara* HA. 2844 (DACB).

Northern Thailand and peninsular Malaysia.

Its leaves and petioles are used as a vegetable in the rural areas.

***Amorphophallus margaritifer*** (Roxb.) Kunth, Enum. Pl. 3: 34 (1841). Hettterscheid & Sarker, Aroideana 19: 132-138 (1996); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 421 (2002); *Arum margaritifer* Roxb., Fl. Ind. (Ed., Carey) 3: 512 (1832); Wight, Icon. Pl. Ind. Or. 3(1): 6, t. 795 (1844); *Plesmonium margaritifera* (Roxb.) Schott, Syn. Aroid.: 34 (1856) ("*margaritifera*"); Gen. Aroid. t. 26 (1858); Hook. f., Fl. Brit. India 6: 518 (1893-reprint 1954); Prain, Beng. Pl. 2: 1110 (1903-reprint 2004); Engler, Pflanzenr. 48 (IV. 23C): 49-51 (1911); Haines, Bot. Bihar and Orissa: 860-861

(1924-reprint 1978); Fischer in Gamble, Fl. Pres. Madras 3: 1107 (1931-reprint 1967); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 101 (1953); Mitra, Fl. Pl. E. India 1: 75 (1958); Mukherjee, Fl. Pachmarhi & Bori Reserves: 313 (1984); Verma *et al.*, Fl. Raipur, Durg and Rajnandgaon: 396 (1985); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 12 (1989); Ellis, Fl. Nallamalais 2: 403-404 (1990); Parmar in Shetty & Singh, Fl. Rajasthan 3: 867 (1993); Pullaiah, Fl. Andhra Pradesh 3: 1026 (1997); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 70 (2007); *Plesmonium margaritifera* f. minor Engl., Pflanzenr. 48 (IV. 23C): 51 (1911). Pl. XXII.

Lectotype: Wight, Icon. Pl. Ind. Or. 3(1): 6, t. 795 (1844).

Bengali: *Jongle Ol*

Terrestrial herb; tuber more or less subglobose to depressed globose, 2.5-5.0 cm in diameter and 1.5-3.0 cm thick in vegetative phase, 7-12 cm in diameter and 5-6 cm thick in reproductive phase, seasonally producing numerous small globose to fusiform offsets. Leaf solitary; petiole smooth, 20-80 cm long, 1-3 cm in diameter at the base, green with numerous narrowly elongated black-margined pale green stipes, with small spots between, petiole paler towards the tip, dark green to blackish green at the extreme base; leaf blade 20-70 cm in diameter, 3-sect, segments pinnatisect; leaflets entire, narrowly lanceolate, acuminate, 7-22 cm long, 1-3 cm in diameter, decurrent at base, adaxially green, abaxially paler green. Inflorescence solitary; peduncle smooth, 30-60 cm long, 2-4 cm in diameter, stout, colour same as that of the petiole. Spathe 9-15 × 13-20 cm, erect, broadly ovate, obtuse, concave, loosely convolute below the middle, pale greenish outside, flushed with pink inside, dark purple at the base inside, coriaceous. Spadix very stout, stipitate, obtuse, as long as the spathe or slightly longer than the spathe, 9-16 cm long, lacking a sterile appendix, stipitate for about 1 cm, greenish, with a basal pistillate (female) flower zone about 1.5-3.5 cm long; the central neuter zone about 1.5-2.0 cm long; staminate (male) flower zone about 5-7 cm long and the terminal zone occupied by sterile flowers (neuters). Pistillate flowers numerous, scattered, ovary pale green, globose, 2.5-3.0 × 2.5 mm, 2-3 locular, 1 ovule in each locule, style very short, 0.5-1.0 × 1 mm, stigma yellowish, capitate, 2-3 lobed, 2 × 2 mm, surface verrucate. Neuter flower loosely arranged, large, elongate-obovoid, 7-9 × 4-5 mm at top, cream, tip obtuse or

subtruncate. Male flowers pale brownish yellow, anthers crowded, very short, each 2-3 × 1.5-2.0 mm, dehiscence by apical pores. Fruit a berry, subglobose, red at maturity, c 8 mm long, 1-3 seeded. *Fl. & Fr.:* 5-6. *Shady moist areas on the forest floor.*

**Rajshahi:** Godagari Upazilla, 27 vi 2014, *Md. Sharif Hossain Sourav* 01 (DACB).

India.

The people of Goa (India) apply crushed seeds of the plant in tooth cavity to cure toothache. Because of its numbing effect, the crushed seed is also used externally to cure bruises. The Mundas in India use well-ground raw tuber of the plant to cure body swellings (Caius, 1986).

**Amorphophallus napalensis** (Wall.) Bogner & Mayo, *Aroideana* 8 (1): 19 (1985). Noltie, *Fl. Bhutan* 3 (1): 133 (1994); Hettterscheid & Ittenbach, *Aroideana* 19: 103 (1996); Hajra & Verma, *Fl. Sikkim* 1: 186-187 (1996); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 37-38 (2007); *Thomsonia napalensis* Wall., *Pl. Asiat. Rar.* 1: 83, t. 99 (1830); Blume in Rumphia 1: 150 (1835); Hook. f., *Fl. Brit. India* 6: 518 (1893-reprint 1954); Engler, *Pflanzenr.* 48 (IV. 23C): 56-58 (1911); Hara, *Fl. Eastern Himalaya*: 398 (1966); Hu, *Dansk Bot. Arkiv* 23 (4): 436-438 (1968); Rao & Verma, *Bull. Bot. Surv. India* 18 (1-4): 22 (1976); Hara *et al.*, *Enum. Fl. Pl. Nepal* 1: 92 (1978); *Pythonium wallichianum* Schott, Schott & Endl., *Melet. Bot.*: 17 (1832); *Amorphophallus chlorospathus* auct. non Kurz: *Spring, Fl. Sikkim Himal.*: f. 216-217 (1963). Pl. XXIII.

Type: Nepal, in mountain forest, flowering in June, t. 99 (Wallich, *Pl. Asiat. Rar.*, 1830).

Bengali: *Bannyo Ol Kachu*

Tuberous herb; tuber c 14 cm in diameter, c 12 cm high, subglobose, pale to dark dirty brownish colour. Leaf solitary; petiole stout, c 1 m long, c 2.5-3.5 cm in diameter at the base, pale green with more or less large, irregular dark green or blackish spots; leaf blade dissected, tripartite; leaflets elliptic or oblong or elliptic-lanceolate or obovate, 9-20 cm long, 3-8 cm in diameter, adaxially pale green. Inflorescence solitary; long peduncled, c 72 cm long, stout, blotched like the petiole. Spathe longer, narrower, c 34 × 13.5 cm, not mottled outside, not differentiated into the tube and the limb, tip acute, outside and

inside pale green, becoming yellowish-green at the male anthesis and then opening wider. Spadix exposed, very stout, c 25 × 2 cm, shorter than the spathe, with a rounded apex, green changing to yellow; pistillate (female) flowers below, in a zone c 4.5 cm long and c 1.5 cm in diameter; staminate (male) flowers in a zone 10.5 cm long and 2 cm in diameter; appendix c 9.5 × 2.0 cm, tuberculate, yellowish with numerous small conical warts. Ovary globose, 2-loculed, ovule 1, placenta basal, anatropous, style 1.5 mm long, stigma capitate, faintly 3-lobed. Anthers 3-5, subsessile, pale orange-yellow. Fruit not seen. *Fl. & Fr.*: 4-7. *Rain forests, shaded areas of hill slopes and foot hills, sometimes the hill tops.* 2n = 28 (Petersen, 1989).

**Habiganj:** Chunarughat thana, Kalenga forest range, Kalenga beat area, 27 x 1999, *Zashim Uddin* 1058 (DUSH). **Mymensingh:** Haluaghat, 06 x 2009, *M. Khatun* 115 (DUSH). **Sherpur:** Jhenaigati thana, Rangtia hill, 22 vi 2004, *Hosne Ara* HA. 1028 (DACB). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 30 ix 2004, *Hosne Ara* HA. 1436 (DACB) [Originally collected from Rangtia hill under Sherpur district].

Bhutan, Nepal and India (Darjeeling and Sikkim).

Indigenous people use its young leaves and petioles as a vegetable.

**Amorphophallus paeoniifolius** (Dennst.) Nicolson var. **campanulatus** (Decne.) Sivadasan, *Taxon* 32: 130 (1983). Bakshi, *Fl. Murshidabad Dist.*: 336 (1984); Sharma *et al.*, *Fl. Karnataka*: 296 (1984); Nicolson in Dassanayake & Fosberg, *Rev. Handb. Fl. Ceylon* 6: 37-42 (1987); Henry *et al.*, *Fl. Tamil Nadu*, ser. 1, 3: 55 (1989); Karthikeyan *et al.*, *Fl. India Enum. in Fl. India ser. 4*: 6 (1989); Kothari & Moorthy, *Fl. Raigad Dist. Maharashtra State*: 420 (1993); A. Hay *et al.*, *Blumea Supplement* 8: 27-28 (1995); Saxena & Brahmam, *Fl. Orissa* 4: 2034 (1996); Pullaiah, *Fl. Andhra Pradesh* 3: 1022 (1997); Mayo *et al.*, *Genera Araceae*: 235-238 (1997); Bhattacharyya & Sarkar, *Fl. W. Champaran Dist. Bihar*: 400-401 (1998); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 38-39 (2007); *Dracontium polyphyllum* sensu Dennst., *Schlüssel Hort. Malabar* 13, 38 (1818), non L. (1753); *Arum campanulatum* sensu auct. in part, not as to type of Roxb. (1820), *nom. illegit.*; Roxb., *Pl. Corom.* 3: t. 272 (1820); Hook., *Bot. Mag.* 55: t. 2812 (1828); Wight, *Icon. Pl. Ind. Or.* 3: 5 t. 782 (1844); *Amorphophallus*

*campanulatus* Decne., Nouv. Ann. Mus. Hist. Nat. Paris 3: 366 (1834); Decne., Herb. Timor: 38 (1835); Blume, Rumphia 1: 139, t. 32, 33 (1837); Thw., Enum. Pl. Zeyl.: 335 (1864); Hook. f., Fl. Brit. India 6: 513-514 (1893-reprint 1954); Prain, Beng. Pl. 2: 1109 (1903-reprint 2004); Cooke, Fl. Pres. Bombay: 825-826 (1908); Haines, Bot. Bihar and Orissa: 861-862 (1924-reprint 1978); Heinig, List Chittagong: 74 (1925); Fischer in Gamble, Fl. Pres. Madras: 1587 (1931), repr. ed. 3: 1106-1107 (1967); Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 27 (1931); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 100 (1953); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 110 (1956); Nicolson in Saldanha & Nicolson, Fl. Hassan Dist.: 783-784 (1976); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 20-22 (1976); Bennet, Fl. Howrah Dist.: 93 (1979); Deb, Fl. Tripura State 2: 397-398 (1983); Naithani, Fl. Chamoli 2: 669 (1985); *Amorphophallus dubius* Blume, Rumphia 1: 142 (1837); Kunth, Enum. Pl. 3: 32 (1841); Schott, Syn. Aroid. 38 (1856); Prodr. Syst. Aroid. 130 (1860); Hook. f., Fl. Brit. India 6: 514 (1893-reprint 1954); Engler, Pflanzenr. 48 (IV. 23C): 74-75 (1911); Fishcer in Gamble, Fl. Pres. Madras: 1587 (1931); repr. ed. 3: 1107 (1967); *Amorphophallus sativus* Blume, Rumphia 1: 145 (1837); Engler, Pflanzenr. 48 (IV. 23C): 109 (1911); *Amorphophallus campanulatus* var. *blumei* Prain, Beng. Pl. 2: 1109 (1903-reprint 2004). Pl. XXIV.

Type: Mulenschena Rheede, Hort. Malab. 11: t. 19 (1692).

Bengali: *Ol Kachu*

English: Elephant-yam

Erect herb; tuber depressed-globose, 5.5-20.0 × 4-25 cm, dark brown outside. Leaf solitary; petiole stout, 90-140 cm long, 4-8 cm in diameter, light green with white mottles, surface shallowly corrugate to strongly echinate-verrucate, rarely entirely smooth; leaf blade highly dissected, 30-300 cm across, tripartite, rachises narrowly or broadly winged almost to the base; leaflets rounded, ovate, obovate, elliptic, elliptic-oblong, elliptic lanceolate or lanceolate, 3-35 × 2-12 cm, acuminate, adaxially mid green, abaxially mid green or pale green. Inflorescence solitary; short-peduncled, peduncle 4.5-8.0 cm long and 1-2 cm in diameter, blotched as in the petiole. Spathe broadly campanulate, 15-45 × 15-60 cm, the lower spathe (tube) and limb often separated by a shallow constriction, margin undulate and crisped with a basal convolute and an upper spreading portion, outside light green with whitish patches, inside dark purple, with a

yellowish area and the rest purple to green. Spadix very stout and sessile, 18-40 cm long, usually broader than long, with pistillate (female) flowers below, cylindrical, 3-25 × 1-12 cm, flowers congested or slightly distant; staminate (male) flowers above, about 3-6 cm long and with an apical naked, sterile, dark greenish-purple appendix, appendix irregularly lobed, spongy and whitish within, short or long conical with round or acute tipped, 4-15 × 3-8 cm. Pistillate flowers numerous, ovary subglobose to ovoid, 2-3 locular, ovule 1 per locule, anatropous, style twice the length of the ovary, maroon, stigma 2-3 lobed, reniform, pale or deep yellow coloured. Staminate flowers arranged compactly in a sub-turbinate form, anthers sessile, 2-lobed, off-white coloured and dehiscence by apical pores. Fruit an obovoid berry, 2-3 seeded, orange to red in colour. *Fl. and Fr.*: 5-11. *Damp and moist places under the shades of trees, forest areas and plantations.*  $2n = 28$  (Petersen, 1989).

**Bandarban:** Chimbuk, 29 vi 1987, *Das & Alam* 5886 (BFRIH). **Bengal:** Locality, Collection date, year & number unknown, *J.D. Hooker & Thomson* (K). **Bogura:** Dhunot Upazilla to Sherpur, 19 iii 2011, *Hosne Ara* HA. 2795 (DACB). **Chattogram:** Sitakundo, 22 vi 1979, *Mia & Rahman* M. 105 (DACB); Chunati, 26 ix 2005, *Hosne Ara* HA. 2226 (DACB); Bariadhala, 01 x 2005, *Hosne Ara* HA. 2571 (DACB); Bara Kumira, 01 x 2005, *Hosne Ara* HA. 2584 (DACB); Sitakundo, 01 x 2005, *Hosne Ara* HA. 2596 (DACB); Mirsarai, 01 x 2005 *Hosne Ara* HA. 2605 (DACB). **Cox's bazar:** Ramu, 29 ix 2005, *Hosne Ara* HA. 2285 (DACB); Bara Inani, 30 ix 2005, *Hosne Ara* HA. 2464 (DACB); Swankhali, 30 ix 2005, *Hosne Ara* HA. 2505 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 30 v 2006, *Hosne Ara* HA. 2652 (DACB) [Originally collected from Kalenga beat under Habiganj district]. **Dinajpur:** Singra forest, 18 viii 2005, *Hosne Ara* HA. 2075 (DACB). **Habiganj:** Kalenga beat, Kalenga, 05 v 2003, *Hosne Ara* HA. 279 (DACB). **Jashore:** Jashore town area, 26 v 2012, *Hosne Ara* HA. 2843 (DACB). **Khagrachari:** Jamtoli, 12 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 491 (DACB). **Kurigram:** Singhimari village, 20 v 2013, *Hosne Ara* HA. 2851 (DACB); Baruitari village, 24 viii 2013, *Hosne Ara* HA. 2859 (DACB). **Magura:** Magura area, 26 v 2012, *Hosne Ara* HA. 2835 (DACB). **Moulvibazar:** Madhabkundo, 07 vii 2002, *Hosne Ara & Sarder Nasir Uddin* HA. 125 (DACB); Adampur beat, Kawargola forest, 06 x 2005, *Hosne Ara* HA. 2622 (DACB). **Narayanganj:** Sonargaon,

07 vii 2005, *Hosne Ara* HA. 1916 (DACB). **Narsingdi:** Narsingdi Sadar, 07 vii 2003, *Hosne Ara* HA. 1887 (DACB). **Patuakhali:** Galachipa, Amkhola, 01 ii 2007, *M. Sultana* 1465 (DUSH). **Rajbari:** Rajbari area, 26 v 2012, *Hosne Ara* HA. 2821 (DACB). **Rangamati:** Rangamati area, 16 vi 2001, *Sarder Nasir Uddin* N. 1021 (DACB); Farua reserve forest, Bilaichari, 19 iv 2009, *Sarder Nasir Uddin* N. 3534 (DACB); *ibid*, 21 vii 2009, *Sarder Nasir Uddin* N. 3740 (DACB). **Sherpur:** Rangtia Range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 688 (DACB). **Sirajganj:** Kazipur Upazilla to Charkhadah village, 18 iii 2011, *Hosne Ara* HA. 2790 (DACB). **Sunamganj:** Town area, 06 vi 1998, *Hosne Ara* HA. 44 (DACB).

Northern Thailand, Sri Lanka, India, Myanmar, southern China, Java (Indonesia) and northern Australia.

*Ol kachu* is a very common type of aroid in Bangladesh, and is cultivated for its edible corm. It is cultivated in the districts of Satkhira, Jashore and the Chattogram Hill Tracts on a commercial basis.

The tuber acts as appetiser, stomachic and tonic, and is used in the treatment of abdominal pains, tumours, asthma, bronchitis, vomiting, elephantiasis, piles, acute rheumatism, diseases of blood and enlargement of the spleen. Aerial parts of the plant are used in earache, swelling of throat, pimples, cholera, diarrhoea, pain, puerperal fever, kala-azar, neuralgia and bites of poisonous insects. Roots are emmenagogue, and used in boils and ophthalmia (Ghani, 2003). It has highly antidiabetic properties (Hassan and Maruf, unpublished).

People of Bangladesh eat fried *Ol kachu* for the treatment of gout. The sap of petiole is used for relief of poisonous insect bite (Hassan, 1988).

**Anthurium** Schott, in Wiener Z. Kunst 1829 (3): 828 (1829).

**Type (Lectotype) species:** *A. acaule* (Jacquin) Schott (*Pothos acaulis* Jacquin, Britton & Wilson, Sci. Surv. Porto Rico 5: 128. 1923).

Evergreen herbs; stem erect, creeping, or short to long-climbing, rarely terrestrial, internodes very short or elongate. Leaves petiolate; petiole short or elongate, short

vaginate at the base, always geniculate apically; leaf blade small to very large (exceeding 2 m), usually coriaceous, rarely membranaceous or stiff and brittle, extraordinarily variable in shape, linear to orbicular in outline, rarely peltate, entire to trifid or trisect, or pedatifid or sub-palmatifid, or pedatisect to radiatisect, rarely the lobes or segments themselves pinnately lobed, cuneate to cordate at the base, sagittate or hastate. Inflorescence always solitary; peduncle usually rather elongated, rarely short. Spathe usually persistent, sometimes marcescent or deciduous, usually linear to linear-lanceolate, rarely elliptic to ovate, broadly cordate to sub-orbicular, erect, spreading or reflexed. Spadix sessile to long-stipitate, usually cylindrical to conic, rarely clavate or globose, very short to very long (over 1 m). Flowers bisexual, perigoniate, tepals 4. Ovary ovoid to oblong or obovoid, 2-locular, ovules 1-2 per locule, rarely more, anatropous, hemianatropous or sub-campylotropous, funicle short, placenta axile near the apex of the septum, stilar region inconspicuous to attenuate, stigma small, sub-capitate. Stamens 4, free, filaments sub-compressed, usually equalling tepals at anthesis, sometimes exceeding them, anthers short, connective slender, opening by a longitudinal slit. Fruit a berry, variously shaped from globose to elongate-fusiform. Seed oblong to ellipsoid or subglobose, sometimes curved, testa usually smooth or somewhat verrucose, thin.

Over 800 species are distributed throughout tropical America and West Indies (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 2 cultivated species.

#### KEY TO THE SPECIES

- |   |                    |
|---|--------------------|
| 1. Cordate bright red spathe, spadix pendent and tipped<br>yellow with white band | <b>andreanum</b>   |
| - Linear green spathe, spadix slender, yellowish green                            | <b>crytallinum</b> |

**Anthurium andreanum** Linden, Illustr. Hort. 24: 43, t. 271 (1877). Engl., Pflanzenr. 21 (IV. 23B): 241 (1905); Baily, Manual Cult. Pl.: 184 (1949); Graf, Exotica, edn. 8: 128, 1755 (1976); Tropica, edn. 5: 94, 941 (1978-reprint 2003); Nicolson, Fl. Vitiensis Nova 1: 445-446 (1979); Sheffer *et al.*, Taxon 29: 502 (1980); Walters *et al.*, European Gard. Fl. 2 (2): 83-84 (1984-reprint 2003); Mayo, Fl. Trop. E. Africa: 5 (1985); Nicolson in



Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 20 (1987); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 39-40 (2007). Pl. XXV.

Type: Colombia. Linden based the taxon on a cultivated plant originally collected by E. Andre' in 1876 in El Choco' Province, Colombia.

Bengali: *Bahari Kachu*

English: Flamingo Flower, Boy Flower

A small herb; stem usually less than 30 cm long, 1-2 cm in diameter, internodes short. Leaves petiolate; petiole 20-60 cm long, nearly erect, terete, short-vaginate at the base, leaf blade 17-50 × 11-22 cm, coriaceous, narrowly ovate, heart-shaped, green, with prominent, sometimes overlapping basal lobes, marginal vein arising from the first basal vein. Inflorescence solitary, usually held above the leaves; peduncle more or less erect. Spathe 6-15 × 5.0-12.5 cm, bright red, broadly ovate to almost rounded, cordate, puckered, often with prominently raised veins. Spadix pendent and tipped, 4-9 cm × 6-8 mm, usually white, becoming yellowish at least towards the apex, slightly tapered to the apex, usually curved slightly and directed downwards. Ovary ovoid to oblong, 2-locular, ovules 1-2 per locule, anatropous, placentation axile. Stamens 4, free. Fruit a berry, ovoid, reddish. *Fl. & Fr.*: 1-12. *Warm, moist environment and shady damp places.* 2n = 30, 32 (Kumar and Subramaniam, 1986).

**Dhaka:** Mirpur C & B garden, 06 iii 1980, *Mahbuba Halim* 804 (DACB); Mirpur Botanical Garden, 02 x 2004, *Hosne Ara* HA. 1443 (DACB).

Southwest Colombia and Northwest Ecuador.

The plant is widely used for ornamental purposes in public places and homesteads.

***Anthurium crystallinum*** Linden & André, Linden, Cat: 90, t. 128 (1873); Illustration Horticole 20: 87 (1873). Engl., Pflanzenr. 21 (IV. 23B): 198 (1905); Baily, Manual Cult. Pl.: 185 (1949); Graf, Exotica, Edn. 8: 133 (1976); Tropica, edn. 5: 92, 941 (1978-reprint 2003); Walters *et al.*, European Gard. Fl. 2 (2): 83 (1984-reprint 2003); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 20 (1987); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 40 (2007). Pl. XXVI.

Type: Colombia.

Bengali: *Sundar Patar Kachu*

English: Crystal Hope

An upright, epiphytic perennial herb; stem c 25 cm tall. Leaves petiolate; petiole c 21 cm long, short-vaginate at the base; leaf blade large, broadly ovate to elliptic, velvety, deep green, pink-bronze when young, sharply reflexed and 30-45 cm long, midrib and veins white, Inflorescence solitary; peduncle elongate. Spathe erect and spreading, narrow, green, c 8 cm long. Spadix borne intermittently, slender, yellowish green, 12-18 cm long. Flowers bisexual. Ovary ovoid to oblong, 2-locular, ovules 1-2 per locule, anatropous, placentation axile, stigma small. Stamens 4, free. Fruit a berry, globose. Seed subglobose, testa smooth and thin. *Fl. & Fr.*: 1-12. *Warm, moist and shady places.*  $2n = 30, 34$  (Kumar and Subramaniam, 1986).

**Dhaka:** Ramna Park, 19 ii 1981, *Mahbuba Halim* 921 (DACB); Mirpur Botanical Garden, 02 x 2004, *Hosne Ara* HA. 1444 (DACB).

Colombia.

As an ornamental plant, it is commonly planted both in public places and homesteads.

**Ariopsis** Nimmo in J. Graham, *Cat. Pl. Bombay*: 252 (1839).

**Type species** : *A. peltata* Nimmo

Small to medium-sized, slender, seasonally dormant herbs with milky latex; stem a subglobose tuber. Leaves usually solitary, rarely few together; petiole very slender, sheath fairly short; leaf blade peltate, cordate-ovate or only emarginate basally, thin, glaucous below, posterior lobes very short, primary lateral veins pinnate and also radiating from the petiole insertion, forming a sub-marginal collective vein, marginal vein also present, higher order venation reticulate. Inflorescence 1-3 in each floral sympodium, appearing with or without leaves; peduncle very slender, equalling to or much longer than the spathe, erect to spreading. Spathe ovate, boat-shaped, hooded, not constricted, gaping widely, not convolute at the base, marcescent. Spadix shorter than the spathe; pistillate (female) flower zone adnate to the spathe, very short and few-flowered,

sometimes separated from the staminate (male) flower zone by short, free, naked axis; staminate (male) flower zone fertile to apex, relatively thick, cylindrical-conoid, many-flowered. Flowers unisexual, perigone absent. Ovary ovoid to ovoid-oblong, 1-locular, ovules many, orthotropous, placentae 4-6, parietal, stylar region absent, stigma stellate with 4-6 lacinate lobes. Synandrium peltate, connate filaments forming a stipe longer and narrower than the dilated common connective, thecae subglobose to ellipsoid, dehiscent by an oval pore. Fruit a berry, 4-6 angled, stigma persistent, many-seeded. Seed oblong, apically narrowed and obtuse.

Two species are distributed throughout tropical south Asia (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 2 species.

#### KEY TO THE SPECIES

- |   |                    |
|---|--------------------|
| 1. Plants with both inflorescence and leaves appearing at the same time | <b>peltata</b>     |
| - Plants with inflorescence before the emergence of leaves              | <b>protanthera</b> |

**Ariopsis peltata** Nimmo in Graham, Cat. Pl. Bombay & Civin. (Add. & Corr.): 252 (1839). Schott, Syn. Aroid.: 40 (1856); Gen. Aroid. t. 35 (1858); Prodr. Syst. Aroid.: 136 (1860); Hook. f., Fl. Brit. India 6: 519 (1893-reprint 1954); Cooke, Fl. Pres. Bombay: 827 (1908); Engler, Pflanzenr. 71 (IV. 23E): 130-131 (1920); Fischer in Gamble, Fl. Pres. Madras: 1580 (1931), repr. ed. 3: 1102 (1967); Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 30 (1931); Mitra, Fl. Pl. E. India 1: 76 (1958); Nicolson in Saldanha & Nicolson, Fl. Hassan Dist.: 784 (1976); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 22-23 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 88 (1978); Sharma *et al.*, Fl. Karnataka: 296 (1984); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 7 (1989); Vajravelu, Fl. Palghat Dist.: 532 (1990); Kothari & Moorthy, Fl. Raigad Dist. Maharashtra State: 421 (1993); Noltie, Fl. Bhutan 3 (1): 130 (1994); Deshpande *et al.*, Fl. Mahabaleshwar Adjoin., Maharashtra: 614-615 (1995); Hajra & Verma, Fl. Sikkim 1: 187 (1996); Mayo *et al.*, Gen. Araceae: 275-276 (1997); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 179 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 41 (2007); Remusatia vivipara sensu Wight, Icon. Pl. Ind. Or. 3: t. 900 (1845), non Schott (1832);

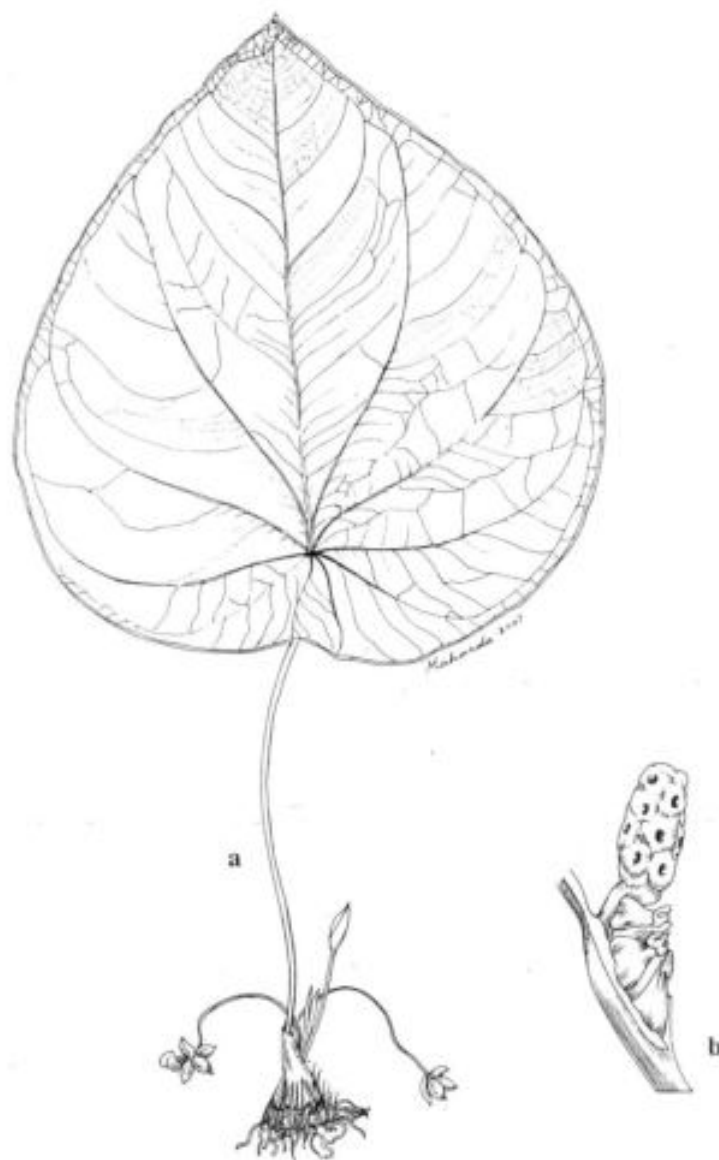


Figure 8. **Ariopsis peitata** Nimmo: a) habit sketch of a flowering plant; b) a spadix.

*Ariopsis protanthera* N.E. Brown, Rep. Roy. Gard. Kew. 51 (1877), nom. nud; *Ariopsis peltata* f. *coaetanea* Engl., Pflanzenr. 71 (IV. 23E): 130-131 (1920). Fig. 8.

Type: 'Concan', Stocks s. n. (K).

Bengali: *Choto Kachu*

English: Cute Little Oddball

Small herb; clustered with many slender root-fibres; stem a subglobose tuber, 1-3 cm in diameter, greenish. Leaves usually solitary; petiole slender, sheath fairly short, light green to purplish, 5-16 cm long, 2-3 mm in diameter; leaf blade entire, peltate, apiculate, broadly ovate to sub-orbicular, cuspidate, base very shallowly cordate, posterior lobe very short, venation sub-palmate, 5-15 × 3.8-11.0 cm, thin textured. Inflorescence 1-3 in each floral sympodium, appearing with leaves; peduncle very slender, much longer than the spathe, erect, 2-6 cm long. Spathe cymbiform, 0.8-1.7 × 0.6-1.2 cm, apiculate, incurved, not convolute at the base, marcescent, pinkish or mauve. Spadix shorter than the spathe; pistillate (female) flower zone 2.5-6.5 mm long, separated from staminate (male) flower zone by short, free, naked axis; appendix absent. Ovary 1-locular, ovules many, orthotropous, placentae 4-6, parietal, extending from the base to the apex of locule, style absent, stigma sessile, 4-6 lobed, yellowish-orange. Staminate (male) flower zone embedded in the tissue of the spadix, of 2-loculed anthers connate in groups of three, ellipsoid, blunt, 4.5-8.0 × 2.0-3.8 mm, yellow, strongly stipitate. Fruit a berry, with a membranous wall, many-seeded. Seeds oblong, apically narrowed and obtuse, longitudinally furrowed. *Fl. & Fr.*: 5-8. *On shady, wet rocks in deep forests.* 2n = 28 (Petersen, 1989).

**Rangamati:** Kaptai, Sita Pahar, Barochara, 17 vi 2001, *Sarder Nasir Uddin* N. 1029 (DACB); 24 ix 2002, *Sarder Nasir Uddin* N. 1545 (DACB); 08 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 435 (DACB).

India (Assam, Sikkim and the western Ghats), Nepal, Bhutan and Myanmar.

***Ariopsis protanthera*** N.E. Br. in Rep. Roy. Gard. Kew 1877: 51 (1877). Hook. f., Fl. Brit. India 6: 519 (1893 - reprint 1954); Mayo *et al.*, Gen. Araceae: 275-276 (1997); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 181 (2002); Boyce *et al.*, Fl. Thailand 11 (2): 198-199 (2012); *Ariopsis peltata* f. *protanthera* (N.E. Br.) Engl. & Krause in Engl. Pflanzenr. 71 (IV. 23E): 130-131 (1920). Fig. 9.

Type: Assam (Chatterjee-Herb. Calcutta).

Bengali: *Choto Kachu*

Diminutive tuberous-stemmed herb with milky latex, seasonally dormant, to 12 cm tall; stems irregularly globose, white, green where exposed to light, c 2 cm in diameter, mostly clustered. Leaves usually solitary, rarely few; petiole very slender, sheaths fairly short, 6-14 cm long; leaf blade peltate, 3-10 × 4-10 cm, cordate-ovate or only emarginate basally, thin, glaucous grey green with copious thick white latex when damaged, posterior lobes very short; primary lateral veins also present, higher order venation reticulate. Inflorescence 1-3 in each floral sympodium, appearing before the leaves; peduncle very slender, 4-5 cm long, much longer than spathe, erect to spreading. Spathe ovate, boat-shaped, 2.0-2.5 × 1.0 cm, not constricted, gaping widely, not convolute at the base, marcescent, dull yellow. Spadix shorter than spathe, c 1.5 × 0.4 cm; pistillate (female) flower zone adnate to spathe, c 4 mm long, very short and few flowered; sterile interstice free, naked, c 3 mm long; staminate (male) flower zone fertile to apex, cylindrical-conoid, c 10 × 4 mm, many-flowered, dirty very pale yellow. Flowers unisexual, perigone absent. Ovary ovoid to ovoid-oblong, c 3 × 4 mm, pale green speckled purple, stylar region very short, 1-locular, ovules many, orthotropous, placenta 4 - 6, parietal, stigma persistent, stellate with 4-6 lobes. Synandrium peltate, connate filaments forming a stipe longer and narrower than dilated common connective, thecae subglobose to ellipsoid, dehiscent by oval pore, synandria all connate apically, forming a continuous surface punctured by cavities with somewhat prominent margins into which pollen is shed from the surrounding thecae. Fruits a 4-6 angled berry, c 5 × 5 mm, pale green. Seed many, oblong, apically narrowed and obtuse. *Fl. & Fr.*: Not available. *Shady seepage areas of nearly vertical slopes with remnant evergreen forest, geophytes on forest floor or in rock crevices.*

**Rangamati:** Kaptai Lake, Shubalong, 05 ix 1999, *Boyce, Toha & Rahman* 5648 (HCU, K).

Northeastern India through northern Myanmar and northern Thailand.

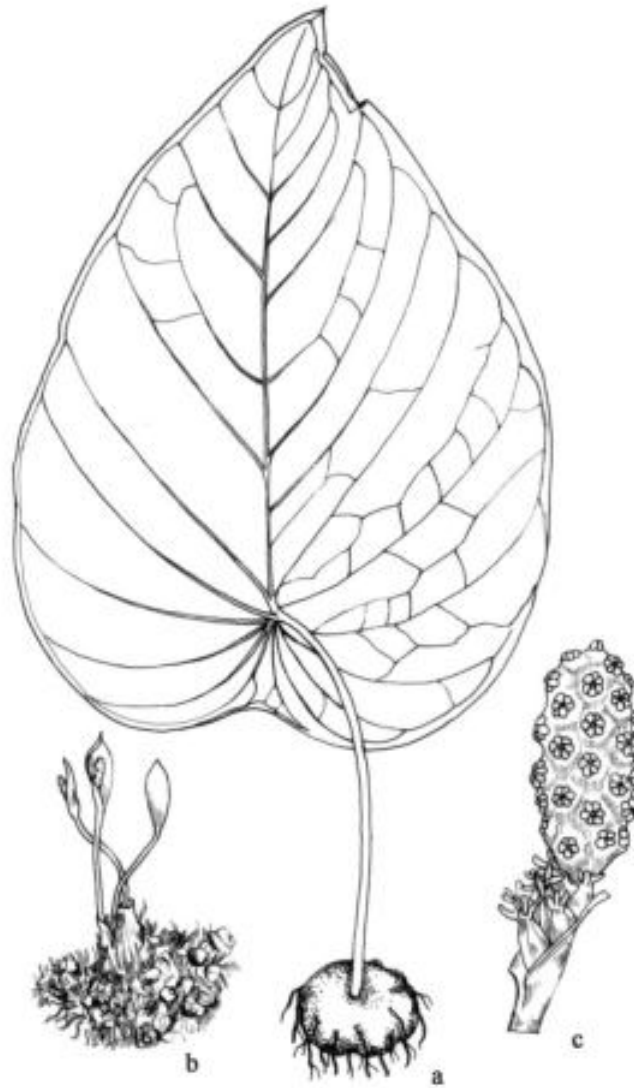


Figure 9. *Ariopsis protanthera* N.E. Br., a) habit sketch; b) habit in flower, showing branching of tubers; c) spadix.

**Caladium** Ventenat, Descript. Pl. Nouv. Jard. Cels, 30 (1801).

**Type (Lectotype) species:** *C. bicolor* (Aiton) Ventenat  
(*Arum bicolor* Aiton, see Hubbard & Rehder, Bot. Mus. Leaflet 1: 3. 1932).

Seasonally dormant or evergreen herbs; stem tuberous, subglobose. Leaves several; petiole sheath distinct; leaf blade usually peltate, sometimes not, often variegated, cordate-sagittate or sagittate, rarely trisect, basal ribs well-developed, primary lateral veins pinnate, forming a sub-marginal collective vein, secondary and tertiary laterals arising from the primaries at a wide angle, forming an interprimary collective vein, higher order venation reticulate. Inflorescence 1-2 in each floral sympodium, appearing with or before leaves; peduncle rather long, often as long as the petiole. Spathe constricted, tube with convolute margins, usually ventricose-globose, persistent, green, eventually splitting in the fruit; limb white, boat-shaped, gaping, marcescent after anthesis and deciduous. Spadix a little shorter than the spathe, densely flowered; pistillate (female) flower zone cylindrical-conoid or ellipsoid, separated from the staminate (male) flower zone by a basally thicker zone of sterile male flowers; staminate (male) flower zone fertile to the apex, subcylindrical to subclavate, more than twice as long as the pistillate (female) flower zone. Flowers unisexual, perigone absent. Ovary 1-2 locular, ovules 1-20, anatropous, funicle short, placentae subbasal or parietal, stylar region free, stigma nearly as wide as the ovary. Male flower 3-5 androus, stamens connate to obpyramidal, truncate to nearly concave, sinuously subhexagonal synandrium, common connective thick, dehiscing by short apical slit. Fruit a berry, 1-many seeded, white. Seed ovoid to ellipsoid.

About 12 species are distributed throughout tropical America and West Indies (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 2 species.

**KEY TO THE SPECIES**

- |  |                   |
|--|-------------------|
| 1. Leaf blade ovate to elliptic, dark green to medium green or variegated with pink, red, or white | <b>bicolor</b>    |
| - Leaf blade ovate, deep green with white blotches and spots above                                 | <b>humboldtii</b> |



**Caladium bicolor** (Ait.) Vent., Mag. Encycl. 4 (16): 464 (1801). Engler, Pflanzenr. 71 (IV. 23E): 31 (1920); Standley, Fl. Panama, Ann. Missouri Bot. Gard. 31 (1): 37-38 (1944); Bailey, Manual Cult. Pl.: 188 (1949); Standley & Steyermark, Fl. Guatemala, Fieldiana, Bot. 24 (1): 322-323 (1958); Graf, Exotica, edn. 8: 149 (1976); Tropica, edn. 5: 96, 960 (1978-reprint 2003); Nicolson, Fl. Vitiensis Nova 1: 458 (1979); Madison, Selbyana 5: 370-373 (1981); Walters *et al.*, European Gard. Fl. 2 (2): 99 (1984-reprint 2003); Mayo, Fl. Trop. E. Africa: 5 (1985); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 51 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 10 (1989); Matthew, Excursion Fl. Cent. Tamilnadu, Ind.: 539 (1991); Noltie, Fl. Bhutan 3 (1): 156 (1994); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 401 (1998); Acevedo-Rodriguez and Nicolson in Acevedo-Rodriguez and Strong, Contr. U. S. Nat. Herb. 52: 29 (2005); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 42 (2007); *Arum bicolor* Ait., Hort. Kew. 3: 316 (1789); *Cyrtospadix bicolor* (Aiton) Britton & P. Wilson, Bot. Porto Rico 5: 126 (1923); *Xanthosoma sylvestre* Bello, Anales Soc. Esp. Hist. Nat. 12: 114 (1883). Pl. XXVII.

Bengali: *Bahari Kachu*

English: Fancy-leaf Caladium

Terrestrial tuberous herb; tuber starchy, fully subterranean or with the apex at soil line, flattened, subglobose or sub-cylindrical, 2-12 × 2.5-6.0 cm, white or yellowish within. Leaves several, erect; petiole 30-95 cm long, 4-8 mm thick, sheathing in the lower part, green or marked with small purplish or reddish striations, with a glaucous surface; leaf blade peltate, ovate to elliptic, 12-40 × 9-26 cm, the posterior lobes round, usually strikingly variegated with shades of green, white, red and pink, glaucous abaxially. Inflorescence solitary or borne two or three together; peduncle equalling the petioles, erect. Spathe constricted, tube green, 2-3 cm long; limb white, 4-8 cm long, boat-shaped, deciduous. Spadix shorter than the spathe, lacking a sterile appendix; pistillate (female) flower zone below, cylindrical-conoid, 1-3 cm long; staminate (male) flower zone to the apex with a constricted transition zone of sterile flowers, sterile flowers largest at the base, more elongate in the narrowed part of the spadix, the sterile part 1.0-2.4 cm long; staminate (male) flower zone 2.5-6.0 cm long, white. Ovary sub-bilocular with two placentae and 10-12 ovules, anatropous, stigma nearly as wide as the ovary, often yellowish. Male flower 3-5 androus, stamens united into truncate synandrium with the

marginal thecae, dehiscing by short apical slits. Fruit a berry, whitish, many-seeded. Seeds subovoid. *Fl. & Fr.*: 4-6. *Shady moist areas of the forest floor.*  $2n = 28$  (Petersen, 1989).

**Dhaka:** BNH Office compound, 06 v 1980, *Mahbuba Halim* 849 (DACB); Khilgaon area, 16 iv 1988, *Hosne Ara* HA. 6 (DACB); Dhanmondi area, 18 iv 1988, *Hosne Ara* HA. 8 (DACB); 19 iv 1988, *Hosne Ara* HA. 9 (DACB); 11 v 1988, *Hosne Ara* HA. 10 (DACB); Bangladesh National Herbarium garden (Cultivated), 30 v 2006, *Hosne Ara* HA. 2649 (DACB) [Originally collected from Kawargola forest under Moulvibazar district]. **Moulvibazar:** Adampur beat, Kalenga, Kawargola forest, 11 vi 2002, *Pavel Partha* 162 (JUH); *ibid*, 03 v 2003, *Hosne Ara* HA. 228 (DACB); *ibid*, 03 v 2003, *Pavel Partha* 516 (JUH); *ibid*, 18 v 2005, *Hosne Ara* HA. 1628 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1828 (DACB); Adampur beat, Kawargola forest, 06 x 2005, *Hosne Ara* HA. 2626 (DACB). **Mymensingh:** Dhobaura thana, Madhupara, 16 vi 2004, *Hosne Ara* HA. 745 (DACB). **Tangail:** Sakhipur, 20 vi 1978, *Reaz* 58 (DACB).

South America, from Panama to Bolivia and eastward to the Atlantic coast of Brazil. Naturalized throughout the tropics (Madison, 1981).

The plant is widely used for ornamental purposes.

***Caladium humboldtii*** Schott, Oesterr. Bot. Wochenbl. 4: 417 (1854). Graf, *Tropica*, edn. 5: 96, 961 (1978-reprint 2003); Everett, *Encycl. Horticult.* 2: 545 (1981); Madison, *Selbyana* 5: 369-370 (1981); Walters *et al.*, *European Gard. Fl.* 2 (2): 99 (1984-reprint 2003); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 42-43 (2007); *Caladium myriostigma* C. Koch, *Wochenschr. Gärtnerei Pflanzenk.*: 135 (1862); *Caladium humboldtii* var. *myriostigma* (C. Koch) Engler, D.C., *Monogr. Phan.* 2: 468 (1879). Pl. XXVIII.

Type: Brazil: Amazonas: San Carlos, n.v. "contra culevra," Humboldt & Bonpland 985 (B, non vidi, photo NY).

Bengali: *Pata Bahari Kachu*

Terrestrial herb; tuber globose, 1-2 cm in diameter, yellow within, suckering freely. Leaves several, erect; petioles terete, 10-24 cm × 1.0-1.5 mm; leaf blade ovate, small, membranaceous, peltate, with sagittate base, 5-9 × 2.0-4.5 cm, deep green with white blotches and spots adaxially, pale abaxially. *Fl. & Fr.*: As observed in Bangladesh for the last 20 years this species does not bloom. *Shady moist places*.  $2n = 19$  (Petersen, 1989).

**Dhaka** : Mirpur Botanical Garden, 02 x 2004, *Hosne Ara* HA. 1445 (DACB).

Brazil and Venezuela.

The plant is widely used for ornamental purposes in public places and homesteads.

### **Colocasia** Schott in Schott & Endlicher,

Melet. Bot. 18 (1832) *nom. cons.*

**Type species:** *C. antiquorum* Schott (*Arum colocasia* L.), *typ. cons.*

Small, medium-sized or gigantic, seasonally dormant or evergreen herbs with milky latex; stem either a hypogeal, subglobose or subcylindrical tuber, or an epigeal and slender to massive aerial, later decumbent, sometimes stoloniferous. Leaves several; petiole stout to very slender, petiolar sheathing below, rather long, persistent; leaf blade peltate, ovate-cordate to sagittate-or oblong-cordate, posterior lobes rounded, shortly to almost entirely connate, basal ribs well-developed, primary lateral veins pinnate, forming sub-marginal collective veins, 1-2 marginal veins also present, secondary and tertiary laterals arising from the primaries at a wide angle, higher order venation reticulate. Inflorescence 1 or many in each floral sympodium, appearing with the leaves; peduncle much shorter than the petiole. Spathe constricted between the tube and the limb, sometimes with a second constriction above the male zone of the spadix, tube with convolute margins, usually much shorter than the limb, ovoid or oblong, persistent, enlarging in fruit and then splitting open irregularly; limb oblong and boat-shaped to narrowly lanceolate, erect to reflexing at anthesis, later deciduous, greenish, white or deep yellow or dirty pale brown. Spadix sessile, shorter than the spathe; pistillate (female) flower zone short, separated from the staminate (male) flower zone by a narrower zone of sterile male flowers; staminate (male) flower zone cylindrical to fusiform; terminal appendix erect, elongate-conoid to fusiform or subulate, sometimes

reduced to small, rarely absent. Flowers unisexual, perigone absent. Ovary ovoid or oblong, 1-locular, ovules many, hemiorthisotropous, funicles relatively long, placentae 2-5, parietal, stylar region short, stigma discoid-capitate or weakly lobed. Male flowers 3-6 androus, stamens connate into a more or less truncate synandrium, thecae lateral, oblong-linear, dehiscent by apical pores. Sterile male flowers depressed-obpyramidal, truncate, laterally compressed. Fruit a berry, greenish to whitish or yellowish brown, obconical or oblong, stigma remnants persistent, many-seeded. Seeds ovoid to ellipsoid, many-grooved.

Mayo *et al.*, 1997, reported that 8 species are distributed throughout tropical Asia and Malay Archipelago. In Bangladesh, this genus is represented by 10 species and 4 varieties.

#### KEY TO THE SPECIES

- |   |                     |
|---|---------------------|
| 1. Appendix absent  | 2                   |
| - Appendix present  | 4                   |
| 2. Plants stoloniferous   | <b>lihengiae</b>    |
| - Plants not stoloniferous  | 3                   |
| 3. Spathe limb over 12 cm   | <b>mannii</b>       |
| - Spathe limb under 12 cm   | <b>virosa</b>       |
| 4. Appendix small, up to 5 mm long  | <b>gigantea</b>     |
| - Appendix longer than 5 mm   | 5                   |
| 5. Leaf blade under 25 cm   | 6                   |
| - Leaf blade over 25 cm   | 8                   |
| 6. Plants rhizomatous, leaf blade narrowly oblong-ovoid                       | <b>fallax</b>       |
| - Plants cormous, leaf blade broadly ovate, cordate or subcordate             | 7                   |
| 7. Leaf blade green with dark blotches between the nerves above               | <b>affinis</b>      |
| - Leaf blade dark green above with a deep violet interveinal zone             | <b>heterochroma</b> |
| 8. Leaf blades deeply peltate, 60-84 × 50-65 cm, very broadly ovate-sagittate | <b>oresbia</b>      |
| - Leaf blades peltate, 26-45 × 8-30 cm, ovate-sagittate                       | 9                   |

9. Spathe having one constriction, sterile male zone absent  
below the appendix **esculenta**
- Spathe having two constrictions, sterile male zone present  
below the appendix **hassanii**

**Colocasia affinis** Schott, Bonplandia 7: 28 (1859). Hook. f., Fl. Brit. India 6: 523 (1893-reprint 1954); Krause in Engler, Pflanzenr. 71 (IV. 23E): 64 (1920); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 26-27 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 91 (1978); Balakrishnan, Fl. Jowai 2: 564 (1983); Walters *et al.*, European Gard. Fl. 2 (2): 101 (1984-reprint 2003); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 10 (1989); Noltie, Fl. Bhutan 3 (1): 136-138 (1994); Hajra & Verma, Fl. Sikkim 1: 191 (1996); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 271-272 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 43-44 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 75 (2010); *Alocasia jenningsii* Veitch, Fl. Serres. 17: t.1818 (1868); Illustr. Hortic. t. 585 (1869); Gard. Chron. 136 (1869); *Colocasia affinis* var. *jenningsii* (Veitch) Engl. DC., Monogr. Phan.: 2: 493 (1879); Krause in Engler, Pflanzenr. 71 (IV. 23E): 64 (1920). Pl. XXIX.

Type: Khasia, 2-4000', *J.D. Hooker, s.n.* (K).

Bengali: *Bahari Kachu*

Small herb; stem a globose tuber, c 1.5 cm in diameter and c 1.0 cm high, stolons filiform. Leaves with petiole; petioles more slender, 12-25 cm long, sheathing for almost half the length, sheaths yellowish-green; leaf blade broadly ovate or cordate or subcordate, peltate, 10-15 × 10-15 cm, green with dark blotches between the nerves above, acute at the tip, sinus 0.2-1.0 cm, intramarginal veins several, slightly glaucous beneath, thinner-textured. Inflorescence 1-2 together; peduncle slender, 6.5-12.0 cm long. Spathe 10-15 cm long with a basal convolute, persistent, tubular green portion of about 2.0-3.5 cm long and an upper limb expanded rose-yellowish zone about 8-12 cm long. Spadix with a basal pistillate (female) flower zone, a neuteriflorous zone above, followed by a staminate (male) flower zone and terminating into a naked sterile, subulate, golden

yellow to cream coloured appendix. Pistillate flowers naked, densely arranged; ovary green, subovoid, unilocular, ovules many on parietal placentae, stigma sessile, discoid. Neuters irregularly shaped, flat above. Staminate flowers of 6-8 linear anthers, sessile, flat topped, dehiscence by apical pores. *Fl. & Fr.*: 5-8. *Shady and moist hill slopes*.  $2n = 28$  (Petersen, 1989).

**Mymensingh:** Dhubaura thana, Madhupara, 16 vi 2004, *Hosne Ara* HA. 747 (DACB).  
**Netrakona:** Vharatpur, 18 vi 2004, *Hosne Ara* HA. 861 (DACB). **Sherpur:** Gopalpur beat, Maya-Ghashi, Monshapara, 20 vi 2004, *Hosne Ara* HA. 871 (DACB). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 26 vi 2004, *Hosne Ara* HA. 1073 (DACB) [Originally collected from Monshapara under Sherpur district].

Tropical Himalayas (Sikkim, Assam) and southwestern India.

It may be cultivated as an ornamental plant for its showy leaves and inflorescence.

**Colocasia esculenta** (L.) Schott, Schott & Endl., Melet. Bot.: 18 (1832). Syn. Aroid.: 40 (1856) (sub. *C. antiquorum*) & Prodr. Syst. Aroid.: 138 (1860) (sub. *C. antiquorum pr. pte*); Kunth, Enum. Pl. 3: 37 (1841); Hook. f., Fl. Brit. India 6: 523 (1893-reprint 1954) (sub. *C. antiquorum pr. pte*); Blatter & McCann, J. Bombay. Nat. Hist. Soc. 35: 29-30 (1931); Birdsey, Cult. Aroid. 44-45 (1951); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 100 (1953); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 110 (1956); Standley & Steyermark, Fl. Guatemala, Fieldiana, Bot. 24 (1): 323-324 (1958); Hu, Dansk Bot. Arkiv 23 (4): 428 (1968); Hotta, Mem. Fasc. Kyoto Univ., Ser. Biol. 4 (1): 91, fig. 4A-H (1970); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 26 (1976); Nicolson in Saldanha & Nicolson, Fl. Hassan Dist. 786 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 91 (1978); Nasir, Fl. Pakistan 120: 7 (1978); Nicolson, Fl. Vitiensis Nova 1: 456-457 (1979); Bennet, Fl. Howrah Dist.: 95-96 (1979); Deb, Fl. Tripura State 2: 398 (1983); Balakrishnan, Fl. Jowai 2: 564 (1983); Bakshi, Fl. Murshidabad Dist.: 337 (1984); Sharma *et al.*, Fl. Karnataka: 297 (1984); Walters *et al.*, European Gard. Fl. 2 (2): 100-101 (1984-reprint 2003); Mayo, Fl. Trop. E. Africa: 5 (1985); Naithani, Fl. Chamoli 2: 673 (1985); Verma *et al.*, Fl. Raipur, Durg and Rajnandgaon: 395 (1985); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 54 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 10 (1989);

Vajravelu, Fl. Palghat Dist.: 533 (1990); Naithani, Fl. Pl. India, Nepal & Bhutan: 454 (1990); Matthew, Excursion Fl. Cent. Tamilnadu, Ind. 539 (1991); Kothari & Moorthy, Fl. Raigad Dist. Maharashtra State: 422 (1993); Parmar in Shetty & Singh, Fl. Rajasthan 3: 865-866 (1993); Noltie, Fl. Bhutan 3(1): 136-137 (1994); A. Hay *et al.*, Blumea Supplement 8: 45 (1995); Deshpande *et al.*, Fl. Mahabaleshwar Adjoin., Maharashtra: 618 (1995); A. Hay, Sandakania 7: 33-36 (1996); Saxena and Brahmin, Fl. Orissa 4: 2041 (1996); Hajra & Verma, Fl. Sikkim 1: 191 (1996); Pullaiah, Fl. Andra Pradesh 3: 1024-1025 (1997); Bhattacharyya and Sarkar, Fl. W. Champaran Dist. Bihar: 401-402 (1998); Matthew, Fl. Palni Hills, S. Ind. 3: 1370 (1999); Hajra & Rao, Fl. Great Nicobar Island: 470 (1999); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 272-274 (2002); Sarma & Sarkar in Singh & Rao, Fl. Palamau Dist. Jharkhand: 627 (2002); Acevedo-Rodriguez and Nicolson in Acevedo-Rodriguez and Strong, Contrib. U. S. Nat. Herb. 52: 30 (2005); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 44-45 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 74 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 214-215 (2012); *Arum esculentum* L. Sp. Pl. 965 (1753); *Arum colocasia* L., Sp. Pl. 965 (1753). Roxb., Fl. Ind. 3: 494 (ed. 2, 1832); Wight, Icon. Pl. Ind. Or. 3: 5, t. 786, f. 1 (1844); *Arum nymphaeaeifolium* (Vent.) Roxb., Fl. Ind. 3: 495 (ed. 2, 1832); Wight, Icon. Pl. Ind. Or. 3: 786, t. 2 (1844); *Caladium nymphaeaeifolium* Vent., Descr. Pl. Nouv. Jard. Cels: fol. t. 30 (1801); Wild., Sp. Pl. 4: 488 (1805); *Caladium acre* R. Brown, Fl. Nouv. Holl. 1: 336 (1810); *Arum colocasioides* Desfontaines, Cat. Pl. Hort. Reg. paris ed. 3, 385. (1829); *Arum nymphaeifolium* (Vent.) Roxburgh, Fl. Ind. 3: 495 (1832); Wight, Icon. Pl. Ind. Or.: 5, t. 786, fig. 3 (1844); *Colocasia nymphaeifolia* (Vent.) Kunth, Enum. Pl. 3: 37 (1841); Wight, Icon. Pl. Ind. Or. 3: 5, t. 786 (1844); Heinig, List Chittagong: 74 (1925); Duthie, Fl. Upp. Gang. Plain, repr. ed., 2: 365 (1960); Prain, Beng. Pl. 2: 1112 (1903-reprint 2004); *Colocasia acris* (R. Br.) Schott in Schott & Endlicher, Melet. Bot. 18 (1832); Kunth, Enum. Pl. 3: 38 (1841); *Colocasia antiquorum* Schott in Schott & Endlicher, Melet. Bot. 18 (1832); Wight, Icon. Pl. Ind. Or. 3: 5, t. 786 (1844); Miquel, Fl. India Bat. 3: 202 (1855); Schott, Prodr. Syst. Aroid. 138 (1860); Bentham, Fl. Austral. 7: 155 (1878); Engler in Martius, Fl. Bras. 3 (2): 199 (1878); In Dc., Monogr. Phan. 2: 491 (1879); Hook. f., Fl. Brit. India 6: 523 (1893-reprint 1954); Bot. Mag. 120, t. 7364 (1894); N.E. Brown in Dyer, Fl. Trop. Africa 8: 164 (1901); Haines, Forest Fl. Chota Wagpur 551 (1910); Krause in Engler, Pflanzenr. 71 (IV. 23E): 65 (1920); Haines, Bot.

Bihar & Orissa: 866 (1924); Heinig, List Chittagong: 74 (1925); Fischer in Gamble, Fl. Pres. Madras 1580 (1931); repr. ed. 2, 3: 1102 (1967); Gagnapain, Fl. Gen. Indochine 6: 1139 (1942); Mitra, Fl. Pl. E. India 1: 78 (1958); Duthie, Fl. Upp. Gang. Plain, repr. ed., 2: 365 (1960); Prain, Beng. Pl. 2: 1112 (1903-reprint 2004); Heng & Boyce in Heng *et al.*, Fl. China 23: 74-75 (2010); *Colocasia peregrina* Rafinesque, Fl. Tellur. 3: 65 (1836); *Colocasia vulgaris* Rafinesque, Fl. Tellur. 3: 65 (1836); *Colocasia himalensis* Royle, (III. Bot. Himal. 407. 1839), *nom. nud.*) Gard. Chron. 2: 372 (1893); *Colocasia euchlora* C. Koch & Sello, Ind. Sem. Hort. Berol. App. 4 (1854); *Colocasia fontanesii* Schott, Oesterr. Bot. Wochenbl. 4: 409 (1854); *Colocasia illustris* Bull, Catal. 4 (1873); Fl. Mag. t. 107 (1874), teste Engler (1920); *Colocasia antiquorum* var. *euchlora* (C. Koch) Schott ex Engler in DC., Monogr. Phan. 2: 491 (1879); Krause in Engler, Pflanzenr. 71 (IV. 23E): 67 (1920); *Colocasia antiquorum* var. *illustris* (Bull) Engler in DC., Monogr. Phan. 2: 492 (1879); Krause in Engler, Pflanzenr. 71 (IV. 23E): 67 (1920); *Colocasia antiquorum* var. *esculenta* (L.) Schott ex Engler in DC., Monogr. Phan. 2: 492 (1879); Krause in Engler, Pflanzenr. 71 (IV. 23E): 67 (1920); *Colocasia antiquorum* Schott var. *acris* (R. Br.) Schott ex Engler in DC., Monogr. Phan. 2: 492 (1879); Krause in Engler, Pflanzenr. 71 (IV. 23E): 68 (1920); *Alocasia dussii* Hort. ex Dammann, Gartenfl. 41: 412 (1892); *Caladium colocasia* (L.) W.F. Wight, Contr. U.S. Nat. Herb. 9: 208 (1905); *Colocasia antiquorum* var. *globulifera* Engler & Krause in Engler, Pflanzenr. 71 (IV. 23E): 68 (1920); *Colocasia esculenta* var. *illustris* (Bull) Hill, Bot. Mus. Leaf. Harvard Univ. 7: 118 (1939); *Colocasia esculenta* var. *acris* (R. Br.) Hill, Bot. Mus. Leaf. Harvard Univ. 7: 117 (1939). Pl. XXX.

Lectotype: Jamaica. Sloane, Voy. Jamaica 1: t. 106, f. 1. 1707, designated by Nicolson in A. C. Smith, Fl. Vit. Nov. 1: 456 (1979).

#### KEY TO THE VARIETIES

1. Appendage of the spadix is shorter than the male portion,  
staminode portion absent above the female portion 2
- Appendage of the spadix is longer than the male portion,  
staminode portion present above the female portion **antiquorum**



2. Tuber longer, 35 × 15 cm, sometimes stolons are produced from the main tuber **esculenta**
- Tuber shorter, 3 × 4 cm, always stolons are produced from the main tuber **aqualitis**

var. **esculenta**

Bengali: *Kachu*

English: Taro, Dasheen, Coco-yam

Perennial herb; stem a tuberous or elongate rhizome or corm, large main tuber or corm with a few side tubers, tuber usually cylindrical, 35 × 15 cm, sometimes stolons are produced from the main tuber or corm. Leaves several together, petiolate; petiole 30-85 cm long, sheathing for about 25-35 cm at the base, green, occasionally purple; leaf blade peltate, 26-45 × 10-35 cm, oblong-ovate to suborbicular, dark green adaxially and light green abaxially, base shallowly cordate, glaucous, peltate, apex broadly and shortly cuspidate, venation pinnately reticulate, sinus 1-4 cm long. Inflorescence with axillary peduncle, shorter than the petiole, solitary-many; peduncle 16-25 cm long. Spathe having one constriction, up to 28 cm long, glabrous, lower spathe (tube) ellipsoid, persistent, green, 3-4 cm long; limb lanceolate or lanceolate-elliptic, yellow, 20-24 cm long, acuminate, opening slightly at the base, the rest remaining furled during anthesis, golden yellow. Spadix sessile, shorter than the spathe, 11.5-14.0 cm long, male and female zones usually separated by a flat elongate neuter, appendix narrow conical, constricted at the base. Pistillate (female) flower zone 2.5-3.5 cm long, 1.2 cm in diameter at the base, staminode portion absent, neuter portion 1.5-2.0 cm long, 0.5 cm in diameter at the middle, light yellow, staminate (male) flower zone 3.7-4.5 cm long, 0.6-0.7 cm in diameter, yellow and the apical sterile appendix about 3-4 cm long, 0.4-0.5 cm in diameter at the base, yellow. Female flowers naked, many crowded at the base of the spadix, ovary ovoid with parietal placentation and orthotropous ovules, green, 1.5 × 3.0 mm, style short, stigma 1 mm in diameter, yellow, interpistillar staminodes clavate, white, mostly exceeding the ovaries. Neuter flowers elongate, sub-rhomboidal to hexagonal, occupying the constricted zone of the spadix. Male flowers numerous, each with 6-8 linear, cream coloured anther lobes, dehiscence by apical pores; appendix shorter than the male zone, subcylindrical, tapering towards the tip. Fruiting spathe

ellipsoid, breaking up irregularly. Fruit a berry, ovoid, c 4 mm in diameter, ripening orange, strongly fruity-smelling, seeds elongate. *Fl. & Fr.*: 5-10. *Sides of streams, ditches, water-logged low-lying areas, paddy fields, shady secondary forests and plantations.*  $2n = 28$  (Petersen, 1989).

**Bandarban:** Alikadam, Thanci road, 13 x 1998, *Rahman, David et al.* 3753 (HCU); Ruma, 09 ix 1987, *Alam* EB 53 (BFRIH); On the way of Betchari, 22 ix 2004, *Hosne Ara* HA. 1253 (DACB); Kulpara, 23 ix 2004, *Hosne Ara* HA. 1289 (DACB); Lama, 06 xii 2007, *Bushra, Habib & Mofiz* B. 624 (DACB). **Barishal:** East Narayanpur village and Dostani village, 22 ii 2008, *Hosne Ara* HA. 2660 (DACB); Kashipur, Lakaotta, 23 ii 2008, *Hosne Ara* HA. 2715 (DACB). **Bogura:** Beltola, 06 ii 2003, *Hosne Ara & Rezia Khatun* HA. 158 (DACB); Shibgonj area, 19 viii 2005, *Hosne Ara* HA. 2183 (DACB). **Chattogram:** Garjania, 04 vii 1920, *Cowan* 995, 999 (E 00075385, E00075386); Korerhat, Noitila, 31 viii 1999, *Boyce, Toha & Rahman* 5401, 5757 (HCU, K); Shubalong, 22 xi 1980, *Khan, Huq, Rahman & Mia* K. 6166 (DACB); Bansbaria, 21 viii 1987, *M.K. Alam* 5919 (BFRIH); Hinguli, Kamalar Thali, 31 viii 1999, *Boyce, Toha & Rahman* 5402 (HCU, K); Chunati, 26 ix 2005, *Hosne Ara* HA. 2219 (DACB); Herbang, 26 ix 2005, *Hosne Ara* HA. 2267 (DACB); Hazarikil forest, 27 ix 2005, *Hosne Ara* HA. 2301 (DACB); Baramashi, teastate area, on the way of Hazarikhil, 27 ix 2005, *Hosne Ara* HA. 2302 (DACB); Fatiqchari, 27 ix 2005, *Hosne Ara* HA. 2307 (DACB); Hathazari, Nandirkir, 27 ix 2005, *Hosne Ara* HA. 2315 (DACB); Chittagong University area, 28 ix 2005, *Hosne Ara* HA. 2333 (DACB); BCSIR Campus area, 28 ix 2005, *Hosne Ara* HA. 2342 (DACB); Bariadhala, 01 x 2005, *Hosne Ara* HA. 2572 (DACB); Barakumira, 01 x 2005, *Hosne Ara* HA. 2582 (DACB); Sitakundo, 01 x 2005, *Hosne Ara* HA. 2591 (DACB); Mirsarai, 01 x 2005, *Hosne Ara* HA. 2599 (DACB); Town area, 01 x 2005, *Hosne Ara* HA. 2610 (DACB); Foiage lake area, 01 x 2005, *Hosne Ara* HA. 2618 (DACB); Kumira, Sitakundo, 11 vii 2017, *Tajul et al.* TAK. 5232 (DACB); Chandranath, Sitakundo, 11 ix 2017, *Moniruzzaman et al.* MAK. 5527 (DACB); Dhopachari, 25 ix 2017, *Moniruzzaman et al.* MAK. 5833 (DACB). **Chittagong Hill Tracts:** Ghagra, 27 iv 1976, *Huq, Rahman & Mia* H. 2467 (DACB). **Cumilla:** Jashpur, 26 ix 2004, *Hosne Ara* HA. 1389 (DACB). **Cox's Bazar:** Korantan quartar, 11 x 1943, *Sinclair* 3277 (E 00079894); Kelatoli sorra, 10 v 1945, *Sinclair* 4274 (E 00075388); Teknaf, 24 x 1963,

*M.S. Khan* 637 (DUSH); Neela range, Neela beat, 27 viii 1991, *Khan, Huq, Mia & Rahman* K. 8509 (DACB); Neela range, Whykong beat, 28 viii 1991, *Khan, Huq, Mia & Rahman* K. 8550 (DACB); Whykeong, Harikhola, 25 xii 1996, *Rahman et al.* 634 (HCU); Kelatuli, 17 v 1999, *Huq & Mia* 10561 (DACB); Ramu, 26 ix 2005, *Hosne Ara* HA. 2282 (DACB); Punnagram, 26 ix 2005, *Hosne Ara* HA. 2287 (DACB); Teknaf Game Reserve, Whykeon Range, Rhykong beat, 29 ix 2005, *Hosne Ara* HA. 2356 (DACB); Upper Rezu range, 29 ix 2005, *Hosne Ara* HA. 2402 (DACB); Chota Inani 30 ix 2005, *Hosne Ara* HA. 2431 (DACB); Bara Inani, 30 ix 2005, *Hosne Ara* HA. 2461 (DACB); Swankhali, 30 ix 2005, *Hosne Ara* HA. 2500 (DACB); Himchari, 30 ix 2005, *Hosne Ara* HA. 2521 (DACB); Cox's bazar town area, 30 ix 2005, *Hosne Ara* HA. 2561 (DACB); Eidgah, 01 x 2005, *Hosne Ara* HA. 2565 (DACB); Naithongpara, Teknaf, 02 ix 2016, *Kabir et al.* NK. 143 (DACB); Circuit House, 07 ix 2016, *Kabir et al.* NK. 397 (DACB); Jhlongiha, Uttaron res. area, 27 ix 2016, *Kabir et al.* NK. 525 (DACB).

**Dhaka:** Dhaka, 21 vii 1946, Sukdev (DUSH); Air port area, 19 ix 1970, *A.M. Huq* 166 (DACB); Khilgaon area, 15 iv 1988, *Hosne Ara* HA. 4 (DACB); Khilgaon, Tilpapara, 26 viii 2002, *Hosne Ara* HA. 136 (DACB); Bangladesh National Herbarium garden (Cultivated), 26 vi 2015, *Hosne Ara* HA. 2886 (DACB) [Originally collected from Moulvibazar district]. **Dinajpur:** Khansama, Hossainpur, 24 viii 1998, *Mia et al.* M 4170 (DACB); Town area, 17 viii 2005, *Hosne Ara* HA. 2026 (DACB); Ramsagar, 17 viii 2005, *Hosne Ara* HA. 2064 (DACB); Singra forest, 18 viii 2005, *Hosne Ara* HA. 2072 (DACB); Near Birgonj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2126 (DACB); Near Nawabgonj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2136 (DACB); Ranigonj, 19 viii 2005, *Hosne Ara* HA. 2163 (DACB); Fultala, 19 viii 2005, *Hosne Ara* HA. 2173 (DACB). **Gazipur:** Burulia village, 25 vii 2004, *Hosne Ara* HA. 1079 (DACB); Kaliakair, 19 viii 2005, *Hosne Ara* HA. 2203 (DACB). **Habiganj:** Kalenga beat, Kalenga, 16 v 2005, *Hosne Ara* HA. 1537 (DACB); Satchari forest area, 17 v 2005, *Hosne Ara* HA. 1582 (DACB); 07 vii 2005, *Hosne Ara* HA. 1871 (DACB). **Jashore:** Rupganj, 29 viii 1983, *Huq, Mia & Mahbuba* H. 5974 (DACB); Monirampur, 05 i 2004, *M. Khatun* 382 (DUSH). **Khagrachari:** Matiranga, 26 vi 1985, *Huq & Mia* H. 7171 (DACB); Alutilla, 11 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 462 (DACB); Jamtoli, 12 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 489 (DACB); Narikal Begun College road, 12 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 503 (DACB);

Khagrachari, 10 x 2018, *Naimur Rahman* NR. 1257 (DACB). **Kurigram:** Razarhat, 31 x 2007, *Bushra, Habib & Mofiz* B. 430 (DACB). **Moulvibazar:** Madhabkundo, 05 vi 1998, *Hosne Ara* HA. 33 (DACB); Madhabkundochara, 25 vi 2001, *Sarder Nasir Uddin* N. 1093, 1094 (DACB); 07 vii 2002, *Hosne Ara & Sarder Nasir Uddin* HA. 124 (DACB); 04 v 2003, *Hosne Ara* HA. 248 (DACB); Sreemongal, Lawachara, 15 v 2005, *Hosne Ara* HA. 1474 (DACB); Adampur beat, Kawargola forest, 18 v 2005, *Hosne Ara* HA. 1619 (DACB); Muraichara, 19 v 2005, *Hosne Ara* HA. 1671 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1711 (DACB); Gazipur beat, Harargonj reserve forest, 21 v 2005, *Hosne Ara* HA. 1744 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1751 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1786 (DACB); Gazipur beat, Harargonj reserve forest, 05 vii 2005, *Hosne Ara* HA. 1800 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1824 (DACB); Adampur beat, Kowargola forest, 07 ix 2005, *Hosne Ara* HA. 2215 (DACB); Muraichara beat, Ichachhara forest, 07 v 2010, *Hosne Ara* HA. 2757 (DACB); Muraichara beat, Awolachara punji, 07 v 2010, *Hosne Ara* HA. 2764 (DACB); Town area, 07 v 2010, *Hosne Ara* HA. 2768, 2769 (DACB). **Mymensingh:** Mymensingh University Campus, 19 ix 1980, *Mia, Huq, & Rahman* M. 413 (DACB); Haluaghat thana, Koroitoli, 20 vi 2004, *Hosne Ara* HA. 907 (DACB). **Narsingdi:** Narsingdi Sadar, 07 vii 2005, *Hosne Ara* HA. 1880 (DACB). **Narayanganj:** Sonargaon, 03 x 1977, *Huq & Rahman* H. 3491 (DACB); 07 vii 2005, *Hosne Ara* HA. 1909 (DACB). **Netrakona:** Durgapur thana, Bijoypur, 16 vi 2004, *Hosne Ara* HA. 751 (DACB); Fantha, 17 vi 2004, *Hosne Ara* HA. 774 (DACB); Vabanipur, 18 vi 2004, *Hosne Ara* HA. 848 (DACB); Farangpara, 18 vi 2004, *Hosne Ara* HA. 867 (DACB). **Panchagarh:** Banglabanda, Tetulia upazila, 17 viii 2005, *Hosne Ara* HA. 1976 (DACB). **Patuakhali:** Patuakhali Sadar, Sobujbag, 21 vii 1998, *M. Sultana* 08 (DUSH); Kalapara, Kuakata, 23 vii 1998, *M. Sultana* 80 (DUSH); Galachipa, Noluabaghi, 31 i 1999, *M. Sultana* 234 (DUSH); Kalapara, Dhankhali, 12 iii 1999, *M. Sultana* 337 (DUSH); Patuakhali Sadar, Lohalia, 17 xi 2004, *M. Sultana* 451 (DUSH); Galachipa, Rangabali, 24 iii 2006, *M. Sultana* 1194 (DUSH); Bauphal, Bogha, 03 vi 2006, *M. Sultana* 1379 (DUSH); Galachipa, Majher char, 17 xii 2010, *M. Sultana* 1843 (DUSH). **Rangamati:** Shubalong, 22 xi 1980, *Khan, Huq, Rahman & Mia* K. 6166 (DACB); Kaptai, Sitapahar, 27 vi 1998, *Rahman & Toha et al.* 3230 (HCU); 17 viii 1998, *Rahman & Toha* 3286, 3289, 3290, 3294, 3296 (HCU); Kaptai, Debarmatha, 09 x 1998,

*Rahman, David, Khan* 3607 (HCU); Rangamati Road, Shapchari, Manikchari, 30 viii 1999, *Boyce, Toha & Rahman* 5398 (HCU, K); Kaptai, Shilsori Village, 09 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 445 (DACB); Tourist spot, Hanging bridge area, 18 ix 2004, *Hosne Ara* HA. 1092 (DACB); Rangamati DC Bangloo area, 20 ix 2004, *Hosne Ara* HA. 1157 (DACB); Faring Keong FB, Karnafuli forest range, Kaptai, 03 viii 2010, *Sarder Nasir Uddin* N. 4372 (DACB). **Sherpur:** Bakshigonj, Lawchapra, Dumurtola, 08 x 2003, *Hosne Ara* HA. 593 (DACB); Rangtia range, Gazni beat, 09 x 2003, *Hosne Ara* HA. 634 (DACB); Rangtia range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 678 (DACB); Rangtia range, Gazni beat, 21 vi 2004, *Hosne Ara* HA. 921 (DACB); Ghenaigati thana, Samaschura beat, Samaschura forest, 23 vi 2004, *Hosne Ara* HA. 1063 (DACB); Gazni, 15 v 2007, *Ershad Tutul* 07 (DUSH). **Sunamganj:** Sunamganj town area, 06 vi 1998, *Hosne Ara* HA. 42 (DACB). **Tangail:** Modupur, Rasulpur, 06 x 2003, *Hosne Ara* HA. 550 (DACB); Mirzapur, 19 viii 2005, *Hosne Ara* HA. 2193 (DACB). **Thakurgaon:** Dhamagar, 17 viii 2005, *Hosne Ara* HA. 2006 (DACB).

Pan-tropical.

It has been an important foodstuff in tropical and subtropical regions for more than two thousand years. In Bangladesh, it is commercially cultivated all over the country. It plays an important role in meeting the demand for vegetables during the post-monsoon season when other vegetables are scarce. Almost the entire plant including the leaves, petioles, flowers, corms and stoloniferous runners are consumed as vegetables.

Ethanollic extract of corms is hypotensive. Juice of leaves and roots is used in cancer treatment of the nose and warts. Leaves and raw corms cause severe irritation in the mouth. Juice of the petioles is used as a styptic or astringent, stimulant and rubefacient and also in athlete's feet. Corm juice is a trypsin inhibitor and also used in alopecia and scorpion sting (Ghani, 2003).

The paste of petiole of the plant, if coated on the wound, prevents bleeding and acts as an antiseptic. The petiole of this plant is also used for curing the itching ear and ear infections (Hassan, 1988).

**Colocasia esculenta** (L.) Schott var. **antiquorum** (Schott) Hubb. & Rehder, Bot. Mus. Leaflet 1 (1): 5 (1932). A Hay *et al.*, Blumea Supplement 8: 45 (1995). Pl. XXXI.

Type : 1079.4 (LINN).

Bengali: *Mukhi Kachu*

Herb; stem a underground small tuber or corm but cormels are large and many. Leaves petiolate; petiole c 100 cm long, green or purple; leaf blade broadly ovate-cordate, membranous, 26-40 × 10-24 cm, dark green above with a deep violet interveinal zone or dark green adaxially and light green abaxially. Inflorescence 1-2 together; peduncle green or dark purple, c 40 cm long, c 1.1 cm in diameter. Spathe 30.5-40.0 cm long, constricted, one constriction present between tube and limb, tube 8.5-10.0 cm long, both side of the lower spathe light green; limb 24-30 cm long, c 5.5 cm in diameter at the middle, both side of the limb light or golden yellow and more leathery; tip of the spathe pointed, green, c 0.5 cm long. Spadix shorter than the spathe, 19-27 cm long; pistillate (female) flower zone 2.3-3.2 cm long, 0.9-1.1 cm in diameter at the base; staminode zone 1.5-2.0 cm long, 0.5-0.8 cm in diameter at the base, cream; sterile zone 3-4 cm long, 0.5-0.8 cm in diameter; staminate (male) flower zone 3.5-4.0 cm long, 0.6 cm in diameter, cream; appendix 8-13 cm long, 0.6-0.8 cm in diameter, cream and tip of the appendix blunt. Ovary green, c 3 × 3 mm, style short, stigma c 1 mm in diameter, light yellow. Staminode c 3 × 2 mm, cream. Male flower 6-8 androus. *Fl. & Fr.*: 5-10. *Sides of streams, ditches, water-logged low-lying areas, shady secondary forests and plantations.*

**Dinajpur:** Dinajpur town area, 17 viii 2005, *Hosne Ara* HA. 2027 (DACB); Singra forest, 18 viii 2005, *Hosne Ara* HA. 2073 (DACB); Birgonj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2127 (DACB); Nawabgonj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2137 (DACB); Ranigonj, 19 viii 2005, *Hosne Ara* HA. 2164 (DACB). **Panchagarh:** Tetulia upazilla, Banglabanda, 17 viii 2005, *Hosne Ara* HA. 1977 (DACB). **Thakurgaon:** Dharmagar, 17 viii 2005, *Hosne Ara* HA. 2007 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 26 vi 2015, *Hosne Ara* HA. 2887 (DACB) [Originally collected from Panchagarh district].

Pan-tropical.

In Bangladesh, it is commercially cultivated all over the country. Almost the entire plant including the leaves, petioles, flowers and cormels are consumed as vegetables.

*Note:* The chromosome number has been determined for the variety *Colocasia esculenta* (L.) Schott var. *antiquorum* (Schott) Hubb. & Rehdar. Preliminary determination of 2n chromosome number appears as 42.

**Colocasia esculenta** (L.) Schott var. **aqualitis** Hassk., Pl. Jav. Rar.: 150 (1848). A. Hay *et al.*, Blumea Supplement 8: 45 (1995). Pl. XXXII.

Type: ? Hasskarl (? L).

Bengali: *Lati Kachu*

Herb; stem a underground small tuber, c 3 × 4 cm, always stolons are produced from the main tuber. Leaves petiolate; petiole 75-108 cm long, green or purple; leaf blade peltate, ovate or triangular, c 36.0 × 22.5 cm, sinus 8-10 cm long, dark green adaxially and light green abaxially. Inflorescence 1-2 together; peduncle green or dark purple. Spathe constricted, c 25 cm long; tube c 3 cm long, both side of the tube green; limb c 22 cm long, golden yellow, one constriction present between tube and limb, both side of the limb golden yellow and leathery; tip of the spathe pointed, green, c 0.3 cm long. Spadix shorter than the spathe, c 10 cm long; pistillate (female) flower zone 1.6-2.0 cm long, c 0.6 cm in diameter at the base; staminode zone absent; sterile zone c 1.5 cm long, cream; staminate (male) flower zone 3.0-3.5 cm long, c 0.6 cm in diameter, golden yellow; appendix c 2.5 cm long, c 0.4 cm in diameter at the base, golden yellow and not pointed. Ovary green, c 1.5 × 2.0 mm, style short, stigma c 1 mm in diameter, yellow. Male flower 6-8 androus. *Fl. & Fr.*: 5-10. *Sides of streams, ditches, water-logged low-lying areas, shady secondary forests and plantations.*

**Cox's Bazar** : Teknaf, 28 x 1963, *M. S. Khan* 637 (DUSH). **Moulvibazar** : Gazipur beat, Hararganj reserve forest, 21 v 2005, *Hosne Ara* HA. 1738 (DACB). **Narayanganj**: Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1917 (DACB). **Rangamati** : DC Bangloo area, 20 ix 2004, *Hosne Ara* HA. 1157 (DACB). **Dhaka**: Bangladesh National Herbarium garden (Cultivated), 30 vi 2015, *Hosne Ara* HA. 2888 (DACB) [Originally collected from Rangamati district].

Pan-tropical.

In Bangladesh, it is commercially cultivated all over the country. Almost the entire plant including the leaves, petioles, flowers and stoloniferous runners are consumed as vegetables.

**Colocasia fallax** Schott in Bonplandia 7 (3): 28 (1859); Prodr. Syst. Aroid.: 138-139 (1860). Hook. f., Fl. Brit. India 6: 524 (1893-reprint 1954); Krause in Engler, Pflanzenr. 71 (IV. 23E): 64-65 (1920); Haines, Bot. Bihar and Orissa: 868 (1924-reprint 1978); Mitra, Fl. Pl. E. India 1: 78 (1958); Hu, Dansk Bot. Arkiv 23 (4): 429 (1968); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 10 (1989); Nobile, Fl. Bhutan 3(1): 136-137(1994); Hajra & Verma, Fl. Sikim 1: 192 (1996); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 272 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 45-46 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 75 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 215-216 (2012); *Colocasia kerrii* Gagnep., Not. Syst. Paris 9: 130 (1941), *et in* Lecomte, Fl. Gen. Indo-Chine 6: 1139 (1942). Pl. XXXIII.

Type: Silhet (Wallich n. 8944); Assam (Sheik Mokim n. 145-Herb Calcutta).

#### KEY TO THE VARIETIES

- |   |                 |
|---|-----------------|
| 1. Petiole and peduncle green with purple to light purple admixture | <b>purpurea</b> |
| - Petiole and peduncle green throughout the length                  | <b>fallax</b>   |

var. **fallax**

Bengali: *Ban Kachu*

A small to medium, slender to robust, colony-forming, evergreen herb up to 30-50 cm high; stem a globose tuber, 1.0-3.5 cm in diameter, freely rooting at the nodes, stolon numerous, c 20-45 cm long, c 0.3-0.4 cm in diameter. Leaves few-together; petiole longer than the leaf blade, green, 12-81 cm long, sheathing for almost half the length, sheaths reddish-brown; leaf blade 10-24.5 × 3.5-15 cm, narrowly oblong-ovoid, peltate, apiculate, base rounded with a shallow rounded sinus, sinus 0.2-1.0 cm long, slightly glaucous beneath, dark green adaxially and light green abaxially, intramarginal veins several.



Inflorescence 1-3 together; peduncle slender, 8-28 cm long, light green. Spathe erect, lower spathe (tube) ellipsoid-globose, 1.8-2.0 × 1.0-1.3 cm, green; limb narrowly lanceolate, very finely acuminate, orange-yellow, 6-14 cm long, thick, spreading fully and then reflexing at anthesis. Spadix shorter than or equaling the spathe, 5-9 cm long; pistillate (female) flower zone of spadix 1.2-1.9 × 0.5 cm with 4-6 rows of whitish sterile ovaries at the base; no narrowed zone of neuters above; staminate (male) flower zone 1.1-1.4 × 0.4 cm; appendix 2.7-3.0 × 0.1-0.2 cm, tapering cylindrical, acute, scaly-rough, with several rows of sterile male flowers at the base, 0.5-0.6 cm long, c 0.3 cm in diameter. Ovary subglobose, c 1.1 mm in diameter, 1-locular, ovules many, hemiorthotropous on the parietal placentation, speckled white, style short, stigma disciform. Anthers oblong, slightly compressed with the flat top crenulate, dehiscing by apical pores. Fruit many-seeded, ovoid to ellipsoid. *Fl. & Fr.*: 5-7. *Evergreen forests with deep humus soil and by the side of small streams.* 2n = 42 (Kumar and Subramaniam, 1986).

**Cox's Bazar:** Himchari, 30 ix 2005, *Hosne Ara* HA. 2531 (DACB); Kolatoli, 12 x 2016, *Jahid Hasan* NK. 810 (DACB). **Moulvibazar:** Madhabkundo, 05 vi 1998, *Hosne Ara* HA. 34 (DACB); *ibid*, 25 vi 2001, *Sarder Nasir Uddin* N. 1093 (DACB); *ibid*, 26 vi 2001, *Sarder Nasir Uddin* N. 1094 (DACB); *ibid*, 05 vii 2002, *Hosne Ara & Sarder Nasir Uddin* HA. 92 (DACB); *ibid*, 04 v 2003, *Hosne Ara* HA. 248 (DACB); *ibid*, 20 v 2005, *Hosne Ara* HA. 1708 (DACB); *ibid*, 06 vii 2005, *Hosne Ara* HA. 1846 (DACB); *ibid*, 03 xii 2014, *Hosne Ara* HA. 2866 (DACB). **Rangamati:** Kaptai, Sita Pahar, 17 viii 1998, *Rahman & Toha* 3297 (HCU), Kaptai Lake, Shubalong, 05 ix 1999, *Boyce, Toha & Rahman* 5650 (HCU, K); Shubalong water fall area, 19 ix 2004, *Hosne Ara* HA. 1127 (DACB). **Sherpur:** Bakshigonj, Lawchapra, Dumurtola, 08 x 2003, *Hosne Ara* HA. 595 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 20 vi 2015, *Hosne Ara* HA. 2882 (DACB) [Originally collected from Madhabkundo forest under Moulvibazar district].

Northeastern India, Nepal, northern Thailand, southwestern China and northern Vietnam.

This species is used as a leafy vegetable in Yunnan and southern China (Heng, 1979). It may also be cultivated as an ornamental plant.

**Colocasia fallax** Schott var. *purpurea* H. Ara & M.A. Hassan, Bangladesh J. Plant Taxon. 26 (1): 14-17 (2019). Fig. 10 & Pl. XXXIV.

*Holotype*: Bangladesh, Moulvibazar district, Madhabkundo reserve forest, 20 v 2005, Hosne Ara HA 1709 (DACB).

Bengali: *Ban Kachu*

A small to medium, colony-forming, evergreen herb up to 30-68 cm high; stem a globose tuber, 1.5 cm in diameter, freely rooting at the nodes, stolon c 39 cm long, c 0.5 cm in diameter. Leaves few together; petiole longer than the leaf blade, 12-68 cm long, sheathing for almost half the length, green with purple, light purple admixture; leaf blade 10-25 × 8-23 cm, narrowly oblong-ovate, apiculate, base rounded with a shallow rounded sinus, sinus 0.2-1.0 cm long, slightly glaucous beneath, dark green adaxially or dark green abaxially with a deep violet interveinal zone and light green abaxially, intramarginal veins several. Inflorescence 1-3 together; peduncle slender, 8-20 cm long, green with purple to light purple admixture. Spathe erect, lower spathe (tube) 1.6-2.3 × 1.0-1.3 cm, green; limb narrowly lanceolate, very finely acuminate, orange-yellow, 6.0-14.5 cm long, more thick. Spadix shorter than spathe; pistillate (female) flower zone 1.2-2.0 × 0.5-0.6 cm with 4-6 rows of whitish sterile ovaries at the base; no narrowed zone of neuters above; staminate (male) flower zone 1.5-2.1 × 0.4-0.6 cm; appendix 3.5-5.7 × 0.2-0.3 cm, acute, scaly-rough, with several rows of sterile male flowers at the base, c 1.1 cm long, c 0.3 cm in diameter. Ovary subglobose, c 1.1 mm in diameter, 1-locular, ovules many, hemiorthotropous on the parietal placentation, green, style short, stigma disciform. Anthers oblong, slightly compressed with the flat top crenulate, dehiscing by apical pores. Fruit many-seeded, ovoid to ellipsoid. *Fl.* & *Fr.*: 4-9. Grows on the hill slopes *as under growth*.  $2n = 30$  (Begum and Alam, 2009).

**Bandarban**: Betchari forest area, 22 ix 2004, *Hosne Ara* HA. 1188 (DACB); Thanchi, 24 ix 2004, *Hosne Ara* HA. 1358 (DACB). **Moulvibazar**: Madhabkundo reserve forest, 20 v 2005, *Hosne Ara* HA. 1709 (DACB); *ibid*, 06 vii 2005, *Hosne Ara* HA. 1844 (DACB); *ibid*, 03 xii 2014, *Hosne Ara* HA. 2867 (DACB). **Dhaka**: Bangladesh National Herbarium garden (Cultivated), 20 vi 2015, *Hosne Ara* HA. 2883 (DACB) [Originally collected from Madhabkundo forest under Moulvibazar district].

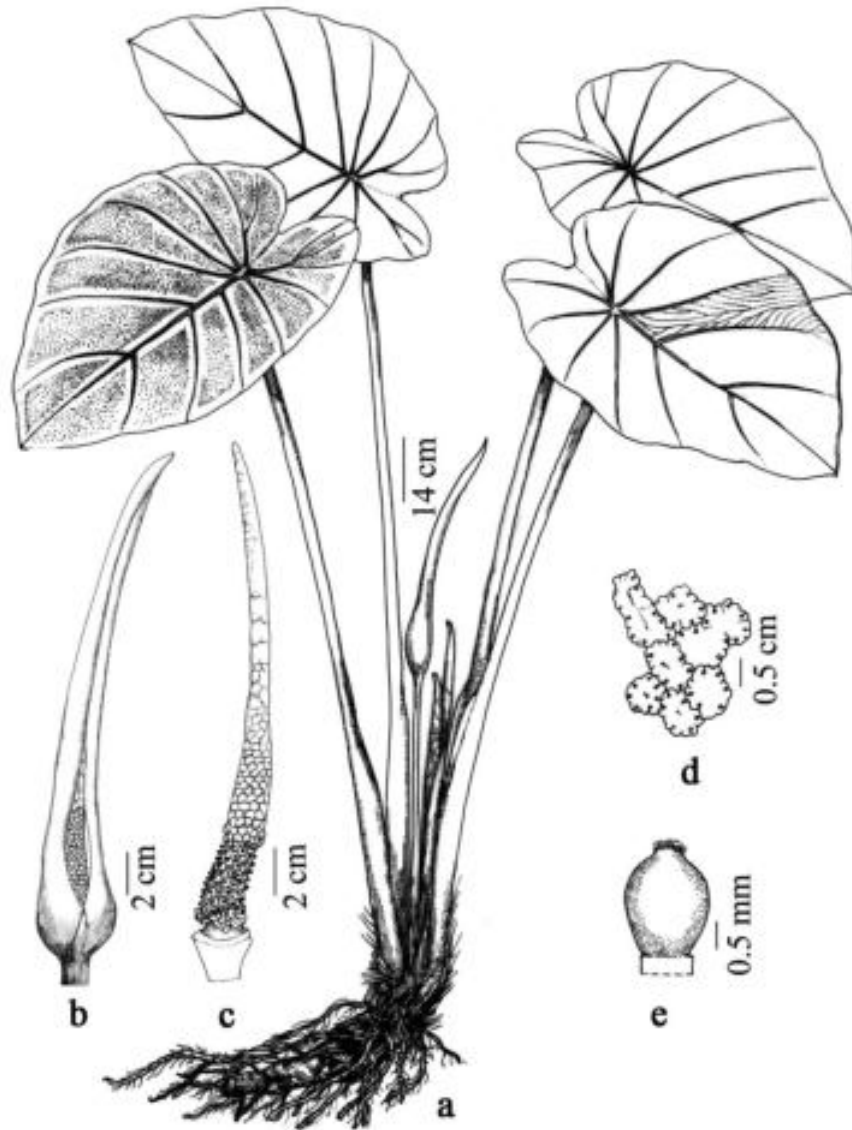


Figure 10. *Colocasia fallax* Schott var. *purpurea* H. Ara & M.A. Hassan, a) habit sketch of a flowering plant; b) inflorescence; c) spadix; d) synandria (top view); e) gynoecium.

Northeastern part of Bangladesh, Moulvibazar district (within greater Sylhet).

The major morphological and cytological differences between two varieties of *Colocasia fallax* Schott are outlined in Table 3.

**Table 3. Morphological and Cytological comparison of *Colocasia fallax* Schott var. *purpurea* H. Ara & M.A. Hassan with *Colocasia fallax* Schott var. *fallax***

Characters	<i>Colocasia fallax</i> Schott var. <i>purpurea</i> H. Ara & M.A. Hassan	<i>Colocasia fallax</i> Schott var. <i>fallax</i>
Petiole and peduncle	Green with purple to light purple admixture	Green throughout the length
Sterile male zone	Not less than 1.0 cm long	Not more than 0.5 cm long
Chromosome number	2n = 30	2n = 28
Acrocentric chromosome	Present (one pair)	Absent
Small chromosome	Present (seven pairs)	Absent
CMA-Band	CMA-positive bands 2	CMA-positive bands 8

***Colocasia gigantea*** (Blume) Hook. f., Fl. Brit. India 6: 524 (1893-reprint 1954). Krause in Engler, Pflanzenr. 71 (IV. 23E): 70-71 (1920) (sub. *colocasia indica*); Hu, Dansk Bot. Arkiv 23(4): 429 (1968); Hotta, Mem. Fac. Sci. Kyoto Imp. Univ., Ser. Biol. 4: 94 (1970); A. Hay, Sandakania 7: 36-39 (1996); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 273 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 46-47 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 74 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 216-217 (2012); *Caladium giganteum* Blume ex Hassk., Cat. Hort. Bogor. 56 (1844); *Leucocasia gigantea* (Blume) Schott, Oesterr. Bot. Wochenbl. 7: 34 (1857); Gen. Aroid. 38 (1859), *et* Prodr. Syst. Aroid. 141 (1860); *Colocasia indica* Engler in DC., Monogr. Phan. 2: 494 (1879), *et* Pflanzenr. 71 (IV. 23 E): 69-70 (1920), p.p., non Kunth. Enum. 3: 39 (1854). Pl. XXXV.

Type: Indonesia, Java. *Blume s.n.* (L!, holo).

Bengali: *Salad Kachu*

English: Giant Elephant Ear, Indian Taro

Perennial evergreen herb; a stout short above-ground stem, creeping to decumbent, clothed with marcescent leaf bases, 20-50 cm long, 4-6 cm in diameter, stolons 2-4, trailing horizontally, branching, thin, pale green, 30-40 cm long, 0.4-0.5 cm in diameter. Leaves several together; petiole light green, pruinose, 80-120 cm long, lower half of the length sheathing; leaf blade ovate-cordate, apex short acuminate, undulate along the margin, base deeply cordate, sinus open, peltate, 25-150 × 17-100 cm, green or pale green adaxially, glaucous below, primary lateral veins 6-7 pairs. Inflorescence 5-8 in each axil of leaf; peduncle cylindrical, shorter than the petiole, 30-70 cm long, 1-2 cm in diameter, each one with a membranous cataphyll, nearly equalling the length of the peduncle. Spathe oblong, distinctly constricted, 12-25 cm long; tube light green, ellipsoid, inrolled, 3.5-5.0 cm long, 1.5-3.0 cm in diameter; limb white, erect, 8.5-19.0 cm long, boat-shaped, 3.0-5.5 cm in diameter, deciduous. Spadix sessile, shorter than the spathe, 9-20 cm long; pistillate (female) flower zone yellow, conic, 1.5-3.0 cm long, 1.5-2.0 cm in diameter; sterile portion slender, 3.0-4.5 cm long; staminate (male) flower zone 5-14 cm long, c 1.1 cm in diameter; appendix very short, acute, 1-5 mm long, surface slightly and irregularly rugose. Ovary numerous, oblong-ovoid, c 2.5 × 1.5 mm, green, ovules scattered, placentation parietal, style distinct but very short, less than 0.5 mm long, stigma capitate, light yellow, c 2 mm in diameter. Synandria c 2.5 × 2.5 mm, waxy white. Fruiting peduncle erect, fruit an oblong berry, c 5 mm long. Seeds many, spindle-shaped, with many distinct longitudinal striates. *Fl. & Fr.*: 4-9. Flowering of the plant is not an annual phenomenon but occurs at an intervals of 6-7 years. *Shady places of hill slopes and foothills*.  $2n = 28, 42$  (Petersen, 1989).

**Bandarban:** On the way of Betchari, 22 ix 2004, *Hosne Ara* HA. 1254, 1255 (DACB); Kulpara, 23 ix 2004, *Hosne Ara* HA. 1290 (DACB); Betchari forest area, 23 ix 2004, *Hosne Ara* HA. 1355 (DACB). **Khagrachari:** Jamtoli, 12 vii 2003, *Hosne Ara and Sardar Nasir Uddin* HA. 483 (DACB). **Patuakhali:** Patuakhali Sadar, Lohalia, 19 xi 2004, *M. Sultana* 500 (DUSH); Galachipa Amkhola, 01 ii 2007, *M. Sultana* 1453 (DUSH). **Rangamati:** Kaptai, Shilsori village, 08 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 390, 415 (DACB); Silchari, 08 vii 2003, *M. Khatun* 334 (DUSH); Kaptai, Sitapahar, 14 x 2003, *Hosne Ara* HA. 712 (DACB); Rajbari area, 18 ix 2004, *Hosne Ara* HA. 1119 (DACB). **Dhaka:** BADC office, Airport road (Cultivated), 22 iv 2006, *Hosne*

*Ara* HA. 2627 (DACB) [Originally collected from Panchari under Khagrachari district]; Bangladesh National Herbarium garden (Cultivated), 30 iv 2008, *Hosne Ara* HA. 2741 (DACB) [Originally collected from Shilsori village under Rangamati district].

Native of southern China, Myanmar, Peninsular Thailand, Indo-China to the Malay Peninsula, Sumatra and Java of Indonesia.

The petioles and leaves of the plant are rich in iron, calcium and vitamin C. In Bangladesh, children and women generally suffer from a deficiency of iron, calcium and vitamin C and, as such, the plant may be consumed as a supplement. The plant can be cultivated in kitchen gardens for ready availability. It is also cultivated for its edible petioles (Hotta, 1970).

The indigenous people of Bangladesh use the petiole of the plant in salads. Leaves and petioles are also used in curries.

***Colocasia hassanii*** H. Ara, Bangladesh J. Plant Taxon. 25 (1): 101-106 (2018). Fig. 11 & Pl. XXXVI.

*Holotype*: Bangladesh, Bandarban district, on the way of Betchari, 22. 09. 2004, Hosne Ara HA 1215, 1216 (DACB).

Bengali: *Tita Kachu*

English: Bitter Taro (proposed)

Annual herb; stem an underground small corm, perennial, corm c 2.5 cm in diameter, and c 2 cm high, stolons 1-2, trailing horizontally, non-branching, thin, pale green or pale purple, c 20 cm long, ca. 0.5 cm in diameter. Leaves 4-6; petiole 20-65 cm long, sheathing for about 1/3 at the base; leaf blade peltate, 26-45 × 8-30 cm, ovate, acute, cordate, dark green adaxially and light green abaxially, base shallowly cordate, glaucous, venation pinnately reticulate, sinus 1-3 cm long. Inflorescence 1-2 together; peduncle 10-14 cm long, shorter than petiole. Spathe having two constriction, 15.0-25.5 cm long, lower spathe (tube) convolute, light green, 4.0-6.5 cm long, c 2 cm in diameter, nearly cylindrical; limb lanceolate, light yellow, 11-19 cm long, the lower part of limb separated in two parts by a constriction, lower subglobose, 3.0-3.5 cm, upper narrowly lanceolate apex long-acuminate, 8.0-15.5 cm, leathery, erect. Spadix sessile, shorter than spathe,

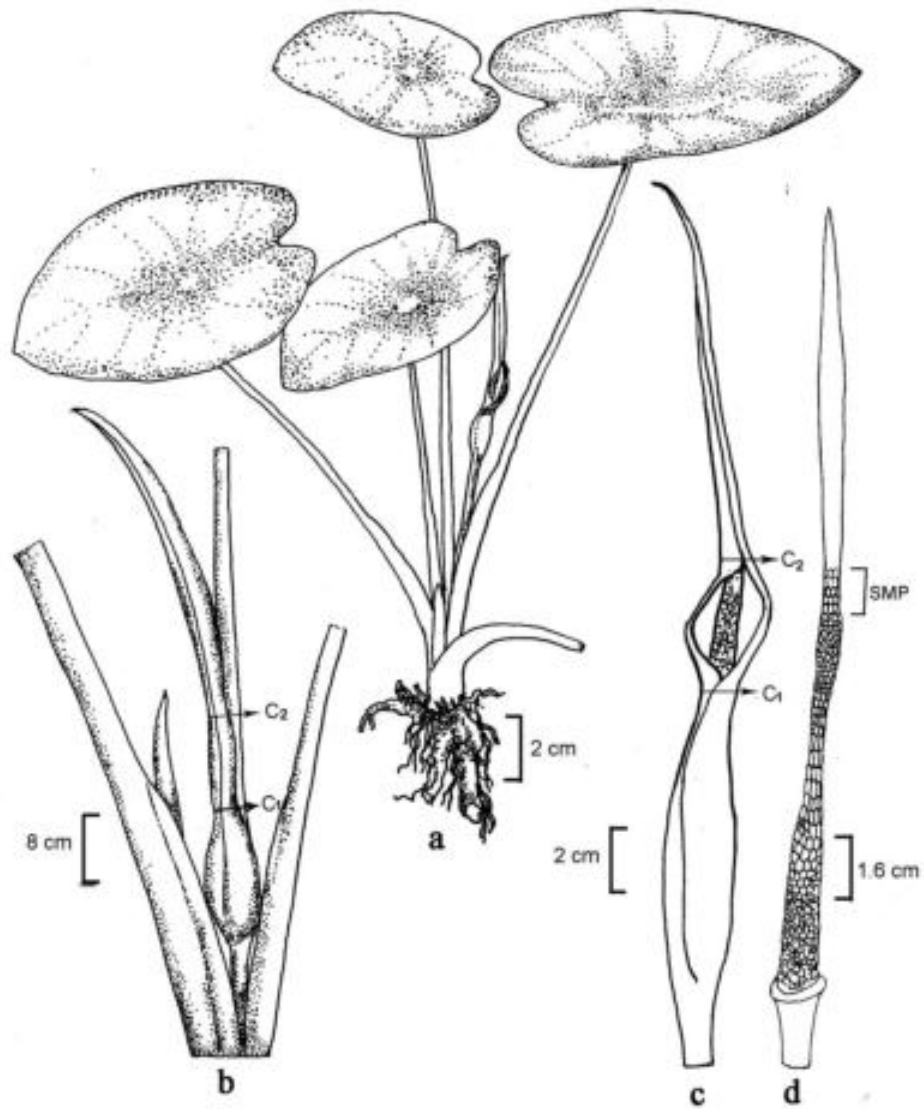


Figure 11. *Colocasia hassanii* H. Ara, a) habit; b) spathe (c<sub>1</sub>: constriction 1; c<sub>2</sub>: constriction 2); c) inflorescence; d) spadix (smp: sterile male portion).

10-19 cm long; pistillate (female) flower zone cylindrical, 2.8-3.0 cm long, c 1 cm in diameter; staminode c 1.8 cm long, creamy; sterile zone slender, c 1.8 cm long, c 0.4 cm in diameter at the middle, creamy; staminate (male) flower zone 2.1-2.8 cm long, 0.4-0.5 cm in diameter; a sterile male zone present below the appendix, 0.4-0.5 cm long, c 0.2 cm in diameter; appendix 6.5-10.0 cm long, 0.3-0.5 cm in diameter. Ovary numerous, narrow, green, 3-5 × 2-3 mm, style very short, green, stigma c 0.05 cm in diameter, yellow, placentation parietal, ovules 6, c 1.5 × 1.0 mm. Staminode cream colour, c 0.15 × 0.2 cm. Male flower 6-8 androus, c 0.1 × 0.12 cm. Fruit a berry. *Fl. & Fr.*: 6-10. *Grows in the hilly areas as undergrowth.*

**Bandarban:** On the way of Betchari, 22 ix 2004, *Hosne Ara* HA. 1215, 1216 (DACB); Meghla forest area, 23 ix 2004, *Hosne Ara* HA. 1291, 1292 (DACB). **Cox's Bazar:** Chota Inani, 30 ix 2005, *Hosne Ara* HA. 2432 (DACB); Bara Inani, 30 ix 2005, *Hosne Ara* HA. 2462 (DACB); Himchari area, 30 ix 2005, *Hosne Ara* HA. 2522 (DACB). **Khagrachari:** Alutilla, 11 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 461 (DACB); Jamtoli, 12 vii 2003, *Hosne Ara* HA. 484 (DACB). **Moulvibazar:** Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1747 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1777 (DACB); Adampur beat, Kawargola forest, 06 x 2005, *Hosne Ara* HA. 2625 (DACB). **Rangamati:** Kaptai, Shilsori village, Velbapara, 08 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 391 (DACB); Kaptai, Sitapahar, 14 x 2003, *Hosne Ara* HA. 711 (DACB); Rajbari area, 18 ix 2004, *Hosne Ara* HA. 1122 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 18 vi 2015, *Hosne Ara* HA. 2881 (DACB) [Originally collected from Bandarban district].

Eastern hilly areas of Bangladesh (Bandarban and Rangamati hill districts and Moulvibazar district of greater Sylhet).

The indigenous people of Bangladesh use its petioles in curries.

The major morphological differences between *Colocasia hassanii* H. Ara and its closely allied species *Colocasia esculenta* (L.) Schott are outlined in Table 4.



**Table 4. Morphological comparison of *Colocasia hassanii* H. Ara with its closely related *Colocasia esculenta* (L.) Schott.**

Character	<i>Colocasia hassanii</i> H. Ara	<i>Colocasia esculenta</i> (L.) Schott
Petiole	c 62 cm long, green or purple, spotted	c 100 cm long, green or purple, not spotted
Spathe	Two constrictions present between tube and limb	One constriction present between tube and limb
Tube and limb of the spathe	Both sides of the lower spathe light green and both sides of the limb light yellow and leathery	Both sides of the lower spathe green and both sides of the limb golden yellow and leathery
Spadix	Sterile male portion present	Sterile male portion absent
Tip of the appendix	Pointed, c 0.7 cm long	Obtuse (blunt)
Taste	Bitter	Not bitter

*Note:* The chromosome number has been determined for the species *Colocasia hassanii* H. Ara. Preliminary determination of 2n chromosome number appears as 28.

***Colocasia heterochroma*** H. Li *et* Z. X. & Wei, Acta Bot. Yunnan. 15 (1): 16-17 (1993). Govaerts & Frodin, world Cheekl. Bibliog. Araceae: 273 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 47-48 (2007). Pl. XXXVII.

Type: China (Yunnan), Li Heng 9108.

Bengali: *Bahari Kachu*

Small herb; stem a globose tuber, c 1.5 cm in diameter and c 1 cm high, stolons very slender, more or less concealed with thin, dark brown cataphylls. Leaves usually 4-5; petioles pale green, 17-25 × 0.3 cm, longer than the leaf blade; leaf blade 6.5-16.0 × 5-12 cm, ovate-cordate, membranous, peltate, tip acute, margin entire, base rounded with a shallow rounded sinus, sinus 0.5-1.5 cm long, dark green above with a deep violet interveinal zone, light green abaxially, slightly glaucous. Inflorescence 1-2 together; peduncle 4-8 cm long, shorter than the petiole. Spathe 7.0-9.5 cm long, having two constrictions, one between the tube and the limb and the other within the limb above the male zone dividing the limb into lower and upper parts, spathe tube 1.5 × 1.5 cm, green, lower part of limb 0.7-1.3 × 1.3 cm, inside dark violet and outside yellow, upper part

narrowly lanceolate, 5.8-6.7 cm long with yellow colour on both sides, tip acuminate. Spadix cylindrical, 9.2-12.0 cm long; pistillate (female) flower zone 1.0-1.2 cm long; zone of sterile flowers 0.5-0.7 cm long; staminate (male) flower zone 1.9-2.3 cm long; appendix 5.8-7.8 × 0.3 cm, rough, narrowed at the base. Ovary subglobose, 1-locular, ovules many, hemiorthotropous on parietal placentation, stigma sessile, disciform, green. Male flowers 10-12 androus, stamens connate into subtruncate synandrium, thecae lateral, oblong-linear, dehiscing by the apical pore. *Fl. & Fr.*: 7-8. *Moist, shady hill slopes at an altitude of 200 m.*

**Bandarban:** Keochia, Chimbuk, 08 ix 1999, *Boyce, Toha & Rahman* 5762 (HCU, K). **Rangamati:** Kaptai Lake, Sitapurdah, 03 ix 1999, *Boyce, Toha & Rahman* 5547 (HCU, K); Kaptai Lake, Shubalong, 05 ix 1999, *Boyce, Toha & Rahman* 5652 (HCU, K); Kaptai, Sitapahar, 22 ix 2002, *Sarder Nasir Uddin* N. 1442 (DACB); 08 vii 2003, *Hosne Ara and Sarder Nasir Uddin* HA. 437 (DACB). **Dhaka:** Bangladesh National Herbarium garden 30 vii 2004, *Hosne Ara* HA. 1086 (DACB) [Originally collected from Sitapahar under Rangamati district].

Southwestern China (Heng and Wei, 1993).

It may be cultivated as an ornamental plant because of its variegated leaves and showy inflorescence.

**Colocasia lihengiae** C.L. Long *et* K.M. Liu, *Bot. Bull. Acad. Sin.* 42: 313-317 (2001). Gogoi and Borah, *Gard. Bull. Singapore* 65 (1): 33-35 (2013); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 48 (2007). Pl. XXXVIII.

Holotype/Type: China. Yunnan Prov.: Mengla, Mengxing. River watershed, in a valley with dense rainforest, 20 vi 1998, Long Chun-lin & Li Meilan 9806 (Holotype: KUN); Paratype: 18 vii 1998, Long Chun-lin & Li Meilan 9824 (KUN), cultivated in Kunming Botanical Garden.

Bengali: *Jongle Kachu*

Terrestrial perennial herb with stolons; stem rhizomatous, rhizome erect, 4-8 cm long, 2-3 cm in diameter, stolons 6-12, trailing horizontally, non-branching, thin, pale green or pale purple, 70-80 cm long, c 0.5 cm in diameter, with dark green cataphylls.

Leaves 4-6; petiole cylindrical, light green, reddish-purple, 80-120 cm long; leaf blade peltate, sagittate-cordate, membranous, 30-40 cm long, 18-25 cm wide, green adaxially, pale green abaxially, primary lateral veins 6 pairs, pale green, marginal veins inconspicuous. Inflorescence 4-6 together; peduncle cylindrical, pale green, 40-50 cm long, much shorter than the petiole. Spathe constricted in the middle, lower convolute part (tube) yellowish-green, 4-5 cm long, c 2 cm in diameter, nearly cylindrical; limb oblong-lanceolate, golden yellow, 11-13 cm long, c 4 cm in diameter, reflexed. Spadix fragrant; pistillate (female) flower zone golden yellow, cylindrical, 2.0-2.5 cm long, c 0.7 cm in diameter; staminate (male) flower zone cylindrical, yellow, c 3.5 cm long, 0.6-0.8 cm in diameter; neuter flower zone between the female and male zones, cylindrical, c 1 cm long, 0.4-0.5 cm in diameter; appendix absent. Female flowers obovoid, carpels 3 or 4, ovary unilocular, placentae 2, parietal, ovules spindle-shaped, nearly erect, numerous, stigma sessile, discoid. Synandria 8-10 androus, c 0.1 cm long, yellow. *Fl. & Fr.*: 5-7. Limestone areas in *deep forests, shady places of hill slopes and at the foothills*.  $2n = 28$  (Long and Liu, 2001).

**Bandarban:** Thanchi forest area, 24 ix 2004, *Hosne Ara* HA. 1357 (DACB); Pavel Partha 748 (JUH). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 05 v 2005, *Hosne Ara* HA. 1465 (DACB) [Originally collected from Thanchi under Bandarban district].

Yunnan (southern China).

**Colocasia mannii** Hook. f., *Fl. Brit. India* 6: 524 (1893-reprint 1954); Krause in Engler, *Pflanzenr.* 71 (IV. 23E): 69 (1920); Mitra, *Fl. Pl. E. India* 1: 78 (1958); Rao and Verma, *Bull. Bot. Surv. India* 18 (1-4): 27 (1976); Karthikeyan *et al.*, *Fl. India Enum. in Fl. India ser. 4*: 10 (1989); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 273 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 48-49 (2007). Pl. XXXIX.

Type: Assam (Herb. Kew).

Bengali: *Jongle Kachu*

A herb; stem rhizomatous, rhizome 5-6 cm long, 3-4 cm in diameter, stolon absent. Leaves several together; petiole purple-green, 50-87 cm long, sheathing in the lower one-third; leaf blade oblong-ovate, 25-41 × 13-25 cm, sagittate with a broad sinus, tip acute,

peltate, green adaxially, paler green abaxially, primary lateral veins 6-7 pairs, pale green. Inflorescence produced in both juvenile and adult plants, solitary or paired; peduncle almost completely enclosed in the sheath of the subtending leaf, 30-40 cm long. Spathe 18.0-23.5 cm long; tube 3-5 cm long, light green; limb narrowly oblong-cymbiform, 15.0-18.5 cm long, c 7.7 cm in diameter, reflexed. Spadix shorter than the spathe, 9-11 cm long; pistillate (female) flower zone 3.0-3.8 cm long, c 1 cm in diameter; sterile interstice c 3 cm long, yellow; staminate (male) flower zone 3.0-4.2 cm long, 0.5 cm in diameter, tip rounded; appendix absent. Pistils numerous, ovaries globose, green, incompletely 3-5 locular with parietal placentation and numerous oval-shaped ovules, stigma sessile, discoid, whitish, c 1 mm in diameter. Synandria ivory, irregularly rhombo-hexagonal, 8-10 androus, 1 mm in diameter, yellow. *Fl. & Fr.*: 6-7. *Shady and moist places of hill slopes of rain forests, usually near canals (Chhara).*

**Moulvibazar:** Gazipur beat, Hararganj reserve forest, 21 v 2005, *Hosne Ara* HA. 1737 (DACB); 05 vii 2005, *Hosne Ara* HA. 1807 (DACB); Juri forest, 01 xii 2014, *Hosne Ara* HA. 2862 (DACB). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 07 v 2006, *Hosne Ara* HA. 2637 (DACB) [Originally collected from Hararganj reserve forest under Moulvibazar district].

Assam of India.

**Colocasia oresbia** A. Hay, Sandakania 7: 39-42 (1996). Govaerts & Frodin, World Checkl. Bibliog. Araceae: 273 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 49-50 (2007). Pl. XXXX.

Type: A. Hay 10046, Malaysia, Borneo (Sabah), 30 March 1995.

#### KEY TO THE VARIETIES

1. Tuber not less than 20 cm long, stolon absent, inflorescence in groups of up to 8, never 3 or less **oresbia**
- Tuber up to 7 cm long, stolon present, inflorescence in groups of up to 3 **stolonifera**

var. **oresbia**Bengali: *Sada Kachu*

An evergreen herb; stem condensed, creeping to decumbent, clothed in marcescent leaf bases, 25-40 cm long, 8-12 cm in diameter, stolons absent. Leaves several together; petiole light green, 80-180 cm long, sheathing in the lower one-half to one-third; leaf blade very broadly ovate-sagittate, deeply peltate, 60-84 cm long, 50-65 cm wide, green adaxially, paler green abaxially, primary lateral veins 5-6 pairs, pale green. Inflorescence produced in both juvenile and adult plants, solitary or paired (in groups of up to 8); peduncle almost completely enclosed in the sheath of the subtending leaf, when paired the sequence perpendicular to the circumference of the stem with the younger one further out, 25-60 cm long, much shorter than the petiole. Spathe 20.0-36.5 cm long; tube narrowly ovoid, glaucous green, 4.0-5.5 cm long; limb erect, lanceolate, 11-31 cm long, pale cream-yellow, open only at the base, the rest convolute. Spadix sessile, shorter than the spathe, 10.0-22.5 cm long; pistillate (female) flower zone 3.5-4.0 cm long, 1.0-1.5 cm in diameter, slightly tapering distally; sterile interstice 1-2 cm long; staminate (male) flower zone 6.0-11.5 cm long, c 1 cm in diameter; appendix constricted at the base, 3.0-4.5 cm long, 0.4-0.5 cm in diameter, tapering to a point, surface slightly and irregularly rugose. Pistils numerous (c 150-400), interspersed irregularly with c 2.5 mm long upturned ivory staminodes, ovaries incompletely 3-5 locular with parietal placentation and numerous sub-orthotropous ovules, style distinct but very short, less than 0.5 mm long, stigma whitish, c 2 mm in diameter. Synandria ivory, irregularly rhombo-hexagonal, 1.0-1.5 mm in diameter. Fruiting spadix aligned with the peduncle. Fruits numbering hundreds per infructescence, green tinged-brown when ripe. Seeds c 0.7 mm long. *Fl. & Fr.*: 6-9. *Rain forests, shady places of hill slopes and foothills.*

**Chattogram:** Hazarikhil forest, 27 ix 2005, *Hosne Ara* HA. 2297, (DACB); Fatiqchari, 27 ix 2005, *Hosne Ara* HA. 2310 (DACB). **Cox's Bazar:** Taknaf game reserve, Whykeon range, Kudumgath, 29 ix 2005, *Hosne Ara* HA. 2355 (DACB); Upper Rezu range, 29 ix 2005, *Hosne Ara* HA. 2406 (DACB); Chota Inani, 30 ix 2005, *Hosne Ara* HA. 2433 (DACB); Bara Inani, 30 ix 2005, *Hosne Ara* HA. 2460 (DACB); Swankhali, 30 ix 2005, *Hosne Ara* HA. 2504 (DACB); Himchari, 30 ix 2005, *Hosne Ara* HA. 2520 (DACB). **Khagrachari:** Alutilla, 11 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 460 (DACB). **Moulvibazar:** Madhabkundo, 05 vi 1998, *Hosne Ara* HA. 36

(DACB); 05 vii 2002, *Hosne Ara & Sarder Nasir Uddin* HA. 91 (DACB); 20 v 2005, *Hosne Ara* HA. 1710 (DACB); 06 vii 2005, *Hosne Ara* HA. 1826 (DACB); Juri forest, 02 xii 2014, *Hosne Ara* HA. 2865 (DACB); Madhabkundo, 03 xii 2014, *Hosne Ara* HA. 2870 (DACB). **Rangamati:** Kaptai, Rampahar, 07 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 359 (DACB); Kaptai, Bangchhari, 08 vii 2003, *Hosne Ara* HA. 415 (DACB); Kaptai, Sitapahar, 08 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 436 (DACB); Rajbari area, 18 ix 2004, *Hosne Ara* HA. 1121 (DACB); Shubalong forest area, 19 ix 2004, *Hosne Ara* HA. 1123 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 09 v 2006, *Hosne Ara* HA. 2640 (DACB) [Originally collected from Madhabkundo under Moulvibazar district].

Indonesia.

The leaves and plants are used as a vegetable.

Tribal people use its rhizome in curries.

*Note:* The chromosome number has been determined for the species *Colocasia oresbia* A. Hay. Preliminary determination of 2n chromosome number appears as 26.

***Colocasia oresbia*** A. Hay var. ***stolonifera*** H. Ara & M.A. Hassan, Bangladesh J. Plant Taxon. 26 (1): 17-20 (2019). Fig. 12 & Pl. XLI.

*Holotype:* Bangladesh, Rangamati district, Rangamati forest area, 27.09.2004, Hosne Ara HA 1435 (DACB).

Bengali: *Ban Kachu*

Perennial herb; stem a tuberous rhizome, tuber c 4.5-7.0 cm long and c 1.8-4.0 cm in diameter, stolon small, white. Leaves thin, petiolate; petiole c 99.5 cm long, light green, sheathing for about 1/3 at the base; leaf blade peltate, 45-52 × 32-36 cm, ovate-sagittate, acute, base cordate, light green adaxially and abaxially, primary lateral veins 5-6 pairs, venation pinnately reticulate, pale green, sinus c 8.0 cm long. Inflorescence solitary or paired (in groups of up to 3); peduncle 30-35 cm long, c 0.7 cm in diameter, light green, shorter than the petiole. Spathe constricted, 19.5-25.0 cm long; tube light green, 2.3-3.5 cm long, c 2.5 cm in diameter; limb reflexed, golden yellow, 17.0-21.5 cm long, 5-6 cm

in diameter at the middle. Spadix sessile, shorter than the spathe, 11.5-13.5 cm long; pistillate (female) flower zone cylindrical, 2.1-3.0 cm long, 0.8-1.0 cm in diameter; sterile portion 1.0-1.5 cm long, cream, c 0.5 cm in diameter at the middle; staminate (male) flower zone 4.7-5.5 cm long, 0.5-0.6 cm in diameter, light yellow; appendix 3.0-3.5 cm long, c 0.4 cm in diameter at the middle, light yellow, tip of the appendix blunt. Ovary numerous, narrow, green, 1.5-2.0 mm long, 2-3 mm in diameter, ovule numerous, style very short, green, stigma c 0.05 cm in diameter, yellow. Staminate cream colour, 0.2-0.3 cm long, c 0.15 cm in diameter. Male flower 6-8 androus. *Fl. & Fr.*: 8-10. *Grows on the hill slopes as under growth.*

**Rangamati:** Rangamati forest area, 27 ix 2004, *Hosne Ara* HA. 1435 (DACB).

**Dhaka:** Bangladesh National Herbarium garden (Cultivated), 10 viii 2015, *Hosne Ara* HA. 2894 (DACB); 13 ix 2015, *Hosne Ara* HA. 2895 (DACB); 17 ix 2015, *Hosne Ara* HA. 2896 (DACB) [Originally collected from Rangamati forest area under Rangamati district].

Eastern hilly area of Bangladesh (Rangamati district).

The major morphological differences between two varieties of *Colocasia oresbia* A. Hay are outlined in Table 5.

**Table 5. Morphological comparison of *Colocasia oresbia* A. Hay var. *stolonifera* H. Ara & M.A. Hassan with *Colocasia oresbia* A. Hay var. *oresbia*.**

Characters	<i>Colocasia oresbia</i> A. Hay var. <i>stolonifera</i> H. Ara & M.A. Hassan	<i>Colocasia oresbia</i> A. Hay var. <i>oresbia</i>
Tuber	Up to 7.0 cm long and 4 cm in diameter (4.5-7.0 × 1.8-4.0)	Not less than 20 cm long and 8 cm in diameter (25-40 × 8-12)
Stolon	Present	absent
Leaf shape & texture	Apex and posterior lobe obtuse, leaf blades shallowly peltate, 45-52 × 32-36 cm, ovate-sagittate	Apex and posterior lobe semicircular, leaf blades deeply peltate, 60-84 × 50-65 cm, very broadly ovate-sagittate
Inflorescence	Solitary or in groups of up to 3	In groups of up to 8, never 3 or less

**Note:** The chromosome number has been determined for the variety *Colocasia oresbia* A. Hay var. *stolonifera* H. Ara & M.A. Hassan. Preliminary determination of 2n chromosome number appears as 26.

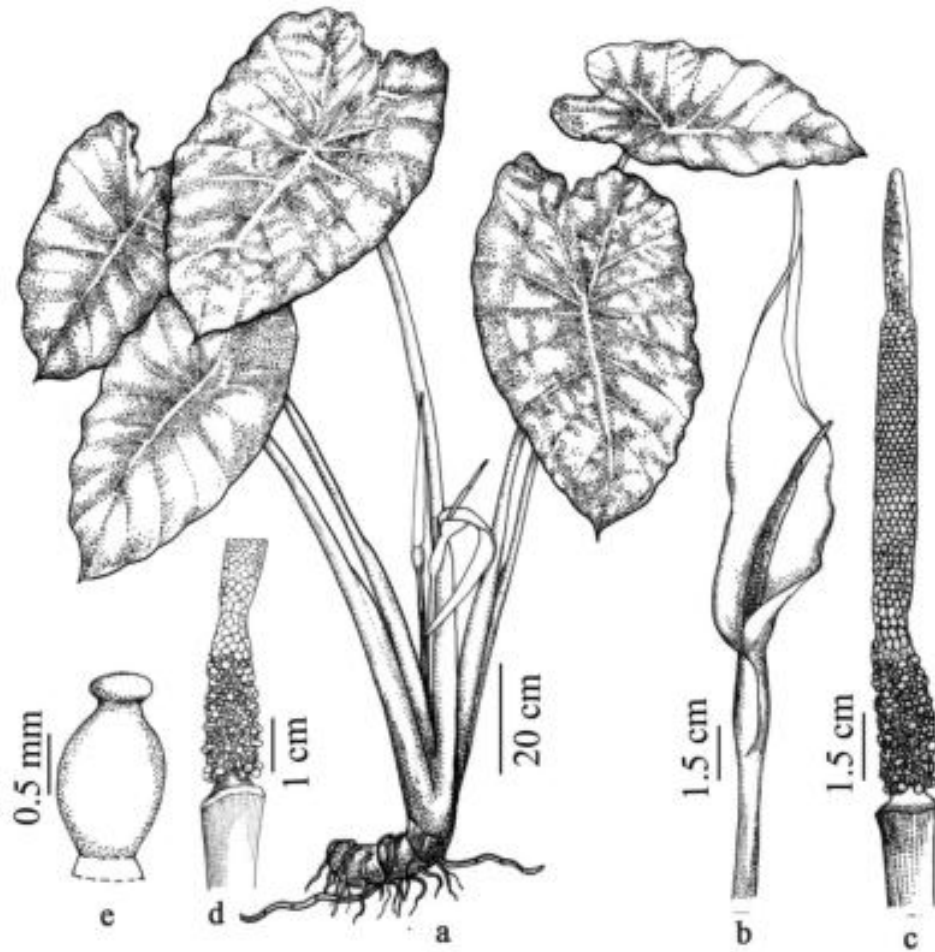


Figure 12. *Colocasia oresbia* A. Hay var. *stolonifera* H. Ara & M.A. Hassan, a) habit sketch of a flowering plant; b) inflorescence; c) spadix; d) lower portion of the spadix; e) gynoecium.



**Colocasia virosa** Kunth, Enum. Pl. 3: 39 (1841). Schott, Syn. Aroid.: 41 (1856), Prodr. Syst. Aroid: 139 (1860); Hook. f., Fl. Brit. India 6: 524 (1893-reprint 1954); Krause in Engler, Pflanzenr. 71 (IV. 23E): 68-69 (1920); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 10 (1989).; *Calla virosa* Roxb., Fl. Ind. 3: 517 (1832) ; Wight, Icon. Pl. Ind. Or. 3. t. 808 (1844); *Zantedeschia virosa* C. Koch, Ind. Seminum. Hort. Berol. App. 9 (1854). Pl. XLII.

Type: Bengal (Roxburgh).

Bengali: *Ban Kachu*

Herbs; stem a tuberous or elongate rhizome, rhizome 10 cm long, 2-3 cm in diameter, cylindrical, stolons absent. Leaves many, petiolate; petiole green, 40 cm long, smooth; leaf blade oblong-ovate, 24 × 16 cm, peltate, coriaceous, margin slightly wavy, glossy green adaxially, pale green abaxially, primary lateral veins 6-9 pairs. Inflorescence 1-3 together; peduncle c 17 cm long, green. Spathe nearly straight, c 15.5 cm long; tube c 2.5 cm long, c 1.5 cm in diameter, oblong, light green; limb narrowly lanceolate, dark yellow, c 12 cm long, c 5 cm in diameter. Spadix much shorter than the spathe, 6.9-7.5 cm long; the lower third part pistillate (female) flower zone, 2.3-2.5 cm long, c 0.8 cm in diameter; staminate (male) flower zone 4.5-5.0 cm long, c 0.5 cm in diameter, tip acute; appendix absent. Ovary broadly ovoid, c 0.4 mm long, c 0.3 mm in diameter, green, 3-4 locular with parietal placentation and numerous ovules, stigma large, peltate, white. Anthers peltate, 8-12 celled, yellow. *Fl.*: 5. *Grows in shady and moist places of forest.*

**Moulvibazar:** Muraichara beat, Ichachara forest, 07 v 2010, *Hosne Ara* HA. 2752 (DACB). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 17 v 2011, *Hosne Ara* HA. 2779 (DACB) [Originally collected from Ichachara forest under Moulvibazar district].

Southern and eastern India.

**Cryptocoryne** Fischer *ex* Wydler, Linnaea 5: 428 (1830).

**Type species:** *C. spiralis* (Retzius) Fischer *ex* Wydler (*Arum spirale* Retzius).

Small to medium-sized evergreen (except *Cryptocoryne nevillii*) seasonally dormant herbs with procumbent to erect rhizomes and short to long stolons, cataphylls often

present in flowering specimens, sometimes also in nonflowering specimens, sub-2-keeled. Leaves many with elongate sheathing petioles; leaf blade elliptic-ovate to narrowly ovate, lanceolate, linear, mostly glabrous, rarely pubescent, base attenuate to cordate, venation transverse-reticulate. Inflorescence solitary; usually shortly peduncled. Spathe with three parts: (1) basal tube (called kettle) with united margins, (2) upper tube (sometimes twisted) with fused margins, and (3) terminal limb which opens and sometimes extends into a tail, a distinctive 'collar' or 'collar zone' is often found inside at the transition between the upper tube and the limb. Spadix slender, small, included in the kettle, with five parts: (1) a basal pistillate (female) flower zone, (2) part with olfactory bodies, (3) a thin, naked interstice, (4) staminate (male) flower zone, and (5) a minute naked appendix, sometimes adnate to the base of the flap at the top of the kettle. Flowers unisexual, perigone absent. Female flowers 4-8, naked, upright, in a single connate whorl, with outcurved styles, stigma ovate-elliptic to emarginate, occasionally trilobed, sub-vertical, ovaries connate, 1-locular, ovules 5-many, orthotropous, placenta sub-basal to obliquely parietal. Male flowers apparently 1-androus, stamens free, anthers sessile or with short filaments, apex excavated with very prominent, thickened margins, thecae 2 per stamen, opposite, dehiscing by an apical pore. Infructescence a sub-ovoid to globular syncarpium, ultimately splitting in the upper adaxial part and becoming star-shaped. Seed ellipsoid-oblong, straight or slightly curved, testa brown, not very thick, rough to slightly costate or smooth.

About 50 species are distributed throughout tropical Asia and Malay Archipelago (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 3 species.

#### KEY TO THE SPECIES

- |  |                      |
|--|----------------------|
| 1. Tube of the spathe longer than the limb         | <b>2</b>             |
| - Tube of the spathe shorter than the twisted limb | <b>spiralis</b>      |
| 2. Margin of the limb recurved, glabrous           | <b>retrospiralis</b> |
| - Margin of the limb densely fimbriate             | <b>ciliata</b>       |

**Cryptocoryne ciliata** (Roxb.) Fischer *ex* Wydler, *Linnaea* 5: 428 (1830). Schott, *Melet.* 1: 26 (1832); *Syn. Aroid.*: 2 (1856); *Bonplandia* 5: 222 (1857); *Prodr. Syst. Aroid.*: 15-16 (1860); Hook. f., *Fl. Brit. India* 6: 492 (1893-reprint 1954); Prain, *Beng. Pl.* 2: 1105 (1903-reprint 2004); Engler, *Pflanzenr.* 73 (IV. 23F): 248-249 (1920); Ridley, *Fl. Malay Peninsula*: 86 (1925); Fischer in Gamble, *Fl. Pres. Madras*: 1575 (1931), repr. ed. 3: 1098 (1967); Blatter & McCann, *J. Bombay Nat. Hist. Soc.* 35: 17-18 (1931); Datta & Mitra, *Bull. Bot. Soc. Beng.* 7 (1 & 2): 100 (1953); Sinclair, *Bull. Bot. Soc. Beng.* 9 (2): 110 (1956); Mitra, *Fl. Pl. E. India* 1: 84 (1958); Rataj, *Studie CSAV* 3: 35-38 (1975); Bennet, *Fl. Howrah Dist.*: 95 (1979); Sharma *et al.*, *Fl. Karnataka*: 297 (1984); Khan & Halim, *Aqua. Angios. Bangladesh*: 64 (1987); Karthikeyan *et al.*, *Fl. India Enum. in Fl. India ser.* 4: 10 (1989); Benerjee & Rao, *Mangroves Orissa Coast*: 104 (1990); A. Hay *et al.*, *Blumea Supplement* 8: 49 (1995); Saxena & Brahmam, *Fl. Orissa* 4: 2043 (1996); Hajra & Rao, *Fl. Gr. Nicobar Island*: 470 (1999); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 279 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 50-51 (2007); Boyce *et al.*, *Fl. Thailand* 11 (2): 221-222 (2012); *Ambrosina ciliata* Roxb., *Pl. Corom.* 7: 90, t. 294 (1820); *Cryptocoryne elata* Griff., *Not. Pl. Asiat.* 3: 134 (1851); *Icon. Pl. As.*, t. 170, 171 (1851). *Pl. XLIII.*

Holotype: Roxburgh, Ind. Orient.

Bengali: *Kerali*

English: Water Trumpet

Aquatic or marsh herb; rhizome stout, 5-10 × 1-3 cm, runners 30-40 cm long on which at intervals of 7-10 cm new rooting plants develop, roots numerous, sometimes a longer internode present between a series of shorter ones. Cataphylls large, surrounding the younger leaf, present only in flowering specimens. Leaves green, somewhat spongy; petioles strong, in the lower third sheathed, green, 10-30 × 0.2-0.8 cm; leaf blade linear-lanceolate or elliptic linear to ovate, abruptly or inconspicuously cordately lobed at the base, 12-40 × 2-15 cm, 4-6 times longer than wide, deep green (except the midrib), acute or acuminate at the apex, surface smooth, margin entire, primary lateral nerves several on each side, scarcely prominent, passing away from the midrib at an acute angle. Inflorescence solitary; peduncle 1-4 cm long. Spathe 17-30 cm long; basal tubular part c 2 cm long, scarcely 1 cm wide; upper tube 15-28 cm long, 5-6 mm wide, straight, not

twisted, whitish, smooth; limb ovate-oblong, 5-8 × 1.5-2.0 cm, surface rough, purple-red, pink or olive-yellow-green, margin densely fimbriate. Pistillate (female) flowers 4-8; staminate (male) flowers 50-80, stamens arranged in 6 irregular spirals; appendix broad-conical, about 3 × 4 mm, thick below. Ovary c 8 mm long, several seeded, ovules bi-seriate, narrowed into a short outwardly bent style, stigma more or less narrowly ovate, sometimes emerginate, olfactory bodies small, rounded or more or less irregular, white. Anthers 2-loculed. Syncarpium (infructescence) globular, 2-3 cm in diameter, cells 6-8 seeded. Seeds oblong, smooth. *Fl. & Fr.*: 5-10. *Riverbanks, ditches, canals and loamy-clayey soils on coastal plains.*  $2n = 22, 33$  (Petersen, 1989).

**Barishal:** Jalabari, 01 iii 1872, *C.B. Clarke* 16924 (CAL). **Barguna:** Amtali, 19 iii 1989, *Huq, Mahfuz, Matiur & Mia* H. 9133 (DACB). **Bhola:** Patila, 26 ii 1989, *Huq, Mia & Rahman* H. 9018 (DACB). **Chattogram:** Nijhumdwip. 03 i 1977, *Yusuf* 56 (CLH); Sandwip, Horispur, 10 ii 1988, *Mia & Mahfuz* M. 1501 (DACB). **Cox's Bazar:** Shandupara (Bagh Khali river side), 15 ix 1944, *Sinclair* 3762 (E 00079891); Ukhia, Palong Khali, 30 i 1999, *Rahman et al.* 4251 A (HCU). **Dhaka:** BNH Office Compound (Cultivated), 20 ix 1982, *Mahbuba Halim* 994 (DACB) [Originally collected from Jashore district]; Dhaka University Botanical garden (Cultivated), 22 iv 2008, *Hosne Ara* HA. 2737 (DACB) [Originally collected from Barishal district]. **Jashore:** Keshabpur, 30 viii 1983, *Huq, Mia & Mahbuba* H. 5982 (DACB); Keshabpur Bazar, Horian river Chotoliar Mut, 16 vi 1981, *Gopen* (DACB). **Khulna:** Locality unknown, 1896, *Shaik Mokim* (CAL); Burigualini, 12 ii 1976, *K. Pasha* 265 (DACB); Sundarban, Mongla-Hironpoint, 03 ii 1987, *Huq & Mia* H. 8150 (DACB). **Patuakhali:** Bauphal Thana, Vill. Indrakool, 16 iii 1973, *Khan & Huq* K. 2878 (DACB); Khepupara, 31 xii 1979, *Khan, Huq, Rahman & Mia* K. 5832 (DACB); Galachipa Ulania, 13 iii 1982, *Rahman & Mia* R. 1322 (DACB); Kalapara, Nilgonj, 11 iii 1999, *M. Sultana* 321 (DUSH); Kalapara, Tiakhali, 15 iii 1999, *M. Sultana* 380 (DUSH); Galachipa, Basbunia, 01 iii 2005, *M. Sultana* 673 (DUSH); Patuakhali Sadar, Lohalia, 14 v 2005, *M. Sultana* 716 (DUSH); Mirzagonj, Amragasia, 16 v 2005, *M. Sultana* 808 (DUSH); Kalapara, Gongamoti, 07 i 2006, *M. Sultana* 960 (DUSH); Galachipa, Rangabali, 24 iii 2006, *M. Sultana* 1181 (DUSH); Dasmina, Ranggopaldi, 02 ii 2007, *M. Sultana* 1544 (DUSH). **Satkhira:** Satkhira, 01 v 1883, *C.B. Clarke* 33399 (CAL).

India, Thailand, Vietnam, Malaysia, Indonesia and New Guinea.

***Cryptocoryne retrospiralis*** (Roxb.) Kunth, Enum. Pl. 3: 12 (1841). Wight, Icon. Pl. Ind. Or. 3: 4, t. 772 (1844); Schott, Aroideae: 8 (1853); Syn. Aroid.: 2 (1856); Bonplandia 5: 222 (1857); Prodr. Syst. Aroid.: 18 (1860); Hook f., Fl. Brit. India 6: 493 (1893-reprint 1954); Prain, Beng. Pl. 2: 1106 (1903-reprint 2004); Cooke, Fl. Pres. Bombay 2: 818 (1908); Engler, Pflanzenr. 73 (IV. 23F): 246-247 (1920); Haines, Bot. Bihar and Orissa: 871-872 (1924-reprint 1978); Fischer in Gamble, Fl. Pres. Madras 3: 1575 (1931), repr. ed. 3: 1098 (1967); Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 17 (1931); Mitra, Fl. Pl. E. India 1: 84 (1958); Subramanyam, Aquatic Angios.: 76, f. 50 (1961); Rataj, Stud. CSAV 3: 44 (1975); Nicolson in Saldanha & Nicolson, Fl. Hassan Dist.: 786 (1976); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 11 (1976); Sharma *et al.*, Fl. Karnataka: 297 (1984); Verma *et al.*, Fl. Raipur, Durg and Rajnandgaon: 395 (1985); Khan & Halim, Aqua. Angios. Bangladesh: 66 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 10 (1989); Vajravelu, Fl. Palghat Dist.: 533-534 (1990); Matthew, Excursion Fl. Cent. Tamilnadu, Ind. 540 (1991); Parmar in Shetty & Singh, Fl. Rajasthan 3: 866 (1993); Noltie, Fl. Bhutan 3(1): 155 (1994); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 282 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 51-52 (2007); *Ambrosinia retrospiralis* Roxb., Hort. Bengal.: 65 (1814); Fl. Ind. 3: 492 (1832); *Ambrosinia unilocularis* Roxb., Fl. Ind. 3: 493 (1832); *Cryptocoryne unilocularis* (Roxb.) Kunth, Enum. Pl. 3: 13 (1841); Wight, Icon. Pl. Ind. Or. 3: 5, t. 774 (1844); Engler, Pflanzenr. 73 (IV. 23F): 237 (1920); Haines, Bot. Bihar & Orissa: 872 (1924); Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 15 (1931); Fisher in Gamble, Fl. Pres. Madras: 1575 (1931); repr. ed. 3: 1099 (1967). Fig. 13.

Lectotype: Roxburgh's unpublished drawing no. 1292 of *Ambrosinia retrospirale* (K) (vide Jacobsen, Misc. Pap. Landbouwhogeschool 19: 200. 1980).

Aquatic herb, submerged or sometimes growing in marsh; roots strong, usually in a single whorl on a short rhizome, rhizomes 6-10 mm in diameter. Leaves petiolate, always distinctly differentiated into petioles and leaf blade; petioles strong, 1/3-2/3 sheathed at the base, vertically red-lined, mainly on the membranous sheaths, lines 0.2-0.5 mm long; leaf blades green, entire or on the margins inconspicuously undulate, linear-lanceolate,



Figure 13. *Cryptocoryne retrospiralis* (Roxb.) Kunth, a) habit sketch of a flowering plant; b) inflorescence with spadix detail viewed through opened kettle; c) gynoecium, longitudinal section; d) syncarpium; e) seed.

acute or acuminate at the apex, base cuneate, up to 20 cm long and 1.6 cm in diameter. Inflorescence solitary; peduncle 2.5-3.0 cm long. Spathe 16-18 cm long; a basal, slightly expanded, tubular portion about 2.0-2.5 cm long, 8 mm in diameter; an upper slightly narrower, tubular portion 14.0-15.5 cm long and flat, linear-lanceolate, long-acuminate, closely twisted, recurved-margined limb, glabrous, inside tube purplish, at the top with white areas of depressions, the limb and the upper tubular portion with dark purplish spots inside. Spadix with pistillate (female) flower zone 4-6 mm long; a few neuters just above the pistillate flowers; naked interstice about 9-10 mm long; staminate (male) flower zone c 3 mm long and with a terminal short conical appendix. Pistillate flowers 4-6, ovules orthotropous, placentation axile, stigma orbicular, on a very short, thick, decurved style, neuter flowers a few, clavate, purplish. Staminate flowers crowded together into a sub-cylindrical to ellipsoid mass. Syncarp with sub-fusiform, longitudinally ridged seeds. *Fl. & Fr.*: 11-3. *Shallowly tided sandy grounds and banks of streams, ditches, canals, beels and haors*.  $2n = 72$  (Petersen, 1989).

**Dhaka:** Savar, 05 v 1968, *Mozahar* 110 (DUSH). **Faridpur:** Faridpur town superb, 07 i 1976, *Huq, Rahman & Mia* H. 2075 (DACB). **Manikganj:** Gulipitha near bridge, 12 xi 1975, *Huq, Rahman & Mia* H. 1512 (DACB). **Narayanganj:** Bandar, 26 xii 1963, *Abdul Ghani* 118 (DUSH). **Khulna:** Locality, Collection date & number unknown, 1896, *Shaik Mokim* (CAL); Locality & Collection number unknown, 01 viii 1900, *Shaik Mokim* (CAL); Collector & Collection date unknown, Dublar Char, 2176 (CAL).

From the northern part of the Bay of Bengal (West Bengal in India) to Bangladesh, Myanmar, Thailand and Laos.

**Cryptocoryne spiralis** (Retz.) Fischer *ex* Wydler, *Linnaea* 5: 428 (1830). Blume, *Rumphia* 1: 84, t. 36c (1836); Kunth, *Enum. Pl.* 3: 12 (1841); Wight, *Icon. Pl. Ind. Or.* 3: 4, t. 773 (1844); Schott, *Aroideae* 8, t. 13 (1853); *Syn. Aroid.* 2 (1856); *Bonplandia* 5: 222 (1857); *Prodr. Syst. Aroid.*: 18 (1960); Hook. f., *Fl. Brit. India* 6: 494 (1893-reprint 1954); Prain, *Beng. Pl.* 2: 1106 (1903-reprint 2004); Cooke, *Fl. Pres. Bombay* 2: 818-819 (1908); Engler, *Pflanzenr.* 73 (IV. 23F): 237 (1920); Haines, *Bot. Bihar and Orissa*: 872 (1924-reprint 1978); Heinig, *List Chittagong*: 74 (1925); Fischer in Gamble, *Fl. Pres. Madras* 3: 1099 (1931-reprint 1967); Blatter & McCann, *J. Bombay Nat. Hist. Soc.* 35:

15-16 (1931); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 100 (1953); Mitra, Fl. Pl. E. India 1: 84 (1958); Rataj, Stud. CSAV 3: 30-32 (1975); Sharma *et al.*, Fl. Karnataka: 297 (1984); Khan & Halim, Aqua. Angios. Bangladesh: 66 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 10 (1989); Matthew, Excursion Fl. Cent. Tamilnadu, Ind. 540 (1991); Deshpande *et al.*, Fl. Mahabaleshwar Adjoin., Maharashtra: 616-617 (1995); Samvatsar, Fl. W. Tribal Madhya Pradesh: 296 (1996); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 282-283 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 52-53 (2007); *Arum spiralis* Retz. Obs. Bot. 1: 30 (1779); *Ambrosinia spiralis* (Retz.) Roxb., Hort. Bengal.: 65 (1814); Fl. Ind. 3: 492 (1832); *Cryptocoryne huegelii* Schott, Aroideae 8, t. 12 (1853); Syn. Aroid. 2 (1856); Prodr. Syst. Aroid. 18 (1860); Hook. f., Fl. Brit. India 6: 494 (1893-reprint 1954); Engler, Pflanzenr. 73 (IV. 23F): 236-237 (1920); Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 14-15 (1931); *Cryptocoryne tortuosa* Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 16, t. 1 (1931). Fig. 14.

Holotype: Ind. Orient., Tranquebar, herb. Koenig (BM).

Bengali: *Ban Kachu*

Aquatic herb, submerged or emergent; roots up to 1 cm thick and 30 cm long, secondary roots in whorls, internodes 0.6-0.8 cm long, rhizome 1.5 cm in diameter. Leaves petiolate; petiole 1/2-2/3 sheathed, green, sheaths decorated with 0.3-0.5 mm long longitudinal red lines or dots; leaf blade oblong-lanceolate, broadest in the middle or in the upper third, on both sides narrowed, (7-)12.5-20.0 cm long and (0.5-) 1.2-3.0 cm broad, tip acute, base cuneate, green. Inflorescence solitary; peduncle usually 0.8-2.0 cm long. Spathe 7.5-14.0 cm long; a basal tubular portion 1.5-2.0 (-3) cm long, 8 mm in diameter, brown or red-brown; limb 7.0-8.5 cm long, below 1.0-1.4 cm in diameter, nearly upright at the beginning of flowering, later 1-2 times spirally strongly twisted, with long ligules, dull green-brown on the upper side, purple-red inside, obliquely expressively wrinkled, wrinkles and margins warty. Spadix with a basal pistillate (female) flower zone about 3.5 mm long; a naked slender interstice about 11 mm long; a staminate (male) flower zone about 3 mm long terminating in a small appendix, subconical. Pistillate flowers 4-6 in number, ovules many in each pistil, orthotropous on



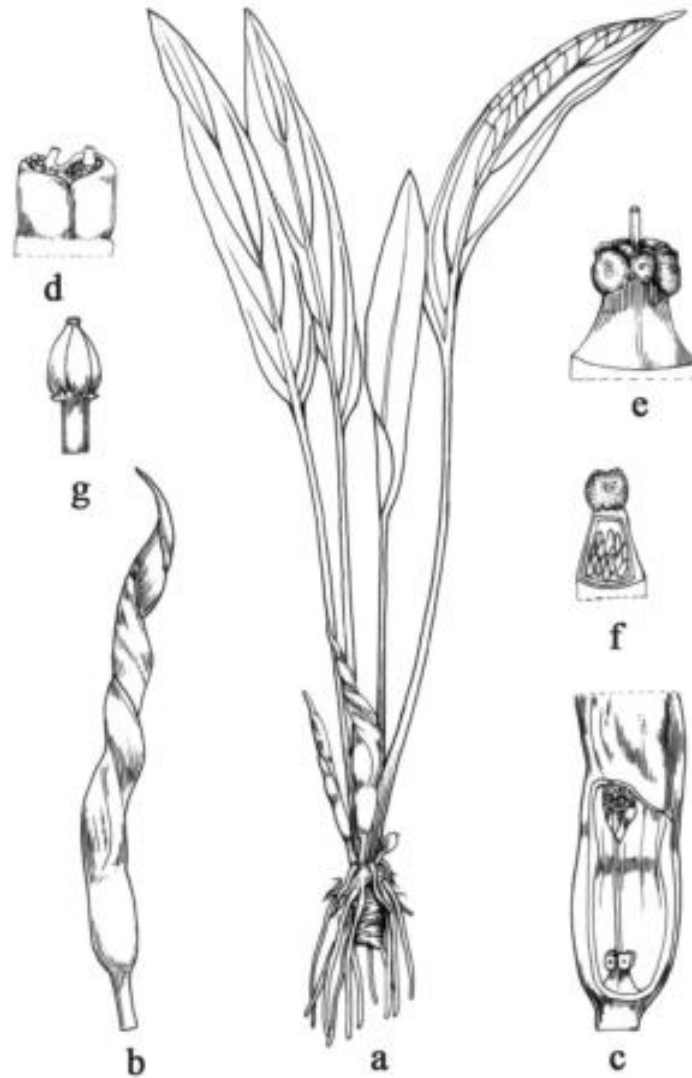


Figure 14. **Cryptocoryne spiralis** (Retz.) Fischer *ex* Wydlar, a) habit sketch of a flowering plant; b) inflorescence; c) inflorescence with spadix detail viewed through opened kettle; d) stamen; e) female zone of spadix; f) gynoecium, longitudinal section; g) syncarpium.

axile placenta, style very short, thick, slightly recurved with a broadly elliptic stigma. Neuter flowers few, sub-obconic to truncate, dark-purplish. Staminate flowers crowded, forming a subcylindrical mass. Syncarps 1-2 cm long, many-seeded. Seeds sub-fusiform, longitudinally many-ridged. *Fl. & Fr.*: 10-4. *Riverbanks, water courses and paddy fields*.  $2n = 66, 88$  (Petersen, 1989).

**Dhaka:** Nayerhat, 07 i 1973, *Khan & Huq* K. 2623 (DACB). **Khulna:** Locality & Collection number unknown, Eastern Bengal, 1896, *Shaik Mokim* (CAL, K). **Lower Bengal:** Locality, Collection date, year & number unknown, *S. Kurz* (CAL); Locality & Collection number unknown, 08 xii 1896, *Mr. Daur* (CAL). **Jashore:** Locality, Collection date & number unknown, 1896, *Shaik Mokim* (CAL).

India (South India and West Bengal).

The rhizome of the plant possesses medicinal value and is used to treat coughs and abdominal diseases and as an antipyretic. The roots are used as a herbal tonic and antiperiodic (Yusuf *et al.*, 1994).

**Dieffenbachia** Schott in Wiener Z. Kunst 1829 (3): 803 (1829).

**Type species:** *D. seguine* (Jacquin) Schott (“*seguinum*”; *Arum seguine* Jacquin).

Evergreen herbs, low or rather tall, terrestrial; stems erect to decumbent and rooting, internodes distinct, green, smooth, the sap milky. Leaves numerous, forming an apical crown; petiolar sheath persistent, more than half as long as the petiole or reaching the leaf blade; leaf blade oblong-ovate, elliptic to oblanceolate, cuneate to subcordate at the base, dark to light green or sometimes variegated with white, silver, yellow or various shades of green, midrib thick, venation striate. Inflorescence 1-2 to several in each floral sympodium, cataphylls short and usually inconspicuous; peduncle shorter than the petiole. Spathe persistent, slightly or distinctly constricted between the tube and the limb, green, lower part convolute into a usually rather long, persistent tube which splits longitudinally in the fruit, upper part expanded into a short, erect or recurved limb. Spadix slightly shorter than the spathe; the pistillate (female) flower zone entirely adnate to the spathe, enclosed within the tube, laxly flowered; staminate (male) flower zone above and free from the spathe with a transitional zone of scattered clusters of

staminodia. Flowers unisexual, perigone absent. Pistillate (female) flower zone loosely arranged, each subtended by 4-5 clavate, white staminodia, ovary stout, subglobose to ovoid, thick-walled, 1-3 locular with 1 sub-basal, anatropous ovule per locule, stylar region inconspicuous, stigma massive, almost as broad as or broader than the ovary, 2-3 lobed or subhemispheric (when unilocular), usually yellow. Staminate (male) flower zone with 4-5 stamens, connate into a subsessile, rhomboid to hexagonal synandrium, truncate at the apex, sulcate laterally, anthers lateral, common connective thick, fleshy, thecae oblong-ellipsoid, dehiscing by short, apical, pore-like slit. Sterile male flowers composed of a whorl of 3-6, flattened, irregularly globose-ellipsoid, or sometimes connate staminodes. Fruit a berry, globose to 2-3 furrowed, 1-3 seeded, scarlet red to orange when ripe. Seed globose to ovoid, testa smooth, green to blackish-green.

About 30 species are distributed throughout tropical and subtropical Asia, West Indies (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 1 species.

**Dieffenbachia seguine** (Jacq.) Schott, Wiener Z. Kunst 1829: 803 (1829). Bailey, Manual Cult. Pl.: 182-183 (1949); Standley & Steyermark, Fl. Guatemala, Fieldiana, Bot. 24 (1): 326-328 (1958); Nasir, Fl. W. Pakistan 120: 5-6 (1978); Walters *et al.*, European Gard. Fl. 2 (2): 96 (1984-reprint 2003); Mayo, Fl. Trop. E. Africa: 6 (1985); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 46-48 (1987); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 403 (1998); Acevedo-Rodriguez and Nicolson in Acevedo-Rodriguez and Strong, Contrib. U. S. Nat. Herb. 52: 31 (2005); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 53-54 (2007); *Arum seguine* Jacq., Enum. Syst. Pl. 31 (1760); *Caladium seguine* (Jacq.) Vent., Mag. Enc. 4: 461-471. d (1800); *Dieffenbachia picta* Schott, Oesterr. Bot. Wochenb. 2: 68 (1852); *Caladium maculatum* Lodd., Bot. Cab. 7: 608 (1822); *Dieffenbachia maculatum* (Lodd.) G. Don in Sweet, Hort. Brit., ed. 3, 632 (1839). Pl. XLIV.

Type: Caribbean. Illustr. of *Arum seguine* Jacq. (Select. t. 151. 1763).

Bengali: *Bish Kachu, Bahari Kachu*

English: Dumb Cane, Mother-in-law Plant

A perennial herb, usually attaining a length of 1 m and sometimes up to 3 m; the caudex usually thick and often decumbent, 4-5 cm thick. Leaves petiolate; petioles c 40

cm long, the sheath half as long or longer; leaf blade up to about 40-75 × 10-22 cm, oblong to oblong-ovate, usually variegated (in escaped plants usually dark green with scattered whitish spots), acute to sub-cordate at the base. Inflorescence 1-2 together; peduncle short. Spathe 15-18 cm long; the closed portion 10-12 × 2 cm; the upper portion 5-6 cm long. Spadix slightly shorter than the spathe; basal portion of the spadix naked, c 1 cm long; the densely flowered pistillate (female) flower zone 6-7 cm long; the staminate (male) flower zone 6-7 cm long, separated from the pistillate by a naked zone of 2 cm long. Female florets club-shaped, staminodes not exceeding the ovary. Fruit a berry, scarlet. *Fl. & Fr.*: 5-9. *Shady, damp or moist places.* 2n = 34 (Petersen, 1989).

**Bandarban:** Chimbuk hill, 20 ix 2004, *Hosne Ara* HA. 1165 (DACB). **Chattogram:** BCSIR Campus, 09 v 1984, *Yusuf* 558 (BCSIRH); BCSIRH Campus area, 28 ix 2005, *Hosne Ara* HA. 2345 (DACB). **Dhaka:** Dhaka University Botanical garden, Curzon Hall, 30 xi 2001, *Hosne Ara* HA. 50 (DACB); Mirpur Botanical garden, 02 x 2004, *Hosne Ara* HA. 1437 (DACB). **Rangamati:** Kaptai, Chitmaram, 09 i 2005, *Hosne Ara & Sarder Nasir Uddin* HA. 1430 (DACB); 09 i 2005, *Sarder Nasir Uddin* N. 2720 (DACB).

Throughout the Neotropics.

The plant is widely used for ornamental purposes in public places and homesteads. It is well known among the toxic aroids. The people of the West Indies use the stem of the plant to poison their enemies and punish slaves. The caustic juice contained within the plant causes severe burning of the skin and mucus membranes of the human body. The plant is scarcely cultivated nowadays because of its harmful effect on the labourers (Plowman, 1969).

The species is used as a contraceptive by the people of Lesser Antilles, Cuba, Santo Domingo and Puerto Rico. It is also used as a cure for impotence and frigidity. The people of Martinique use the species as an ingredient for preparing an antidote against the bites of pit vipers and the Carib Indians use it in the treatment of yaws. The West Indian people make a solution by boiling the sap of the species with hog's lard and rub the same upon swollen areas of dropsy patients. The species is also used in the treatment of gout. The people of Guatemala apply smashed leaves of the species as poultices for gout,

rheumatism and bites of poisonous animals. The people of El Salvador extract oil from the seeds of the species and apply the same to minor inflammations, burns and small wounds. In Brazil, the leaf decoction is gargled to relieve angina (Croat, 1994).

### **Epipremnum** Schott in Bonplandia 5: 45 (1857).

**Type species:** *E. mirabile* Schott (1858).

Moderate to very large, slender to very robust, secondary hemiepiphytic, evergreen climbing herbs with abundant trichosclereids; stem root-climbing or less often prostrate, usually producing long flagelliform shoots with reduced cataphylls and abundant clasping roots. Leaves several to many, distichous, petiolate; petiole geniculate apically, sheath prominent, long, pulvinate apically and basally, petiolar sheath long, marcescent to deciduous, sometimes decomposing to conspicuous net-fibrous mass; leaf blade large, entire, often oblique, lanceolate, elliptic, elliptic-oblong, or regularly or irregularly pinnatifid, divisions pinnatifid to pinnatisect, with perforations along the midrib or not, primary lateral veins pinnate, running into marginal vein, secondary and often tertiary parallel-pinnate, tertiary and higher order venation often reticulate. Inflorescence solitary to several together and axillary; peduncle relatively short and robust, sometimes obscured by a mass of netted fibrous degraded cataphylls. Spathe canoe-shaped, stoutly to rather weakly beaked, usually deciduous. Spadix subcylindrical, conic, often quite thick, sessile, rarely stipitate, bluntly tapering towards the apex, shorter than the spathe. Flowers bisexual, naked. Ovary polygonal-cylindrical, apex truncate, 1-locular, ovules 2-8, anatropous, placenta parietal, stylar region prominent to massive, stigma punctate to linear and longitudinal. Stamens 4, free, filaments strap-shaped, anthers much shorter than the filaments, anther cells ellipsoidal, longitudinally dehiscent. Fruit a berry, small, 1-8 seeded, stylar region deciduous at maturity. Seed curved, testa thickish, smooth to ornamented.

About 20 species are distributed throughout tropical southeast Asia, Australasia and Pacific (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 2 species.

**KEY TO THE SPECIES**

1. Leaf blade green, never variegated, regularly pinnately divided and with pin-hole perforations along the midrib **pinnatum**
- Leaf blade often yellow and green or white and green variegated, irregularly pinnately divided and lacking pin-hole perforations along the midrib **aureum**

**Epipremnum aureum** (Linden & André) G.S. Bunting, Ann. Missouri Bot. Gard. 50: 28 (1964, '1963'). P.C. Boyce, Aroideana 27: 207-209 (2004); *Pothos aureus* Linden & André, Ill. Horticolae 27: 69 (1880); Bailey, Manual Cultivat. Pl.: 183 (1949); Boyce *et al.*, Fl. Thailand 11 (2): 233-234 (2012); *Epipremnum mooreense* Nadeuad, J. De Botanique 13: 6 (1899); *Scindapsus aureus* (Linden & André) Engl., Engler & Krause in Engler, Pflanzenr. 37 (IV. 23Ba): 80 (1908); Bailey, Manual Cultivat. Pl.: 183 (1949); Graf, Tropica, edn. 5: 125, 1086 (1978-reprint 2003); *Rhaphidophora aurea* (Linden & André) Birdsey, Baileya 10: 159 (1963, '1962'); Hu, Dansk Bot. Arkiv 23 (4): 421 (1968); Graf, Exotica, edn. 8: 228 (1976); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 404-405 (1998); Walters *et al.*, European Gard. Fl. 2 (2): 86 (1984-reprint 2003); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 75 (2007); *Rhaphidophora aurea* (Linden & André) Furtado, Gard. Bull. Singapore 20: 379 (1964), comb. superfl.; *Epipremnum pinnatum* (L.) Engl. 'Aureum', Nicolson, Allertonia 1: 374 (1978). Pl. XLV.

Type: Solomon Islands.

Bengali: *Money Plant*

English: Money Plant, Silver Vine

A very long climber, up to 30 m long or more; stem (adult) 5-40 mm in diameter, with prominent irregular whitish longitudinal crests, active portions of stem mid-green to pale yellow-green, sometimes with large obscure dull yellow to white variegations, depending on leaf variegation, older stems with distinctive matte to sub-lustrous orange-brown papery epidermis; flagellate foaming shoots common, arising high in the canopy and reaching the ground. Leaves petiolate; petiole geniculate, also striate-variegated, (adult) 5-19-50 cm long, sheath semi-deciduous, smooth; leaf blade dull to somewhat

glossy mid-green, usually irregularly yellow or white variegated, rarely entirely mid-green, 10-93 × 5-60 cm, entire (juvenile) to irregularly pinnatifid, ovate to elliptic in outline, sub-coriaceous, apex acute to acuminate, base moderately cordate, divisions pinnatifid to pinnati-partite, pinnae up to half the length of the lamina wide, apex truncate, primary venation white beneath, tiny dots observed at the lower surface, higher order venation reticulate. Inflorescence pedunculate and axillary, 8-10 cm long. Spathe yellowish at maturity, boat-shaped, shortly acuminate, up to 14-16 cm long. Spadix shorter than the spathe, sub-cylindrical, 12-14 cm long, 1.5-2.0 cm thick. Pistils with a subpunctiform stigma, ovary unilocular, ovules many, anatropous, placentation parietal. Stamens 4, with flattened filaments. Fruit rarely produced. Seeds many, narrowly oblong, testa thin and smooth. *Fl. & Fr.*: Flowering of the plant almost never produced (Boyce *et al.*, 2012). There are two records of flowering of this plant, one in Rio Piedras, Puerto Rico, on May 25, 1956, and the other in Miami, Florida on May 4, 1962 (Birdsey, 1962). *Partial shady damp places.*

**Patuakhali:** Patuakhali Sadar, Lebukhali, 22 vii 2010, *M. Sultana* 1796 (DUSH).

**Dhaka:** Banani area, 04 x 2004, *Hosne Ara* HA. 1456 (DACB).

Native of Solomon Islands, now cultivated and frequently naturalized in many tropical and subtropical regions.

The plant is widely used for ornamental purposes in public places and homesteads.

***Epipremnum pinnatum* (L.) Engl.** in Engl., *Pflanzenr.* 37 (IV. 23B): 60-63 (1908). Merr., *Interpr. Herb. Amboin.* 127 (1917); Graf, *Tropica*, edn. 5: 105, 109, 999 (1978-reprint 2003); Nicolson, *Fl. Vitiensis Nova* 1: 441-443 (1979); Walters *et al.*, *European Gard. Fl.* 2 (2): 86 (1984-reprint 2003); Mayo, *Fl. Trop. E. Africa*: 6 (1985); Nicolson in Dassanayake & Fosberg, *Rev. Handb. Fl. Ceylon* 6: 32-33 (1987); Karthikeyan *et al.*, *Fl. India Enum.* in *Fl. India ser.* 4: 11 (1989); Liu & Huang, *Fl. Taiwan*: 807-809 (1996); Boyce, *Blumea* 43 (1): 201-205 (1998); Acevedo-Rodriguez and Nicolson in Acevedo-Rodriguez and Strong, *Contrib. U. S. Nat. Herb.* 52: 34-36 (2005); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 55 (2007); Heng & Boyce in Heng *et al.*, *Fl. China* 23: 15 (2010); Boyce *et al.*, *Fl. Thailand* 11 (2): 235-236 (2012); *Pothos pinnata* L., *Sp. Pl.*,

ed. 2: 1374 (1763); Roxb., Fl. Ind. 1: 456 (1820); *Monstera pinnata* (L.) Schott in Weiner Z. Kunst 4: 1028 (1830); *M. pinnatifida* (Roxb.) Schott, Wiener Z. Kunst 4: 1028 (1830); *Scindapsus pinnatus* (L.) Schott in Schott & Endlicher, Melet. Bot.: 21 (1832); *S. caudatus* (Roxb.) Schott in Schott & Endlicher, Melet. Bot.: 21 (1832); *S. pinnatifidus* (Roxb.) Schott in Schott & Endlicher, Melet. Bot.: 21 (1832); *Pothos caudatus* Roxb., Fl. Ind. ed. 1: 436 (1832); *P. pinnatifidus* ('*pinnatifida*') Roxb., Fl. Ind. ed. 1: 437 (1832); *Scindapsus dilaceratus* K.Koch & Sello, Ind. Sem. Hot. Berol., App.: 5 (1853); *Monstera dilacerata* (K.Koch & Sello) K.Koch, Ind. Sem. Hot. Berol., App.: 5 (1855); *Epipremnum mirabile* Schott, Bonplandia (Hannover) 5 (3): 45 (1857); Hook. f., Fl. Brit. Ind. 6: 549 (1893-reprint 1954); *Tornelia dilacerata* (K.Koch & Sello) Schott, Prodr. Syst. Aroid.: 356 (1856); *Rhaphidophora pinnata* (L.) Schott, Prodr. Syst. Aroid.: 385 (1860); *Epipremnum elegans* Engl., Bull. Soc. Tosc. di Ort. 4: 269 (1879); *E. crassifolium* Engl., Bot. Jahrb. Syst. 25: 12 (1898); Pl. XLVI.

Type: Amboina. Illustr. published as *Apendix laciniata* Rumph., Herb. Amboin. 5: 489, t. 183, f. 2. (1747).

Bengali: *Lata Kachu*

English: Centipede Tonga-vine, Devil's Ivy, Iden Pothos,  
Taro vine

A large root-climber, up to 15 m long; pre-adult plants usually forming modest terrestrial colonies, adult plants with stem 2.5-4.0 cm in diameter, internodes 2-25 cm long, branched. Leaves petiolate; petiole 19.5-60.0 cm × 3-13 mm, smooth, dark green, pulvinate at both ends, sheath running to upper pulvinus and soon disintegrating to leave a reticulate network of intertwined venation; leaf blade sub-leathery, oblong, base wide cordate, 10-93 × 5-60 cm, regularly pinnatifid to (rarely) entire, ovate to oblong-elliptic in outline, sub-membranous, apex acute to acuminate, base rounded to slightly cordate, divisions pinnatifid to pinnatisect with pin-hole perforations along the midrib, pinnae 1.2-6.5 cm wide, 12-13 per side, narrowly lanceolate to somewhat falcate, with 1-3 equally strong, parallel costae, apex truncate to acute, the terminal one usually sub-rhomboid, dark green adaxially, pale abaxially. Inflorescence solitary, rarely two or more together; peduncle 5.5-21.5 × 0.4-1.0 cm, stout, terete, pale green, enveloped by sheath, finally withering. Spathe canoe-shaped, 7-18 × 3-10 cm, green outside, yellow inside, apex



acuminate. Spadix 8.5-19.5 × 1.1-3.5 cm, sessile, cylindrical, bluntly tapering towards the apex, base slightly obliquely inserted, green. Flowers bisexual, 3-7 mm in diameter, ovary 4-12 × 2-7 mm, cylindrical, basal part slightly compressed, ovules 2 or 3, stylar region 3-7 × 1.5-4.0 mm, trapezoid, apex flattened, stigma linear, 2-6 × 0.1-0.5 mm, longitudinal. Stamens 4, filaments 5 × 1 mm, anthers narrowly ellipsoid, 1.5-2.0 × 0.7-1.0 mm. Fruit mid-green. Seeds reniform, smooth, 4.5 × 3.5 mm, pale to mid-brown. *Fl. & Fr.*: 4-5. *Creeping on trees or on stone walls in shady and moist situations in the tropical rain or deciduous forests.* 2n = 60 (Petersen, 1989).

**Sylhet:** Sylhet near forest school, 13 iii 1956, *M.S. Khan* 173 (DUSH); Tamabil-Jafflong, 04 vi 1998, *Hosne Ara* HA. 28 (DACB). **Dhaka:** Balda Garden, 22 x 1966, *Zeyauddin* 142 (DUSH); Dhaka University Botanical garden, Curzon Hall, 26 vi 2004, *Hosne Ara* HA. 1074 (DACB); Khilgaon, Tilpapara (Cultivated), 30 iv 2006, *Hosne Ara* HA. 2628 (DACB); 30 iv 2008, *Hosne Ara* HA. 2742 (DACB) [Originally collected from Tamabil-Jafflong forest under Sylhet district].

Southeastern Asia through Malesia and into Oceania.

The plant is used as a medicine in China for treating abscesses, traumatic injury and rheumatic anthralgia (Heng, 1979). In Fiji, village people prepare a medicine by mixing crushed leaves and stems of *E. pinnatum* and *Premna taitensis*. The medicine, known as 'tonga', cures 'aches'. *E. pinnatum* is also cultivated as an ornamental plant in the Pacific east of the Fijian region, as well as in other parts of the world (Nicolson, 1979).

The plant is used to blacken teeth (Boyce, 1998).

**Gonatopus** J.D. Hook. *ex* Engl. in A. & C. De Candolle,  
Monogr. Phan. 2: 208 (1879).

**Type species:** *G. boivinii* (Decaisne) Engler (*Zamioculeas boivinii* Decaisne).

Seasonally dormant herbs; stem a subglobose, subterranean tuber or a cylindrical horizontal rhizome. Leaf solitary, glabrous, subtended by several basal cataphylls, rarely pilose or scabrous; petiole pulvinate at the base or in the middle; leaf blade usually trisect, rarely not (*G. petiolulatus*). Inflorescence 1-4 in each floral sympodium, appearing before or with the emergence of the leaves, subtended by several cataphylls;

peduncle erect, very short to long. Spathe constricted between the tube and the limb. Spadix subequal to spathe; the lower part bearing pistillate (female) flower zone, separated from male zone by very short, constricted zone of sterile flowers; the upper part bearing staminate (male) flower zone, male zone longer than the female, cylindrical to clavate. Flowers unisexual, perigoniate, tepals 4 (-6), in 2 decussate whorls, fleshy, truncate to cuculate. Female flowers usually lacking staminodes, exceptionally 1 staminode present, ovary 2-locular, ovules 1 per locule, anatropous, placentation basal-axile, stylar region thick, stigma large, discoid-hemispheric. Stamens with connate filaments forming tube around central, cylindrical to clavate pistillate, often exerted above tepals at anthesis, connective slender, thecae dehiscing by apical pore. Fruit a berry, ovoid-ellipsoid, fleshy, 1-2 seeded, red or orange to yellow, or whitish. Seed ovoid-ellipsoid, testa thin and smooth.

About 5 species are distributed throughout tropical east and subtropical southeast Africa (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by a single species.

**Gonatopus boivinii** (Decne.) Engl., Monogr. Phan. 2: 209 (1879). N.E. Br. in F.T.A. 8: 196 (1901); Engler, Pflanzenr. 21 (IV. 23B): 306-308, fig. 86 (1905); Peter in Nachr. Ges. Wiss. Göttingen, Math.-Phys. Kl. 1929 (3): 207 (1930); U.O.P.Z.: 277 (1949); Vollesen in Opera Bot. 59: 107 (1980); Mayo, Fl. Trop. E. Africa: 10-11 (1985); Mayo *et al.* Genera Araceae: 149-151 (1997); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 57-58 (2007); *Zamioculcas boivinii* Decne. in Bull. Soc. Bot. Fr. 17: 321 (1870); Hook. f. in Bot. Mag. 99, t. 6026 (1873). Pl. XLVII.

Type: Zanzibar, *Boivin* (P, holo.).

Bengali: *Kushum*

English: Giraffe's Knees, Sand Forest Arum

Tuberous herb; tuber subglobose, c 4 cm long, c 8 cm in diameter. Leaf up to 130 cm long; petiole 50-70 cm long, 0.5-1.5 cm in diameter, with central pulvinus, erect, green; leaf blade tripinnately compound, spreading to 60-70 cm in diameter, ultimate lobes ovate to elliptic, sometimes lanceolate, 2.5-9.0 × 1.5-4.5 cm, dark green adaxially, paler abaxially, acuminate, base subacute to obtuse, sessile to petiolulate, not decurrent. Inflorescence 1, appearing with plants; peduncle 38-42 cm long, 0.8-1.0 cm in diameter,

erect. Spathe 18-21 cm long; tube shortly cylindrical, tightly convolute around the pistillate flowers; constricted slightly at the apex, 2.5-3.0 cm long, 1.5-2.0 cm in diameter, outer surface greenish-yellow, lined and speckled maroon or purple; limb oblong, 16-18 × 4.5-5.5 cm, long cuspidate, outside similar to tube in colour, inside cream, sometimes speckled pink to brown. Spadix 7.0-10.5 cm long; staminate (male) flower zone cylindrical, 5-8 cm long, 0.7-1.0 cm in diameter, with tepals creamy to yellowish-cream in colour; middle sterile zone constricted, short about 3 mm; pistillate (female) flower zone cylindrical, 2.0-2.5 cm long, 1.5 cm in diameter. Pistil c 2.5 mm long, ovary 2-locular, placentation axile, stigma discoid, green, about 1.5 mm broad. Fruit a berry, somewhat compressed laterally, obovoid with pronounced septal suture, c 1.3 × 1.4 cm, 2-seeded. Seeds obovoid-cylindrical, subterete, smooth, 1 cm long, 0.6 cm in diameter, raphe 0.8 cm long. *Fl. & Fr.*: 4-5. *Shady moist areas on forest floor.*

**Netrakona:** Durgapur, 10 xii 2001, *Golam Samdani* (DUSH). **Dhaka:** Dhaka University Botanical garden (Cultivated), 28 iv 2002, *Hosne Ara* HA. 51 (DACB); 22 iv 2008, *Hosne Ara* HA. 2738 (DACB); Bangladesh National Herbarium garden, 27 iv 2008, *Hosne Ara* HA. 2740 (DACB) [Originally collected from Durgapur under Netrakona district].

South Africa, Mozambique, Zimbabwe, Zambia, Malawi, Tanzania, Zaire and Kenya.

The rhizome of the plant is known to be poisonous to human beings, dogs and birds (Mayo, 1985).

In Bangladesh, the Garos in Netrokona district use the paste of the rhizome with honey for the treatment of seminal weakness.

***Homalomena*** Schott in Schott & Endlicher,  
Melet. Bot. 20 (1832).

**Lectotype species:** *H. cordata* Schott (*Dracontium cordatum* Houttuyn 1779, non Aublet 1775; Nicolson in Taxon 16: 517. 1967).

Perennial, evergreen, aromatic herbs; usually with creeping, short to large, erect or ascending stem. Leaves several; petiole long, sheathing below, persistent to marcescent;

leaf blade simple, lanceolate, elliptic, oblong, subtriangular or cordate to sagittate, apex acuminate, usually with tubular tip, glabrous, primary lateral veins pinnate, running into marginal veins, secondary and tertiary lateral veins parallel-pinnate. Inflorescence 1-6 or many in each floral sympodium; peduncle shorter than the petiole. Spathe erect, persistent, usually not constricted, ellipsoid to boat-shaped; rarely constricted between the tube and the limb and then tube convolute; limb gaping at anthesis and afterwards closing. Spadix shorter or subequal to the spathe, stipitate or sessile; basal zone occupied by pistillate (female) flower zone and upper zone by staminate (male) flower zone, usually staminate (male) flower zone are contiguous with pistillate (female) flower zone, rarely a sub-naked barren portion found between staminodes. Flowers unisexual, perigone absent. Female flowers usually mixed with single anterior staminode (rarely 2, very rarely 3), equal to or half the length of the ovary, sometimes staminodes absent, ovary ovoid or globose, incompletely 2-4 (-5) loculed, ovules many, hemianatropous with thin and slender funicle, placentation parietal and axile, style minute, stigma button-like to discoid, sub-hemispheric, sub-capitate or slightly 2-4 lobed. Male flowers (fertile) 2-4 (-6) androus, rarely 1-androus, stamens free, minute, truncate apically, filaments absent or distinct, connective thick, thecae ovoid, ellipsoid or oblong, opening by the longitudinal slit, rarely by the transverse slit, sterile male flowers 2-4 androus, sometimes present at the base of male axis of spadix. Fruit a greenish berry, ovoid or subglobose or cylindrical, few or many-seeded. Seeds small, ellipsoid or elongate-ellipsoid, testa thick.

About 110 species are distributed throughout tropical southeast Asia, Malay Archipelago and tropical America (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 5 species.

#### KEY TO THE SPECIES

- |   |                 |
|---|-----------------|
| 1. Leaves with spots  | <b>2</b>        |
| - Leaves without spots  | <b>3</b>        |
| 2. Leaf blade dark green with a narrow white margin and bold<br>irregular yellow blotches | <b>wallisii</b> |
| - Leaf blade usually red-tinged particularly along the margins                            | <b>pendula</b>  |

- |  |                     |
|--|---------------------|
| 3. Male flowers 3-4 androus                                    | <b>4</b>            |
| - Male flowers 5 androus                                       | <b>gigantea</b>     |
| 4. Basal lobes of leaf blade usually divaricate, ovate, obtuse | <b>aromatica</b>    |
| - Basal lobes of leaf blade cordate                            | <b>coerulescens</b> |

**Homalomena aromatica** (Spreng.) Schott, Schott & Endl., Melet. Bot.: 20 (1832). Syn. Aroid.: 117-118 (1856); Prodr. Syst. Aroid.: 309 (1860); Hook. f., Fl. Brit. India 6: 532 (1893-reprint 1954); Engler & Krause in Engler, Pflanzenr. 55 (IV. 23Da): 59-61 (1912); Heinig, List Chittagong: 75 (1925); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 110 (1956); Mitra, Fl. Pl. E. India 1: 76 (1958); Hu, Dansk Bot. Arkiv 23 (4): 425 (1968); Hotta, Mem. Fac. Sci. Kyoto Imp. Univ., Ser. Biol. 4: 90 (1970); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 30 (1976); Deb, Fl. Tripura State 2: 399-400 (1983); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 11 (1989); A. Hay, Blumea Supplement 8: 70 (1995); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 329 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 58-59 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 18 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 242 (2012); *Calla occulta* Lodd., Bot. Cab.: t. 12 (1817), *nom. illeg.*; *Zantedeschia aromatica* Spreng., Syst. Veg. 3: 765 (1826); *Calla aromatica* (Spreng.) Roxb., Fl. Ind. ed. 1832, 3: 513 (1832); Bot. Mag. t. 2279; Wight, Icon. Pl. Ind. Or. 3: t. 805 (1844); *Zantedeschia foetida* C. Koch, Ind. Sem. Hort. Berol. 1854 (APP.): 9 (1854). Pl. XLVIII.

Type: Curtis's Bot. Mag. 49 (1821) t. 2279.

Bengali: *Gandho Kachu*

Evergreen, moderate, somewhat robust perennial herb; rhizomes aromatic, caudex 10-30 cm long, 2-4 cm thick. Leaves petiolate; petioles longer than the leaf blade and sheathing for about one-third of its length, 30-60 cm long; leaf blade ovate-sagittate to elliptic-sagittate or lanceolate-sagittate, 15-30 × 10-20 cm, basal lobes usually divaricate, ovate, obtuse, about one-third the length of the apical lobe, apex acute to long-acuminate, primary lateral veins pinnate, running into marginal vein, secondary and tertiary lateral veins parallel pinnate. Inflorescences 1-2 together; peduncle 10-18 cm long, erect to declinate, green. Spathe green, oblong, convolute, not constricted, apiculate, 5-7 cm long,

1.0-1.5 cm in diameter. Spadix stipitate, stipe c 5 mm long, equalling or slightly exceeding the spathe; pistillate (female) flower zone cylindrical, 1-2 cm long; staminate (male) flower zone longer than the female zone, 2.5-4.5 cm long. Ovary ovoid-globose, usually mixed with few narrowly clavate staminodes, staminode ivory, equalling and as long as the ovary, ovary pale green, 3-loculed, ovules many, hemianatropous, placentation parietal, stigma sessile, discoid. Male flowers 3-4 androus, stamens free. Fruit a berry, ovoid, many-seeded. Seeds small, testa thick. *Fl. & Fr.*: 6-9. *Shady places of hill slopes and foothills.*

**Bandarban:** Hatimatapara, Ruma, 26 ii 1988, *M.K. Alam* EB 80 (BFRIH); Betchari, 23 ix 2004, *Hosne Ara* HA. 1302 (DACB); Near Mangui jheel, 24 ix 2004, *Hosne Ara* HA. 1359 (DACB). **Chattogram:** Chunati Reserve Range, 09 vi 1997, *Rahman, Khan, Toha* 1066 (HCU); 02 viii 1997, *Yusuf* 1004 (BCSIRH); *ibid*, 27 iii 1998, *Rahman & Wilcock et al.* 2582 (HCU); Dhopachara, Gondamara, 02 ix 1999, *Boyce, Toha & Rahman* 5543 (HCU, K); Chunati, 26 ix 2005, *Hosne Ara* HA. 2220 (DACB); Herbang, 26 ix 2005, *Hosne Ara* HA. 2270 (DACB); Hazarikhil forest, 27 ix 2005, *Hosne Ara* HA. 2298 (DACB); Chattan Chara, Dhopachari, Dohazari, 11 vi 2001, *Sarder Nasir Uddin* N. 971 (DACB); Kalapani, Hazarikhil, 19 viii 2014, *Sarder Nasir Uddin* N. 5475 (DACB); Mohamaya Eco-park, Mirsora, 26 vii 2017, *Shahidul, Al Amin & Kawsar* SAK. 5321 (DACB). **Cox's Bazar:** Bhagamura, Baraichara, 27 viii 1996, *Rahman & Uddin* 284 (HCU), Raikong beat, Whykeong Range, 11 ix 1999, *Boyce, Toha & Rahman* 5879 (HCU, K); Teknaf Game Reserve, Whykeon Range, Rhykong beat, 29 ix 2005, *Hosne Ara* HA. 2353 (DACB); 30 iii 2005, Himchari, 30 ix 2005, *Hosne Ara* HA. 2528 (DACB). **Dhaka:** Dhaka University Botanical garden, 03 viii 1945, Collector & Collection number unknown (DUSH); Jinjira, Keranigonj, 17 i 1978, *Huq & Rahman* (DACB); Bangladesh National Herbarium garden (Cultivated), 25 vi 2004, *Hosne Ara* HA. 1070 (DACB) [Originally collected from Lawachara reserve forest under Moulvibazar district]. **East Bengal:** Bangladesh, Locality, Collection date & year unknown, *Griffith* 5966, 5967 (K). **Habiganj:** Satchari, 17 v 2005, *Hosne Ara* HA. 1575 (DACB); Satchari forest area, 07 vii 2005, *Hosne Ara* HA. 1864 (DACB). **Khagrachari:** Narikhil Begun College road, 12 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 505 (DACB). **Moulvibazar:** Lawachara, 19 viii 1939, *G.K. Deka* 23250 (ASSAM);

Madhabkundo, 05 vii 2002, *Hosne Ara & Sarder Nasir Uddin* HA. 87 (DACB); Lawachara reserve forest, 02 v 2003, *Hosne Ara* HA. 199 (DACB); Adampur beat, 03 v 2003, *M. Khatun* 268 (DUSH); Gazipur beat, Hararganj reserve forest, 07 v 2003, *Hosne Ara* HA. 316 (DACB); Adampur beat, Kawargola forest, 16 iv 2004, *Hosne Ara* HA. 720 (DACB); Sreemongal, Lawachara reserve forest, 15 v 2005, *Hosne Ara* HA. 1470 (DACB); Adampur beat, 18 v 2005, *Hosne Ara* HA. 1625 (DACB); Muraichara, 19 v 2005, *Hosne Ara* HA. 1678 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1713 (DACB); Gazipur beat, Hararganj reserve forest, 21 v 2005, *Hosne Ara* HA. 1739 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1784 (DACB); Gazipur beat, Hararganj reserve forest, 05 vii 2005, *Hosne Ara* HA. 1802 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1829, 1830 (DACB); Lawachara reserve Park, 18 viii 2009, *Sarder Nasir Uddin* N. 3942 (DACB); Muraichara beat, Ichachara forest, 07 v 2010, *Hosne Ara* HA. 2756 (DACB); Muraichara beat, Awolachara punj, 07 v 2010, *Hosne Ara* HA. 2756 (DACB); Kamarchara forest beat, Kamalganj, 21 ix 2011, *Sarder Nasir Uddin* N. 4818 (DACB); Juri forest, 02 xii 2014, *Hosne Ara* HA. 2863 (DACB); Madhabkundo, 03 xii 2014, *Hosne Ara* HA. 2873 (DACB). **Rangamati:** Chitmarang, Kaptai, 16 viii 1987, *M.K. Alam* 5902 (BFRIH); Kaptai, Sitapahar, 17 viii 1998, *Rahman & Toha* 3285 (HCU); Kaptai, Sitapahar, 27 vi 1998, *Rahman & Toha* 3216C, 3233 (HCU); Ghagra, Kaw-khali, Champatali, 30 viii 1999, *Boyce, Toha & Rahman* 5400 (HCU, K); Kaptai, Rampahar, Baluchara, 06 ix 1999, *Boyce, Toha & Rahman* 5758 (HCU, K); Rangamati area, 03 ix 2002, *Sarder Nasir Uddin* N. 1745 (DACB); Kaptai, Sitapahar, Sapchari, 23 ix 2002, *Sarder Nasir Uddin* N. 1485 (DACB); Kaptai, Bangchori beat, Bangchori, 06 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 350 (DACB); Kaptai, Rampahar, 07 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 352 (DACB); Bangchori, 07 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 383 (DACB); Kaptai, Sitapahar, 18 xii 2004, *Sarder Nasir Uddin* N. 2622 (DACB). **Sylhet:** Khadim Nagar National Park, 14 iii 2019, *Mahabuba Sultana & Seyedur Rahman* MS. 2741 (DACB).

Northeastern India, northern Thailand and southwestern China.

The rhizome of the plant is used as an aromatic stimulant by people in different parts of India (Caius, 1986).

**Homalomena coerulescens** Jungh. in *Schedula ex Miquel*, Fl. Ind. Bat. 3: 212 (1859). Schott, *Prodr. Syst. Aroid.*: 310 (1860); Engler, in DC. *Mon. Phan.* 2: 38 (1879) *et in Arac. exsicc. et illustr.* n. 67; Hook. f., *Fl. Brit. India* 6: 533 (1893-reprint 1954); Engler, *Pflanzenr.* 55 (IV. 23 Da): 64-65 (1912); Ridley, *Fl. Malay Peninsula*: 104-105 (1925); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 59-60 (2007); *Homalomena minor* Griff., *Notul.* 3: 152 (1851); Schott, *Syn. Aroid.* 119 (1856); *Prodr. Syst. Aroid.* 311 (1860); Engler, in DC. *Mon. Phan.* 2: 343 (1879); *Homalomena major* Griff., *Notul.* 3: 153 (1851); Schott, *Syn. Aroid.* 119 (1856), *Prodr. Syst. Aroid.* 312 (1860); *Homalomena wallichii* Schott, *Bonplandia* 7: 30 (1859), *Prodr. Syst. Aroid.* 311 (1860); Engler, in DC. *Mon. Phan.* 2: 335 (1879). Pl. XLIX.

Type: Singapore-(Wallich Cat. n. 8951-Herb. Calcutta).

Bengali: *Gandho Kachu*

Evergreen herb; stem 14 cm long and 4 cm thick. Leaves several, petiolate; petiole longer than the leaf blade, 70-90 cm long, sheath about 1/3 its length; leaf blade 38-42 × 25-29 cm, ovate, cordate, tip acute or acuminate, basal lobes cordate with a broad shallow sinus, sinus 7-9 cm long, dark green adaxially, light green abaxially, glabrous, primary lateral veins pinnate, running into marginal vein, secondary and tertiary lateral veins parallel pinnate. Inflorescence 1-2 together; peduncle shorter than the petiole, 10-17 cm long. Spathe oblong-lanceolate, convolute, not constricted, 6.2-9.1 cm long, subacute, outside green and inside pale yellow to white. Spadix shortly stipitate, very stout, 6-9 cm long, shorter or subequal to spathe; pistillate (female) flower zone cylindrical, 2-3 × 1.0-1.2 cm; staminate (male) flower zone longer than the female zone, 4-6 × 1.3-1.5 cm, Ovary oblong-obovoid, usually mixed with some narrowly clavate staminodes, equalling as long as the ovary, 3-loculed, ovules many, hemianatropous, placentation parietal, stigma discoid, 3-4 lobed. Male flowers 4- androus, stamens free. Fruit a berry, ovoid, many-seeded. Seeds small, testa thick. *Fl. & Fr.*: 7-8. *Shady and moist areas on hill slopes.*

**Moulvibazar:** Sreemongal, Lawachara reserve forest, 15 v 2005, *Hosne Ara* HA. 1471 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1746 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1782 (DACB);



Muraichara beat, Ichachara forest, 07 vi 2010, *Hosne Ara* HA. 2759 (DACB). **Rangamati:** Kaptai, Sitapahar, 08 vii 2003, *Hosne Ara and Sardar Nasir Uddin* HA. 417 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 25 vi 2004, *Hosne Ara* HA. 1071 (DACB) [Originally collected from Lawachara reserve forest under Moulvibazar district].

Myanmar, Malaysia and Indonesia.

Some indigenous people of Bangladesh use petioles of the plant as a vegetable.

**Homalomena gigantea** Engler, Pflanzenr. 55 (IV. 23 Da): 61-63 (1912); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 60 (2007). Fig. 15.

Type: Malayasia (A. Engler, n. 4031-Herb. Berlin).

Bengali: *Gandho Kachu*

Evergreen herb; stem c 50 cm (or more) long, c 6 cm thick. Leaves several, petiolate; petiole longer than the blade and sheathing for about one-third its length, 80-110 cm long; leaf blade ovate, cordate or sagittately cordate, basal lobes semi-ovate or rounded, sinus narrow, 45-50 × 32-36 cm, dark green adaxially, light green abaxially, glabrous, primary lateral veins pinnate, running into marginal vein, secondary and tertiary lateral veins parallel pinnate. Inflorescence several together; peduncle shorter than the petiole, c 20 cm long. Spathe green, oblong-lanceolate, convolute, not constricted, shortly acuminate, 10.5-13.0 cm long, persistent, 2.0-2.5 cm in diameter. Spadix with 5-8 mm long stipe, shorter or subequal to spathe; pistillate (female) flower zone cylindrical, 3.0-4.5 × 1.0-2.0 cm; staminate (male) flower zone longer than the pistillate (female) flower zone, 7.5-8.5 × 1.6 cm. Ovary ovoid, usually mixed with few narrowly clavate staminodes, 3-loculed, ovules many, hemianatropous, placentation parietal, stigma discoid. Male flowers 5- androus, stamens free. Fruit a berry, obovoid, many-seeded. Seeds small, testa thick. *Fl. & Fr.*: 6-9. *Shady and moist areas on hill slopes.*

**Moulvibazar:** Kulaura, Gazipur beat, Hararganj reserve forest, 06 vii 2002, *Hosne Ara and Sardar Nasir Uddin* HA. 94 (DACB); Hararganj reserve forest, 05 vii 2005, *Hosne Ara* HA. 1803 (DACB). **Netrakona:** Durgapur thana, Khonafanda, 18 vi 2004, *Hosne Ara* HA. 859 (DACB). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 25 vi 2004,

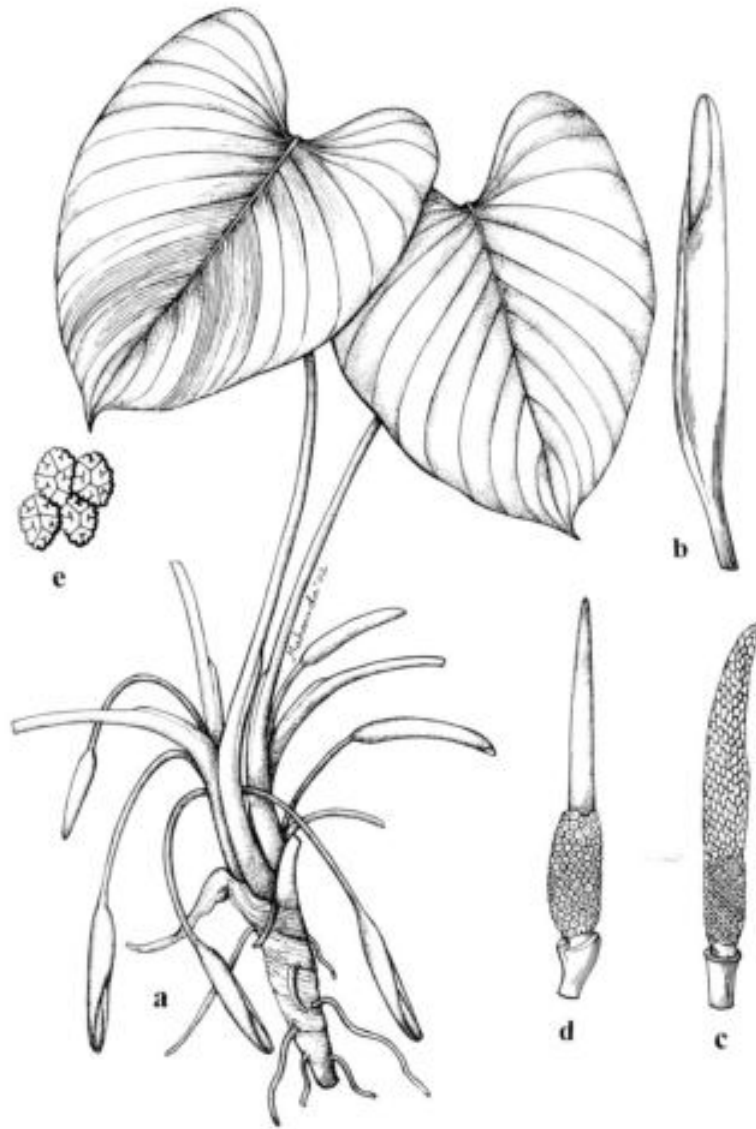


Figure 15. *Homalomena gigantea* Engl., a) habit sketch of a flowering plant; b) inflorescence; c) spadix; d) fruiting spadix; e) front view of male flower.

*Hosne Ara* HA. 1072 (DACB) [Originally collected from Hararganj reserve forest under Moulvibazar district].

Southwestern Malaysian provinces.

Young leaves are eaten as a vegetable.

**Homalomena pendula** (Blume) Bakh. f., *Blumea* 12: 67 (1963). Karthikeyan *et al.*, *Fl. India Enum.* in *Fl. India ser.* 4: 11 (1989); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 60-61 (2007); *Caladium pendulum* Bl., *Cat.* 103 (1823); *Calla rubescens* Roxb., *Fl. Ind.* 3: 515 (1832); *Homalomena rubescens* (Roxb.) Kunth, *Enum. Pl.* 3: 57 (1841); Hook. f., *Fl. Brit. India* 6: 532 (1893-reprint 1954); Engler, *Pflanzenr.* 55 (IV. 23Da): 63 (1912); Heinig, *List Chittagong*: 75 (1925); Mitra, *Fl. Pl. E. India* 1: 76 (1958); Deb, *Fl. Tripura State* 2: 400 (1983); Karthikeyan *et al.*, *Fl. India Enum.* in *Fl. India ser.* 4: 11 (1989); Noltie, *Fl. Bhutan* 3(1): 130-131 (1994). Fig. 16.

Type: Himalaya, Sikkim (Hook. f. *et* Thomson).

Bengali: *Gandho Kachu*

Herb; stem erect, 8-20 (or more) cm long, 4-5 cm thick. Leaves several, petiolate; petioles 30-45 cm long, reddish, broadening below into a firm sheath; leaf blade ovate, shortly acuminate, cordate or sagittately cordate, 15-40 × 10-25 cm, usually red-tinged particularly along the margins, basal lobes slightly outwardly directed, rather broadly triangular with rounded tips, half to one-third the length of the apical lobe, primary veins radiating from the petiole apex and secondary veins closely parallel, diverging from the compound midrib, arching towards the marginal vein. Inflorescence several together; peduncle several, 8-15 cm long, reddish. Spathe red, oblong-lanceolate, convolute, not constricted, shortly acuminate, 7-8 cm long, 1.5-2.0 cm in diameter. Spadix with 5-7 mm long stipe, pistillate (female) flower zone 1.5-2.5 × 1.0 cm, reddish; staminate (male) flower zone 3-6 × 1.0-1.5 cm, white. Ovary oblong-obovoid, 3-loculed, ovules many, hemianatropous, placentation parietal, stigma sessile, discoid, staminode 1, clavate, equalling the ovary. Stamens mostly 4 androus. Fruit a berry, ovoid, many-seeded. Seeds small, testa thick. *Fl. & Fr.*: 5-9. *Shady and moist places of hill slopes and foothills.* 2n = 40 (Petersen, 1989).

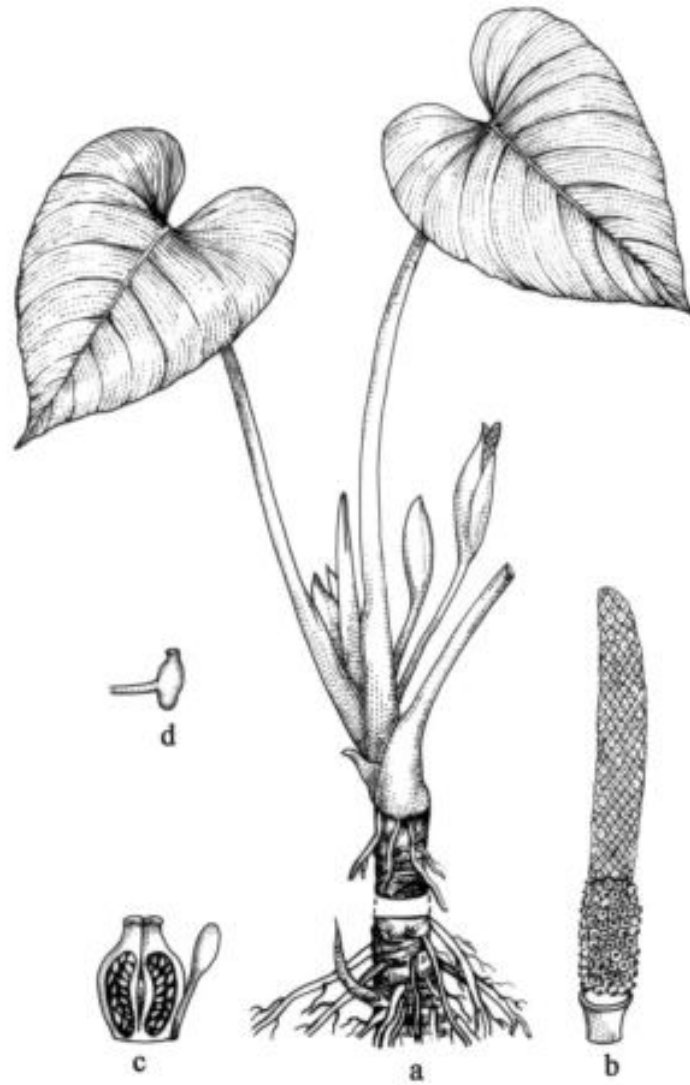


Figure 16. **Homalomena pendula** (Blume) Bakh. f., a) habit sketch of a flowering plant; b) spadix; c) gynoecium, longitudinal section and associated staminode; d) ovule.

**Sylhet:** Singla reserve, 22 xii 1914, *U.N. Kanjilal* 4906 (ASSAM).

India (Sikkim Himalayas and Khasia Hills).

The plant is used to poison water by the Malays (Caius, 1986).

**Homalomena wallisii** Regel in *Gartenflora* 25: 320 (1876). Engler and Krause, *Pflanzenr.* 55 (IV. 23Da): 76-77 (1912); Birdsey, *Cult. Aroid.* 68 (1951); Graf, *Exotica*, edn. 8: 176 (1976); Graf, *Tropica*, edn. 5: 106, 1019 (1978-reprint 2003); Walters *et al.*, *European Gard. Fl.* 2 (2): 90 (1984-reprint 2003); Nicolson in Dassanayake & Fosberg, *Rev. Handb. Fl. Ceylon* 6: 21 (1987); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 338 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 61-62 (2007); *Curmeria wallisii* Masters, *Garden. Chron. New Ser.* 4: 108 (1977). Pl. L.

Type: Tropical America.

Bengali: *Bahari Kachu*

An evergreen herb; stem hypogean and aromatic. Leaves crowded on a short, erect stem; petiole 4-5 cm long; leaf blade 13-20 × 6-8 cm, much longer than the petiole, more or less elliptic-oblong, rounded or cordate at the base, adaxially smooth, dark green with a narrow white margin and bold irregular yellow blotches, abaxially rough, glaucous, tinged with red. Inflorescence longer than the petiole. Spathe 8 cm long, pale reddish-purple, glossy within, constricted at the middle. Spadix as long as the spathe, stipe c 5 mm long; pistillate (female) flower zone cylindrical, c 2 cm × 7.5 mm; staminate (male) flower zone longer than the pistillate (female) flower zone, c 5.5 cm × 6 mm. Female florets without staminodes. Ovary obovoid, 3-loculed, ovules many. *Fl. & Fr.*: 6-9. *Shady wet areas*.  $2n = 42$  (Petersen, 1989).

**Dhaka:** Mirpur Botanical garden, 02 x 2004, *Hosne Ara* HA. 1446 (DACB).

Colombia.

As an ornamental plant, this species is commonly grown both in public places and homesteads.

**Lagenandra** Dalzell in Hooker's Journ.  
Bot. Kew Gard. Misc. 4: 289 (1852).

**Type species:** *L. toxicaria* Dalzell.

Small to medium-sized evergreen herbs with procumbent to erect rhizomes. Leaves several, cataphylls prominent, usually 2-keeled; petiole elongate, shortly sheathing; leaf blade elliptic-ovate to linear, usually glabrous, coriaceous, venation pinnately parallel. Inflorescence solitary; peduncle short, rarely long, erect at anthesis, deflexed in fruit. Spathe with two parts: the kettle (basal tube) with united margins and an apical limb, inside at the juncture of the kettle and limb there is an incrassate protruding collar. Spadix small, slender, sessile, included in the kettle, with four parts: a basal pistillate (female) flower zone with a few neuter flowers (olfactory bodies) just above and contiguous with it a thin, naked interstice, a staminate (male) flower zone and a terminal, short subconical appendix. Flowers unisexual, perigone absent. Pistillate (female) flowers numerous, naked, spirally arranged in a globose mass, each pistil with a many-angled, unilocular ovary, ovules 1-12 (-15), orthotropous, placenta basal, stylar region thick, usually short, rarely long, stigma discoid to hemispheric, sometimes oblique, relatively broad. Staminate (male) flowers numerous, clustered in a subglobose or sub-cylindrical mass, stamens two-lobed, sessile, with a tubular beak at the top of each lobe with a rim around the beak, dehiscence through the tube. Infructescences globose, appearing fleshy, but ultimately the fruit walls split longitudinally from the base and coil backwards thereby releasing the seeds. Seeds few, ellipsoid to narrowly ellipsoid or subcylindrical, testa longitudinally ridged, dark brown.

About 14 species are distributed throughout tropical south Asia (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 1 species.

**Lagenandra gomezii** (Schott) Bogner & Jacobson, Aqua Plant. 1987: 49 (1987). Govaerts & Frodin, World Checkl. Bibliog. Araceae: 344 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 62-63 (2007); *Cryptocoryne gomezii* Schott, Bonplandia 5: 221 (1857); Prodr. Syst. Aroid. 14 (1860); Hook. f., Fl. Brit. India 6: 495 (1893); Engl., Pflanzenr. 73 (IV. 23F): 234 (1920); Rataj, Stud. CSAV 3: 33-34 (1975);

Mitra, Fl. Pl. E. India 1: 84 (1958); Khan & Halim, Aqua. Angios. Bangladesh: 64 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 10 (1989). Fig. 17.

Type: Herb, Wallich 8958 (W. GOMEZ 126) K (holotype); K, LE, CAL, CGE, BM (isotypes).

A small evergreen rhizomatous herb. Leaves several, cataphylls usually 2-keeled; petiole only in the lower one-fourth sheathed; leaf blade 4.5-7.0 × 2.5-3.5 cm, elliptic-ovate to oblong-lanceolate, inconspicuously dentate at the base, not blistered, usually glabrous, tip obtuse, acute or rounded. Inflorescence solitary, up to 11 cm long; peduncle 5-6 cm long. Spathe with two parts: the kettle (basal tube) with united margins, c 1.8 cm long and an apical limb c 3.5 cm long, joining directly to the kettle; basal zone constricted, opening through a lateral vertical surface, pale inside on the lower side, upper zone deep red. Pistils 6, naked, spirally arranged, unilocular, ovules many, orthotropous, placentation basal, styler region thick, stigma horizontal, relatively broad. Stamens 40-50, in 5-6 spirals. Seeds few, testa dark brown. *Fl. & Fr.*: No reports available. *Shady moist places.*

**Sylhet:** Sillhet, Wallich Cat. 8958 (BM).

This species is endemic to Bangladesh. It was first described by Schott in 1857 based on a collection made in 1828 from Panchara, Sylhet (Khan *et al.*, 2001). Since then there is no report of its collection from that location or from any other locations inside and outside Bangladesh. Perhaps by now it has become extinct, atleast from its type locality.

**Lasia** Loureiro, Fl. Cochinch. 64, 81 (1790).

**Type species:** *L. aculeata* Lour. (= *L. spinosa* (L.) Thw.).

Clump and colony-forming, creeping to suberect, perennial, stoloniferous, evergreen, marsh or aquatic herbs; stem thick, aculeate or unarmed, decumbent, green, internodes relatively long or short. Leaves several together; petioles long, aculeate, shortly sheathing at the base, with upturned spines, pulvinate at the apex; leaf blade sagittate to hastate-sagittate when juvenile, adult leaf blade deeply pinnatifid in anterior division, posterior divisions pedatifid, sometimes simple or deeply pinnatifid, aculeate on the larger nerves



Figure 17. **Lagenandra gomezii** (Schott) Bogner & Jacobson; a) habit sketch of a flowering plant; b) inflorescence with spadix details viewed through opened kettle; c) horizontal stigma of pistils.



beneath, pinnately nerved above the bifurcate basal nerves, secondary venation reticulate. Inflorescence solitary in leaf-axils; peduncle elongate, spiny. Spathe dark purple, linear, very long and narrow and opening basally or broader, very thick and spongy, spirally twisted, much longer than spadix, finally withering. Spadix short, sessile, cylindrical, obtuse. Flowers bisexual, perigoniate, tepals 4-6, free, with vaulted-truncate apex. Gynoecium ovoid to ellipsoid, ovary 1-locular, with a single, pendulous, anatropous ovule, placentation apical, style very short, stout, stigma discoid-hemispheric. Stamens 4-6, free, anthers elliptic, dehiscent by a longitudinal slit, filaments free, flattened, strap-shaped. Fruit a leathery berry, usually densely warty on top, 1-seeded, green or dull purple when ripe. Seeds large, compressed-obovoid, testa thin, brown, hard, somewhat rugose.

Two species (*Lasia spinosa* (L.) Thw. and *Lasia concinna* Alderw.) are distributed throughout tropical southeast Asia and Malay Archipelago (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by a single species, *L. spinosa* and a distinct biological green variant.

***Lasia spinosa*** (L.) Thw., Enum. Pl. Zeyl.: 336 (1864). Engl. in Engl., Pflanzenr. 48 (IV. 23C): 24-25 (1911); Haines, Bot. Bihar and Orissa: 859-860 (1924- reprint 1978); Fischer in Gamble, Fl. Pres. Madras 1589 (1931), repr. ed. 3: 1108-1109 (1967); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 110 (1956); Hara, Fl. E. Himalaya: 397 (1966); Hu, Dansk Bot. Arkiv 23 (4): 416-418 (1968); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 32-33 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 91 (1978); Bennet, Fl. Howrah Dist.: 92 (1979); Deb, Fl. Tripura State 2: 400-401 (1983); Balakrishnan, Fl. Jowai 2: 561 (1983); Bakshi, Fl. Murshidabad Dist.: 337-338 (1984); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 35-36 (1987); Khan & Halim, Aqua. Angios. Bangladesh: 66 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 12 (1989); Noltie, Fl. Bhutan 3(1): 129 (1994); A. Hay, Blumea Supplement 8: 93 (1995); Saxena & Brahman, Fl. Orissa 4: 2044 (1996); Hajra & Verma, Fl. Sikkim 1: 192 (1996); Pullaiah, Fl. Andra Pradesh 3: 1025 (1997); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 403 (1998); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 347 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 63-64 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 16 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 249-250 (2012); *Dracontium*

*spinosa* L., Sp. Pl.: 967 (1753); Moon, Cat. 30 (1824); *Lasia aculeata* Lour., Fl. Cochinch.: 81 (1790); ed. Willdenow ed., 1: 103 (1793); Hook. f. in Trimen, Handb. Fl. Ceylon 4: 363 (1898); Ridley, Fl. Malay Peninsula: 125 (1925); *Pothos heterophylla* Roxb., Fl. Ind. 1: 457 (1820); *nom. illeg.* ed. 2, 1: 438 (1832); *Pothos lasia* Roxb., Fl. Ind. 1: 458 (1820); *nom. illeg.* ed. 2, 1: 438 (1832); *Lasia heterophylla* (Roxb.) Schott, Schott & Endl., Melet. Bot. 21 (1832); Kunth, Enum. Pl. 3: 67 (1841); Wight, Icon. Pl. Ind. Or. 3: 5, t. 777 (1844); Schott, Bonplandia 5: 125 (1857); Gen. Aroid. 82 (1858); Prodr. Syst. Aroid. 402 (1860); Hook. f., Fl. Brit. India 6: 550 (1893-reprint 1954); Prain, Beng. Pl. 2: 1116 (1903-reprint 2004); Burkil in Rec. Bot. Surv. Ind. 4: 135 (1910); Heinig, List Chittagong: 75 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 101 (1953); Mitra, Fl. Pl. E. India 74 (1958); *Lasia loureirii* Schott, Schott & Endl., Melet. Bot. 21 (1832), *nom. illeg.*; Bonplandia 5: 125 (1857); Prodr. Syst. Aroid. 400 (1860); *Lasia roxburghii* Griff., Not. Pl. Asiat. 3: 155 (1851); Schott, Bonplandia 5: 125 (1857); Prodr. Syst. Aroid. 401 (1860); *Lasia hermanni* Schott, Bonplandia 5: 125 (1857), *nom. illeg.*; Prodr. Syst. Aroid. 400 (1860); *Lasia zollingeri* Schott, Bonplandia 5: 125 (1857), Prodr. Syst. Aroid.: 401 (1860); *Lasia deciscens* Schott, Ann. Mus. Lugd.-Bat. 1: 127 (1863); *Lasia spinosa* var. *hermannii* Engler in DC. Monogr. Phan. 2: 274 (1879); *Lasia crassifolia* Engler, Arac. Exsicc. Illustr. no. 194 (1883); Engler, Bot. Jahrb. Syst. 25: 15 (1898); Engler, Pflanzenr. 48 (IV. 23C): 25 (1911); *Lasia crassifolia* f. *angustisecta* Engler, Arac. Exsicc. Illustr. no. 194 (1883). Engler, Bot. Jahrb. Syst. 25: 15 (1898); Engler, Pflanzenr. 48 (IV. 23C): 26 (1911); *Lasia crassifolia* f. *latisecta* Engler, Bot. Jahrb. Syst. 25: 15 (1898); Engler, Pflanzenr. 48 (IV. 23C): 26 (1911); *Lasia spinosa* f. *diversifolia* Alderw., Bull. Jard. Bot. Buitenzorg, ser. 3, 1: 379 (1920); *Lasia spinosa* f. *simplex* Alderw., Bull. Jard. Bot. Buitenzorg, ser. 3, 1: 379 (1920) ('simplex'). Fig. 18 & Pl. LI.

Type: Herb. Hermann, Vol. 5, fol. 291, No 328 (BM).

Bengali: *Kanta Kachu, Vombarali*

Perennial evergreen stout herb; rhizome up to 1.5 m long, continued above into a prostrate or ascending stem, stem up to 0.5 m long, 2-6 cm thick, clothed with up to 1 cm long broad-based spines, inside white, turning brown on exposure. Leaves several



Figure 18. *Lasia spinosa* (L.) Thw., a) habit sketch of a flowering plant; b) inflorescence; c) detail of spadix; d) flower, longitudinal section; e) infructescence; f) seed.

together; petioles about 75-150 cm long, sheathing for about 15-20 cm at the base, coriaceous, persistent, aculeate with slightly upturned spines all over, geniculate at the apex; leaf blade (juvenile) sagittate to hastate-sagittate, (adult) deeply pinnatifid in anterior division, with posterior divisions pedatifid, sometimes simple, the anterior lobe 35-45 × 37-47 cm, posterior lobe 17-18 × 5-10 cm, major veins aculeate on lower surface, primary lateral veins pinnate in anterior division, pedate in posterior divisions, higher order venation reticulate. Inflorescence solitary, axillary and spiny; peduncle about 30-120 cm long, c 1 cm in diameter. Spathe fleshy; tube ovate-oblong, 6-10 cm long when spread; limb linear-lanceolate, 10-30 cm long, convolute and twisted, forming an erect 'tubular' structure which does not spread, dark purplish-green outside, inside dark-purple, finally deciduous. Spadix pale crimson, sessile, cylindrical, 2-6 × 0.8-1 cm, obtuse, elongating to 10-12 in fruits, reddish, dense-flowered; appendage absent. Flowers compactly arranged, bisexual. Ovary ovoid, 1.5-2.5 mm long, 1-loculed, ovule solitary, hanging from the apex, style stout, short, 0.5-1.0 mm long, stigma depressed-globose, c 1 mm broad. Perianth segments 4-6, obovate with incurved tips, 1.5-3.0 mm long, stamens 4-6, filaments short, flat, anthers c 0.5 mm long, dehiscing by longitudinal slits. Fruit a berry, obovoid, hexagonal, top muricate, 7 × 2 cm, green when ripe, 1-seeded. Seeds compressed, rugose, exalbuminous. *Fl. & Fr.*: 1-11. *Shady and moist places in forests growing as undergrowth and in village thickets.*  $2n = 26$  (Petersen, 1989).

**Barishal:** Uzirpur thana, East Narayanpur village, 06 ii 2008, *Hosne Ara* HA. 2657 (DACB); Dostina village, 22 ii 2008, *Hosne Ara* HA. 2658 (DACB); Kashipur, Lakaotta, 23 ii 2008, *Hosne Ara* HA. 2721 (DACB). **Bengal:** Locality unknown, June 1887, *Hook. fil & G. Thomson* (CAL.). **Bogura:** Beltola-Hindupara, 12 iii 2001, *B.M. Rezia Khatun* RK. 2771 (DACB); Beltola, 06 ii 2003, *Hosne Ara & Rezia Khatun* HA. 146, 147, 148, 151, 152 (DACB); Shibgonj area, 19 viii 2005, *Hosne Ara* HA. 2186 (DACB); Dhunot Upazilla to Sherpur, 19 iii 2011, *Hosne Ara* HA. 2794 (DACB). **Bhola:** Full-kaisha, Badlipur, 16 xii 2004, *Hosne Ara* HA. 1427 (DACB). **Chattogram:** Chunati Reserve Range, 27 iii 1998, *Rahman, Wilcock & Toha* 2577 (HCU); 04 i 1999, *Rahman et al.* 4070 (HCU); 25 ii 1999, *Rahman et al.* 4459 (HCU); Chunati, 26 ix 2005, *Hosne Ara* HA. 2225 (DACB); Bara Kumira, 01 x 2005, *Hosne Ara* HA. 2583 (DACB); Sitakundo, 01 x 2005, *Hosne Ara* HA. 2590 (DACB); Mirsarai, 01 x 2005, *Hosne Ara* HA. 2603

(DACB). **Cumilla:** Jashpur, 26 ix 2004, *Hosne Ara* HA. 1393 (DACB). **Cox's Bazar:** Signal Hill, 25 xi 1944, *Sinclair* 3802 (E00079899); 25 xi 1944, *Sinclair* 3802 (E 00079900); Kelatoli forest, 09 i 1945, *Sinclair* 3896 (E 00079898); Himchari National Park, Chainda beat, 29 viii 1996, *Rahman & Uddin* 423 (HCU); Upper Rezu reserve forest, 30 iii 1998, *Rahman, Wilcock & Toha* 2736 (HCU); Ramu, 26 ix 2005, *Hosne Ara* HA. 2286 (DACB); Punnagram, 26 ix 2005, *Hosne Ara* HA. 2270 (DACB); Teknaf game reserve, Whykeon range, Rhykong beat, 29 ix 2005, *Hosne Ara* HA. 2352 (DACB); Himchari, 30 ix 2005, *Hosne Ara* HA. 2529 (DACB); Ranghajhiri, Ramu, 26 x 2016, *Moniruzzaman, Mehedi & Kabir* NK. 1360 (DACB). **Dhaka:** Keranigonj, 17 i 1978, *Huq & Rahman* H. 3751 (DACB); Taraghat, 19 iii 1981, *Huq, Rahman & Mia* H. 5009 (DACB); Khilgaon, Tilpapara (Cultivated), 15 i 2005, *Hosne Ara* HA. 1431 (DACB) [originally collected from Bhola district]; Savar, 26 v 2012, *Hosne Ara* HA. 2808a (DACB); Dhaka University Botanical Garden (Cultivated), 15 i 2015, *Hosne Ara* HA. 2877 (DACB) [Originally collected from east Narayanpur village under Barishal district]. **Dinajpur:** Singra foest, 18 viii 2005, *Hosne Ara* HA. 2069 (DACB). **East Bengal:** Bangladesh, Locality, Collection date & year unknown, *Griffith* 5949 (K). **Faridpur:** Bagat, 06 i 1976, *Huq, Rahman & Mia* H. 1997 (DACB). **Gazipur:** Burulia village, 25 vii 2004, *Hosne Ara* HA. 1082 (DACB). **Habiganj:** Rema-Kalenga beat, Rema area, 04 iv 1997, *Huq & A.I.* 10452 (DACB); Kalenga beat, Kalenga, 05 v 2003, *Hosne Ara* HA. 273, 274 (DACB); Kalenga beat, Kalenga, 16 v 2005, *Hosne Ara* HA. 1536 (DACB). **Jashore:** Keshabpur Sub-division, 30 viii 1983, *Huq, Mia & Mahbuba* H. 6015 (DACB); Jashore town area, 26 v 2012, *Hosne Ara* HA. 2842 (DACB). **Jhalakati:** Kaukhali, 04 iii 1985, *Huq & Mia* H. 6785 (DACB). **Khagrachari:** Bhaibonchara, 19 ii 1998, *M.K. Alam* EB. 168 (BFRIH). **Khulna:** Sundarban, 06 v 2011, *Azam Khan* 1940 (DUSH). **Kishoreganj:** Kishoreganj, Noguea, 13 i 1979, *Mahbuba Halim* 346 (DACB); Karimgonj, Jangle Bari Village, 13 iii 1988, *Mia & Mahfuz* M. 1654 (DACB). **Kurigram:** Rajarhat, 31 x 2007, *Bushra, Habib & Mafiz* B. 415 (DACB); Singhimari village, 20 v 2013, *Hosne Ara* HA. 2849 (DACB); Baruitari village, 24 viii 2013, *Hosne Ara* HA. 2856 (DACB). **Magura:** Magura area, 26 v 2012, *Hosne Ara* HA. 2827 (DACB). **Manikganj:** Manikganj area, 26 v 2012, *Hosne Ara* HA. 2816 (DACB). **Moulvibazar:** Lawachara, 23 ii 1941, *R.N. De* 20376 (ASSAM); Lawachara reserve forest, 02 v 2003, *Hosne Ara* HA. 204, 205, 206, 207 (DACB); 15 v 2005, *Hosne Ara*

HA. 1469 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1725 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1798 (DACB); Gazipur beat, Hararganj forest, 05 vii 2005, *Hosne Ara* HA. 1799 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1835 (DACB); Lawachara, Jenkichara, 03 ii 2009, *Bushra, Momtaz & Nasir B.* 1350 (DACB); *ibid*, 03 ii 2009, *Sarder Nasir Uddin* N. 3354 (DACB); Muraichara beat, Awolachara punji, 07 v 2010, *Hosne Ara* HA. 2763 (DACB); Kamalgonj, Kamarchara forest beat, 21 ix 2011, *Sarder Nasir Uddin* N. 4817 (DACB). **Mymensingh:** Haluaghat thana, Koroitoli, 20 vi 2004, *Hosne Ara* HA. 906 (DACB). **Narayanganj:** Bandar, 31 viii 1941, *Singh & Acharja* (DUSH); Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1914 (DACB). **Narsingdi:** Sadar, 07 vii 2005, *Hosne Ara* HA. 1886 (DACB). **Netrakona:** Durgapur, 08 x 2000, *M. Khatun* 04 (DUSH); Farangpara, 18 vi 2004, *Hosne Ara* HA. 866 (DACB). **Noakhali:** Sadar, Mohabbatpur, 12 i 1992, *M.K. Alam* 230 (BFRIH). **Patuakhali:** Patuakhali Sadar, Santibag, 22 vii 1998, *M. Sultana* 29 (DUSH); Bauphal, Kopai, 26 ix 1999, *M. Sultana* 413 (DUSH); Kalapara, Kuakata, 09 i 2006, *M. Sultana* 1080 (DUSH). **Rajbari:** Rajbari area, 26 v 2012, *Hosne Ara* HA. 2822 (DACB). **Rangamati:** Burkul, 29 iii 1976, *Lister* 1876 (E 00079892). **Sherpur:** Rangtia range, Gazni beat, 09 x 2003, *Hosne Ara* HA. 631 (DACB); Rangtia range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 679 (DACB); Rangtia range, Gazni beat, 21 vi 2004, *Hosne Ara* HA. 927 (DACB); Zinaigathi thana, Rangtia hill, 22 vi 2004, *Hosne Ara* HA. 1032 (DACB). **Sirajganj:** Kazipur upazilla to Charkhadah village, 18 iii 2011, *Hosne Ara* HA. 2784 (DACB). **Sylhet:** Tilagar reserve, 19 iv 1947, *M.M. Srinivasan* 22347 (ASSAM); Sylhet town area, 21 v 1968, *Amalendu* 121 (DUSH). **Tangail:** Modupur, Rasulpur, 06 x 2003, *Hosne Ara* HA. 548 (DACB).

From India through Papua New Guinea, northern Thailand and north to southern China.

In Bangladesh, stem and tender leaves are used in curries. Leaves and roots of the plant possess medicinal properties to cure piles, colic, rheumatism and intestinal diseases. The root of the plant is a remedy for affections of the throat (Yusuf *et al.*, 1994). The rhizome of this plant is used in curing lymphotuberculosis, lymphonoditis, stomach ache, injury, rheumatism and insect/snake bites (Heng, 1979).

The people of Konda Reddis in India use rhizome of *L. spinosa* as cooked food. The Konds and Porjas people massage mildly heated rhizome paste over the body for relief of body pains (Rao and Henry, 1996).

*Note:* A green form of this species has been collected from the Dostani village of Barishal district in Bangladesh. This character is genetically stable as observed under plantation in the botanical garden of Dhaka University. According to P.C. Boyce, one of the leading world experts of Araceae, it is only a biological variation. However, other than its morphological variation, the green form has different chromosome number  $2n = 28$  (Alam *et al.* 2012), not  $2n = 26$  as in typical *L. spinosa*. Two submetacentric chromosomes are present in the green form, which is absent in the *L. spinosa*. *L. spinosa* bears satellites, whereas the green form does not bear any satellite. Further investigation is needed to determine its actual taxonomic status. Pl. LII.

**Monstera** Adanson, Fam. Pl. 2: 470 (1763), *nom. cons.*

**Type species:** *M. adansonii* Schott (*Dracontium pertusum*), *typ. cons.*

Evergreen climbing herbs; usually with thick and greatly elongate stems, rooting at the nodes. Leaves distichous, short-petiolate, appressed to the tree trunks and covering the stem and roots; petiole geniculate apically, sheath usually long, persistent or deciduous; leaf blade entire, ovate or broadly ovate-cordate or oblong to ovate-elliptic, oblique, often conspicuously and elaborately perforated with large holes, sometimes pinnatifid, primary lateral veins pinnate, running into marginal veins, secondary laterals often parallel-pinnate, higher order venation reticulate. Inflorescence 1-several in each floral sympodium; peduncle terminal, shorter than the petiole. Spathe ovate or oblong-ovate, cuspidate, boat-shaped and somewhat convolute basally, white to rose-coloured inside, remaining open after anthesis, finally deciduous. Spadix sessile, subcylindrical, somewhat shorter than the spathe. Flowers bisexual, perigone absent, lowermost flowers usually sterile, the others perfect, naked. Gynoecium obovoid to ellipsoid, prismatic, ovary 2-locular, ovules 2 per locule, anatropous, on very short funicle, placenta axile at the base of the septum, stylar region often massive, broader than the ovary, apex truncate to shortly attenuate, stigma oblong-elliptic to linear and longitudinal or round. Stamens 4,

free, filaments flattened, connective slender, thecae oblong-ellipsoid, dehiscent by longitudinal slit. Sterile flowers with 4 minute, conic staminodia, pistillode 2-locular, prismatic, lacking ovules. Fruit a berry, 1-3 seeded, shedding prismatic styler region at maturity, pulpy within. Seed obovoid to ellipsoid, compressed, testa smooth.

About 40 species are distributed throughout tropical America and West Indies (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 2 species.

### KEY TO THE SPECIES

- |  |                  |
|--|------------------|
| 1. Leaf blade broadly cordate at the base with many symmetrical perforations | <b>deliciosa</b> |
| - Leaf blade oblique, unequal at the base with large irregular holes         | <b>obliqua</b>   |

**Monstera deliciosa** Liebmann, Kjoeb. Vidensk. Meddel. 19: 9 (1849). Engler & Krause in Engler, Pflanzenr. 37 (IV. 23Ba): 111 (1908); Standley, Fl. Panama, Ann. Missouri Bot. Gard. 31 (1): 31 (1944); Bailey, Manual, Cultivat. Pl.: 183 (1949); Standley & Steyermark, Fl. Guatemala, Fieldiana, Bot. 24 (1): 330-331 (1958); Graf, Exotica, edn. 8: 181 (1976); Madison, Contrib. Gray Herb. 207: 94-97 (1977); Graf, Tropica, edn. 5: 110, 457, 1041 (1978-reprint 2003); Nasir, Fl. W. Pakistan 120: 5 (1978); Nicolson, Fl. Vitiensis Nova: 440 (1979); Walters *et al.*, European Gard. Fl. 2 (2): 87 (1984-reprint 2003); Mayo, Fl. Trop. E. Africa: 6 (1985); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 21 (1987); Matthew, Excursion Fl. Cent. Tamilnadu, Ind 540 (1991); Parmar in Shetty & Singh, Fl. Rajasthan 3: 869 (1993); Noltie, Fl. Bhutan 3 (1): 156 (1994); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 403-404 (1998); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 64-65 (2007); *Monstera borsigiana* Engler, D. C. Monog. Phan. II: 266 (1879); *Monstera tacanaensis* Matuda, Ann. Inst. Biol. Univ. Nat. Aut. Mex. 43: Ser. Bot. 1: 55 (1972, published 1974). Pl. LIII.

Type: Mexico, Oaxaca, Western Cordillera, 5000-7000 fl., Dec. 1842, Liebmann s.n. (c).

Bengali: *Lata Kachu*

English: Swiss Cheese Plant, Fruit Salad Plant

Usually a large and coarse, epiphytic vine, often climbing high on trees; stem stout, often greatly elongate, sometimes 6 cm thick or even more in diameter. Juvenile plant a



terrestrial creeper. Leaves with erect petioles, about twice the length of the leaf blade; leaf blade thickly coriaceous, glossy deep green adaxially, paler abaxially, ovate, cordate at the base, acuminate at the tip. Adult plants smooth, stem 2-8 cm thick, green internodes 4-10 cm long, axillary buds not distinct but represented by a swollen region of the stem above the node. Leaves with petioles 30-100 cm long, 2.0-2.5 cm in diameter, tuberculate or smooth, vaginate for 1/6-9/10 its length, sheath wings marcescent or deciduous; leaf blade coriaceous, glossy adaxially, pale green abaxially, ovate, 25-90 × 25-75 cm, shorter than the petiole, cordate at the base, acute or mucronate at the apex, regularly pinnatifid, perforate or not, perforations in 1-5 series per side, elliptic, 0.5-8.0 cm long, primary lateral veins prominent abaxially, 6-14 in number per side, the secondary lateral veins reticulate. Inflorescence 1-several in each floral sympodium, peduncle tuberculate or smooth, terete, 10-18 × 1.0-1.8 cm. Spathe coriaceous, broadly ovate, apiculate, 15-25 cm long, pale yellow. Spadix white or green, 10-20 × 2.5-3.0 cm, the pistils truncate, 6-11 mm across. Fruiting spadix green or bluish-green, 15-22 cm long, 4.5-6.0 cm thick, the berries 10-18 mm across. Seeds spheroidal, 16-22 mm long, 10-13 mm across, green within. *Fl. & Fr.*: 3-10. *Shady areas*.  $2n = 24, 48, 56, 60, 70$  (Petersen, 1989).

**Dhaka:** Gulshan area, 04 x 2004, *Hosne Ara* HA. 1450 (DACB).

Mexico, Guatemala, Costa Rica and Panama (Madison, 1977).

The fruit of *M. deliciosa* is edible when ripe and takes a yellow colour with a detectable aroma. Before full maturation, the outer bluish-green skin of the fruit contains tricho-scleroids which cause irritation to mouth and throat. Taste of the fruit is comparable to banana and pineapple fruit salad. The fruits are sold commercially as Ceriman in Mexico (William, 1991).

The pulp of the fruit is mixed in ice and drinks. In Europe, the pulp is used to flavour champagne. The species is widely used for ornamental purposes in public places and homesteads.

The plant possesses medicinal value. In Mexico, a decoction of the plant is used against arthritis. The Mexicans use the aerial roots of the plant for making strong baskets

(Plowman, 1969). In South America, juice from crushed leaves is used to cure ear ache, eczema and ulcers. Mosterioa, an alkaloid contained in the leaf of the plant, is an antidote for poison and is used against snake bite (William, 1991).

**Monstera obliqua** Miq., *Linnaea* 18: 79 (1844). Engler & Krause in Engler, *Pflanzenr.* 37 (IV. 23Ba): 102-103 (1908); Graf, *Tropica*, edn. 5: 112, 1042 (1978-reprint 2003); Madison, *Contrib. Gray Herb.* 207: 67-72 (1977); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 65-66 (2007); *Monstera microstachya* Schott, *Oest. Bot. Woch.* 5: 274 (1855); *Monstera expilata* Schott, *Prodr. Syst. Aroid.* 367 (1860). Pl. LIV.

Type: Surinam, Vredenburger-Zandrits, October 1842, Focke 719 (U, Photo HB, SEL).

Bengali: *Lata Kachu*

Englishes: Window Leaf, Mexican Breadfruit

Slender climbing epiphyte on trees, saplings or shrubs; juvenile plant terrestrial creepers. Leaves entire, exserted and erect, petiolate; leaf blade membranaceous, ovate to lanceolate. Adult plants with stem smooth, terete, 2-7 mm thick, green, internodes 1-6 cm long, occasionally producing hanging and creeping stolons with internodes 10-30 cm long. Leaves usually entire; petiole 5-15 cm long, vaginate for most of its length, the sheath wings deciduous; leaf blade membranaceous, quite variable in shape, ranging from lanceolate to ovate, c 35 cm long and c 4 cm in diameter with an acute to broadly ovate base, c 14 cm long and c 12 cm in diameter with a truncate to subcordate base, mostly ovate, somewhat falcate, 8-15 cm long and 4-6 cm in diameter, the base oblique, unequal, with one side about twice as wide as the other, usually entire but sometimes perforated, the holes one to many in a single series on each side of the midrib, primary lateral veins not prominent. Inflorescence produced sympodially in groups of six to eight, rarely fewer; peduncle terete, 7-15 cm long, 1-2 cm in diameter, elongating throughout the development of the fruit. Spathe green to white when immature, becoming bright yellow at maturity, 4-7 cm long, 3-5 cm in diameter when fully open, acuminate or mucronate for 3-8 mm at the tip. Spadix deep yellow, 2.5-6.0 cm long and 5-10 mm in diameter. Fruiting spadix green to olive-green, tinged with orange when immature, becoming lighter and finally deep orange at maturity, 4-8 cm long and 10-15 mm in diameter. Fruit a berry, globose, 5-8 mm in diameter. *Fl. & Fr.*: 5-11. *Shady and moist places.*

**Dhaka:** Gulshan area, 04 x 2004, *Hosne Ara* HA. 1451 (DACB).

Panama, Colombia, Peru, Bolivia, Venezuela, Trinidad, Tobago and the Guyanas and Amazonian Brazil.

As an ornamental plant, this species is commonly planted both in public places and homesteads.

**Philodendron** Schott in Wiener Z. Kunst 1829 (3): 780 (1829), *nom. et orth. cons.* ('*Philodendrum*').

**Type (Lectotype) species:** *P. grandifolium* (Jacq.) Schott (see Britton & Wilson 1923).

Evergreen herbs, small to gigantic; stem repent to rhizomatous, climbing, arborescent or plant rosulate and acaulescent, internodes usually long, often short, sometimes producing flagelliform shoots. Leaves numerous, small to gigantic, prophylls of mature stems caducous, marcescent and deciduous or persistent; petiole sometimes warty or covered with scale-like processes, sometimes swollen, rarely geniculate apically, vaginate for part or all their length; leaf blade variable in shape, simple and linear, cordate, sagittate or hastate, or trifid, trisect, pinnatifid, bipinnatifid, rarely pedatisect, venation striate. Inflorescence 1-11 in each floral sympodium; peduncle usually much shorter than the petiole. Spathe thick-fleshy, erect, entirely persistent, usually constricted between the tube and the limb; tube convolute, cylindrical to ventricose, often coloured purple or red inside; limb usually boat-shaped, widely gaping at anthesis, later closing, usually white inside, rarely red. Spadix sessile or short-stipitate; pistillate (female) flower zone free, rarely basally adnate to the spathe, usually shorter than the staminate (male) flower zone and separated from it by an intermediate sterile zone of staminodal flowers; intermediate sterile zone cylindrical or constricted or ellipsoid and thicker, usually shorter than the male zone. Flowers unisexual, perigone absent. Ovary ovoid or obovoid, 2-4 to several locular, ovules 1-50 or more per locule, usually hemiorthotropous, rarely hemianatropous to nearly anatropous, funicle long to very short, placenta axile to basal, stylar region usually as broad as the ovary, sometimes slightly broader, sometimes attenuate, rarely elongate, stigma sometimes also lobed or discoid-hemispheric, often as broad as the style.

Staminate (male) flower zone 2-6 androus, thick, stamens free, anthers sessile to subsessile, connective thick, apically truncate. Staminodes usually prismatic, truncate, sometimes clavate, often somewhat similar to stamens. Fruit a sub-cylindrical to obovoid berry, 1 to many-seeded, white, whitish-translucent, red or orange-red. Seed tiny to fairly large, ovoid-oblong to ellipsoid, testa rather thick, striate-costate.

About 500 species are distributed throughout tropical and southern subtropical America, West Indies (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 4 species.

#### KEY TO THE SPECIES

- |  |                       |
|--|-----------------------|
| 1. Leaf blade not below 75 cm long   | <b>2</b>              |
| - Leaf blade up to 60 cm long  | <b>3</b>              |
| 2. Leaf blade having 10-12 segments on each side of the midrib                                       | <b>bipinnatifidum</b> |
| - Leaf blade pinnately lobed less than halfway to midrib; lobes more or less wedge-shaped and obtuse | <b>lacerum</b>        |
| 3. Leaf blade cordate-ovate-shaped, light green to greyish green, marbled with silvery areas         | <b>mamei</b>          |
| - Leaf blade heart-shaped, glossy green  | <b>scandens</b>       |

**Philodendron bipinnatifidum** Schott *ex* Endl., Gen. Pl. 1 (3): 237 (1837). Kunth, Enum. Pl. 3: 51 (1841); Schott, Syn. Aroid. 113 (1856) & Prodr. Syst. Aroid. 297 (1860); Krause in Engler, Pflanzenr. 60 (IV. 23Db): 135 (1913); Graf, Exotica, edn. 8: 183, 185, 187 (1976); Tropica, edn. 5: 112, 1061 (1978-reprint 2003); Walters *et al.*, European Gard. Fl. 2 (2): 92 (1984-reprint 2003); Mayo, Kew Bulletin 46 (4): 633-643 (1991); Noltie, Fl. Bhutan 3(1): 157 (1994); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 67-68 (2007).; *Philodendron selloum* C. Koch in Index Sem. Hort. Reg. Bot. Berol. 1853, Appendix: 14 (1854) & in Ann. Sci. Nat. 4, Ser. 1: 341 (1854); Schott, Syn. Aroid. 109 (1856) & Prodr. Syst. Aroid. 298 (1860); *Philodendron lundii* Warming in Videnskab. Meddelels. Kjöbenhavn 1867 (8-11): 128, t. IV (1867); Krause in Engler, Pflanzenr. 60 (IV. 23Db): 135 (1913). Pl. LV.

Type: Plant cultivated at Schoenbrunn Palace Gardens, Vienna, by Schott, originally collected by him in Brazil, probably near Rio de Janeiro; no specimens are known to exist, represented by colour illustrations:-Schott Icones Aroideae nos. 2609, 2610, 2640, 2663-2665 (W, microfiche ! in Schott 1984).

Bengali: *Bahari Kachu*

English: Split Leaf Philodendron, Tree Philodendron,  
Lacy Tree Philodendron, Selloum

Evergreen herb; stem erect, decumbent and semi-erect, branching sparingly in basal parts, up to 3.5 m tall, 5-13 cm in diameter. Leaves petiolate; petiole 70-150 cm long, 1.0-1.7 cm in diameter at the apex, broadly sulcate adaxially with sharply angled margins or flattened or occasionally slightly convex, rounded abaxially, sheath c 12 cm long on leaves subtending inflorescence; leaf blade usually bipinnatifid, either weakly or very strongly, occasionally pinnatifid, very 10-12 segments on each side of the midrib, variable in shapes of lobes and sinuses, broadly cordiform-sagittate in outline, 75-120 cm long, 60-120 cm in diameter, glossy dark green adaxially, paler abaxially. Inflorescence 1-11 in each floral sympodium; peduncle 5-10 cm long, 1.5-5.0 cm in diameter at the apex, green. Spathe 12-33 cm long, 6.5 cm in diameter at the middle; somewhat constricted centrally at anthesis; outside of basal half green, maroon-purple or chocolate-brown, apical half pale, greener or more yellowish; inside of the spathe entirely cream-white. Spadix 15.0-28.5 cm long; pistillate (female) flower zone 2.8-5.7 cm long, 1.7-4.0 cm in diameter, tapering upwards, adnate dorsally to the spathe for 1/2-3/4 of length; fertile staminate (male) flower zone 3.0-8.5 cm long, 1.5-3.2 cm in diameter, ellipsoid to cylindrical, apex acute to rounded, white; sterile staminate (male) flower zone longer and thicker than the fertile staminate (male) flower zone, 5.5-14.5 cm long, 1.5-3.2 cm in diameter near apex, increasing gradually to 2-4 cm in diameter near the base, white. Ovary 2.0-3.7 mm in diameter, cylindrical to somewhat barrel-shaped, locules 6-15 per ovary, ovules 2-4(-6) per locule, style usually present, as wide as or distinctly narrower than the ovary and style crown, sometimes lacking, stigma 2.0-3.8 mm in diameter, entirely covering style crown lobes, or absent from their dorsal sides. Stamens 5.0-6.5 mm long, 0.8-1.2 mm in diameter at the apex, staminodes 2-6 mm long, 1-2 mm in diameter at the apex, cylindrical to clavate, truncate at the apex. Fruit a berry, 1.4 × 0.7-0.8 cm, cylindrical, white or yellow when ripe, with edible, sweet-tasting pulp. Seeds 3.5-

4.0 mm long, 1.7-1.8 mm in diameter, sub-cylindrical. *Fl. & Fr.*: 5-10. *Shady moist areas*.  $2n = 36$  (Petersen, 1989).

**Dhaka:** Bashundhara area, 04 x 2004, *Hosne Ara* HA. 1452 (DACB).

Northeastern Brazil (Mayo, 1991).

As an ornamental plant, this species is commonly planted both in public places and homesteads.

The plant juice is of medicinal value and cures orchitis, rheumatism and ulcers. It is believed that the seeds of the species are anthelmintic. The people of Brazil use its seeds and roots as a vermifuge (Croat, 1994).

**Philodendron lacerum** (Jacq.) Schott, Melet 1: 19 (1832), Syn. Aroid.: 108 (1856), Prodr. Syst. Aroid.: 290 (1860). Krause in Engler, Pflanzenr. 60 (IV. 23Db): 114-115 (1913); Birdsey, Cult. Aroids.: 85 (1951); Graf, Exotica, edn. 8: 193, 221 (1976); Tropica, edn. 5: 115, 119, 1062 (1978-reprint 2003); Walters *et al.*, European Gard. Fl. 2 (2): 92 (1984-reprint 2003); *Arum lacerum* Jacq., Hort. Schoenbr. 4, t. 468 (1804); *Caladium lacerum* Willd., Spec. 4: 491 (1805). Pl. LVI.

Type: Cuba, Jamaica.

Bengali: *Bahari Lata Kachu*

Evergreen stout herb, climbing, plant tall, with long internodes. Leaves petiolate; petiole to 90 cm, terete; leaf blade to c. 75 cm, numerous, ovate-circular in outline, cordate at base, pinnately lobed less than halfway to midrib; lobes more or less wedge-shaped and obtuse; midrib and principal veins very prominent. Inflorescence 1-11 per node; peduncle shorter than the petiole. Spathe erect, convolute, surrounding the spadix, constricted between the tube and the limb, c 12 cm long, with tube outside dull purple and limb greenish cream. Spadix cylindrical, erect; pistillate (female) flower zone basal; separated from the staminate (male) flower zone by a zone of sterile staminate flowers. Flowers unisexual. Ovary 2- to many-locular, with 1 to many ovules per locule, stigma sessile. Stamens 2-6. Fruit a fleshy berry. Seeds ovoid to ellipsoid. *Fl. & Fr.*: 7-10. *Shady moist places*.

**Dhaka:** Bailey Road, 04 x 2004, *Hosne Ara* HA. 1453 (DACB).

Cuba, Haiti and Jamaica.

As an ornamental plant, this species is commonly planted both in public places and homesteads.

**Philodendron mamei** Andre', Revue Hortic. 105 (1883); Illustration Horticole 43: 293 (1896). Birdsey, Cultivat. Aroid.: 87 (1951); Graf, Exotica, edn. 8: 217, 223 (1976); Tropica, edn. 5: 114, 118, 1062 (1978-reprint 2003); Walters *et al.*, European Gard. Fl. 2 (2): 94 (1984-reprint 2003). Pl. LVII.

Type: Ecuador.

Bengali: *Bahari Kachu*

Erect, terrestrial or a root-climber to 1m long; stem prostrate, internodes very short. Scale leaves reddish, dying and persistent. Leaves petiolate; petiole nearly as long as leaf blade, reddish at apex and base, flat on upperside and narrowly crinckly-winked near apex; leaf blade to 60 × 45 cm, reflexed, cordate-ovate-shaped, adaxially light green to greyish green, marbled with silvery areas, coriaceous, apex acute. Inflorescence 1-11 per side; peduncle shorter than the spathe. Spathe erect, convolute, surrounding the spadix, constricted between the tube and the limb, c 15 cm long, brownish red outside. Spadix cylindrical, erect; pistillate (female) flower zone basal; separated from the staminate (male) flower zone by a zone of sterile staminate flowers. Flowers unisexual. Ovary 2- to many locular, with 1 to many ovules per locule, stigma sessile. Stamens 2-6. Fruit a fleshy berry. Seeds ovoid to ellipshoid. *Fl. & Fr.*: 6-10. *Shady moist areas.*

**Dhaka:** Dhaka University Botanical Garden, Curzon Hall, 04 x 2004, *Hosne Ara* HA. 1454 (DACB).

Ecuador.

As an ornamental plant, this species is commonly planted both in public places and homesteads.

**Philodendron scandens** C. Koch & Sello *ex* Koch in Koch & Bouché, Index Sem. Hort. Berol. 1853 (Append.): 14 (p. 4 in separate) (1853). Krause in Engler, Pflanzenr. 60 (IV. 23Db): 56 (1913); Birdsey, Cultivat. Aroid.: 89 (1951); Bunting, Gentes Herb. 10: 160 (1968); Graf, Exotica, edn. 8: 203, 207 (1976); Tropica, edn. 5: 115 (1978-reprint 2003); Walters *et al.*, European Gard. Fl. 2 (2): 93 (1984-reprint 2003); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 44 (1987); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 68 (2007); *Pothos discolor* Hort., nom. nud., Alston in Trimen, Handb. Fl. Ceylon 6: 197 (1931). Pl. LVIII.

Type: Unknown, described from cultivation at Berlin.

Bengali: Latano Kachu

English: Heart-leaf Philodendron

Evergreen herb; climber of small size, the terminal part of the stem finally pendent and nearly reaching the ground, up to 1.5 cm thick, internodes elongate, 10-15 cm long, nodes with a circular cataphyll scar, subtended by a patch of roots. Leaves petiolate; petioles in the adult stage up to 25 cm long, somewhat geniculate in the outer third sheath without inflorescence open and only c 2 cm long, sheath with inflorescence open and more than half the petiole length; leaf blade in juvenile stage small and softly purple, in the adult stage large, 20-40 × 18-23 cm, green, more or less glossy, reflexed, heart-shaped with about 3 principal veins from each side of the midrib, cordate at the base, margins entire to slightly undulate. Inflorescence 1-11 per side; peduncle 7-10 cm long. Spathe green outside, red inside, 14-18 cm long; lower one-third slightly broader (3 cm) than upper two-thirds (2.0-2.5 cm). Spadix c 15 cm long; stipe c 1.5 cm long; lower pistillate (female) flower zone c 5 cm long and upper staminate (male) flower zone c 8 cm long. *Fl. & Fr.*: 5-11. Partially *shady places*.  $2n = 32$  (Petersen, 1989).

**Dhaka:** Banani area, 04 x 2004, *Hosne Ara* HA. 1455 (DACB).

Northern Neotropics.

The plant is widely used for ornamental purposes in public places and homesteads.



**Pistia L., Sp. Pl. 963 (1753).****Type species:** *P. stratiotes* L.

Small, free-floating, rosulate, evergreen, freshwater, aquatic herbs with pendent fibrous roots; stem very short, acaulescent, stoloniferous. Leaves several in a rosette up to 30 cm across but often much less, densely pubescent; petiole very short, almost absent, sheath very short, ligulate, very thin, scarious at base; leaf blade somewhat spongy, obovate-cuneate to obovate-oblong, up to 10 by 7 cm, apex rounded, truncate or retuse, midrib absent, primary veins subparallel, all arising from base, diverging slightly and running into margin near apex, strongly prominent on lower surface, higher order venation reticulate. Inflorescence solitary, small, hidden among the leaf-bases; peduncle very short, pubescent. Spathe constricted centrally; basal part slightly inflated, convolute; apical part more or less erect, expanded, acute-acuminate, light yellowish-green to white, pubescent outside, glabrous inside. Spadix highly reduced, and in three parts: the lower pistillate (female) flower zone; the naked portion adnate to the spathe and the upper stipitate staminate (male) flower zone free from the spathe. Flowers unisexual, perigone absent. Pistillate (female) flower solitary, unilocular with many orthotropous ovules on a parietal placenta, attached to the spathe, stylar region short, slender, curved, stigma small, sub-spherical, papillose. Staminate (male) flowers 2-8, connate into a single whorl borne on a short stipe subtended by a shallow basal cup, each flower a synandrium of 2 connate stamens. Fruit a thin-walled several-seeded berry, ellipsoid, dehiscent by irregular slits. Seeds few, oblong or ovoid, rugose, testa thick.

Only 1 species, pantropical in distribution (Mayo *et al.*, 1997). In Bangladesh, this genus is also represented by 1 species.

**Pistia stratiotes** L., Sp. Pl.: 963 (1753). Roxb., Fl. India 3: 131 (ed. 2, 1832); Kunth, Enum. Pl. 3: 8 (1841); Hook. f., Fl. Brit. India 6: 497 (1893-reprint 1954); Prain, Beng. Pl. 1105 (1903-reprint 2004); Cooke, Fl. Pres. Bombay 2: 817 (1908); Engl. in Engl., Pflanzenr. 73 (IV. 23F): 259-260 (1920); Haines, Bot. Bihar and Orissa: 873 (1924-reprint 1978); Heinig, List Chittagong: 74 (1925); Ridley, Fl. Malay Peninsula: 85-86 (1925); Fischer in Gamble, Fl. Pres. Madras: 1573 (1931), repr. ed. 3: 1097-1098 (1967);

Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 14 (1931); Standley, Fl. Panama, Ann. Missouri Bot. Gard. 31 (1): 4 (1944); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 101 (1953); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 110 (1956); Standley & Steyermark, Fl. Guatemala, Fieldiana, Bot. 24 (1): 347-348 (1958); Mitra, Fl. Pl. E. India 1: 85 (1958); Subramanyam, Aquatic Angios.: 75 (1961); Liu & Huang, Quart. Journ. Taiwan Mus. 16: 139 (1963); Hara, Fl. E. Himalaya: 397 (1966); Hu, Dansk Bot. Arkiv 23 (4): 457 (1968); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 12 (1976); Nicolson in Saldanha & Nicolson, Fl. Hassan Dist. 788 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 91 (1978); Graf, Tropica: 129 (1978); Nasir, Fl. W. Pakistan 120: 2 (1978); Bennet, Fl. Howrah Dist.: 92 (1979); Deb, Fl. Tripura State 2: 401 (1983); Bakshi, Fl. Murshidabad Dist.: 338 (1984); Sharma *et al.*, Fl. Karnataka: 297 (1984); Walters *et al.*, European Gard. Fl. 2 (2): 112 (1984-reprint 2003); Verma *et al.*, Fl. Raipur, Durg and Rajnandgaon: 396 (1985); Mayo, Fl. Trop. E. Africa: 66-68 (1985); Nicolson in Dassanyake & Fosberg, Rev. Handb. Fl. Ceylon 6: 100 (1987); Nair & Nayar, Fl. Courtallum 2: 393 (1987); Khan & Halim, Aqua. Angios. Bangladesh: 67 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 12 (1989); Islam, Fl. Majuli: 337 (1990); Vajravelu, Fl. Palghat Dist. 535 (1990); Ellis, Fl. Nallamalais 2: 403 (1990); Matthew, Excursion Fl. Cent. Tamilnadu, India: 541 (1991); Kothari & Moorthy, Fl. Raigad Dist. Maharashtra State: 418-419 (1993); Parmar in Shetty & Singh, Fl. Rajasthan 3: 867 (1993); Noltie, Fl. Bhutan 3(1): 156 (1994); A. Hay, Blumea Supplement 8: 98 (1995); Liu & Huang, Fl. Taiwan: 810 (1996); Saxena & Brahmam, Fl. Orissa 4: 2064 (1996); Pullaiah, Fl. Andra Pradesh 3: 1025 (1997); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 404 (1998); Matthew, Fl. Palni Hills. S. India 3: 1372 (1999); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 419-421 (2002); Acevedo-Rodriguez and Nicolson in Acevedo-Rodriguez and Strong, Contrib. U. S. Nat. Herb. 52: 44-45 (2005); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 69 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 79 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 252-253 (2012); *Zala asiatica* Lour., Fl. Cochinch.: 405 (1790), *et* Willd. 492 (1793); *Pistia minor* Blume, Rumphia 1: 78 (1836); *Pistia occidentalis* Blume, Rumphia 1: 79 (1836); *Pistia stratiotes* L. var. *linquiformis* Engler in Martius, Fl. Bras. 3 (2): 214 (1878); Pflanzenr. 73 (IV. 23F): 260 (1920); *Pistia stratiotes* L. var. *cuneata* Engler in Martius, Fl. Bras. 3 (2): 214 (1878); Pflanzenr. 73 (IV. 23F): 259 (1920); *Pistia stratiotes* L. var. *spathulata* Engler in Martius, Fl. Bras. 3

(2): 214 (1878); Pflanzenr. 73 (IV. 23F): 259 (1920); *Pistia stratiotes* L. var. *obcordata* Engler in Martius, Fl. Bras. 3 (2): 214 (1878); Pflanzenr. 73 (IV. 23F): 259 (1920). Fig. 19 & Pl. LIX.

Lectotype: India, Kerala; 'Kodda Pail', Rheede, Hort. Malab. 11, t. 32 (1692).

Bengali: *Topa pana*, *Khudi pana*

English: Water Lettuce, Water Cabbage,  
Tropical Duckweed

Aquatic, free-floating, stoloniferous monoecious evergreen herb; stem bearing a rosette of several leaves and up to 30 cm long, with several adventitious roots clothed with plumosely spreading root-hairs. Leaves several, petiolate, sheath very short; petiole very short, almost absent, sheath very short, ligulate, very thin, scarious at base; leaf blade somewhat spongy, up to 14 cm long, 8 cm in diameter, spathulate, obconic or oblong, apex rounded to truncate, green, paler and more densely pubescent abaxially, midrib absent, main veins 5-7, primary veins subparallel, higher order venation reticulate. Inflorescence solitary, very small, much shorter than leaves and partially hidden among leaf bases; peduncle 10-15 mm long, tomentose. Spathe pubescent outside, glabrous inside, somewhat constricted centrally, c 10-12 × 5-7 mm, lower margins connate and adnate to ovary wall together forming tube; free margins between tube and spathe limb folded between stigma and staminate organs forming a partition between an upper staminate partial chamber and a lower pistillate one; limb erect, ovate, expanded, acute-acuminate. Spadix shorter than spathe, mostly adnate to spathe, c 5-7 mm; pistillate (female) flower zone bearing a single gynoeceium at the base and a thin, green, pouch-shaped flap just below spathe partition; only the apical staminate (male) flower zone free. Flowers unisexual, perigone absent. Ovary ovoid, c 1 mm diameter, 1-locular, stylar region attenuate, stigma small, discoid-subcapitate. Staminate (male) flower zone subtended by a thin, marginally lobed, green; synandrium composed of 2-connate stamens, c 2 mm diameter. Fruit a ellipsoid berry, 0.5 × 0.3 cm, membranous, 8-20 seeded. Seeds c 0.2 cm long, 0.1 cm in diameter, oblong to truncate, reddish-brown. *Fl. & Fr.*: 10-3. *Surface of ponds, ditches, slow-running streams and irrigation canals.* 2n = 28 (Petersen, 1989).

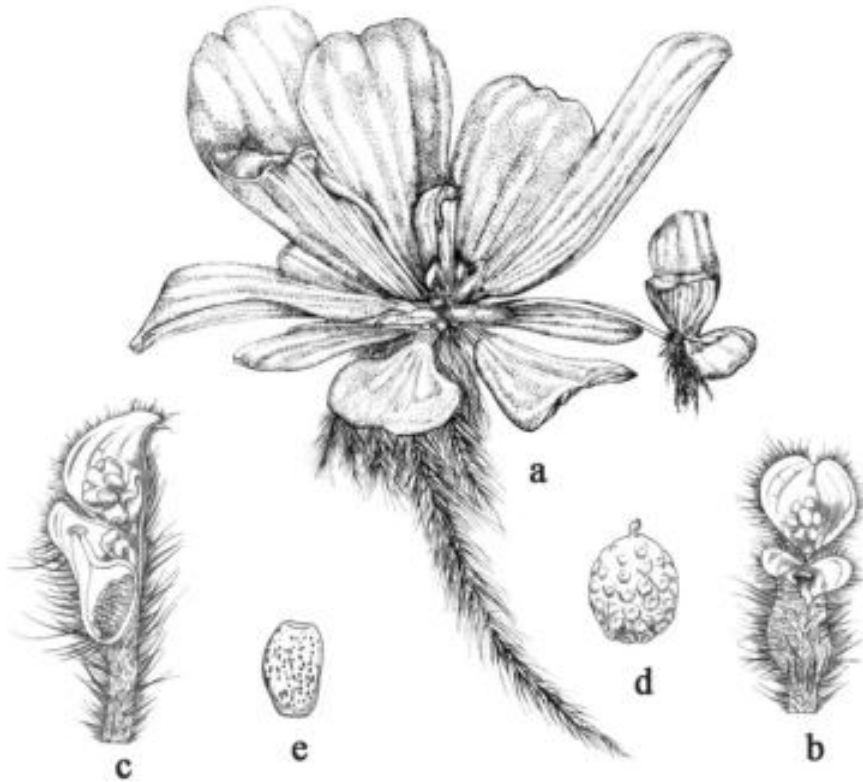


Figure 19. *Pistia stratiotes* L., a) habit sketch of a flowering plant; b) inflorescence, front view; c) inflorescence, side view, longitudinal section; d) fruit; e) seed.

**Barishal:** East Narayanpur and Dostani village, 22 ii 2008, *Hosne Ara* HA. 2664 (DACB); Kashipur, Lakaotta, 23 ii 2008, *Hosne Ara* HA. 2720 (DACB); **Bogura:** Beltola, 06 ii 2003, *Hosne Ara & Rezia Khatun* HA. 142 (DACB); Shibgonj area, 19 viii 2005, *Hosne Ara* HA. 2189 (DACB); Dhunot Upazilla to Sherpur, 19 iii 2011, *Hosne Ara* HA. 2792 (DACB); **Chattogram:** Locality, Collection date & number unknown, *J.D. Hooker & Thomson* (K); Chittagong University area, 29 viii 2016, *Tajul & Kawsar* TOK. 79 (DACB); Mithachara, Fatehpur, Hathajari, 14 xi 2017, *Moniruzzaman & Kawsar* MAK. 6398 (DACB). **Dhaka:** Dhaka, 06 v 1943, *A.K. Acharja* (DUSH); Postugola, Bottala, 16 x 1963, *Abdul Ghani* 42 (DUSH); Jurain, 15 xi 1964, *Moula Baksha* 16 (DUSH); Zinzira, 11 ii 1968, *Mozahar* 27 (DUSH); Mirpur Sec. 12, 01 viii 1970, *Zazim* 240 (DUSH); Khilgaon area, 15 iv 1988, *Hosne Ara* HA. 5 (DACB); Savar, 26 v 2012, *Hosne Ara* HA. 2807 (DACB); **Dinajpur:** Near Birgonj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2132 (DACB); Near Nawabgonj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2140 (DACB); Ranigonj, 19 viii 2005, *Hosne Ara* HA. 2167 (DACB); Fultala, 19 viii 2005, *Hosne Ara* HA. 2177 (DACB); **East Bengal:** Bangladesh, Locality, Collection date & year unknown, *Griffith* 2791, 5616 (CAL); **Gaibandha:** Palasbari Upazila, Jamalpur, 06 v 1988, *Mia, Mahbuba, Rezia, Mahfuz & Bushra* M. 1837 (DACB); **Gazipur:** Joydebpur, 09 viii 1970, *M.A. Rahman* 214 (DUSH); Burulia village, 25 vii 2004, *Hosne Ara* HA. 1081 (DACB); Tetupara road, Baropaiha, 25 vii 2004, *Hosne Ara* HA. 1086 (DACB); Kaliakair, 19 viii 2005, *Hosne Ara* HA. 2208 (DACB). **Gopalganj:** Gopalganj Sadar, 28 ix 2018, *Naimur Rahman* NR. 1242 (DACB). **Jashore:** Jashore town area, 26 v 2012, *Hosne Ara* HA. 2841 (DACB); **Kurigram:** Singhimari village, 20 v 2013, *Hosne Ara* HA. 2850 (DACB); Baruitari village, 24 viii 2013, *Hosne Ara* HA. 2853 (DACB); **Magura:** Magura area, 26 v 2012, *Hosne Ara* HA. 2828 (DACB); **Manikganj:** Manikganj area, 26 v 2012, *Hosne Ara* HA. 2813 (DACB); **Moulvibazar:** Sreemongal, Lawachara reserve forest, 15 v 2005, *Hosne Ara* HA. 1498 (DACB); **Mymensingh:** Main road, 18 ix 1980, *Mia, Huq & Rahman* M. 315 (DACB); **Narayanganj:** Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1915 (DACB); **Narsingdi:** Narsingdi Sadar, 07 vii 2005, *Hosne Ara* HA. 1885 (DACB); **Patuakhali:** Patuakhali Sadar, Sobujbag, 21 vii 1998, *M. Sultana* 27 (DUSH); Dasmina, Ranggopadi, 02 iii 2005, *M. Sultana* 683 (DUSH); Galachipa, Noluabaghi, 01 ii 2007, *M. Sultana* 1491 (DUSH); **Rajbari:** Rajbari area, 26 v 2012, *Hosne Ara* HA. 2823 (DACB); **Sirajganj:** Kazipur upazilla to Charkhadah

village, 18 iii 2011, *Hosne Ara* HA. 2783 (DACB); **Sherpur:** Bakshigonj, Lawchapra, Dumurtola, 08 x 2003, *Hosne Ara* HA. 596 (DACB); Rangtia Range, Gazni beat, 09 x 2003, *Hosne Ara* HA. 639 (DACB); Rangtia Range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 677 (DACB); Koshba village, 22 vi 2004, *Hosne Ara* HA. 989 (DACB); **Sylhet:** Jaintiapur, 30 x 1935, *G.K. Deka* 12860 (ASSAM); **Tangail:** Modhupur, Dokhola, 06 x 2003, *Hosne Ara* HA. 552 (DACB); Mirzapur, 19 viii 2005, *Hosne Ara* HA. 2198 (DACB).

Pan-tropical.

The plant is used to cure urinary tract infection and swellings (Heng, 1979). The leaves of the plant possess antiseptic, antitubercular, antidysenteric and anthelmintic properties, and are used for the treatment of eczema, leprosy, piles, ulcers, syphilis, cough and asthma. Roots of the plant contain laxative and diuretic properties (Yusuf *et al.*, 1994).

The plants are cultivated as a feed in China. The juice of the plant is applied to cure diseases of the eye and ear. Ash of the plants is used in curing ringworm infection.

**Pothos L., Sp. Pl. 968 (1753).**

**Type species:** *P. scandens* L.

Small to very large, climbers on trees with the aid of adhesive roots or creeping over rocks; stem branched, rather 'woody', lower branches rooting, upper ones free and pendent in most species, buds of lateral shoots sometimes perforating the leaf sheath or ± infra-axillary. Leaves distichous; petiole conspicuously winged or wingless, petiolar sheath minute or well-developed at the base; leaf blade linear-lanceolate to ovate or elliptic, sometimes oblique with reticulate venation. Inflorescence axillary or infra-axillary, solitary or forming short branching systems of several inflorescences, bearing 4-6 or more rigid, coriaceous cataphylls at the base; peduncle very short to very long, sometimes reflexed, partly or entirely enveloped by the cataphylls. Spathe small, cymbiform or elongate, not constricted, at last entirely spreading and either patent or

recurved, green to dirty white or yellow or deep purple, persistent into fruiting. Spadix sessile or long stipitate, globose, ovoid, cylindrical, ellipsoid or obovoid, densely or laxly flowered. Flowers bisexual, perigoniate, tepals 4-6. Ovary ovoid-oblong or depressed, 3-locular, ovules 1 per locule, anatropous, placenta axile at the base of the septum, stylar region sometimes as broad as the ovary, stigma discoid-hemispheric. Stamens 6, rarely 4, free, filaments oblong, flattened, anthers dehiscent by longitudinal slits. Fruit a berry, ellipsoid to ovoid, usually red or rarely whitish or dull purple when ripe. Seed 1-3, ellipsoid, testa smooth.

About 70 species are distributed throughout south and southeast Asia, Australasia, Malagasy region and Malay Archipelago (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 3 species.

#### KEY TO THE SPECIES

- |  |                   |
|--|-------------------|
| 1. Peduncle green  | <b>2</b>          |
| - Peduncle dark purple   | <b>junghuhnii</b> |
| 2. Inflorescence bent, spathe purple, fertile spadix cream                                   | <b>scandens</b>   |
| - Inflorescence straight, spathe greenish white to green, fertile spadix pale green to white | <b>chinensis</b>  |

**Pothos chinensis** (Raf.) Merr., J. Arn. Arb. 24: 210 (1948). Schott, Prodr. Syst. Aroid.: 564 (sub. *P. seemanii*) (1860); Benth., F.C. How, Fl. Kwangchow [Canton=Guangzhou] 693-694 (1956); Chun, Fl. Hainan 4: 130 (1977); Wu & Li, Fl. Yunnan. 2: 742-744 (1979), pl. 208, 8; Li in Wu & Li, Fl. Reip. Pop. Sin., 13(2): 19-20 (1979), pl. 3, 10; Sai in Li *et al.*, Fl. Guizhou. 6: 546-548 (1987); Liu & Huang, Fl. Taiwan: 812 (1996); Boyce, Blumea 45 (1): 155-160 (2000); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 427 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 71-72 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 7 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 255-256 (2012); *Tapanava chinensis* Raf., Fl. Tellur. 4: 14 (1837); *Pothos seemannii* Schott, Bonplandia 5: 45 (1857); Liu & Huang, Quart. Journ. Taiwan Mus. 16: 140 (1963); *Pothos cathcartii* Schott, Aroid. 1: 22 (1858), t. 44-45 (as '*cathcartii*'); Hook.

f., Fl. Brit. India 6: 552 (1893-reprint 1954); Engler, Pflanzenr. 21 (IV. 23B): 27 (1905); Haines, Bot. Bihar and Orissa: 858 (1924-reprint 1978); Mitra, Fl. Pl. E. India 1: 72 (1958); Hara, Fl. E. Himalaya: 397 (1966); Hu, Dansk Bot. Arkiv 23 (4): 413 (1968); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 33-34 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 91 (1978); Deb, Fl. Tripura State 2: 402 (1983); Pant, Fl. Corbett Nat. Park: 159 (1986); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 12 (1989); Noltie, Fl. Bhutan 3(1): 125 (1994); Hajra & Verma, Fl. Sikkim 1: 192 (1996); Chauhan *et al.* in Hajra, Contrib. Fl. Namdapha, Arunachal Pradesh: 339 (1996); *Pothos warburgii* Engl., Bot. Jahrb. Syst. 25: 2(1898); *Pothos balansae* Engl., Bot. Jahrb. Syst. 25: 3 (1898); *Pothos yunnanensis* Engl, Pflanzenr. 21 (IV. 23B): 28 (1905); *Pothos chinensis* (Raf.) Merr. var. *lotienensis* C.Y. Wu & H. Li, Acta Phytotax. Sin. 15(2): 101 (1977). Fig. 20.

Type: Bot. Reg. 16, Pl. 1337 (1830).

Bengali: *Bahari Lata*

English: Rock Vine

A large shrubby climber; stem midgreen, becoming greyish-brown with age, internodes 2.0-3.5 cm long, free or occasionally rooting at the base, arising from mature sterile stem as side branches, often branching to three or more orders. Leaves many; petiole broadly winged, obovate-oblong to linear-oblong or elongate-triangular, 5-12 × 0.5-2.0 cm, base decurrent to clawed, apex truncate, rounded to auriculate; leaf blade coriaceous, ovate to elliptic or lanceolate, base rounded to acute, apex attenuate-mucronate to acute or attenuate, 1.8-18.0 × 0.6-5.5 cm. Inflorescence straight, solitary, 1-2 together; peduncle sheathed, very stout, 0.8-1.5 cm long, erect to variously curved, green to brown-tinged. Spathe 0.4-1.6 × 0.4-1.0 cm, ovate, concave, margins in-rolled, base cordate, clasping and slightly decurrent on the peduncle; apex hooded to recurved, greenish white to green, occasionally faintly purple-tinged. Spadix stipitate, stipe 5-10 × 1.0-1.25 mm, erect, straight, green; the fertile portion of the spadix globose to ovoid, sometimes subglobose, 5-10 × 1.0-1.2 mm, pale green to white. Flowers c 1-2 mm in diameter. Ovary 1.0-1.5 × 0.2-0.7 mm, yellowish-green to dirty white, stigma punctate. Stamens 1-4 × 0.5 mm, filaments strap-shaped, c 0.2 mm broad, dehiscing longitudinally in slits, yellow. Fruit obclavate to ovoid or ellipsoid, 1.0-1.7 × 1.0-1.4 mm, mid-green ripening to scarlet. Seeds 1-3, ellipsoid to compressed, globose, c 3-6 mm in diameter, testa smooth. *Fl. & Fr.*: 12-6 (Noltie, 1994). *Tropical humid forests, usually primary or secondary forests.*





Figure 20. *Pothos chinensis* (Raf.) Merr., a) portion of flowering stem; b) mature sterile shoot; c) inflorescence.

**Chattogram:** Jungle Chunati, 30 xii 1989, *Khan, Huq & Alam* K. 8171 (BFRIH).

**East Bengal:** Bangladesh, Locality, Collection date & year unknown, *Griffith* 5946 (K).

**Rangamati:** Burkul, Collection date unknown, 1876, *J.L. Lister* 127 (CAL, K).

Northeastern India, Nepal, Bhutan, Myanmar, southwestern China, northern Thailand, Laos, Cambodia, Vietnam and Taiwan.

The people of Lakhimpur (India) take the leaves of this plant, after frying them in ghee, as a pain-killer (Caius, 1986).

***Pothos junghuhnii*** de Vriese in F.A.W. Miquel, Pl. Jungh.: 104 (1851). Govaerts & Frodin, World Checkl. Bibliog. Araceae: 428 (2002); *Pothos macrophyllus* de Vriese in F.A.W. Miquel, Pl. Jungh.: 104 (1851), *nom. illeg.*; *Pothos scandens* var. *javanicus* de Vriese in F.A.W. Miquel, Pl. Jungh.: 103 (1851); *Pothos roxburghii* Schott, Aroideae: 22 (1856), pro syn; *Pothos vrieseanus* Schott, Aroideae: 22 (1856); Hook. f., Fl. Brit. India 6: 552 (1893); *Pothos junghuhnianus* Schott, Prodr. Syst. Aroid.: 567 (1860), orth. var. Fig. 21 & Pl. LX.

Slender to moderately robust, root-climbing herbs. Leaves petiolate, bright to mid-green adaxially, pale abaxially; petiole 3.5-8.0 × 0.5-2.0 cm, broadly winged, oblong to obovate-oblong, base decurrent to clawed, apex truncate, rounded or weakly auriculate, leaf blade 3-13 × 1.5-6.0 cm, ovate to elliptic or oblong-lanceolate, base rounded to acute, apex attenuate-mucronate to acute or attenuate. Inflorescence solitary, arising from the distal leaf axils of fertile shoots; peduncle slender, 2.5-5.0 cm × 1.0-1.2 mm, erect, dark purple. Spathe 6-20 × 4-15 mm, ovate, flat to convex, base cordate, clasping the peduncle; apex slightly raised, acute to subacute with a small mucro, dull green to purple. Spadix stipitate, stipe slender, 2.5-3.5 × 1.0-1.5 mm, erect, straight, dark purple; fertile portion 6-20 × 3.5-10 mm, globose to ovate-ellipsoid or ovoid-clavate, cream to yellow. Flowers 0.6-1.2 mm in diameter, with 6 free tepals and 6 stamens. Infructescence with 1-8 berries. Fruit c 4-7 mm in diameter, ovoid or ellipsoid, ripening scarlet. Seeds c 3-6 mm in diameter, ellipsoid. *Fl. & Fr.*: 4-10. *Primary to disturbed secondary forest, often on limestone.*



Figure 21. *Pothos junghuhnii* de Vriese, a) portion of flowering stem; b-c) inflorescence.

The authors could not collect any specimen of this taxon. Wallich collected specimen of this species from Silhet (Sylhet) as noted by Hook. f. (1893, pp. 552).

Malesia.

**Pothos scandens** L., Sp. Pl.: 698 (1753); ed. 2 (1763) 1373-1374, 1675. Lour., Fl. Cochin. 532 (1790); Roxburgh, Fl. Ind. 1: 451 (1820); ed. 2, 1: 430 (1832); Schott, Schott & Endl., Melet. Bot.: 21 (1832); Endl., Gen. Pl. 3: 239 (1837); Kunth, Enum. Pl. 3: 65-66 (1841); Wight, Icon. Pl. Ind. Or. 3: 5, t. 776 (1844); Schott, Aroideae: 22 (1856-1857), t. 33; Gen. Aroid.: (1858) t. 95 & Prodr. Syst. Aroid.: 563 (1860); Engl. in DC, Monogr. Phanerogam. 2: 84-85 (1879); Hook. f., Fl. Brit. India 6: 551 (1893); Prain, Beng. Pl. 2: 1115 (1903-reprint 2004); Engler, in Engler Pflanzenr. 21 (IV. 23B): 26-27 (1905); Cooke, Fl. Pres. Bombay 2: 828-829 (1908); Haines, Bot. Bihar and Orissa: 857-858 (1924-reprint 1978); Ridley, Fl. Malay Peninsula: 127-128 (1925); Heinig, List Chittagong: 75 (1925); Blatter & McCann, J. Bombay Nat. Hist. Soc. 25: 31 (1931); Fischer in Gamble, Fl. Pres. Madras 1592 (1931), repr. ed. 3: 1110 (1967); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 101 (1953); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 111 (1956); Mitra, Fl. Pl. E. India 1: 72 (1958); Hu, Dansk Bot. Arkiv 23(4): 413-414 (1968); Nicolson in Saldanha & Nicolson, Fl. Hassan Dist.: 788 (1976); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 33 (1976); Balakrishnan, Fl. Jowai: 550-560 (1983); Deb, Fl. Tripura State 2: 402 (1983); Sharma *et al.*, Fl. Karnataka 298 (1984); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 25-26 (1987); Nair & Nayar, Fl. Courtallum 2: 394 (1987); Henry *et al.*, Fl. Tamil Nadu 3: 58 (1989); Vajravelu, Fl. Palghat Dist.: 535 (1990); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 12 (1989); Kothari & Moorthy, Fl. Raigad Dist. Maharashtra State: 418 (1993); Noltie, Fl. Bhutan 3 (1): 125 (1994); A. Hay, Blumea Supplement 8: 109 (1995); Chauhan *et al.* in Hajra, Contrib. Fl. Namdapha, Arunachal Pradesh: 339 (1996); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 404 (1998); Boyce, Blumea 45 (1): 180-186 (2000); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 430 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 72 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 6-7 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 260-261 (2012); *Batis hermaphrodita* Blanco, Fl. Filip. ed. 1, 791 (1837). *Pothos hermaphroditus* (Blanco) Merr., Sp.

Blancoan.: 90 (1918); *Pothos longifolius* Presl, Epimel. Bot. 242 (1849); Schott, Aroideae 22, t. 34 (1855); Prodr. Syst. Aroid. 563 (1860); Engler, Pflanzenr. 21 (IV. 23B): 23 (1905); *Pothos angustifolius* Presl, Epimel. Bot. 243 (1849); Schott, Aroideae 21, t. 31 (1853); Prodr. Syst. Aroid. 559 (1860); Engler, Pflanzenr. 21 (IV. 23B): 23 (1905); *Pothos microphyllus* Presl, Epimel. Bot. 243 (1849). Schott, Aroideae 23, t. 408 (1853); *Pothos scandens* L. var. *javanica* de Vriese, Pl. Junghuhn. 1: 103 (1851); *Pothos scandens* L. var. *zeylanica* de Vriese, Pl. Junghuhn. 1: 103 (1851); *Pothos scandens* L. var. *sumatrana* de Vriese, Pl. Junghuhn. 1: 103 (1851); *Pothos leptospadix* de Vriese, Pl. Junghuhn. 1: 105 (1851); *Pothos zollingerianus* Schott, Oesterr. Bot. Wochenbl. 5: 19 (1855); *Pothos scandens* L. var. *zollingerianus* (Schott) Engler, Pflanzenr. 21 (IV. 23B): 26 (1905); *Pothos horsfieldii* Miq., Fl. Ned. India 3: 178 (1856); *Pothos exiguiflorus* Schott, Aroideae 21, t. 41 (1856-1857); *Pothos vrieseanus* Schott, Aroideae 22, t. 26 (1853); Prodr. Syst. Aroid.: 565 (1860); Hook. f., Fl. Brit. India 6: 552 (1893-reprint 1954); Engler, Pflanzenr. 21 (IV. 23B): 24 (1905); *Pothos chapelieri* Schott, Aroideae 22, t. 35 (1856-1857); *Pothos cognatus* Schott, Aroideae 22, t. 42 (1856-1857); *Pothos scandens* L. var. *cognatus* (Schott) Engler in DC. Monogr. Phanerogam. 2: 84 (1879); *Pothos decipiens* Schott, Bonplandia 7: 165 (1859); Prodr. Syst. Aroid.: 562 (1860); *Pothos fallax* Schott, Prodr. Syst. Aroid.: 560 (1860); *Pothos scandens* L. forma *angustior* Engl., Bot. Tidsskr. 24: 272 (1902); *Pothos scandens* L. var. *helferianus* Engler, Pflanzenr. 21 (IV. 23B): 26 (1905). Fig. 22 & Pl. LXI.

Type: Herb. Hermann 4: 39, No. 329 [lecto BM; designated by Suresh *et al.* Taxon 32: 127 (1983)].

Bengali: *Sunat*, *Sundad*, *Batilata*, *Hatilata*

Epiphytic creeping liana; stem up to 13 m long, branches cylindrical, 2-10 mm in diameter, densely clothed with leaves. Leaves dense, petiolate; petiole 20-140 × 5-20 mm, broadly winged, obovate-oblong to linear-oblong, many-nerved; leaf blade 2-10 × 3-14 cm, ovate to elliptic or lanceolate, base rounded to acute, apex attenuate-mucronate, leathery, 3-nerved on each side. Inflorescence bent, solitary, small, axillary; peduncle slender, 3-10 × 0.5-2.0 mm, erect to spreading, green to purple-tinged, with 6-8 cataphylls at the base, cataphylls green, imbricate, ovate, small, upper ones 4 mm long.



Figure 22. *Pothos scandens* L., a) portion of flowering stem; b) inflorescence.

Spathe very small, cymbiform, margins variously inrolled, purple, 4-6 × 3-4 mm; base short or somewhat long-clawed. Spadix stipitate, subglobose or ellipsoid, 5-6 × 4-5 mm; stipe 4-5 mm long, erect in bud; fertile spadix cream in colour. Flowers c 1-2 mm in diameter, tepals 1.0 × 0.3 mm, oblong-cymbiform, yellow-green to dirty white. Ovary 1.6 × 0.2 mm, yellow-green to dirty white, stylar region truncate, stigma prominent, punctate. Stamens 1-4 × 0.5 mm, filaments strap-shaped, thecae elongate-globose, dehiscing by longitudinal slits. Fruit a berry, oblong-ovate, yellow or red, less than 10 mm long, 5-6 mm in diameter. Seeds c 3-6 mm in diameter, ellipsoid to compressed-globose. *Fl. & Fr.*: 1-12. *Trees or rocks in evergreen tropical to subtropical forests, occasionally hedges or scrubs.* 2n = 24 (Petersen, 1989).

**Barishal:** Barishal, 10 ii 1973, *Syed Zafar Sadeque* 4 (DUSH); Kashipur, Lakaotta, *Hosne Ara* HA. 2719 (DACB). **Bandarban:** Locality unknown, 03 v 1977, *A.M. Huq* 3349 (DACB). **Bogura:** Beltola-Hindupara, 12 iii 2001, *B.M. Rezia Khatun* RK. 2775 (DACB); Dhoshthika, Fakir para, 04 ii 2003, *Hosne Ara & Rezia Khatun* HA. 138 (DACB); 04 ii 2003, *Rezia Khatun & Hosne Ara* RK. 4061 (DACB); Mohastangarh, 05 ii 2003, *Hosne Ara & Rezia Khatun* HA. 139 (DACB); Mohastangarh near Borhanuddin Mazar, 05 ii 2003, *Rezia Khatun & Hosne Ara* RK. 4125 (DACB); Beltola, 06 ii 2003, *Hosne Ara & Rezia Khatun* HA. 141, 157 (DACB). **Chattogram:** Locality, Collection date & number unknown, *J.D. Hooker & Thomson* (K); Hazarikhil, 30 i 1962, *Amjed Ali Khan* 61 (DUSH); 01 ii 1962, *Md. Shamsur Rahman*, Locality, Collection date, year & number unknown (DUSH); Dhalikchara, 19 ii 1971, *A.M. Huq* 348 (DACB); FRI Campus (East Hill), 05 iii 1979, *Monir et al.* 627 (BFRIH); Chunnati forest range, Harbhang, 09 vi 1979, *Khan, Huq & Rahman* K. 5468 (DACB); Dhurong, 22 iv 1980, *Das & Alam* 3825 (BFRIH); *ibid*, 23 iv 1980, *Das & Alam* 3879 (BFRIH); Fatiqchari, 20 i 1989, *Huq, Rahman & Mahfuz* H. 8989 (DACB); Jungle Chunnati, 30 xii 1989, *Khan, Huq & Alam* K. 8171 (DACB); Banskhal, Sadhanpur, 27 v 1996, *Rahman et al.* 213 (HCU); Baniarchara, 28 iii 1998, *Rahman, Wilcock and others* 2608 (HCU); Dhopachari, 16 ix 1998, *Rahman's collector's: Huda & Dey et al.* 3384B (HCU); Dhopachari, Chamachari, 16 ix 1998, *Rahman et al.* 3384a & 3384b (HCU); Laliarhat, 05 v 2002, *Yusuf* 1503 (BCSIRH); Chunnati forest area, 26 ix 2005, *Hosne Ara* HA. 2224 (DACB); Fatiqchari, 27 ix 2005, *Hosne Ara* HA. 2306 (DACB); Sitakundo, 01 x 2005, *Hosne Ara*

HA. 2589 (DACB); Mirsarai, 01 x 2005, *Hosne Ara* HA. 2606 (DACB); Isamoti, Ranirhat, 30 x 2016, *Tajul, Owahid & Kawsar* TOK. 1722 (DACB); Andhermanik, Rawjan, 4 iv 2017, *Siraj Mia* SM. 556 (DACB); Hajarikhil, Fatikchhari, 8 xi 2017, *Moniruzzaman, Al Amin & Kawsar* MAK. 6324 (DACB). **Cumilla:** Cumilla, Aug. 1952, *Md. Arshad Ali*, Collection number unknown (DUSH); Sultanpur, 12 ii 1976, *Huq & Rahman* H. 2236 (DACB). **Cox's Bazar:** Jilamja, 12 ix 1944, *James Sinclair* 3742 (CAL); Ramu, Dhalikchhari, 19 ii 1971, *Huq* 348 (DACB); Teknaf, Nyttong Hill, 29 iii 1978, *Gani* 2098 (BFRIH); Ukhia, Upper Rezu reserve forest, 12 xii 1984, *Khan, Huq & Mia* K. 6830 (DACB); Goalmara beat, 09 x 1989, *Khan & Huq* K. 8145 (DACB); Teknaf range, Mathabhanga beat, 06 x 1991, *Khan, Huq, Mia & Rahman* K. 8603 (DACB); Baniarchara, 28 iii 1998, *Rahman & Wilcock et al.* 2608 (HCU); Chakaria, Katakhal, 13 xii 1998, *Jahangir* 8114 (BFRIH); Baniarchara, 10 ix 1999, *Boyce, Toha & Rahman* 5878 (HCU & K); Dulahazra Safari Park, 16 ii 2004, *Sarder Nasir Uddin* N. 2184 (DACB); Himchhari, 30 ix 2005, *Hosne Ara* HA. 2530 (DACB); Bangabandhu Safari Park, 8 xii 2016, *Kabir, Jahid & Mehedi* NK. 206 (DACB); Fasiakhali range office, 20 iv 2004, *Sarder Nasir Uddin* N. 2373 (DACB). **Dhaka:** Shahbag, February 1938, *N.K. Chatterji* (DUSH); 15 iv 1940, *Atul*, Collection number unknown (DUSH); Ramna, 02 viii 1940, *A.K. Acharja*, Collection number unknown (DUSH); 28 iv 1949, *Atul*, Collection number unknown (DUSH); Ramna area, 22 viii 1950, *G. Hossain*, Collection number unknown (DUSH); Shahbag, 22 viii 1950, *Kayesuddin Ahmed*, Collection number unknown (DUSH); 23 viii 1950, *Kayesuddin Ahmed*, Collection number unknown (DUSH); Shahbag road, 23 viii 1950, *A.K.M. Nurul Islam*, Collection number unknown (DUSH); Ramna area, 29 viii 1950, *G. Hossain*, Collection number unknown (DUSH); Shahbag, 02 viii 1951, *Md. Waseque*, Collection number unknown (DUSH); Dhaka, July 1952, *P. Sensarma*, Collection number unknown (DUSH); July 1952, *Md. Akhtar Hossain*, Collection number unknown (DUSH); Oct. 1952, *M.A. Zabbar*, Collection number unknown (DUSH); Chandra forest, 16 ix 1960, *S.M. Zahurul Huq* 58 (DUSH); Dhaka University Botanical garden, 01 xii 1965, *Zeyauddin* 49 (DUSH); 06 ii 1968, *Mozaher* 26 (DUSH); Mirpur, Road No. 12, 04 iv 1969, *Moiz* 11 (DUSH); 04 iv 1969, *M.H. Rahman* 114 (DUSH); Mohammadpur, 12 vii 1969, *Noorjahan*, Collection number unknown (DUSH); Savar, 05 iv 1970, *Nazim* 80, 81 (DUSH); 19 iv 1970, *M.A. Rahman* 85 (DUSH); D.U. Bot. garden, 30 vi 1970, *A.M. Huq* 75 (DACB); 02 xii 1970,



*Momtaz* 200 (DUSH); Mirpur, 02 xi 1977, *Huq & Rahman* H. 3548 (DACB); Mirpur Botanical garden, 15 xii 1979, *Huq, Mia & Momtaz* M. 211 (DACB); National Botanical Garden, Mirpur, 11 xii 2013, *Emdadul Haque Khokan* EHK. 15 (DACB). **East Bengal:** Bangladesh, Locality, Collection date & year unknown, *Griffith* 5945 (BM, K). **Habiganj:** Kalenga beat, Kalenga, 16 v 2005, *Hosne Ara* HA. 1538 (DACB); Satchari, 17 v 2005, *Hosne Ara* HA. 1586 (DACB); Satchari forest, 07 vii 2005, *Hosne Ara* HA. 1867 (DACB). **Hill Tracts District:** Locality unknown, July 1885, *Dr. King's Collector* 6 (CAL); Locality unknown, January 1887, *Dr. King's Collector* 216 (CAL, K); Locality & Collection number unknown, 1890, *J.J. Wood* (CAL); Locality unknown, Feb. 1940, *Dr. S.K. Mukerjee* 143 (CAL). **Khagrachari:** Halfchari, 17 ix 2006, *Rafiqul Islam* 388 (DUSH). **Cumilla:** Cumilla, Aug. 1952, *Arshad Ali*, Collection number unknown (DUSH). **Kurigram:** Hingon, 05 v 1988, *Mia, Mahbuba, Rezia, Mahfuz & Bushra* M. 1763 (DACB); Rajarhat, 31 x 2007, *Bushra, Habib & Mofiz* B. 429 (DACB); Mogolkata, Andherijhar, 10 x 2014, *Emdadul Haque Khokan* EHK. 166 (DACB). **Moulvibazar:** Sreemangal, 22 iv 1979, *Sh-202* (DACB); Maulvibazar to Gobindagati, 06 x 1979, *Khan & Mia* K. 5644 (DACB); Sreemongal, Lawachara reserve forest, 15 v 2005, *Hosne Ara* HA. 1497 (DACB); Adampur beat, Kawargola forest, 18 v 2005, *Hosne Ara* HA. 1618 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1705 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1753 (DACB); Lawachara, Jenkichara, Sreemangal, 03 ii 2009, *Bushra, Momtaz & Nasir* B. 1351 (DACB); Lawachara National park, 12 v 2009, *Sarder Nasir Uddin* N. 3669 (DACB); Adampur Forest beat, Kamalganj, 20 ix 2011, *Sarder Nasir Uddin* N. 4702 (1), 4702(2), 4702 (3) (DACB). **Netrakona:** Bijoypur, Durgapur thana, 16 vi 2004, *Hosne Ara* HA. 724 (DACB). **Noakhali:** Momarijpur, 18 xi 1981, *Huq, Rahman, Halim & Begum* H. 5277 (DACB); Sadar, Ram Senker Gopai, 13 i 1992, *Akram Hossain* 235 (BFRIH); Tonirhat, 01 vii 1998, *Mia et al.* M. 3947 (DACB). **Pachagarh:** Pachagarh-Joidherhat, 04 vi 1989, *Huq, Rahman, Mahbuba & Mahfuz* H. 9212 (DACB); Dhamur near river side, 24 v 1998, *SK. Harun, Zashim, Nasir* SHR. 235 (DACB); Tonirhat, 01 vii 1998, *Mia et al.* M. 3947 (DACB). **Rangamati:** Rangamati town, 06 vi 1969, *M.M. Rahman* 84 (DUSH); Burkul, Collection date unknown, 1876, *J.L. Lister* 127 (CAL); Kaptai, Sitapahar, 27 vi 1998, *Rahman, Toha & others* 3234 (HCU); Kaptai, Sitapahar, 03 ix 1999, *Boyce, Toha & Rahman* 5546 (HCU & K); 2005, *Snigdha Roy* R. 36 (DACB). **Sylhet:** Sylhet, October

1935, *C.S. Purkayastha* 12443 (ASSAM); Sylhet station, 28 v 1868, *C.B. Clarke* 7180 (K); Near forest School, 13 iii 1956, *M.S. Khan* 163 (DUSH); Sylhet, 19 i 1963, *Pranash Ch. Dab* 73 (DUSH); Jaypur, 16 xii 1966, *P. Bhattacharjee* 8 (DUSH); Chatal, 12 vi 1968, *Sudhangshu* 203 (DUSH); Shalitkar, 14 x 1973, *Khan, Huq & Hassan* K. 3375 (DACB); Chattak, 05 i 1978, *Huq & Rahman* H. 3635 (DACB); Vonobir, 17 i 1979, *Alam & Womesley* 3359 (BFRIH); *ibid*, *Monir & Others* 627 (BFRIH); Salutikor, 01 v 1981, *Mia, Huq & Rahman* M. 508 (DACB); Sarighat-Jainta, 03 x 1983, *Huq, Rahman, Mia & Mahbuba* H. 6343 (DACB); Salutikar Airport area, 08 iv 1988, *Mahfuz, Huq, Momtaz & Hosne Ara* MZ. 164 (DACB); Tulabagan, Panerchara, 15 x 1998, *Rahman et al.* 3838 (HCU); Boraikandi, 10 iii 2009, *B.M. Rezia Khatun* RK. 5876 (DACB); Goin hat, 08 ii 2008, *Bushra et al.* B. 777 (DACB).

Madagascar to India, northern Thailand, Sri Lanka, Myanmar, China, Indonesia, Peninsular Malaysia, Borneo and the Philippines.

The root is useful in curing abscess, also applied on the body after bruising and frying in oil. Infusion of leaves is a helpful medicine for curing convulsions and epilepsy. Stem, when inhaled after processing like tobacco, cures asthma (*Yusuf et al.*, 1994).

The people of Yunnan province in China use this plant as a medicine for traumatic injury and rheumatic arthralgia (*Heng*, 1979).

**Remusatia** Schott in Schott & Endlicher,  
Melet. Bot. 18 (1832).

**Type species:** *R. vivipara* (Roxburgh) Schott (*Arum viviparum* Roxburgh, “*viviparium*”).

Small to medium-sized, seasonally dormant, lithophytic or epiphytic herbs; stem a cormous tuber, tuber subglobose, bulbil bearing stolons arising from the apex of the corm, stolons erect, pendulous, or creeping, simple or densely branched, bulbils scaly, with hooked filiform bristles. Leaves 1-2 together; petiole robust or slender, petiolar sheath relatively short; leaf blade peltate, cordate-lanceolate to cordate-ovate, acuminate, usually thinly membranous, venation reticulate. Inflorescence solitary, appearing with or without leaf; peduncle shorter than the petiole. Spathe strongly constricted between the

tube and the limb; sometimes with a secondary constriction above the spadix; tube convolute, persistent, ovoid, closed, green, enclosing female zone and sterile zone of the spadix; limb longer than the tube, broad or narrow, yellowish to cream, erect, spreading and convolute, deciduous or marcescent. Spadix much shorter than the spathe, sessile; pistillate (female) flower zone subcylindrical, about half as long as the spathe tube; separated from the staminate (male) flower zone by much narrower zone of sterile male flowers, staminate (male) flower zone ellipsoid or subclavate, obtuse. Flowers unisexual, perigone absent. Ovary subglobose, 1-locular, many sub-orthotropous ovules on 2-4 parietal placentae, stylar region lacking, stigma sessile, discoid or slightly 3-4 lobed. Male flowers 2-3 androus, anthers attached basally to a short, common filament, locules 4-6, each opening by a single apical, circular pore. Fruit an ovoid to globose berry, many-seeded. Seeds ellipsoid to subglobose, testa verruculose to irregularly costate.

About 4 species are distributed throughout tropical Africa, tropical Asia, Malay Archipelago and Australasia (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 2 species.

#### KEY TO THE SPECIES

- |  |                 |
|--|-----------------|
| 1. Flowering before leaves, bulbiferous shoots few, stout, erect,<br>simple, placenta parietal | <b>vivipara</b> |
| - Flowering with leaves, bulbiferous shoots several, branched,<br>placenta basal               | <b>pumila</b>   |

**Remusatia pumila** (D. Don) Li & Hay, Acta Bot. Yunnan., Suppl. 5: 28 (1992). Noltie, Fl. Bhutan 3(1): 134-136 (1994); Hajra & Verma, Fl. Sikim 1: 193 (1996); Heng & Boyce in Heng *et al.*, Fl. China 23: 72 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 265-266 (2012); *Caladium pumilum* D. Don, Prodr. Fl. Nepal: 21 (1825); *Colocasia pumila* (D. Don) Kunth, Enum. Pl. 3: 40 (1841); *Gonatanthus pumilus* (D. Don) Engler & Krause, Krause in Engler, Pflanzenr. 71 (IV-23E): 19-21, t. 5iA-M (1920); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 110 (1956); Mitra, Fl. Pl. E. India 1: 78 (1958); Hara, Fl. E. Himalaya: 397 (1966); Hu, Dansk Bot. Arkiv 23 (4): 427 (1968); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 25 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 91 (1978); Chowdhery &

Wadhwa, Fl. Himachal Pradesh 3: 729 (1984); Naithani, Fl. Chamoli 2: 671-672 (1985); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 56-57 (2007); Boyce *et al.*, Fl. Thailand 11 (2): 265-266 (2012); *G. sermentosus* Klotzsch. & Otto in Link & Klotzsch., Icon. Pl. Rar. Hort. Roy. Bot. Berol. 1: 33, t. 14 (1841); Hook. f., Fl. Brit. India 6: 522 (1893-reprint 1954); Balakrishnan, Fl. Jowai 2: 565 (1983); *Caladium sarmentosum* Kunth, Enum. Pl. 3: 36 (1841); *Remusatia garrettii* Gagnep., Notul. Syst. (Paris) 9: 138 (1941). Fig. 23.

Type: Himalaya: Sikkim (Hook. f. - Herb. Kew).

Bengali: *Bahari Kachu*

English: Shrew-Khlaw

Terrestrial or epiphytic tuberous, seasonally dormant herb; stem a globose tuber, 0.5-3.0 cm in diameter, pale brown, cataphyll usually 1, slender, acute, 3-13 cm long; bulbiferous shoots several, branched, more profusely in the terminal part, 20-40 cm long, c 2 mm in diameter, reddish-brown, bearing few to clusters of bulbils at the nodes, bulbils c 1 × 1 mm, its scales ending in 3-12 mm long filiform processes. Leaves 1-4 together, peltate, petiolate; petiole 9-50 cm long, sheathing for lower one-fourth; leaf blade ovate or oblong-ovate, acute or slightly acuminate, base shallowly cordate, 6-25 × 4-15 cm, sinus 0.5-4.5 cm wide, dull green on both surfaces, areas between primary veins often purple below and/or above. Inflorescence appearing when plants in leaf, usually one per tuber; peduncle suberect, 3-10 cm long. Spathe tube globose-ovoid, 0.8-2.0 cm long, 5-10 mm in diameter, elongating to 2-4 cm in fruit, green; limb in two parts, separated by a constriction, lower 1.2-2.5 cm long, opening to reveal staminate (male) flower zone of spadix, upper held at an angle, narrowly lanceolate, finely acuminate, 11.5-21.0 × 0.6-1.5 cm, membranous, green when young, yellow afterwards. Spadix sessile, much shorter than the spathe; pistillate (female) flower zone 5.5-10.0 × 3.5-4.5 mm, with a whorl of sterile ovaries at the base and sometimes also at the apex; stipe 5-8 mm long, purple; sterile interstice slender, 4-5 mm, tapering upwards, covered with elongated synandroses, yellow; staminate (male) flower zone 9.0-12.5 × 4.5-5.0 mm, purplish. Ovary 1.0-1.5 mm in diameter, globose-ellipsoid, green, ovules many, placentation basal, stigma disciform. Synandria 0.6 × 1.0 mm, violet to purplish white, filaments 0.7 mm long. Fruit a berry, yellow. Seeds on long funicles, ovoid, testa rough, with a fleshy yellow coat. *Fl. & Fr.*: 5-8. *Shady damp mossy rocks and on trees in the forest. 2n = 28* (Petersen, 1989).

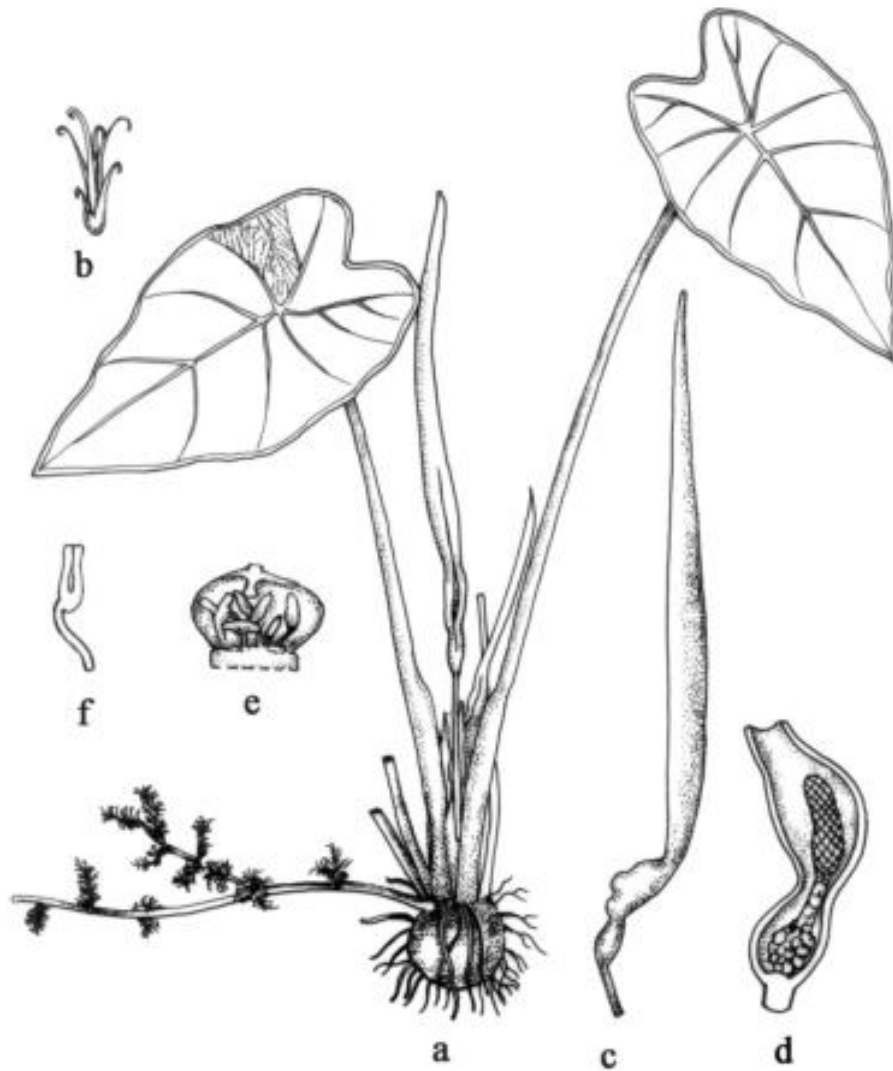


Figure 23. *Remusatia pumila* (D. Don) Li Hay, a) habit sketch of a flowering plant; b) bulbil; c) inflorescence; d) spathe enclosing the spadix; e) gynoecium, longitudinal section; f) ovule.

**Cox's Bazar:** Kelatuli forest, 10 v 1945, *J. Sinclair* (Collection number unknown).

Sinclair (1956) reported this species from Cox's Bazar district in the Bull. Botanical Society of Bengal, Vol. 9 No. 2. But we have not seen any specimen in BM. K. CAL. and in the herbaria of Bangladesh, also we could not collect any specimen of this species from any locality of Bangladesh.

Northeastern India (Sikkim and Khasia Hills), northern Thailand, Nepal, Bhutan and southwestern China.

**Remusatia vivipara** (Roxb.) Schott, Schott & Endlicher, Melet. Bot.: 18 (1832). Kunth, Enum. Pl. 3: 36 (1841); Schott, Syn. Aroid.: 43 (1856); Gen. Aroid.: t. 36 (1858); Prodr. Syst. Aroid.: 137 (1860); Hook. f., Fl. Brit. India 6: 521-522 (1893-reprint 1954); Prain, Beng. Pl. 2: 1113 (1903-reprint 2004); Cooke, Fl. Pres. Bombay 2: 828 (1908); Krause in Engler, Pflanzenr. 71 (IV. 23E): 16-18 (1920); Haines, Bot. Bihar and Orissa: 865-866 (1924-reprint 1978); Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 30 (1931); Fischer in Gamble, Fl. Pres. Madras: 1583 (1931), repr. ed. 3: 1104 (1967); Mitra, Fl. Pl. E. India 1: 77 (1958); Hara, Fl. E. Himalaya: 398 (1966); Hu, Dansk Bot. Arkiv 23(4): 427-428 (1968); Nicolson in Saldanha and Nicolson, Fl. Hassan Dist. 788-789 (1976); Rao and Verma, Bull. Bot. Surv. India 18 (1-4): 24 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 92 (1978); Deb, Fl. Tripura State 2: 403 (1983); Balakrishnan, Fl. Jowai 2: 565-566 (1983); Sharma *et al.*, Fl. Karnataka: 298 (1984); Mukherjee, Fl. Pachmarhi & Bori Reserves: 313 (1984); Chowdhery & Wadhwa, Fl. Himachal Pradesh 3: 729-730 (1984); Mayo, Fl. Trop. E. Africa: 40-42 (1985); Naithani, Fl. Chamoli 2: 672 (1985); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 50 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 12 (1989); Vajravelu, Fl. Palghat Dist.: 535-536 (1990); Matthew, Excursion Fl. Cent. Tamilnadu, Ind. 541 (1991); Kothari & Moorthy, Fl. Raigad Dist. Maharashtra State: 421 (1993); Parmar in Shetty & Singh, Fl. Rajasthan 3: 868 (1993); Noltie, Fl. Bhutan 3(1): 134-135 (1994); A. Hay, Blumea Supplement 8: 111 (1995); Deshpande *et al.*, Fl. Mahabaleshwar Adjoin., Maharashtra: 617 (1995); Pullaiah, Fl. Andhra Pradesh 3: 1026-1027 (1997); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 404 (1998); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 73

(2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 71 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 266-267 (2012); *Arum viviparum* Roxb., Hort. Beng.: 65 (1814), as '*viviparium*'; Fl. Ind. 3: 496 (1832); Wight, Icon. Pl. Ind. Or. 3: 6, t. 798 (1844); *Caladium viviparum* (Roxb.) Nees in Schott & Endl., Melet. Bot.: 18 (1832); *Colocasia vivipara* (Roxb.) Thw., Enum. Pl. Zeyl. 336 (1864); *Remusatia formosana* Hayata, Icon. Pl. Formosan. 8: 136 (1919). Pl. LXII.

Type: India, Kerala; illustration in Rheede, Hort. Malab. 12, t. 9 (1693).

Bengali: *Bahari Kachu*

English: Hitchhiker Elephant Ear

Epiphytic, lithophytic, seasonally dormant herb; stem a depressed globose tuber, 2.5-5.0 cm in diameter, 1.5-4.0 cm thick, pink-red outside, pinkish-white inside; stolons stout, erect, simple or little-branched, 20-40 × 5 mm; bulbiferous shoots few, stout, erect, simple, appearing in the vegetative phase but persisting in a more or less decayed state till the next flowering phase, 10-30 cm × 5-7 mm, bulbils clustered, 4-5 mm long. Leaves few together, petiolate; petioles up to 30 cm long, very shortly sheathing at the base; leaf blade oblong-ovate to ovate-cordate, peltate, 12-42 × 8-20 cm, apex acute, base shallowly cordate, nerves 3-4 on either side of the midrib and 2-3 from the basal costae. Inflorescence appearing when plants leafless, usually on per tuber but, in multi-tuber plants, many inflorescences developing simultaneously; peduncle 6-12 cm long, 5-8 mm in diameter, surrounded 4 or more cataphylls, cataphylls exceeding the peduncle. Spathe about 17 cm long; tube ovoid, green, 3-5 cm long; limb at first erect, later reflexed and ultimately deciduous, yellow, broadly obovate, abruptly apiculate, 5.5-13.0 × 9.5 cm; the tube and the limb separated by a constriction. Spadix slightly exceeding the spathe tube, sessile, 5-7 cm long; pistillate (female) and staminate (male) flower zones separated by a 1.5-2.0 cm long neuter zone; pistillate (female) flower zone subcylindrical, green, 2 cm long, 0.8 cm in diameter, with 3-4 whorls of staminodes at apex and 1-2 whorls at base; staminate (male) flower zone clavate, 1.0-1.5 cm long, 0.5 cm in diameter. Ovary globose-ellipsoid, green, unilocular with numerous, orthotropous ovules on 3-4 parietal placentae, stigma sessile, discoid. Staminate flowers represented by short-stalked synandria of 4-6 anthers, cream coloured, dehiscing by apical pores. Fruiting spathe

ellipsoid, splitting to reveal globose berries ripening red. *Fl. & Fr.*: 3-5. *Subtropical forests and in moist clefts of trees or rocks (Nicolson, 1987).*

**Moulvibazar:** Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1770 (DACB); *ibid*, 07 ix 2005, *Hosne Ara* HA. 2214 (DACB). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 07 ix 2005, *Hosne Ara* HA. 2214 (DACB); (Cultivated), 06 x 2005, *Hosne Ara* HA. 2623 (DACB) [Originally Collected from Kawargola forest under Moulvibazar district].

Africa, Madagascar, India, northern Thailand, Sri Lanka, Nepal, southern China and Taiwan.

The corms of this plant are extremely poisonous.

Corms are used externally for the treatment of breast mastitis, traumatic injury, abscesses and swellings (Heng, 1979).

### **Rhaphidophora** Hasskarl in Flora 25 (2) Beibl. 1: 11 (1842).

**Type species:** *R. lacera* Hasskarl, *nom. illeg.*  
(*Pothos pertusa* Roxburgh, *P. pertusa* (Roxburgh) Schott).

Medium-sized to very large, slender to robust, evergreen, usually climbing herbs, more rarely repent, climbing branches often thick, producing anchor and feeder roots; stem thick, root-climbing, less often prostrate, compressed terete to rectangular in cross-section, often producing long flagelliform shoots with reduced cataphylls and abundant dimorphic clasping and feeding roots. Leaves many, distichous, often forming tufts at the tips of active shoots; petiole with pulvinus at the junction with the blade, geniculate apically, petiolar sheath reaching to the pulvinus in many species, somewhat less often reaching only to half-way along petiole, marcescent to deciduous, sometimes decomposing to conspicuous net-fibrous mass; leaf blade coriaceous, lanceolate or oblong, more or less oblique, base decurrent to unequal or cordate, apex acute to acuminate, entire to regularly pinnatifid or perforated, primary venation pinnate, secondary venation striate to reticulate and tertiary venation where visible reticulate. Inflorescence solitary to several together; peduncle relatively short. Spathe boat-shaped,



deciduous to marcescent, rarely persistent, coriaceous, dirty-white, greenish, creamy or yellow. Spadix sessile to stipitate, subglobose to clavate-cylindrical, often extremely thick, shorter than the spathe. Flowers bisexual, lacking perianth. Gynoecium obconic-prismatic to oblong, truncate, ovary 1-to partially 2-locular, ovules few to many, anatropous, funicle long, placentae parietal to basal, sometimes axile, stylar region well-developed, equal to broader than the ovary, usually truncate apically, rarely elongate-conical, stigma broadly elliptic or oblong and then transverse, or longitudinal. Stamens 4-6, free, filaments oblong-linear, flat, anthers much shorter than the filaments, dehiscing by longitudinal slit. Fruit a berry, usually many-seeded. Seeds oblong, testa thin and smooth.

About 120 species are distributed throughout tropical Africa, tropical southeast Asia, Malay Archipelago, Melanesia and Australasia (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 9 species and 1 variety.

#### KEY TO THE SPECIES

- |   |                  |
|---|------------------|
| 1. Leaves pinnatifid  | <b>2</b>         |
| - Leaves entire   | <b>5</b>         |
| 2. Pinnae 2-5 per side  | <b>glauca</b>    |
| - Pinnae 6 or more per side   | <b>3</b>         |
| 3. Pinnae up to 10 (-12) per side   | <b>grandis</b>   |
| - Pinnae more than 12 per side  | <b>4</b>         |
| 4. Spathe deep purple on both sides   | <b>affinis</b>   |
| - Spathe creamy yellow on both sides  | <b>decursiva</b> |
| 5. Leaves perforate   | <b>pertusa</b>   |
| - Leaves not perforate  | <b>6</b>         |
| 6. Petiolar sheath formed into terminal legule and extended above the lamina, falling quickly and forming horseshoe shaped scar at petiole apex | <b>schotti</b>   |
| - Petiole and petiolar sheath not as above  | <b>7</b>         |
| 7. Spathe long beaked, stigmas pulvinate  | <b>8</b>         |
| - Spathe not long beaked, stigmas raised  | <b>peepla</b>    |

8. Leaf blade oblong-elliptic, cuspidate, membranous, one side  
shallowly cordate at base **hookeri**
- Leaf blade lanceolate, abruptly acuminate, coriaceous, both side  
rounded to cuneate at base **calophyllum**

**Rhaphidophora affinis** Schott, Bonplandia 5: 45 (1857); Prodr. Syst. Aroid.: 385 (1860). Hook. f., Fl. Brit. India 6: 548 (1893-reprint 1954); Engler & Krause in Engler, Pflanzenr. 37 (IV. 23Ba): 53 (1908); Mitra, Fl. Pl. E. India 1: 74 (1958); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 32 (1976); Balakrishnan, Fl. Jowai 2: 561 (1983); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 13 (1989); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 74 (2007). Pl. LXIII.

Type: Khasia, India, J.D. Hooker & Thomson (K)

An evergreen climbing herb, 7-10 m long; stem thick, rooting. Leaves many; petioles with pulvinus at the junction with the leaf blade, and geniculate at the tip; leaf blade 30-60 cm long, coriaceous, oblong, base broadly cordate, pinnatisect or pinnate, bright green on both surfaces, segments many (more than 12 per side), pairs falcately ensiform, acuminate, narrowed at the base, unicostate with very slender lateral nerves. Inflorescence solitary to several together; peduncle c 12 cm long. Spathe leathery, 12-15 cm long, 8-10 cm in diameter, cymbiform, cuspidate, deep purple on both sides. Spadix sessile, subequalling the spathe. Flowers bisexual. Ovary hexagonal-cylindrical, apex domed, 1-loculed, ovules many, placentation parietal, stigma raised on the conical top of the ovary. Stamens 4, filaments flat, locules 2, free at the apex, attached basally, dehiscing laterally. Seeds many, small and oblong, testa thin and smooth. *Fl. & Fr.*: 7-10. *Climbing hemiepiphytes, in rain forests.*

**East Bengal:** Bangladesh, Locality, Collection date & year unknown, *Griffith* 5952 (K).

Khasia Hills in India.

**Rhaphidophora calophyllum** Schott, Bonplandia 5: 45 (1857); Prodr. Syst. Aroid.: 380 (1860). Furtado, Gard. Bull. Straits Settle. 8: 150 (1935); Rao & Verma, Bull. Bot. Surv.

India 18 (1-4): 31 (1976); Balakrishnan, Fl. Jowai 2: 560 (1983); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 13 (1989); Hajra & Verma, Fl. Sikkim 1: 193 (1996); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 75-76 (2007); Rhapsidophora lancifolia Schott, Bonplandia 5: 45 (1857) *et in* Prodr. Syst. Aroid.: 380 (1860); Hook. f., Fl. Brit. India 6: 545 (1893-reprint 1954); Engler & Krause in Engler, Pflanzenr. 37 (IV. 23Ba): 26-27 (1908); Mitra, Fl. Pl. E. India 1: 74 (1958); Deb, Fl. Tripura State 2: 404-405 (1983). Pl. LXIV.

Type: Sikkim, India, J.D. Hooker (K).

#### KEY TO THE VARIETIES

- |   |                    |
|---|--------------------|
| 1. Outside of the spathe orange and inside of the spathe pale or dark red         | <b>calophyllum</b> |
| - Outside of the spathe dark violet and inside of the spathe light creamy pinkish | <b>violaceus</b>   |

var. **calophyllum**

Bengali: *Ban Kachu*

A perennial, sub-parasitic climber, rooting on trees; stem 6-8 mm thick. Leaves petiolate; petiole slender, 8.5-20.0 cm long, channelled up to the base; leaf blade entire, 15-25 × 4-8 cm with 1-2 cm long acumen, herbaceous or sub-coriaceous, falcately lanceolate or lanceolate, abruptly acuminate, coraceous, both side rounded to cuneate at base, brownish-green or brownish-yellow on drying, nerves with anastomosing nervules and usually all similar, rarely 3-5 primary nerves are more prominent towards the base. Inflorescence solitary; peduncle 3-5 cm long, round, smooth, elongating to 10 cm in fruits. Spathe thickly coriaceous, ovate, orange outside, pale or dark-red inside, 8-11 × 3.5-6.0 cm, long-beaked. Spadix narrower, 5-6 cm long, elongating to 10 cm in fruits. Flowers bisexual. Ovary smooth, creamy, 1-loculed, ovules many, anatropous, placentation parietal, stigma pulvinate on a very short conical style. Stamens 4, anthers linear, filaments flat, locules 2, free at the apex, dehiscent by longitudinal slit. Fruit a berry, many-seeded. Seed small and oblong, testa thin and smooth. *Fl. & Fr.*: 8-6. *Subtropical and tropical rain forests*.  $2n = 56$  (Petersen, 1989).

**East Bengal:** Bangladesh, Locality, Collection date & year unknown, *Griffith* 5958, 5960 (K, CAL). **Sherpur:** Rangtia forest, 17 v 2007, *Ershad Tutul* 43 (DUSH).

India (Sikkim Himalayas and Khasia Hills) and Myanmar.

**Rhaphidophora calophyllum** Schott var. **violaceus** H. Ara & M.A. Hassan, Bangladesh J. Plant Taxon. 26(1): 20-23 (2019). Fig. 24 & Pl. LXV.

*Holotype:* Bangladesh, Moulvibazar district, Madhabkundo reserve forest, 20 v 2014, Sarder Nasir Uddin N 5242 (DACB).

Bengali: *Ban Kachu*

A perennial evergreen climber, rooting on trees; stem 5-6 mm thick. Leaves many, petiolate; petiole 3.5-6.0 cm long, channelled up to the base; leaf blade 11-23 × 3.5-5.0 cm with 1-2 cm long acumens, coriaceous, falcately lanceolate or lanceolate, abruptly acuminate, both sides rounded or cuneate at base, brownish-green on drying, nerves with anastomosing nervules and usually all similar, rarely 3-5 primary nerves more prominent towards the base. Inflorescence solitary; peduncle short, 1.5 cm long, round, smooth, light greenish. Spathe thickly coriaceous, ovate, dark violet outside, light creamy pinkish inside, 5.5 × 2.5 cm, long-beaked, tip of the beak light greenish. Spadix shorter than spathe, narrower, 3.5-4.0 cm long, light yellowish. Flowers bisexual. Ovary smooth, creamy, c 3.5 mm long, c 1.8 mm in diameter, unilocular, ovules many, anatropous, placentation parietal, stigma pulvinate on a very short conical style. Stamens 4, free, anthers linear, much shorter than filament, filament flat, free at the apex, dehiscent by longitudinal slit. Fruit not seen. *Fl. & Fr.*: 4-9. *Subtropical and tropical rain forests.*

**Moulvibazar:** Adampur forest beat, Kamalganj, 19 v 2014, *Sarder Nasir Uddin* N. 5172 (DACB); Madhabkundo reserve forest, 20 v 2014, *Sarder Nasir Uddin* N. 5242 (DACB).

Northeastern part of Bangladesh, Moulvibazar district (within greater Sylhet).

The major morphological differences between two varieties of *Rhaphidophora* Hasskarl. are outlined in Table 6.

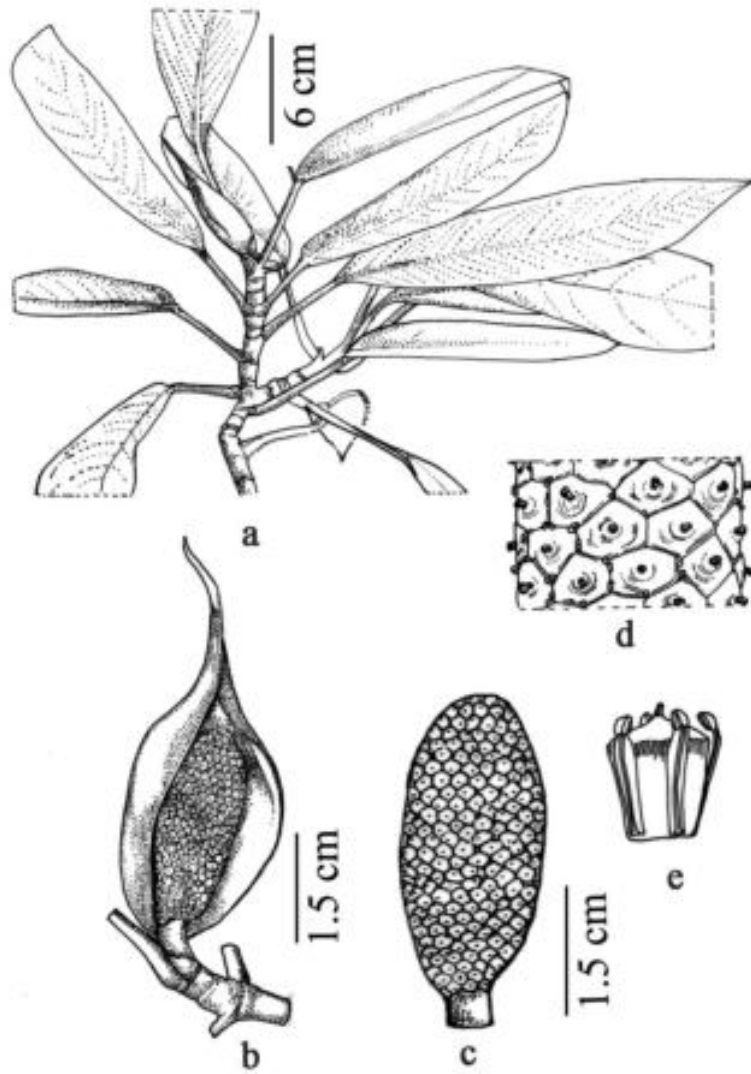


Figure 24. *Rhapsidophora calophyllum* Schott var. *violaceus* H. Ara & M.A. Hassan, a) portion of flowering stem; b) inflorescence; c) spadix; d) detail of spadix; e) flower.

**Table 6. Morphological comparison of *Rhaphidophora calophyllum* Schott var. *violaceus* H. Ara & M.A. Hassan with *Rhaphidophora calophyllum* Schott var. *calophyllum*.**

Characters	<i>Rhaphidophora calophyllum</i> Schott var. <i>violaceus</i> H. Ara & M.A. Hassan	<i>Rhaphidophora calophyllum</i> Schott var. <i>calophyllum</i>
Petiole	Short, 3.5-6.0 cm	Long, 8.5-20.0 cm
Peduncle	Short, up to 1.5 cm	Long, 3-5 cm
Spathe limb	Short, up to 5.5 cm	Long, 8-11 cm
Spathe colour	Dark violet outside and creamy pinkish inside	Orange outside and pale or dark red inside

***Rhaphidophora decursiva*** (Roxb.) Schott in Bonplandia 5: 45 (1857); Prodr. Syst. Aroid.: 385 (1860). Hook. f. in Curtis, Bot. Mag. 99: t. 7282 (1893); Fl. Brit. India 6: 547-548 (1893-reprint 1954); Engler & Krause in Engler, Pflanzenr. 37 (IV-23Ba): 52 (1908); Haines, Bot. Bihar & Orissa: 858-859 (1924-reprint 1978); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 110 (1956); Mitra, Fl. Pl. E. India 1: 74 (1958); Spring, Fl. Sikim Himal., f. 187 (1963); Hara, Fl. E. Himalaya: 398 (1966); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 32 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 92 (1978); Deb, Fl. Tripura State 2: 404 (1983); Balakrishnan, Fl. Jowai 2: 561 (1983); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 30 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 13 (1989); Noltie, Fl. Bhutan 3(1): 128 (1994); Hajra & Verma, Fl. Sikim 1: 193-194 (1996); Pullaiah, Fl. Andra Pradesh 3: 1027 (1997); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 76-77 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 14 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 271-272 (2012); *Pothos decursivus* Roxb., Fl. Ind. 1: 456 (1820); Roxburgh, Fl. Ind. ed. 2. 1: 436 (1832); Wallich, Pl. Asiat. Rarior. 2: 83, t. 192 (1831); Wight, Icon. Pl. Ind. Or. 3: 5, t. 779 (1844); *Monstera decursiva* (Roxb.) Schott, Wiener Z. Kunst 4: 1028 (1830); *Scindapsus decursivus* (Roxb.) Schott in Schott & Endl., Melet. Bot.: 21 (1832); Kunth, Enum. Pl. 3: 62 (1841); Wight, Icon. Pl. Ind. Or. 3: t. 779 (1844); *Rhaphidophora eximia* Schott in Bonplandia 5: 45 (1857); Hook. f., Fl. Brit. India 6: 547 (1893-reprint 1954). Fig. 25.

Type: India, Silhet, Roxburgh drawing 2118 (K).

Bengali: *Lata Kachu*

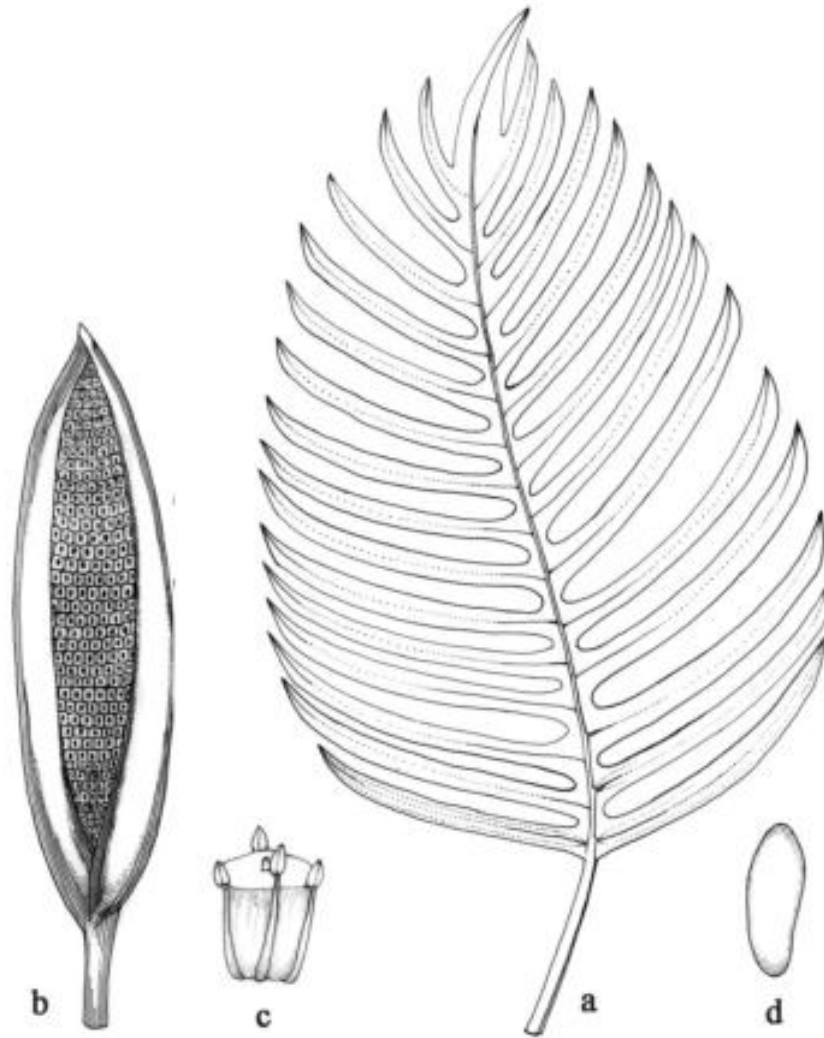


Figure 25. ***Rhapsidophora decurisiva*** (Roxb.) Schott, a) leaf; b) inflorescence; c) flower; d) seed.

Large epiphytic climber; stem stout, 3-5 cm in diameter, green at the back, rooting, internodes 1-2 cm long. Leaves scattered, petiolate; petioles stout, 45-55 cm long, pulvinate at each end, sheath deciduous, 10-15 cm long; juvenile leaf blade rotund, entire, apex abruptly acute, 16 × 13 cm, adult leaf blade oblong-ovate or ovate in outline, green adaxially, paler green abaxially, 60-70 × 40-50 cm, apex acute, base sub-cordate, irregularly and asymmetrically pinnately cut, pinnae more than 12 per side, apex truncate with ascending falcate tip, base narrowed, 20-30 × 2-5 cm, primary lateral nerves 1-3, prominent beneath. Inflorescence axillary, solitary or occasionally paired on tips of lateral shoots; peduncle stout, erect, cylindrical, 8-15 cm long, c 15 mm in diameter, green. Spathe leathery, oblong-ovate, cymbiform, 12-18 × 8-10 cm, beaked, creamy yellow on both sides, oblong-ovate, deciduous. Spadix cylindrical, shorter than the spathe, sessile, base oblique, creamy white, 10-20 cm long, 2-3 cm thick. Ovary hexagonal, unilocular, stylar region greyish-green-white sloughing to reveal white or yellow pulp cavity, ovules many, anatropous, placentation parietal, stigma raised on the conical top of the ovary. Stamens 4 per flower, filaments flat, anthers much shorter than filaments, yellow, oblong, less than 1 mm, thecae dehiscing by longitudinal slits. Fruit a berry, obconical, apex with a persistent style, greenish-white, many-seeded. Seeds small, oblong, testa thin and smooth. *Fl. & Fr.*: 5-11. *Scrambling or climbing on trees in shady and moist areas in the forests.* 2n = 26, 54, 56 (Petersen, 1989).

**Chattogram:** Gondamara, Dhopachara, 02 ix 1999, *Boyce, Toha & Rahman* 5542 (HCU & K). **Cox's Bazar:** Barachara, Himchari, 28 vi 1997, *Rahman* Sn ii (BFRIH); 29 vi 1997, *Rahman et al.* 1424 (HCU); **Rangamati:** Kaptai lake, Pablakhali, 24 ix 1999, *Boyce, Toha & Rahman* 5644 (HCU & K); Kaptai, Ram pahar, Baluchara, 06 ix 1999, *Boyce, Toha & Rahman* 5761 (HCU & K); **Sylhet:** Islachara Burmmehat beat, 18 i 1979, *Alam & Womersley* 3378 (BFRIH); Boromchal beat, Islachara rubber Plantation, 18 i 1979, *Khan & Rahman* K. 5367 (DACB);

Northeastern India, Nepal, northern Thailand, southwestern China, Vietnam and Laos.

Stem and leaves of the plant are used against traumatic injury, fracture, swelling, cold, lumbago, cough, bronchitis and snake bite (Heng, 1979).



**Rhaphidophora glauca** (Wall.) Schott, Bonplandia 5: 45 (1857); Prodr. Syst. Aroid.: 382-383 (1860). Hook. f., Fl. Brit. India 6: 547 (1893-reprint 1954); Engler & Krause in Engler, Pflanzenr. 37 (IV-23Ba): 47 (1908); Burkill in Rec. Bot. Sur. Ind. 4: 135 (1910); Mitra, Fl. Pl. E. India 1: 74 (1958); Hara, Fl. E. Himalaya: 398 (1966); Hu, Dansk Bot. Arkiv 23 (4): 422 (1968); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 32 (1976); Noltie, Fl. Bhutan 3(1): 127-128 (1994); Saxena & Brahmam, Fl. Orissa: 4: 2050 (1996); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 92 (1978); Balakrishnan, Fl. Jowai 2: 560 (1983); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 13 (1989); Hajra & Verma, Fl. Sikim 1: 193-194 (1996); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 77 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 13 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 273-274 (2012); *Pothos glaucus* Wall., Pl. Asiat. Rarior. 2: 45, t. 156 (1831) ('glauc'); *Pothos wallichii* Steud., Nom. Bot. 2: 391 (ed. 2, 1841), *nom illeg.* based on same type as *Pothos glaucus* (Wall.) Schott; *Scindapsus glaucus* (Wall.) Schott in Schott & Endl., Melet. Bot.: 121 (1832); Kunth, Enum. Pl. 3: 61 (1844); *Monstera glauca* (Wall.) Koch ex Ender, Index Aroid.: 54 (1864); *Rhaphidophora glauca* (Wall.) Schott var. *khasiana* Hook. f., Fl. Brit. India 6: 547 (1893-reprint 1954). Fig. 26 & Pl. LXVI.

Type: Nepal, 1820, *Wallich* 4440 (holotype K!).

Bengali: *Ban Kachu*

A green, climbing herb, rooting on the trunks and branches of trees; stem 0.7-2.5 cm thick, geniculate apically. Leaves scattered, petiolate; petiole with pulvinus at junction, shallowly channelled, 9-33 cm long, petiolar sheath reaching the base of the leaf blade; leaf blade elliptic-ovate, falcate, 13-32 × 9-20 cm, irregularly and asymmetrically pinnately cut, glaucous beneath, pinnae 2-5 per side, unequal, falcately linear-lanceolate, base narrowed, apex caudate-acuminate, 2-7 nerved. Inflorescence solitary, arising from the tips of free lateral shoots; peduncle 10-25 cm long, spreading, apical portion curved. Spathe coriaceous, ovate-oblong or oblong-lanceolate, acuminate, 8-14 × 3-9 cm with 1.5-2.0 cm long beak, pale yellow on both sides. Spadix cylindrical, 4.5-10.0 cm long, 1.5-2.0 cm in diameter, sessile, apex truncate-rounded, base slightly tapering, dull cream. Flowers bisexual. Ovary smooth, truncate, 3-5 mm long, ovules many, anatropous, placentation parietal, stigma raised, flat, sessile, circular or elliptic, 0.5-1.0 mm.



Figure 26. **Rhapsidophora glauca** (Wall.) Schott, a) habit sketch of a flowering plant; b) spathe; c) inflorescence; d) stamen, dorsal view; e) whole flower, gynoecium in longitudinal section.

Filaments flat, 2.7-3.0 × 0.8-1.5 mm, anthers 0.9-1.0 × 1.0-1.4 mm. Fruit 12-15 × 3.0-3.5 cm when ripe. Seeds many, small, oblong, testa thin and smooth. *Fl. & Fr.*: 9-5. *Subtropical and tropical humid or rain or deciduous forests*. 2n = 56 (Petersen, 1989).

**East Bengal:** Bangladesh, Locality, Collection date & year unknown, Herbarium of the East India Company, *Griffith* 5955 (K, CAL). **Moulvibazar:** Madhabkundo, 05 vii 2002, *Hosne Ara & Sarder Nasir Uddin* HA. 86 (DACB); Muraichara, 19 v 2005, *Hosne Ara* HA. 1669 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1704 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1765 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1838 (DACB); Madhabkundo, 03 xii 2014, *Hosne Ara* HA. 2874 (DACB). **Rangamati:** Debarmatha, 09 x 1998, *Rahman, David, Khan and others* 3608a (HCU). **Sylhet:** Khadim Nagar, 11 v 2018, *Mahabuba Sultana* MS. 2279 (DACB).

Northeastern India, northern Thailand, Myanmar, northern Laos and Vietnam.

This species is used as an ornamental plant.

**Rhaphidophora grandis** Schott in Oestr. Bot. Zeitschr.: 349 (1858), *et* Prodr. Syst. Aroid.: 386 (1860). Engler & Krause in Engler, Pflanzenr. 37 (IV. 23Ba): 51 (1908); Balakrishnan, Fl. Jowai 2: 560 (1983); Deb, Fl. Tripura State 2: 561 (1983); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 13 (1989); Noltie, Fl. Bhutan 3(1): 128 (1994); Hajra & Verma, Fl. Sikkim 1: 194 (1996); Chauhan *et al.* in Hajra, Contrib. Fl. Namdapha, Arunachal Pradesh: 339 (1996); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 78 (2007); *Rhaphidophora eximia* Hook. f., Fl. Brit. India 6: 547 (1893-reprint 1954). Pl. LXVII.

Type: Himalaya (Griffith n. 5953-Herb. Kew).

Bengali: *Ban Kachu*

A perennial evergreen herb, up to 12 m long; stem 4 cm in diameter, internodes elongated. Leaves scattered, with one foliage leaf at each node; petiole very stout, 15-50 cm long, geniculate at the apex, pulvinate at the leaf blade; leaf blade large, 40-100 × 39-64 cm, oblong, not glaucous below, bright green on both surfaces, pinnae up to 10 (-12)

per side, obliquely truncate, acute, unicostate and many-nerved segments. Inflorescence solitary; peduncle stout, 15-25 cm long. Spathe 20-30 × 5-10 cm, oblong-ovate, acuminate, widely open, orange-yellow on both sides. Spadix large, 17-23 × 3-5 cm, cylindrical, sessile, apex truncate-rounded, base slightly tapering, dull cream in colour. Flowers bisexual. Ovary long, fibrous, apex up to 6 mm in diameter, unilocular, ovules many, anatropous, placentation parietal. Stamens four per flower, filaments flat, anthers much shorter than the filaments, thecae dehiscent by a longitudinal slit. Fruit a berry, many-seeded. Seeds small and oblong, testa thin and smooth. *Fl. & Fr.*: 5-2. *Shady and moist places in the subtropical and tropical humid or rain or deciduous forests.*

**Khagrachari:** Alutila, 11 vii 2003, *Hosne Ara & Sardar Nasir Uddin* HA. 463 (DACB). **Moulvibazar:** Lawachara reserve forest, 02 v 2003, *Hosne Ara* HA. 201 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1702 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1764 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1836 (DACB); Muraichara beat, Ichachara forest, 07 v 2010, *Hosne Ara* HA. 2755 (DACB); Madhabkundo, 03 xii 2014, *Hosne Ara* HA. 2874 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 20 ix 2015, *Hosne Ara* HA. 2897 (DACB) [Originally collected from Lawachara reserve forest under Moulvibazar district].

Bhutan and India.

It is used as an ornamental plant.

**Rhaphidophora hookeri** Schott, *Bonplandia* 5: 45 (1857) *et in Prodr. Syst. Aroid.*: 381 (1860). Hook. f., *Fl. Brit. India* 6: 546 (1893-reprint 1954); Prain, *Beng. Pl.* 2: 1115 (1903-reprint 2004); Engler & Krause in Engler, *Pflanzenr.* 37 (IV. 23Ba): 32-33 (1908); Heinig, *List Chittagong*: 75 (1925); Datta & Mitra, *Bull. Bot. Soc. Beng.* 7 (1 & 2): 101 (1953); Mitra, *Fl. Pl. E. India* 1: 73 (1958); Hara, *Fl. E. Himalaya*: 398 (1966); Hu, *Dansk Bot. Arkiv* 23 (4): 422-423 (1968); Rao & Verma, *Bull. Bot. Surv. India* 18 (1-4): 31-32 (1976); Karthikeyan *et al.*, *Fl. India Enum. in Fl. India ser.* 4: 13 (1989); Noltie, *Fl. Bhutan* 3(1): 126-127 (1994); Saxena & Brahmam in *Fl. Orissa*: 4: 2051 (1996); Hajra & Verma in *Fl. Sikim* 1: 194 (1996); Chauhan *et al.*, in Hajra, *Contrib. Fl. Namdapha*,

Arunachal Pradesh: 339-340 (1996); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 79-80 (2007); Heng & Boyce in Heng *et al.*, *Fl. China* 23: 12 (2010); Boyce *et al.*, *Fl. Thailand* 11 (2): 274 (2012). Fig. 27.

Type: Sikkim, India, J.D Hooker & Thomson (K).

Bengali: *Lata Kachu*

A climbing herb; stem terete, 1-2 cm in diameter, mid green. Leaves petiolate; petioles 12-23 cm long, usually shorter than, rarely equalling the length of the leaf blade, shallowly channelled up to the knee, leaves many, entire, usually crowded at the tips of the branches; leaf blade usually oblong-elliptic, falcate, sometimes lanceolate, cuspidately acuminate, base asymmetric with one side rounded to oblique, the other side very shallowly cordate, 15-47 × 8-20 cm, sides and base of the midrib on the underside shortly hairy, lateral veins all diverging at wide angle from the midrib, of two distinct thicknesses. Inflorescence solitary on tips of free lateral shoots, pendent; peduncle suberect, apex straight, 3-8 cm long, subtended by 1-2 cataphylls, elongating to 15 cm in fruits. Spathe ovate-oblong, 5.0-8.5 × 2-3 cm, long beaked, thick, green outside, yellow or orange-yellow inside, obliquely deciduous. Spadix stoutly cylindrical, 4.5-5.5 × 1.8-2.0 cm, sessile, yellow, elongating to 15 cm in fruits. Ovary hexagonal-cylindrical, apex granular, depressed, walls densely fibrous, c 3 mm in diameter, 1-loculed, ovules many, placentation parietal, stigma sub-sessile, orbicular, c 1-3 mm in diameter, pulvinate. Filaments 6.0 × 1.2 mm, anthers 2.0 × 0.8 mm. Fruit stoutly cylindrical, 10-14 × 3 cm, stigmas prominent. Seeds orange-red. *Fl. & Fr.*: 3-2. *Climber on trees in shady and moist places in the forests.*

**Bandarban:** Ruma P.C., near Pransa, 25 i 1965, *M.S. Khan* 1140 (DUSH). **Chittagong Hill Tracts:** Locality unknown, 18 iii 1876, *J.L. Lister* 237 (CAL). **East Bengal:** Bangladesh, Locality, Collection date & year unknown, Herbarium of the late East India Company, *Griffith* 5963 (K, CAL). **Sylhet:** Silet, Collection date & year unknown, *Wallich* 4441 (BM).

India (Sikkim Himalayas, Upper Assam and Khasia Hills), Nepal, northern Thailand, Myanmar, northern Laos and Vietnam.

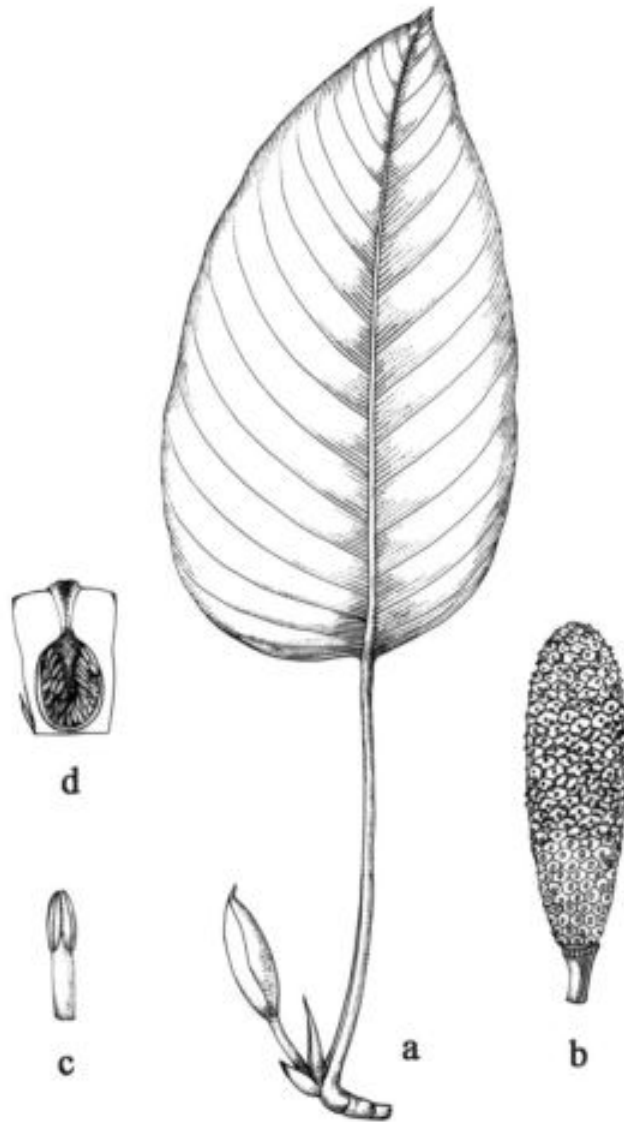


Figure 27. *Rhapsidophora hookeri* Schott, a) portion of flowering stem; b) spadix; c) stamen; d) gynoecium, longitudinal section.

**Rhaphidophora peepla** Schott in Bonplandia 5: 45 (1857) *et* in Prodr. Syst Aroid.: 380-381 (1860). Bentham, Fl. Hongkongensis: 344 (1861); Hook. f., Fl. Brit. India 6: 545 (1893-reprint 1954); Engler & Krause in Engler, Pflanzenr. 37 (IV. 23 Ba): 41-42 (1908); Furtado, Gard. Bull., Straits Settle. 8: 154-155 (1935). Mitra, Fl. Pl. E. India 1: 74 (1958); Hu, Dansk Bot. Arkiv 23 (4): 423 (1968); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 31 (1976); Deb, Fl. Tripura State 2: 404-405 (1983); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 13 (1989); Heng & Boyce in Heng *et al.*, Fl. China 23: 12-13 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 280 (2012); Wight, Icon. Pl. Ind. Or. 3: 5, t. 780 (1844); *Pothos peepla* Roxb., Fl. Ind. 1: 454 (1820) *et* 433 (1832); Wall. Cat. (1828) n. 4441; *P. pipila* Schult. in Roemer & Schultes, Mant. 3: 295 (1827); *Monstera peepla* (Roxb.) Schott, Wiener Z. Kunst 1830 (4): 1028 (1830); *Scindapsus peepla* (Roxb.) Schott in Schott & Endl. Melet. Bot.: 21 (1832); Wight, Icon. Pl. Ind. Or. 3: 5, t. 780 (1844); *Rhaphidophora manipurensis* Engl. & Krause, Bot. Jahrb. Syst. 45: 659 (1911). Fig. 28.

Type: Himalaya (Griffith no. 5958, 5959-Herb. Kew, Calcutta).

Bengali: *Lata Kachu*

An evergreen moderately robust climbing herb; stem stout, smooth, green, terete, rooting and attaching themselves to trees or rock, 8-12 mm in diameter. Leaves tending to cluster at shoot tips, petiolate; petiole shallowly channelled, 10-20 cm, petiolar sheath reaching pulvinus, marcescent; leaf blade entire, oblong-lanceolate to elliptic-oblong-lanceolate, 8-25 × 4-11 cm, apex abruptly acuminate or acute, base broadly rounded to sub-truncate, primary lateral veins many, secondary venation reticulate. Inflorescence solitary, terminal on lateral free shoots; peduncle 6-11 cm long, robust, erect, upper part recurved, with persistent sheaths at the base. Spathe 7-9 cm, long, elliptic-oblong or oblong in outline, gaping and then spreading at anthesis then caducous, dull orange outside, dull orange inside with the base stained yellow, apical rostrum c 10 mm. Spadix cylindrical, 5.5-8.0 cm long, sessile, yellowish white to yellow. Flowers bisexual. Ovary wedge-shaped, truncate, unilocular, ovules many, anatropous, placentation parietal, stylar region well-developed, usually broader than the ovary, stigma raised. Stamens 4, free, filaments oblong-linear, anthers much shorter than the filaments, thecae dehiscing by a longitudinal slit. Fruit a berry, 10-13 × 3 cm, initially green, later turning dull orange,



Figure 28. **Rhaphidophora peepla** Schott, a) portion of flowering stem, b) inflorescence; c) spadix.



usually many-seeded. Seeds small and oblong, testa thin and smooth. *Fl. & Fr.*: 4-8. *Tropical humid, rain forest, deciduous forest. Climbing hemiepiphytes.*

**Chattogram:** Dhopachari, Chamachari, 04 vi 1998, *Rahman et al.* 3064, 3067 (HCU); Dhopachari, 02 vi 2001, *Sarder Nasir Uddin* N. 976 (DACB). **Rangamati:** Kaptai, Sitapahar, 27 vi 1998, *Rahman & Toha* 3231 (HCU); 17 viii 1998, *Rahman & Toha* 3291 (HCU); 03 ix 1999, *Boyce, Toha & Rahman* 5545 (DACB); Shubalong, Kaptai Lake, 05 ix 1999, *Boyce, Toha & Rahman* 5649 (DACB); Kaptai, Chitmaram, 09 i 2005, *Hosne Ara & Sarder Nasir Uddin* HA. 1429 (DACB); Fring Kheong beat, Karnaphuli forest, 15 xii 2010, *Sarder Nasir Uddin* N. 4431 (DACB).

Northeastern India, northern Myanmar, Nepal, northern Thailand, southwestern China and Vietnam.

**Rhaphidophora pertusa** (Roxb.) Schott, *Bonplandia* 5: 45 (1857) *et in Prodr. Syst. Aroid.*: 382 (1860). Hook. f., *Fl. Brit. India* 6: 546-547 (1893-reprint 1954); Hook. f. in Trimen, *Handb. Fl. Ceylon* 4: 361 (1898); Engler & Krause in Engler, *Pflanzenr.* 37 (IV. 23Ba): 47-48 (1908); Fischer in Gamble, *Fl. Pres. Madras*: 1590 (1931), repr. ed. 3: 1109 (1967); Blatter & McCann, *J. Bombay Nat. Hist. Soc.* 35: 31 (1931); Nicolson in Dassanayake & Fosberg, *Rev. Handb. Fl. Ceylon* 6: 31-32 (1987); Karthikeyan *et al.*, *Fl. India Enum. in Fl. India ser.* 4: 13 (1989); Vajravelu, *Fl. Palghat Dist.*: 536 (1990); Matthew, *Excursion Fl. Cent. Tamilnadu, Ind.*: 541 (1991); Pullaiah, *Fl. Andra Pradesh* 3: 1027 (1997); Matthew, *Fl. Palni Hills* 3: 1372 (1999); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 80 (2007); Boyce *et al.*, *Fl. Thailand* 11 (2): 281 (2012); *Pothos pertusa* Roxb. *Hort. Beng.*: 83 (1814), *Fl. Ind.* 1: 455 (1820); Roxb., *Fl. Ind.* 1: 434 (1832); *Monstera pertusa* (Roxb.) Schott, *Wiener Z. Kunst* 1830: 1028 (1830); *Scindapsus pertusus* (Roxb.) Schott in Schott & Endl., *Melet. Bot.* 21 (1832); Wight, *Icon. Pl. Ind. Or.* 3: 5, t. 781 (1844). Pl. LXVIII.

Type: India, Coromandel (Tamil Nadu) mountains. Roxburgh drawing 983 (K) of *Pothos pertusa* Roxb., see Sealy (*Kew Bull.* 11: 373. 1957); published as *Scindapsus pertusus* by Wight (*Icon. Pl. Ind. Or.* 3: 5, t. 781. 1844).

Bengali: *Patakata Kachu*

Usually a large, robust to massive, evergreen, epiphytic climber; stem up to 3.5 cm in diameter, internodes 5-10 cm long. Leaves petiolate; evenly scattered along climbing stems, although tending to be somewhat clustered towards stem tips, petioles of adult leaves 20-35 cm long with a withering sheath; leaf blade of juvenile leaves ovate, oblong-ovate or oblong-elliptic, entire and not perforated, geniculate at the apex, pulvinate at the base; leaf blade of adult leaves broadly ovate-oblong to almost rounded-ovate, 20-50 × 15-25 cm, acute or usually cuspidate-acuminate and rounded or subcordate at the base simple, unequal sided, entire or irregularly and shallowly lobed, occasionally with large holes and some of the perforations usually extending to the margin. Inflorescence solitary, often displaced by shoot extension and appearing lateral; peduncle 5-18 cm long. Spathe coriaceous, oblong, acuminate, 15-20 cm long, 10 cm in diameter when expanded, greenish at first, becoming whitish then yellowish, soon withering and deciduous. Spadix cylindrical, 10-15 cm long and 1.5-2.5 cm in diameter. Flowers naked, bisexual. Ovary unilocular, 0.4 cm long, ovules many, anatropous, placentation parietal, stigma punctate, subimmersed in the truncate style. Stamens 4, free, filaments oblong-linear, 0.3 cm long, anthers much shorter than the filaments, 0.15 cm long, dehiscent by a longitudinal slit. Fruit a berry, many-seeded. Seeds oblong. *Fl. & Fr.*: 8-9. *Wet lowland forests.*

**Moulvibazar:** Madhabkundo, 05 vi 1998, *Hosne Ara* HA. 29 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 07 ix 2004, *Hosne Ara* HA. 1090 (DACB) [Originally collected from Madhabkundo forest under Moulvibazar district].

Southern India, northeastern Thailand, Sri Lanka and Myanmar.

It is widely used as an ornamental plant. The fruits are edible.

The aerial roots and leaves are made into a paste and plastered over fractured bones by the tribal people in India. The paste is also used for healing cuts and wounds (Rao and Henry, 1996).

**Rhaphidophara schottii** Hook. f., *Fl. Brit. India* 6: 544 (1893-reprint 1954); Engler & Krause in Engler, *Pflanzenr.* 37 (IV. 23Ba): 42-43 (1908); Mitra, *Fl. Pl. E. India* 1: 73 (1958). Fig. 29.

Type: Himalaya: Khasia (Hook. f., Sept. 1850-Herb. Kew).

Bengali: *Lata Kachu*

Slender to robust, evergreen, root-climbing liane to 10 m; stems very slightly glossy, dull green, rectangular in cross section, the narrow sides slightly sulcate. Leaves many, petiolate; petioles 3-7 cm, stout, shallowly channelled, dull dark green, petiolar sheath very conspicuous, formed into terminal ligule and extended above the leaf blade, falling quickly and forming horseshoe shaped scar at petiole apex, pale greenish white, ligules extending to 2-3 cm beyond the apical geniculum, sheath soon drying into papery wings and then rapidly falling to leave a continuous scar from the basal geniculum, around the top of the apical geniculum and back to the base; leaf blade entire, thick, fleshy, semi glossy, dull, dark green adaxially, very paler green abaxially, falcately lanceolate or ovate lanceolate or oblanceolate, caudate, acuminate, coriaceous; veins more or less invisible due to leaf thickness. Inflorescence solitary, peduncle short. Spathe c 8 cm, ovoid, acuminate, not constricted, initially inrolled and tubular, afterwards spreading, firm, early caducous. Spadix peduncled, very stout, cylindrical, shorter than the spathe. Flowers bisexual, lacking perianth. Ovary 1-partially 2 locular, anatropous; stylar region well-developed; stigma broadly raised pulvinate. Stamens 4-6, free, filaments oblong-linear, anthers much shorter than the filaments, dehiscing by longitudinal slit. Fruit a berry, many-seeded. Seeds oblong, testa thin and smooth. *Fl. & Fr.*: 8-9. *Dipterocarpus* & *bamboo forests; disturbed undulating hilly land with waterfall and mudstone.*

**Habiganj:** Rema-Kalenga forest area, 06 viii 2000, *Md. Zashim Uddin* 1091 (DACB). **Rangamati:** Kaptai, Ram pahar, Balichara, 06 ix 1999, *Boyce, Toha & Rahman* 5760 (HCU & K); Kaptai Lake, Sitapahar, 03 ix 1999, *Boyce, Toha & Rahman* 5545 (HCU & K); Kaptai Lake, Shubalong, 05 ix 1999, *Boyce, Toha & Rahman* 5649 (HCU, K).

Northern India.

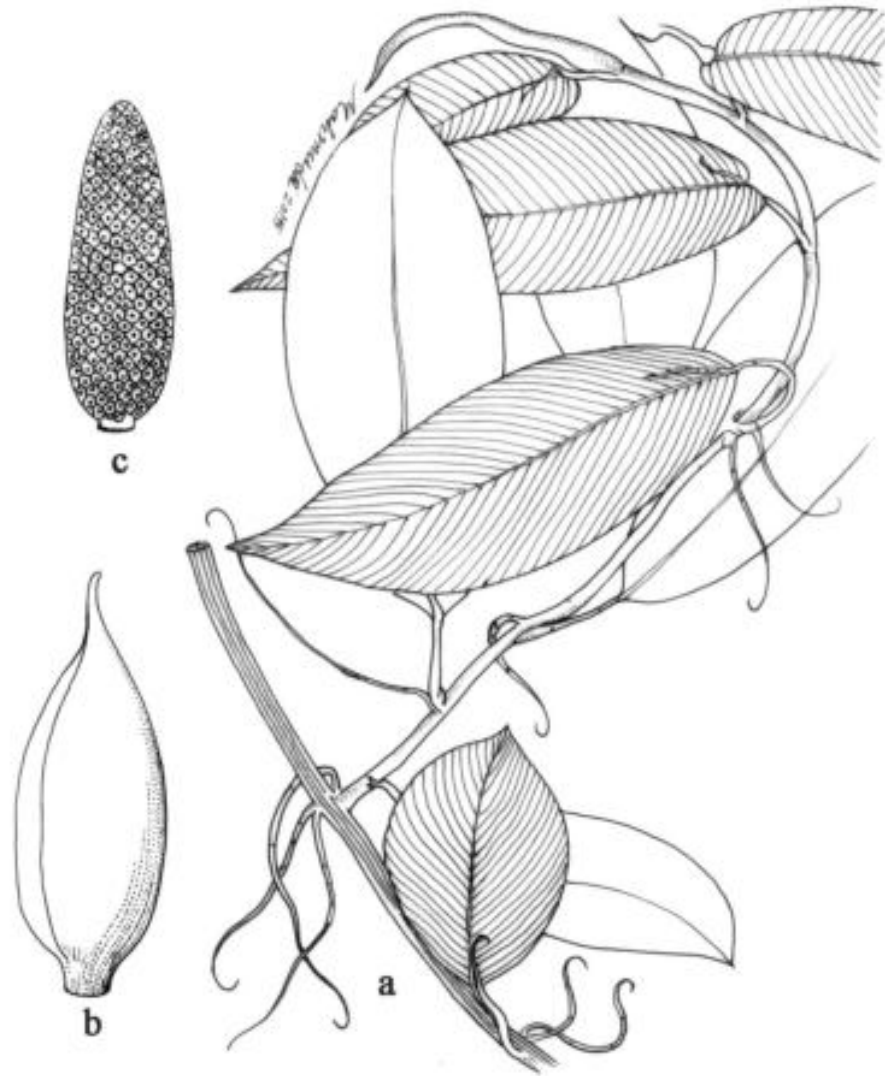


Figure 29. ***Rhapsidophora schottii*** Hook. f., a) habit sketch; b) spathe; c) spadix.

**Schismatoglottis** Zollinger & Moritzi in Moritzi,  
Syst. Verzeichnis Zollinger, 83 (1846).

**Type species:** *S. calytrata* (Roxburgh) Zollinger & Moritzi (*Calla calytrata*  
Roxburgh).

Small to large, perennial, evergreen, terrestrial herbs, rarely pubescent with short or long dense hairs; stem rhizomatous or epigeal, short, sometimes erect or decumbent. Leaves numerous, crowded, rarely distichous; petiolar sheath very short or, more often less than half the petiole length, sometimes with long apical ligule; leaf blade narrow-elliptic, elliptic, lanceolate, oblanceolate, ovate, obovate, cordate or cordate-sagittate, green adaxially, paler green to glaucous abaxially, mostly glabrous, sometimes pubescent or furnished with coarse trichomes on one or both surfaces, sometimes variegated with pale or silvery green, white or yellow, (primary, secondary and tertiary) lateral nerves all reaching near the margin into a marginal vein. Inflorescence at or near the apex of the leafy plant, usually several together; peduncle shorter than the petiole. Spathe constricted between the tube and the limb, sometimes only slightly so, rarely not at all; tube convolute, persistent; limb thinner, mostly erect, broadly boat-shaped, deciduous, usually white to cream, sometimes greenish yellow, very rarely pink, cuspidate to acuminate. Spadix shorter than or equalling the spathe, lower portion pistillate (female) zone, free or partially adnate to the spathe; upper portion staminate (male) zone and whether or not separated from the female by a naked interstice; male portion usually clubbed, fertile below, upwards sterile; the lowermost sterile zone sometimes very laxly flowered, often constricted. Flowers unisexual, perigone absent. Ovary 1-locular, ovules rather few to many, anatropous to hemianatropous, parietal to sub-basal placentation, style inconspicuous or shortly conoid, stigma sessile, discoid, staminodes sometimes present. Fertile male flowers 2-3 androus, stamens very short or fairly long, mostly free, filaments strap-shaped, anthers adnate, connective thick, dehiscing by apical pore, sterile male flowers subclavate, short to long. Fruit a berry, oblong to globose, ripening green or dull yellow or rarely deep red, few or many-seeded. Seeds ellipsoid, longitudinally grooved.

About 120 species are distributed throughout tropical Asia, Malay Archipelago and tropical South America (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by a single species.

**Schismatoglottis picta** Schott in Osterr. Bot. Zeitschr. 8: 317 (1858). Engler and Krause in Engler, Pflanzenr. 55 (IV. 23 Da): 114 (1912); Bailey, Manual Cult. Pl.: 183 (1949); Graf, Exotica, edn. 8: 229-230 (1976); Walters *et al.*, European Gard. Fl. 2 (2): 91 (1984-reprint 2003); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 21 (1987); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 81-82 (2007); *Schismatoglottis calytrata* (Roxb.) Zoll. *et* Moritzi var. *picta* (Schott) Hallier f. in Annual. Buitenzorg 14 (2): 260 (1897). Pl. LXIX.

Type: West Java (Herb. Leiden).

Bengali: *Bahari pata*

Small, evergreen and terrestrial herb; stem an underground rhizome. Leaves petiolate; petiole 20-30 cm long, or sometimes up to 60 cm long, flattened on the upper side towards the apex, green; leaf blade 15-20 × 7.5-13.0 cm, sometimes to 35 × 26 cm, narrowly ovate or oblong-ovate, base cordate, thin, bright green adaxially and usually marked with a ragged, pale, glaucous band running along each side about half-way between the midrib and the margin. Inflorescence several together; peduncle shorter than the petiole, 5-8 cm long. Spathe 5-6 cm long, tube green; limb greenish-yellow. Spadix shorter than the spathe; pistillate (female) flower zone 2 cm and staminate (male) flower zone 1.5 cm long, adjacent to the female, pale yellow; appendix 5.0-7.5 mm long. Ovary 1-locular, anatropous, style shortly conoid, stigma sessile, discoid. Male flowers 2-3 androus, stamens very short, filaments strap-shaped, anthers adnate. Fruit a berry, oblong to globose, few-many seeded. Seeds ellipsoid, longitudinally grooved. *Fl. & Fr.*: 8-9. *Shady moist areas.*

**Dhaka:** Mirpur Botanical Garden, 06 x 2004, *Hosne Ara* HA. 1458 (DACB).

Singapore, Malaysia, Indonesia (Sumatra, Java, Borneo and Celebes) and China.

The plant is widely used for ornamental purposes in public places and homesteads.

**Scindapsus** Schott in Schott & Endlicher,  
Melet. Bot. 21 (1832).

**Type (Lectotype) species:** *S. officinalis* (Roxburgh) Schott (*Pothos officinalis* Roxburgh);  
Schott, Prodr. Syst. Aroid. 395- 397 (1860).

Small to very large, slender to very robust, evergreen, scandent climbing herbs, creeping against trees with the aid of adhesive roots; stem robust, branched, root climbing or less often prostrate, often producing long flagelliform shoots with reduced cataphylls and abundant, dimorphic, clasping and feeding roots. Leaves many, spirally arranged, often foaming tufts at the tips of active shoots, juvenile sometimes in a single form; petiole mostly channelled, pulvinate apically, usually sheathing or winged throughout its length, sheath usually broad, persistent or marcescent; leaf blade always entire, undivided, lanceolate, elliptic or ovate to obovate, acuminate, rarely variegated, pinnately nerved with numerous, parallel, lateral nerves. Inflorescence near stem-apices, very often solitary; peduncle shorter than the petiole. Spathe not constricted, boat-shaped, caducous to deciduous. Spadix sessile to shortly stipitate, cylindrical, narrowly ellipsoid or clavate, slightly shorter than the spathe. Flowers bisexual, naked, perigone absent. Ovary sometimes short, sub-rhomboid or compressed-cylindrical, 1-locular, ovules 1 (-2), anatropous, funicle short, placenta basal, stylar region well-developed, stigma globose, elongate-globose, elliptic, linear, or punctiform. Stamens 4, free, filaments oblong, flattened, broad, connective slender, thecae oblong-ellipsoid, dehiscing by an apical slit. Fruits usually 1-seeded berries. Seed rounded, sub-reniform, testa thick, sparsely verruculose or smooth.

About 36 species are distributed throughout tropical Asia, Malay Archipelago, Melanesia and Pacific (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 4 species.

**KEY TO THE SPECIES**

- |    |   |               |
|----|---|---------------|
| 1. | Leaves green, without blotched with white | <b>2</b>      |
| -  | Leaves green, blotched with white         | <b>pictus</b> |

- |    |  |                     |
|----|--|---------------------|
| 2. | Base of the leaves thinly coriaceous, peduncle 5-10 cm long  | <b>3</b>            |
| -  | Base of the leaves thickly coriaceous, peduncle 2.5-3.5 cm long  | <b>scortechinii</b> |
| 3. | Leaf blade broadly elliptic-ovate to nearly orbicular, sometimes oblique, spadix shorter than the spathe | <b>officinalis</b>  |
| -  | Leaf blade broadly or narrowly oblong, rarely ovate or sub-lanceolate, spadix longer than the spathe     | <b>perakensis</b>   |

**Scindapsus officinalis** (Roxb.) Schott, Schott & Endl., Melet. Bot.: 1: 21 (1832); & Prodr. Syst. Aroid.: 395-396 (1860). Wight, Icon. Pl. Ind. Or. t. 778 (1844); Hook. f., Fl. Brit. India 6: 541 (1893-reprint 1954); Prain, Beng. Pl. 2: 1114 (1903-reprint 2004); Engler & Krause in Engler, Pflanzenr. 37 (IV. 23Ba): 73, t. 30 A-G (1908); Heinig, List Chittagong: 75 (1925); Haines, Bot. Bihar and Orissa: 859 (1924-reprint 1978); Fischer in Gamble, Fl. Pres. Madras 3: 1590 (1931), repr. ed. 3: 1109 (1967); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 101 (1953); Mitra, Fl. Pl. E. India 1: 73 (1958); Hara, Fl. E. Himal. 398 (1966); Hu, Dansk Bot. Arkiv 23 (4): 420-421 (1968); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 30 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 92 (1978); Deb, Fl. Tripura State 2: 405 (1983); Bakshi, Fl. Murshidabad Dist.: 338 (1984); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 14 (1989); Noltie, Fl. Bhutan 3(1): 129 (1994); Saxena & Brahmin, Fl. Orissa 4: 2052 (1996); Hajra & Verma, Fl. Sikim 1: 194 (1996); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 405 (1998); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 476 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 82-83 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 15 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 294-295 (2012); *Pothos officinalis* Roxb., Fl. Ind. 1: 452 (1820); *Monstera officinalis* (Roxb.) Schott, Wiener Z. Kunst 4: 1028 (1830); *Scindapsus annamicus* Gagnep., Notul. Syst. (Paris) 9: 139 (1941). Fig. 30 & Pl. LXX.

Type: Wall. Cat. 4436 (Herb. Calcutta).

Bengali: *Gaj-pipul*

Robust, branched, shrubby climber on trees, 10-20 m high; stem terete, 1.5-5.0 cm diameter, stout, with adhesive roots on the nodes, almost woody when old. Leaves several, tending to cluster at the tips of shoots; petiole prominently winged, 8-18 × 1-3 cm, winged to the knee, geniculate near the apex, petiolar sheath very prominent,



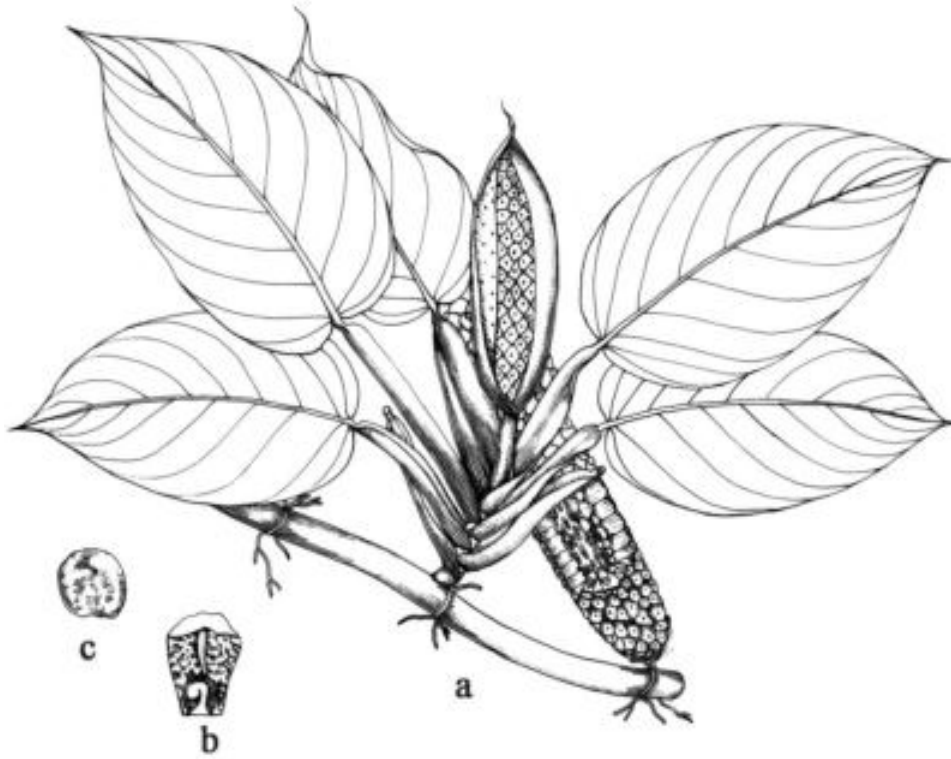


Figure 30. *Scindapsus officinalis* (Roxb.) Schott, a) habit sketch of a flowering plant; b) gynoecium, longitudinal section; c) seed.

spreading and wing-like, persistent; leaf blade simple, spiral, thinly coriaceous, broadly elliptic-ovate to nearly orbicular, sometimes oblique, 10-30 × 6-18 cm, base rounded and very briefly cuneate, usually oblique, thinly coriaceous, apex acute to attenuate, nerves pinnate, ascending, dark-green adaxially, light-green abaxially. Inflorescence solitary, subtended by a fully developed foliage leaf, arising on free lateral and less often adherent shoots; peduncle 5-10 × 1.0-1.5 cm, stout, compressed-cylindrical. Spathe oblong, not constricted, 10-15 × 3-5 cm, fully convolute when young, later slightly opening like a slit, with slender, c 1.5 cm long tip, yellowish-brown inside, coriaceous, ultimately caducous. Spadix cylindrical, 6-11 × 1.0-2.5 cm, sessile, shorter than the spathe, greenish-yellow, dense-flowered. Flowers bisexual, perianth absent. Ovary with flattened tetragonal tops, 6-8 mm long, 1-loculed, dehiscing by lateral slits, ovule solitary, basal, anatropous, stylar region mostly longitudinally rhombohexagonal, 4-6 × 2-3 mm, truncate, stigma longitudinally elongated, c 3 mm, sessile, discoid. Stamens 4, free, filaments flattened, anthers 2-loculed. Fruit a berry, only few ripening, fleshy, 12-15 × 2-3 cm. Seeds reniform. *Fl. & Fr.*: 5-10. *Scrambling or climbing on trees in shady and moist places in the forests.* 2n = 56 (Petersen, 1989).

**Bengal:** Locality, Collection date, year & number unknown, *J.D. Hooker & Thomson* (K). **Chattogram:** Near Chattogram, 05 i 1857, Collection number unknown, *J.D. Hooker & Thomson* (K); Chunati, Harbhanga, 10 vi 1979, *Khan, Huq & Rahman* K. 5552 (DACB); Bariadhala to Hazarikhil, 24 x 1985, *Khan & Mia* K. 7301 (DACB); Dhopachari, Gandamara, 15 ix 1998, *Rahman & Toha* 3355 (HCU); Sitakunda, Chandranath Hill, 31 viii 1999, *Boyce, Toha & Rahman* 5403 (HCU & K); Dhopachari, Gandamara, 02 ix 1999, *Boyce, Toha & Rahman* 5537 (HCU & K); Chunati, 26 ix 2005, *Hosne Ara* HA. 2221 (DACB). **Chittagong Hill Tracts:** Locality & Collection date unknown, 1886, *Dr. King's Collector* 147 (K, CAL). **Dhaka:** Gulshan, 25 xii 1965, *Zeyauddin* 84 (DUSH); Airport area, 19 ix 1970, *A.M. Huq* 182 (DACB); Bangladesh National Herbarium garden (Cultivated), 22 ix 2015, *Hosne Ara* HA. 2898 (DACB) [Originally collected from Gazni beat under Sherpur district]. **Dinajpur:** Singra forest, 14 v 1965, *D.K. Das* SN (BFRIH); 12 x 1980, *Huq, Rahman, Mia & Mahbuba* H. 4792(a) (DACB); 11 vi 1982, *D.K. Das* 4351 (BFRIH); 12 iv 1991, *M.K. Guha* 6970 (BFRIH); Biral, 27 viii 1998, *Mia, Harun, Nasir & Mosharaf* M. 4375 (DACB); Singra

forest, 18 viii 2005, *Hosne Ara* HA. 2068 (DACB). **Gazipur:** Tetupara Road, Baropaiha, 25 vii 2004, *Hosne Ara* HA. 1076, 1077 (DACB); Burulia village, 25 vii 2004, *Hosne Ara* HA. 1078 (DACB). **Habiganj:** Satchari, 17 v 2005, *Hosne Ara* HA. 1573 (DACB); 07 vii 2005, *Hosne Ara* HA. 1866 (DACB). **Mymensingh:** Dhubaura thana, Madhupara, 16 vi 2004, *Hosne Ara* HA. 744 (DACB); Haluaghat thana, koroitoli, 20 vi 2004, *Hosne Ara* HA. 905 (DACB). **Moulvibazar:** Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1724 (DACB). **Netrakona:** Dhahapara, 18 vi 2004, *Hosne Ara* HA. 860 (DACB). **Rangamati:** Kaptai, Sitapahar, 17 viii 1998, *Rahman & Toha* 3292 (HCU); Kaptai, Sitarghat, Sitapahar, 24 ix 2002, *Sarder Nasir Uddin* N. 1541 (DACB); Rangamati area, 03 x 2002, *Sarder Nasir Uddin* N. 1871 (DACB); Kaptai, Sita Pahar, 08 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 438 (DACB). **Sherpur:** Rangtia range, Gazni beat, 09 x 2003, *Hosne Ara* HA. 632 (DACB); Rangtia range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 669 (DACB); Gopalpur beat, Maya Ghashi, Ghenaigati thana, Monshapara, 20 vi 2004, *Hosne Ara* HA. 872 (DACB); Rangtia rang, Ghenaigati thana, Gazni beat, 21 vi 2004, *Hosne Ara* HA. 918 (DACB). **Tangail:** Madhupur forest, 28 x 1972, *A.M. Huq* 458 (DACB); Madhupur forest beat office to National Park, 30 v 1979, *Khan & Sahjahan* K. 5438 (DACB); Modupur, Rasulpur, 06 x 2003, *Hosne Ara* HA. 549 (DACB).

Northeastern India (Sikkim and the Himalayas), Nepal, Myanmar, northern Thailand and China.

Sliced and dried parts of the fruit have stimulant, diaphoretic, aphrodisiac, carminative, anthelmintic and antidiarrhoeal properties. Pulp of the fruit is applied externally on the human body to cure rheumatism. Decoction of the fruit serves as a useful medicine in asthma as an expectorant because of its hypoglycaemic and antiprotozoal effects (Ghani, 2003).

**Scindapsus perakensis** Hook. f., Fl. Brit. India 6: 542 (1893-reprint 1954). Engler and Krause in Engler, *Pflanzenr.* 37 (IV. 23Ba): 75-76 (1908); Ridley, Fl. Malay Peninsula: 116-118 (1925); A. Hay *et al.*, *Blumea* Supplement 8: 153 (1995); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 476 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 83 (2007). Fig. 31.



Figure 31. *Scindapsus perakensis* Hook. f., a) habit sketch of a flowering plant; b) spadix; c) stigma, top view; e) flower with gynoecium to show ovule.

Type: Scortechini (BM), Kunstler 5306 (K), 10692 (K) (both as 'Dr. King's collector').

Bengali: *Banlata*

A climbing herb; stem 10-12 m long, 5-7 cm in diameter, very stout, branched. Leaves many; petioles 10-15 cm long, broadly winged at the base; leaf blade spirally arranged, 21-30 × 6-9 cm, broadly or narrowly oblong, rarely ovate or sub-lanceolate, acuminate, elliptic or nearly ovate, thinly coriaceous, base acute or rounded, primary and secondary nerves indistinguishable above, primary nerves distinct beneath, nervules trabeculate, thinly coriaceous, dark green adaxially, light green abaxially. Inflorescence near stem-apices, solitary; peduncle shorter than the petiole, 8-10 cm long, very stout. Spathe not constricted, boat-shaped, cream-white, ovate, cuspidate, leathery, 8 cm long. Spadix longer than the spathe, cylindrical or sub-clavate. Flowers bisexual. Ovary 1-locular, anatropous, placentation basal, stylar region well-developed, stigma linear. Stamens 4, free, filaments strap-shaped, connective slender, thecae oblong-ellipsoid, dehiscent by an apical slit, naked, perigone absent. Fruit usually a berry and slaty-blue, 1-seeded. Seed lenticular, black, testa thick. *Fl. & Fr.*: 5-10. *Trees in shady and moist places in the forests where this species grows as a climber.*  $2n = 60$  (Petersen, 1989).

**Moulvibazar:** Madhabkundo, 05 vi 1998, *Hosne Ara* HA. 39 (DACB); 06 vii 2005, *Hosne Ara* HA. 1845 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 07 v 2006, *Hosne Ara* HA. 2629 (DACB) [Originally collected from Madhabkundo forest under Moulvibazar district]. **Sherpur:** Jhenaigati thana, Rangtia hill, 22 vi 2004, *Hosne Ara* HA. 1031 (DACB).

Malaysia.

The plant, being a climber on walls or big trees, bears ornamental value for its oblong-lanceolate leaves and broad, strong petioles.

**Scindapsus pictus** Hassk., Tijdschr. Natuurl. Gesch. Physiol. 9: 164 (1842); Cat. Hort. Bogor.: 58 (1844). Hook. f., Fl. Brit. India 6: 541 (1893); Ridley, Fl. Malay Peninsula: 117 (1925); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 476 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 84 (2007); *Scindapsus pothoides*

Schott, Prodr. Syst. Aroid.: 394 (1860), *nom. illeg.*; *Pothos argyraeus* Engl. in A.L.P.de Candolle & A.C.P.de Candolle, Monogr. Phan. 2: 255 (1879), pro syn; *Scindapsus argyraeus* Engl. in A.L.P.de Candolle & A.C.P.de Candolle, Monogr. Phan. 2: 255 (1879). *Scindapsus pictus* var. *argyraeus* (Engl.) Engl., Bot. Jahrb. Syst. 25: 13 (1898); *Pothos argenteus* W. Bull, Cat. 1887: 11 (1887); *Scindapsus pictus* var. *oblongifolius* Engl., Bot. Jahrb. Syst. 25: 13 (1898). Pl. LXXI.

Type: Zollinger 1825 (Bo, L, LE, P).

A very long, evergreen, slender climbing herb, up to 20 m or more long; stem branched. Leaves many, petiolate; petioles slender, sheathing throughout its length, stout, 4 cm long; leaf blade spirally arranged, 7.5 × 5.0 cm, young leaves thick, glaucous, entire, ovate or orbicular or falcate-cordate, green, blotched with white, adult leaves lanceolate, falcate or ovate-cordate, 13-18 × 4-14 cm, dull green, nerves very close and slender, primary or secondary hardly distinct. Inflorescence solitary; peduncle equalling the petiole, very stout. Spathe not constricted, boat-shaped, white, ovate-oblong, prominently pointed, 5 cm long. Spadix stout, shorter than the spathe, 3.5 cm long, green. Flowers bisexual, naked. Ovary 1-locular, ovule 1, anatropous, placentation basal, stylar region well-developed, stigma globose. Stamens 4, free, filaments very short, dehiscing by an apical slit. Fruits usually 1-seeded berries. Seed rounded, testa thick. *Fl.* & *Fr.*: 6-10. *Tropical semi-evergreen forests*.  $2n = 112$  (Petersen, 1989).

**Chittagong Hill Tracts:** Locality unknown, Feb. 1940, *Dr. S.K. Mukerjee* 91 (CAL). **Rangamati:** Mynimukh, 24 xii 1956, *M.S. Khan* 223 (CAL, DUSH).

Tropical Asia, extending up to Indonesia.

**Scindapsus scortechinii** Hook. f., Fl. Brit. India 6: 541 (1893-reprint 1954). Engler and Krause in Engler, Pflanzenr. 37 (IV. 23Ba): 73-74 (1908); Ridley, Fl. Malay Peninsula: 116-117 (1925); A. Hay *et al.*, Blumea Supplement 8: 154 (1995); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 477 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 84-85 (2007); Boyce *et al.*, Fl. Thailand 11 (2): 295 (2012). Fig. 32.

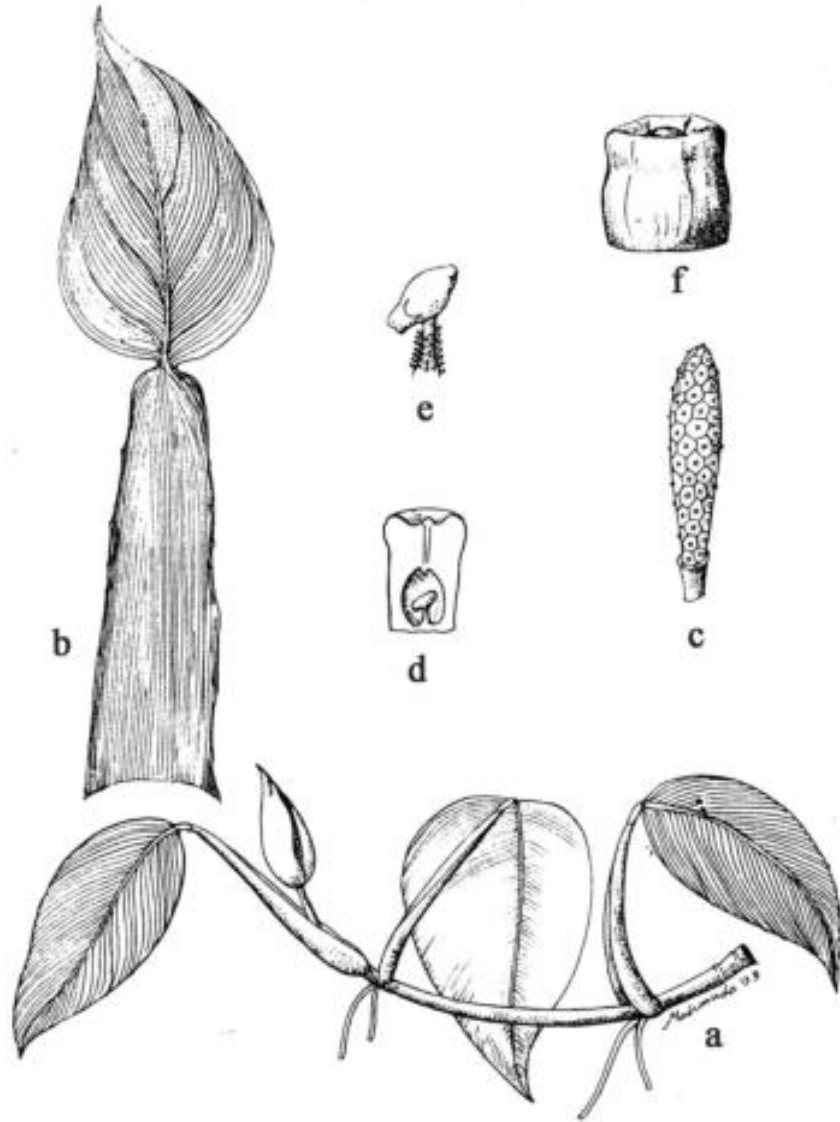


Figure 32. *Scindapsus scortechinii* Hook. f., a) habit sketch of a flowering plant; b) leaf with broadly winged petiole; c) spadix; d) longitudinal section of gynoecium; e) ovule; f) fruit.

Type: Scortechini 370 (BM, K), 3306 (K), Wray 661 (K).

Bengali: *Banno Lata*

A medium-sized, moderately robust, evergreen climbing herb; stem terete, 1.0-1.5 cm in diameter, smooth, bright green when fresh, drying dark brown, stilt-roots stout, arising at each node, branched, creeping over trees. Leaves scattered, petiolate; petiole 5-17 × 0.3-1.0 cm, broadly winged, petiolar sheath prominent, reaching to the base of the apical pulvinus, persistent; leaf blade many, spirally arranged, 10-16 × 3-12 cm, ovate-lanceolate to ovate-elliptic, very stiffly coriaceous, base rounded, apex acute, entire, thickly coriaceous, dark green, very close nerved. Inflorescence solitary, subtended by a fully developed foliage leaf, arising on a free lateral shoot; peduncle cylindrical, 6-12 cm × 4-8 mm. Spathe not constricted, boat-shaped, ovate, acute, 6-11 × 2.5-3.0 cm, stoutly long-beaked, yellowish on both sides, deciduous. Spadix 5-8 × 1 cm, fusiform-cylindrical, sessile, white. Flowers bisexual, naked. Ovary compressed, cylindrical, c 3.5 × 2.0 mm, 1-locular, ovule 1, anatropous, funicle short, placentation basal, stylar region well-developed, stigma elliptic-rounded. Stamens 4, free, filaments oblong, dehiscing by an apical slit. Fruits of berries in clusters, ultimately separating. Seed one, subreniform, testa thick. *Fl. & Fr.*: 5-10. *Shady and moist places in forests.*

**Sherpur:** Rangtia range, Gazni beat, 09 x 2003, *Hosne Ara* HA. 633 (DACB); 21 vi 2004, *Hosne Ara* HA. 919 (DACB).

Peninsular Malaysia and peninsular Thailand.

**Spathiphyllum** Schott in Schott & Endlicher,  
Melet. Bot. 22 (1832).

**Type species:** *S. lanceifolium* (Jacquin) Schott  
(“*lancaefolium*”; *Dracontium lanceaefolium* Jacquin)

Evergreen terrestrial herbs; usually with short, erect to creeping stem, appearing acaulescent, sometimes stoloniferous. Leaves several; petiole geniculate near the apex, sheath long; leaf blade mostly oblong to elliptic or narrowly elliptic, cuspidate-acuminate, the primary and secondary lateral nerves sub-parallel, approximate, ascending chiefly at a narrow angle, not united into a collective nerve. Inflorescence solitary;



peduncle equalling or longer than the leaves. Spathe oblong, elliptic, ovate or obovate, cuspidate-acuminate, decurrent upon the peduncle, membranaceous to sub-coriaceous, convolute in bud, fully expanded, persistent, with distinct midrib and pinnate primary lateral veins, usually white, rarely green, turning green in fruit. Spadix stipitate or sessile, stipe often partially adnate to the spathe, cylindrical, erect, shorter than the spathe. Flowers bisexual, perigoniate. Gynoecium ovoid, sub-cylindrical, obovoid or flask-shaped, ovary 3-locular, ovules 2, 4, 6 or 8 per locule, anatropous to hemianatropous, placentation axile, stylar region usually long, conic and long exerted beyond perigone or almost none, stigma 2-3 lobed, sessile. Tepals 4-6, free. Stamens 4-6, free, filaments short, oblong, flattened, connective slender, thecae oblong-ellipsoid to ovoid, dehiscing by a longitudinal slit. Fruit a berry, rounded, ovoid to obovoid, or conic at the apex, 1-8 seeded, greenish. Seed oblong, ellipsoid to ovoid or slightly curved, somewhat reniform, pale yellow to brown, testa sparsely striate-verrucose.

About 41 species are distributed throughout tropical America, West Indies, eastern Malay Archipelago and Melanesia (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 2 species.

#### KEY TO THE SPECIES

1. Leaf blade conspicuously oblique, oblanceolate, petiole c 28 cm long **floribundum**
- Leaf blade lanceolate to oblong-elliptic, petiole c 45 cm long **wallisii**

**Spathiphyllum floribundum** (Linden & Andre') N.E. Brown, Gard. Chron. 11 (10): 783 (1878). Engler & Krause in Engler, Pflanzenr. 37 (IV. 23Ba): 129-130 (1908); Bailey, Manual Cultivat. Pl.: 184 (1949); Birdsey, Cultivat. Aroid.: 116 (1951); Bunting, Mem. New York Bot. Gard. 10 (3): 25-27 (1960); Graf, Tropica, edn. 5: 126, 1092 (1978-reprint 2003); Everett, Encycl. Hortcut. 9: 3194 (1982); Walters *et al.*, European Gard. Fl. 2 (2): 88 (1984-reprint 2003); *Anthurium floribundum* Linden *et* Andre', III Hort. 21: 24, Pl. 159 (1874); *Amomophyllum floribundum* (Linden *et* Andre') Engl., Gard. Chron. II. 7: 139-140 (1877). Pl. LXXII.

Type: Pl. 159, L' Illustration Horticole 21: 24 (1874).

Bengali: *Bahari Kachu*

English: White Sails, Spathe Flower

Terrestrial evergreen herb; stem short. Leaves petiolate; petiole (6.5-) 10-22 (-28) cm long, often alate nearly to the geniculum, vaginate below or the wings expanded and free; geniculum 0.5-1.3 cm long; leaf blade conspicuously oblique, oblanceolate, widest at or just above the middle, 13-20(-26) cm long and 5.5-9(-10.5) cm in diameter, the apex cuspidate, the base obtuse or acute, marginally undulate, dark green adaxially with a velvety lustre, the primary lateral veins c 9 pairs arising at an angle of c 65-75. Inflorescence solitary; peduncle (16-)20-37 cm long. Spathe white, reflexed, lanceolate or oblong-elliptic, 4-8(-9.8) cm long and 1.2-3 cm in diameter; the apex attenuate to cuspidate; the base acute to subtruncate and clasping the peduncle. Spadix 2.5-5.5 cm long; on a stipe 0.3-0.8 cm long; perianth green, the segments separate or sometimes conglutinate in age. Pistil white, obpyramidal, apically truncate, the stigma elevated and shortly exceeding the perianth; ovary 3-locular, the ovules affixed at or near the base of the locules, varying from (3-)2 to 1 in each of the 3 locules, totaling (7-)6-4 ovules per ovary. Fruiting spadix smooth. Fruit spheroid, the apex truncate. Seeds 1 or 2 per locule, the surface vertically furrowed and foveolate between the verrucose ridges. *Fl. & Fr.*: 4-9. *Shady places.*

**Dhaka:** Dhaka University Botanical Garden, Curzon Hall, 20 ii 1980, *Mahbuba Halim* 744 (DACB); 06 x 2004, Hosne Ara HA. 1459 (DACB); Mirpur Botanical Garden, 06 x 2004, *Hosne Ara* HA. 1460 (DACB).

Colombia.

The plant is widely planted for ornamental purposes in public places and homesteads.

**Spathiphyllum wallisii** Regel, Gartenflora 26: 323, t. 920 (1877). Engler & Krause in Engler, Pflanzenr. 37 (IV. 23Ba): 125 (1908); Bunting, Mem. New York Bot. Gard. 10 (3): 40-41 (1960); Graf, Tropica, edn. 5: 126, 1092 (1978-reprint 2003); Walters *et al.*, European Gard. Fl. 2 (2): 88 (1984-reprint 2003); Acevedo-Rodriguez and Nicolson in

Acevedo-Rodriguez and Strong, Contrib. U. S. Nat. Herb. 52: 46 (2005); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 85-86 (2007). Pl. LXXIII.

Lectotype: Venezuela. Regel, Gartenflora 26: t. 920 (1877), here designated.

Bengali: *Bahari Kachu*

English: Peace Lily, White Sails, Spathe Flower

Terrestrial small evergreen herb; stem short. Leaves petiolate; petiole sub-equalling the leaf blade or a little longer, 45 cm long, commonly adnate in the lower part or nearly to the geniculum, geniculum 1.4-2.3 cm long; leaf blade lanceolate to oblong-elliptic, 14-36 × 5-10 cm, marginally undulate or wavy, apex long-acuminate, recurved at the tip, base acute, midrib nude in the lowermost 2 cm above the geniculum, dark green adaxially, light green abaxially, primary lateral veins c 8-10 pairs arising at an angle of 45-50. Inflorescence solitary; peduncle longer than the petiole, c 20-64 cm long. Spathe cucullate, ovate to oblong-elliptic, 7-17 × 2.5-7.5 cm; apex long acuminate (up to 2.5 cm long); base commonly obtuse or sub-rotund, sometimes acute, decurrent to the peduncle, 1.5-4.0 cm or more, white, becoming green with age. Flowers fragrant. Spadix 1.5-8.0 cm long, on a stipe 0.5-1.2 cm long; perianth white, of separate segments. Style conic, white, prominently exerted beyond the perianth, ovary 3-locular, ovules 6-12. Fruit a berry. Seed oblong. *Fl. & Fr.*: 5-10. *Shady moist areas*. 2n = 30 (Petersen, 1989).

**Dhaka:** Banani area, 04 x 2004, *Hosne Ara* HA. 1457 (DACB).

Colombia.

The plant is widely grown for ornamental purposes in public places and homesteads.

**Stuednera** K. Koch in Wochenschr.  
Gärtnerei Pflanzenk 5: 114 (1862).

**Type species:** *S. colocasiifolia* K. Koch (“*colocasiaefolia*”).

Small to robust herbs, usually evergreen, terrestrial, sometimes seasonally dormant; stem creeping or erect, epigeal, stout, with persistent cataphylls. Leaves solitary or few to several together; petiole terete, petiolar sheath very short; leaf blade peltate, with well-developed reticulate venation, ovate, ovate-oblong, apex acuminate, emarginate basally, sinus very shallow, membranous, basal ribs short. Inflorescence solitary; peduncle shorter

than the petiole. Spathe not constricted but shortly convolute at the base, yellowish or dark purple inside; lower part persistent to the fruiting stage; upper part ovate or ovate-lanceolate, expanded, reflexed, marcescent. Spadix much shorter than the spathe, dense-flowered; pistillate (female) flower zone of the spadix cylindrical, often longer than staminate (male) flower zone, mostly adnate to the spathe at its base, male zone contiguous with the female zone, cylindrical, clavate or capitate, fertile to apex, obtuse. Flowers unisexual, naked, perigone absent. Female flowers with subglobose to ovoid ovaries mixed with a few clavate staminodes, more rarely staminode absent, ovary subglobose to ovoid, 1-locular, ovules numerous, hemiorthotropous, placentation parietal, stylar region lacking, stigma strongly 2-5 lobed. Male flowers 3-6 androus, stamens connate, synandrium strongly lobed, anther-cells globose, dehiscent by an apical pore. Fruit an ovoid berry, many-seeded. Seeds ovoid to ellipsoid, testa costate.

About 8 species are distributed throughout tropical south and southeast Asia (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 4 species.

#### KEY TO THE SPECIES

- |    |   |                       |
|----|---|-----------------------|
| 1. | Spathe not reflexed, limb of spathe narrowly lanceolate   | <b>colocasioides</b>  |
| -  | Spathe reflexed, limb of spathe ovate or ovate-lanceolate   | <b>2</b>              |
| 2. | Leaf blade adaxially green, abaxially paler green and often purple-suffused with the veins pale green | <b>colocasiifolia</b> |
| -  | Leaf blade adaxially glossy deep green and abaxially much paler green                                 | <b>3</b>              |
| 3. | Spathe yellow outside, dark yellow inside with the interior basal half purple red                     | <b>discolor</b>       |
| -  | Spathe light purple outside, purple red inside  | <b>gagei</b>          |

**Steudnera colocasiifolia** K. Koch ("*colocasiaefolia*") in Wochenschr., Gärtnerei Pflanzenk. 5: 114 (1862). Schott in Bonplandia: 222 (1862); Regel, Gartenflora. 18: 323 (1869), t. 633; Andre' in Illustr. Hort. 19: 33, t. 90 (1872); Engl. in DC. Monogr. Phan. 2: 452 (1879); Hook. f. in Bot. Mag.: t. 6762 (1884) *et* in Fl. Brit. India 6: 520 (1893-reprint 1954); Krause in Engler, Pflanzenr. 71 (IV. 23E): 13-15 (1920); Hu, Dansk Bot.

Arkiv 23 (4): 426 (1968); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 494 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 86-87 (2007); Heng & Boyce in Heng *et al.*, Fl. China 23: 70 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 297 (2012). Pl. LXXIV.

Type: Burma (Myanmar), Martaban, Karen hills.

Bengali: *Ban Kachu*

A medium sized evergreen herb; stem rhizomatous, epigeal, erect, later decumbent with age, 20-50 × 1.5-2.5 cm, covered with cataphyll and leaf remains, older portion naked. Leaves several together, petiolate; petiole up to 30 cm long, c 8 mm in diameter, pale green, petiolar sheath very short, pale green; leaf blade 15-40 × 8-25 cm, ovate, peltate, acuminate, base retuse, sinus very shallow, membranaceous, green adaxially, paler green abaxially and often purple-suffused with the veins pale green. Inflorescence solitary; peduncle shorter than the petiole, terete, pale green, 15-20 cm long and up to 4 mm in diameter. Spathe c 15-18 × 7-10 cm, ovate-lanceolate, long acuminate, not constricted, reflexed, marcescent, yellow outside and rich purple-brown inside, lower part persistent into fruiting. Spadix lacking appendix; much shorter than the spathe; 4-7 cm long and 4-7 mm in diameter; pistillate (female) flower zone cylindrical, dorsally adnate to spathe, c 3 cm long, pale creamy white; staminate (male) flower zone oblong-cylindrical, ivory, clavate or capitate, free, c 1.5 cm long. Ovary subglobose, 2-3 × 0.5-1.0 mm, surrounded by a whorl of 5-8 clavate staminodes, ovules numerous, anatropous, placentation parietal, style very short, stigma 4-5 lobed, lobes ascending, blunt, not exceeding the style. Stamens connate, anthers 5-7, 1-2 × 1.5-2.5 mm, thecae dehiscing by apical pores. Fruit an ovoid berry, many-seeded. *Fl. & Fr.*: 4-5. *Shady forest floors*. 2n = 28 (Petersen, 1989).

**Bandarban:** Thanci road, Alikadam, Guishapjiri, 03 v 1998, *Rahman et al.* 2860 (HCU). **Chattogram:** C.U. Botanic garden, 29 vi 1998, *Rahman et al.* 3241 (HCU). **Cox's Bazar:** Signal Hill, 29 viii 1943, *Sinclair* 3198 (E 00079897). **Moulvibazar:** Adampur beat, Mullawia, 23 iii 2008, *Hosne Ara* HA. 2734 (DACB); Lawachara, 20 v 2014, *Sardar Nasir Uddin* N. 5291 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 22 iv 2008, *Hosne Ara* HA. 2739 (DACB) [Originally collected

from Adampur beat under Moulvibazar district]. **Rangamati:** Manikchari, 25 iv 1976, *Huq, Rahman & Mia* H. 2524 (DACB); Pablakhali forest area, 29 iv 1977, *Huq & Rahman* H. 3274 (DACB).

Northeastern India, northern Thailand, southwestern China and Myanmar.

The poisonous stem is used to treat injuries, cuts, bleeding, snake or insect bites, vasculitis and skin ulcers (Heng, 1979).

***Stuednera colocasioides*** Hook. f., Fl. Brit. India 6: 520 (1893-reprint 1954). Krause in Engler, Pflanzenr. 71 (IV. 23E): 11-13 (1920); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 23 (1976); Balakrishnan, Fl. Jowai 2: 565 (1983); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 14 (1989); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 494 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 87-88 (2007); *Stuednera virosa* Prain, Beng. Pl. 2: 1113 (1903-reprint 2004); Heinig, List Chittagong: 74 (1925); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 110 (1956); Mitra, Fl. Pl. E. India 1: 77 (1958). Pl. LXXXV.

Type: Assam, Wallich 1849-Herb. Calcutta; No. 8947, 8944 (K).

Bengali: *Bish Kachu*

A perennial herb; stem c 3.5 cm thick, elongate, fibrous above, yellow inside. Leaves solitary to several together, petiolate; petiole 30-45 cm long, green; leaf blade 25-60 × 15-50 cm, thin, broadly ovate, acute, emarginate or broadly retuse at the base, light green adaxially and glaucous abaxially, purplish when young, veins 5-8 on either side of the midrib. Inflorescence solitary; peduncle shorter than the petiole, pale green, 12-18 cm long, 4-5 mm in diameter. Spathe up to 22 cm long, not reflexed; tube 2.0-2.5 cm long, ovoid, green, c 8 mm in diameter, convolute; limb narrowly lanceolate, acuminate, yellow on both sides. Spadix much shorter than the spathe, lacking appendix, cylindrical, c 5 cm long, yellowish-white; pistillate (female) and staminate (male) flower zones equal, female zone fused with the spathe towards the base for about half way up. Ovary globose, staminodes very minute, ovules numerous, anatropous, placentation parietal. Male flowers 3-6 androus, stamens connate, anther-cells globose, dehiscing by apical

pores. Fruit a berry, ovoid, many-seeded. *Fl. & Fr.*: 4-9. *Shady moist hill slopes in rain forests.*

**Bandarban:** Alikadam, Thanci road, Guishapjhiri, 03 v 1998, *Rahman et al.* 2858 & 2859 (HCU); On the way of Betchari, 22 ix 2004, *Hosne Ara* HA. 1214 (DACB). **Chattogram:** Locality & Collector unknown, 07 v 1875, No. 11367 (CAL); Locality unknown, March 1898, *Mokim* (CAL); Bariadhala to Hazarikhil, 30 x 1978, *Huq, Rahman & Mia* H. 3987 (DACB); Barabakund, 23 vi 1979, *Mia & Rahman* M. 121 (DACB); Dhurong, 23 iv 1980, *Das & Alam* 3882 (BFRIH); Sitakundo, 01 x 2005, *Hosne Ara* HA. 2592 (DACB); Mirsarai, 01 x 2005, *Hosne Ara* HA. 2602 (DACB); Town area, 01 x 2005, *Hosne Ara* HA. 2609 (DACB); Foiage Lake area, 01 x 2005, *Hosne Ara* HA. 2614 (DACB). **Cox's Bazar:** Kelatuli, 12 iii 1945, *Sinclair* 4056 (E 00079896); Himchari, Lalutia, 10 vi 2001, *Sarder Nasir Uddin* N. 966 (DACB); Teknaf Game Reserve, Whykeon Range, Rhykong beat, 29 ix 2005, *Hosne Ara* HA. 2350 (DACB); Bara Inani, 30 ix 2005, *Hosne Ara* HA. 2467 (DACB); Himchari, 30 ix 2005, *Hosne Ara* HA. 2523 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 22 ix 2015, *Hosne Ara* HA. 2899 (DACB) [Originally collected from Madhabkundo under Moulvibazar district]. **Habiganj:** Near Satchari forest, 19 iv 1985, *Huq & Mia* H. 7016 (DACB); Kalenga beat, Kalenga, 16 v 2005, *Hosne Ara* HA. 1541, 1542 (DACB); Satchari forest, 17 v 2005, *Hosne Ara* HA. 1583, 1584 (DACB); 07 vii 2005, *Hosne Ara* HA. 1869 (DACB). **Khagrachari:** Betcharipara, 20 ii 1998, *Alam* EB 246 (BFRIH); Alutilla, 11 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 460 (DACB). **Kushtia:** Chuadanga, Munshiganj, 03 i 1976, *Huq, Rahman & Mia* H. 1862 (DACB). **Moulvibazar:** Samanbag beat, 25 iv 1987, *M.K. Alam* 5809 (BFRIH); Madhabkundo, 05 vi 1998, *Hosne Ara* HA. 38 (DACB); Lawachara reserve forest, 02 v 2003, *Hosne Ara* HA. 203 (DACB); 15 v 2005, *Hosne Ara* HA. 1493, 1494 (DACB); Muraichara, 19 v 2005, *Hosne Ara* HA. 1674 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1714, 1715 (DACB); Gazipur beat, Hararganj forest, 21 v 2005, *Hosne Ara* HA. 1735, 1736 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1783, 1785 (DACB); Gazipur beat, Hararganj forest, 05 vii 2005, *Hosne Ara* HA. 1801 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1831, 1832 (DACB); Muraichara beat, Ichachara forest, 07 v 2010, *Hosne Ara* HA. 2754 (DACB); Muraichara beat, Awolachara

punji, 07 v 2010, *Hosne Ara* HA. 2764 (DACB); Juri forest, 02 xii 2014, *Hosne Ara* HA. 2864 (DACB); Madhabkundo, 03 xii 2014, *Hosne Ara* HA. 2872 (DACB). **Rangamati:** Manikchari, 25 v 1976, *Huq, Rahman & Mia* H. 2524 (DACB); Pablakhali forest area, 29 iv 1977, *Huq & Rahman* H. 3274 (DACB); Kaptai, Thandachari, 14 v 1996, *Mohiuddin & Hoque* 7712 (BFRIH); Ansar Campchari, Rampahar, Kaptai, 16 vi 2001, *Sarder Nasir Uddin* N. 997 (DACB); Kaptai, Bangchori beat, Bangchori, 06 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 349 (DACB); Kaptai, Shilsori, 09 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 450 (DACB); Rajbari area, 18 ix 2004, *Hosne Ara* HA. 1120 (DACB); Rangamati, DC Bangloo area, 20 ix 2004, *Hosne Ara* HA. 1158 (DACB); Kaptai, Chitmaram, 09 i 2005, *Hosne Ara & Sarder Nasir Uddin* HA. 1428 (DACB). **Sylhet:** Sylhet, Collection date & year unknown, *Wallick* 1849, 8944, 8947 (K); Sylhet area 24 vi 1968, *Mozahar* 142 (DUSH); Tamabil-Jafflong, 04 vi 1998, *Hosne Ara* HA. 27 (DACB).

Sikkim, the Himalayas and Cachhar regions of India.

This plant is poisonous for the human body. It may be used in medicine but never consumed by human beings as a vegetable (Watt, 1889-1892).

**Stuednera discolor** N.E. Br. in Gard. Chron. new ser. 4: 708 (1875). Hook. f., Fl. Brit. India 6: 520 (1893-reprint 1954); Krause in Engler, Pflanzenr. 71 (IV. 23E): 15 (1920); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 14 (1989); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 494 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 88-89 (2007); Boyce *et al.*, Fl. Thailand 11 (2): 297-298 (2012); *Stuednera colocasiifolia* var. *discolor* (W. Bull) Engl. in A.DC. & C.DC., Monor. Phan. 2: 452 (1879). Pl. LXXXVI.

Type: Assam (K).

Bengali: *Bahari Kachu*

Medium-sized to robust evergreen herb; stem 2-30 × 1.5-3.0 cm, epigeal, erect, later decumbent with age, densely covered with tattered cataphyll, roots 1.5-3.0 mm in diameter, produced from the lower stem portions and from the ventral surface of the decumbent stems. Leaves several together, petiolate; petioles terete, 10-18 cm long, 3-7



mm in diameter, pale green, petiolar sheath very short; leaf blade 15-30 × 8-18 cm, peltate, ovate, apex acuminate, emerginate basally, sinus very shallow, posterior lobes almost absent, membranaceous, glossy deep green adaxially, much paler green abaxially. Inflorescence solitary; peduncle 6-12 cm long, 1.5-3.0 mm in diameter, terete, pale green. Spathe 10-14 × 3-5 cm, ovate-lanceolate, long acuminate, reflexing on opening, upper part soon withering, marcescent, lower part persistent into fruiting stage, yellow outside, dark yellow inside, red-purple at base. Spadix 4-6 cm × 4-7 mm; pistillate (female) flower zone cylindrical, pale creamy white, dorsally adnate to the spathe; staminate (male) flower zone clavate, free, pale creamy white. Flowers unisexual, naked. Ovary subglobose, 2-3 × 0.5-1 mm, surrounded by a whorl of 5-8 clavate staminodes, 2-5 loculate, ovules numerous, on parietal placentas, hemi-anatropous, style very short, stigma 3-5 lobed, exceeding style width. Stamens 1-2 × 1.5-2.5 mm, 4-6 androus, connate into polygonal, shortly stipitate synandrium, thecae dehiscing by apical pores. Fruit a berry, 6-11 × 4-7 mm, ovoid, ripening dull red. Seeds 0.5-1 × 0.3-0.5 mm, sarcotestate, testa thick, longitudinally costate. *Fl. & Fr.*: 3-5. *Tropical humid forests, shady places of hill slopes and foothills*.  $2n = 56$  (Petersen, 1989).

**Bandarban:** Thanchi road, 23 viii 1997, *Rahman, Alam, Yusuf & Hossain* 1792 (HCU). **Moulvibazar:** Muraichara beat, Ichachara forest, 07 v 2010, *Hosne Ara* HA. 2753 (DACB).

Northeastern India, northern Thailand and Myanmar.

**Stuednera gagei** Krause in Engler, *Pflanzenr.* 71 (IV. 23E): 15-16 (1920). Rao & Verma, *Bull. Bot. Surv. India* 18 (1-4): 24 (1976); Karthikeyan *et al.*, *Fl. India Enum.* in *Fl. India ser. 4*: 14 (1989); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 494 (2002). Pl. LXXVII.

Type : India, Lushai Hills (Gage n. 249-in April 1899-Herb. Calcutta).

Bengali: *Banno Kachu*

Medium sized, evergreen herb; stem 6-12 × 2-3 cm. Leaves solitary to several together, petiolate; petiole 30-65 × 0.5-1.0 cm, green, petiolar sheath short, purple; leaf blade broadly ovate or suborbicular, 24-39 × 18-23 cm, thinly coriaceous, peltate,

acuminate, entire or emarginate at the base, glossy deep green adaxially, paler green abaxially. Inflorescence solitary; peduncle shorter than petiole, 8-15 × 0.5 cm, light green or light purple. Spathe ovate-lanceolate, 9-11 × 3.5-4.5 cm, acuminate, not constricted, reflexed, marcescent, light purple outside and purple red inside. Spadix lacking appendix, much shorter than spathe, 3.5-4.0 cm long; pistillate (female) flower zone 2.5-3.0 × 0.5-0.6 cm, pale yellow, slightly longer and narrower than the staminate (male) flowers; staminate (male) flower zone adjoining the female, clavate or capitate, white, 0.7-1.1 × 0.5-0.7 cm. Ovary subglobose, ovules numerous, anatropous, parietal placentation, style very short, stigma 4-lobed. Fruit a berry, ovoid, many seeded. *Fl. & Fr.*: 3-4. *Grows in shady and damp places of forest floor.*

**Moulvibazar:** Adampur beat, Gangpali, 23 iii 2008, *Hosne Ara* HA. 2735 (DACB).

**Dhaka:** Bangladesh National Herbarium garden (Cultivated), 22 iv 2009, *Hosne Ara* HA. 2748 (DACB) [Originally collected from Gangpali under Moulvibazar district].

India.

**Syngonium** Schott in Wiener Z. Kunst 1829 (3): 780 (1829).

**Type species:** *S. auritum* (L.) Schott (*Arum auritum* L.)

Root-climbing or shortly creeping, evergreen herbs, internodes short to elongate, green. Leaves numerous; petioles long, terete above, long vaginate; leaf blade very variable in form according to the stages of development, at maturity cordate, oblong-cordate, lanceolate, sagittate, trifid to trisect, pedatifid to pedatisect, rarely pinnatifid, when juvenile entire, ovate to sagittate or cordate-sagittate or hastate, reticulate to transverse-reticulate in venation. Inflorescence 1-8 in each floral sympodium; peduncle much shorter than the petiole, erect at anthesis, pendent in the fruit. Spathe strongly constricted between the tube and the limb; tube convolute, ovoid-ellipsoid or cylindrical or globose, sometimes ventricose, persistent; limb usually creamy, boat-shaped to expanded at anthesis, erect to spreading, usually marcescent after anthesis, later deciduous. Spadix sessile, much shorter than the spathe; the pistillate (female) flower zone cylindrical to conoid, separated from the staminate (male) flower zone by a constricted zone of sterile flowers, male zone clavate to cylindrical or ellipsoid, longer than the female zone, fertile

at the apex. Flowers unisexual, perigone absent. Female flower connate, ovary obovoid or oblong-obovoid, 1-3 locular, ovules 1-2 per locule, anatropous, funicle short, stylar region as broad as the ovary, stigma discoid or 2-lobed, rarely globose, discoid-capitate or cup-shaped, narrower than the ovary, connate, forming ovoid to ellipsoid, usually brown, sometimes white. Male flowers 3-4 androus, stamens connate into the synandrium, synandrium obpyramidal, truncate to rounded at the apex, anthers linear, connective thick, dehiscent by a short slit below the apex of the connective. Fruit large. Seed ovoid to ellipsoid, rather large, testa smooth, thin, black or dark brown, shiny.

About 35 species are distributed throughout tropical America and West Indies (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 2 species.

#### KEY TO THE SPECIES

1. Adult leaf blades thick, juvenile leaves thick, large, broadly ovate, peduncle 10-13 cm long at anthesis **macrophyllum**
- Adult leaf blades thin, juvenile leaves thin, sagittate or hastate (or if cordate, very small), peduncle less than 9 cm long at anthesis **podophyllum**

**Syngonium macrophyllum** Engler, Pflanzenr. 71 (IV. 23E): 128 (1920). Standley & Steyermark, Fl. Guatemala, Fieldiana, Bot. 24 (1): 355-356 (1958); Graf, Tropica, edn. 5: 127, 1095 (1978-reprint 2003); Croat, Ann. Missouri Bot. Gard. 68 (4): 621-622 (1981); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 504 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 89-90 (2007). Pl. LXXVIII.

Type: Mexico (locality not known) (B, holotype, two specimens made from cultivated plants in Berlin).

Bengali: *Latano Kachu*

A large evergreen climbing herb; juvenile plants with glaucous stem, internodes 0.8-5.2 cm long, usually scandent. Leaves petiolate, petioles 7-25 cm long, glaucous, sheathed c 1/2 of their length; leaf blade sub-coriaceous, broadly ovate, 8-16 × 6-10 cm, the posterior lobes at first rounded, becoming sagittate, rounded at the apex, intermediate

leaves with the apical lobe elliptic, acuminate at the apex, much constricted at the base, the posterior lobes becoming nearly pinched off, narrowly rounded to acute at the apex. Adult plants with stems scandent, glaucous, internodes 2-4 cm long near the apex, petioles often glaucous, 25-60 cm long, sheathed 1/2-3/4 their length with a rib between the sheath and the leaf blade, the sheath free-ending and acute at the apex, leaf blade subcoriaceous, pedatisect; leaflets 7-9, mostly free or the outer ones confluent, the lowermost usually variously auriculate, dark to medium green adaxially, smooth, light green abaxially, rachis sharply margined, median leaflet 17-47 × 5-18 cm, oblanceolate, elliptic, broadly elliptic or ovate-elliptic, acuminate to acute and down-turned at the apex, cuneate to abruptly attenuate at the base. Inflorescence 4-8 per axil; peduncle almost terete, erect, 10-13 cm long at anthesis. Spathe tube ovate, green and glaucous outside, green to greenish-tan inside, 3.0-5.5 × 3-5 cm; limb 7.0-11.5 cm long, at first green, later cream, mucronate at the apex. Spadix shorter than spathe; pistillate (female) flower zone 1.5-3.0 × 2.0 cm at the base, pale green, flowers irregularly 5-6 sided; staminate (male) flower zone of the spadix oblong-ellipsoid, abruptly constricted just above the sterile staminate flowers, the fertile staminate flowers with 4 stamens. Female flower connate, ovary obovoid or oblong-obovoid, 1-3 locular, ovules 1-2 per locule, anatropous, stylar region as broad as the ovary, stigma sub-sessile, discoid, yellowish at anthesis. Male flowers 3-4 androus, stamens connate into the synandrium, synandrium with the line of fusion scarcely visible, the apex truncate or with a conspicuous central depression, the sterile staminate flowers somewhat larger. Fruit large, 8-14 × 5-8 cm, yellow. Seeds obovoid, white before maturity, becoming dark grey. *Fl. & Fr.*: 6-8. *Shady and damp areas.*

**Dhaka:** Moghbazar area, 06 x 2004, *Hosne Ara* HA. 1461 (DACB).

Mexico to Ecuador (Croat, 1981).

As an ornamental plant, it is commonly planted both in public places and homesteads.

**Syngonium podophyllum** Schott, Bot. Zeitung (Berlin) 9: 85 (1851). Standley, Fl. Panama, Ann. Missouri Bot. Gard. 31 (1): 50 (1944); Birdsey, Cultivat. Aroid.: 125 (1951); Standley & Steyermark, Fl. Guatemala, Fieldiana, Bot. 24 (1): 356-357 (1958);

Graf, *Exotica*, edn. 8: 234, 237 (1976); *Tropica*, edn. 5: 130, 1095 (1978-reprint 2003); Croat, *Ann. Missouri Bot. Gard.* 68 (4): 628-636 (1981); Walters *et al.*, *European Gard. Fl.* 2 (2): 104 (1984-reprint 2003); Noltie, *Fl. Bhutan* 3 (1): 157 (1994); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 505 (2002); Acevedo-Rodriguez and Nicolson in Acevedo-Rodriguez and Strong, *Contrib. U. S. Nat. Herb.* 52: 46 (2005); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 90-91 (2007); *Pothos auritus* Willd. *ex* Schult., *Mant.* 3: 301 (1827), non *Syngonium auritum* (L.) Schott.; *Arum auritum* Vell. non L., *Fl. Flum.* 9. tap. 113 (1827). Pl. LXXIX.

Type: Mexico (Schott drawings 3223 and 3226; NYBG Photos 4330 and 4329 respectively).

Bengali: *Bahari Kachu*

English: Arrow-head Vine, American Evergreen

A large, epiphytic vine; stem 1.0-1.5 cm thick, internodes elongate. Juvenile plants with long-petiolate leaves; leaf blade simple, thin, cordate, 7-14 cm long, becoming sagittate or hastate, basal lobes triangular or oblong-lanceolate, terminal lobe acuminate, leaf blade on climbing plants 12-27 cm long. Adult plants with stem sometimes glaucous, sap milky, internodes 2.8-14.5 cm long, 0.5-3.5 cm wide (dry); petioles 15-50 cm long, sometimes glaucous, sheathed 2/3 their length, sheath free-ending, rounded to obtusely angular above the sheath; leaf blade pedatisect, thin, dark green adaxially, paler abaxially; leaflets 3-11, united to free, lowermost leaflet variously auriculate at the base, the auricles oblong to oblong-elliptic to broadly elliptic, median leaflet obovate to broadly elliptic, abruptly acuminate at the apex, broadly or narrowly decurrent at the base, 16-38 × 6-17 cm, segments separated by short or elongate internodes of the rachis. Inflorescence 4-11 per axil; peduncle sometimes glaucous, somewhat compressed laterally, erect and usually less than 9 cm long at anthesis, pendent. Spathe 9-11 cm long; spathe tube sometimes glaucous, narrowly ovoid to ellipsoid, 3-5 × 1.5-2.0 cm, green inside and outside, limb greenish-white to creamy-white or sometimes green outside and creamy-white inside, 6.0-7.5 × 3-5 cm, long-cuspidate at the apex. Spadix shorter than spathe; pistillate (female) flower zone 1-2 cm long, 6-9 mm in diameter, greenish-creamy; staminate (male) flower zone 4-7 cm long, 7-15 mm in diameter, creamy. Ovary depressed-obpyramidal, stigma discoid-capitate, sometimes 2-or 3-lobed. Syndrium

with anthers usually 4, cross-shaped, 3.5-4.0 mm in diameter. Fruit red to reddish-orange or yellow (rarely brown) at maturity. Seeds many, ovoid, 7-11 × 5-7 mm, black or brown. *Fl. & Fr.*: 2-11. *Shady moist places*. 2n = 26 (Petersen, 1989).

**Bogura:** Beltola, 18 iii 2001, *B.M. Rezia Khatun* R.K. 2875 (DACB). **Chattogram:** Lalkhan Bazar, *Rahman et al.* (without date & number). **Dhaka:** Mirpur Botanical Garden, 02 x 2004, *Hosne Ara* HA. 1447 (DACB); Bangladesh National Herbarium compound, 09 ii 2014, *Emdadul Haque Khokan* EHK. 95 (DACB). **Patuakhali:** Patuakhali Sadar, Lebukhali, 22 vii 2010, *M. Sultana* 1797 (DUSH).

From Mexico to the Guyanas, Brazil and Bolivia.

The plant is widely used for ornamental purposes in public places and homesteads.

The juice of crushed leaves of this plant is an effective medicine to cure asthma. The Siona Indians of northeastern Ecuador use sap of the plant against stings of the paraponera ant (Croat, 1994).

### **Typhonium** Schott in Wiener Z. Kunst 1829 (3): 732 (1829).

**Type (Lectotype) species:** *T. trilobatum* (L.) Schott  
(*Arum trilobatum* L.; Nicolson in Taxon 16: 519. 1967).

Very small to medium-sized, seasonally dormant or evergreen, glabrous, rarely pubescent herbs; stem globose, subglobose or irregular tuber, sometimes rhizomatous or stoloniferous, cataphyll distinct or indistinct. Leaves few to several; petiolar sheath rather short; leaf blade simple, usually cordate-sagittate, sagittate to hastate, trilobed or pedately dissected, rarely linear, narrowly lanceolate, elliptic-oblong or cordate, venation reticulate. Inflorescence solitary, appearing with or without or after the leaves; peduncle shorter than the petiole. Spathe constricted between the tube and the limb; tube usually persistent, convolute; limb incurved, spreading or recurved, widely ovate, ovate to lanceolate, acute to long acuminate, usually green or purplish, marcescent. Spadix sessile, shorter, subequal or longer than the spathe; basal pistillate (female) flower zone with congested female flowers, cylindrical, subconical to subglobose; interstice between the male and the female subcylindrical, partly or entirely covered with sterile flowers; upper

staminate (male) flower zone with congested male flowers, rarely with staminodes above; appendix sessile or shortly stipitate, smooth, basically cylindrical, usually long-exserted, sometimes tapered to the apex. Flowers unisexual, perigone absent. Female flowers each consisting of a pistil, ovary ovoid, ellipsoid or obovoid, unilocular, ovules 1-3, orthotropous, placenta basal, stigma sessile, discoid-hemispheric. Male flowers 1-3 androus but commonly 1-androus, stamens free or sometimes connate, anther sessile, laterally dehiscent to slits or apically short dehiscent to pores. Sterile flowers on interstice capitate, clavate, subulate, or filiform, variously curved. Fruit usually a berry, ovoid, usually surrounded by a persistent spathe tube, 1-or rarely 2-seeded, orange-red, green or white when ripe. Seed globose to obnate, testa thin, rugulose to smooth, albuminous.

About 37 species are distributed throughout tropical south, southeast and east Asia, Malay Archipelago and Australasia (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 8 species and 2 varieties.

#### KEY TO THE SPECIES

- |   |                      |
|---|----------------------|
| 1. Leaves simple  | <b>2</b>             |
| - Leaves pedate   | <b>listeri</b>       |
| 2. Spathe with a long slender apical tail   | <b>flagelliforme</b> |
| - Spathe without apical tail  | <b>3</b>             |
| 3. Base of the appendix expanded forming an oblique cap like structure            | <b>cochleare</b>     |
| - Base of the appendix not expanded and not forming an oblique cap like structure | <b>4</b>             |
| 4. Inflorescence appearing alongside leaves                                       | <b>5</b>             |
| - Inflorescence appearing after the leaves  | <b>roxburghii</b>    |
| 5. Male part of the spadix more than 1.4 cm long                                  | <b>6</b>             |
| - Male part of the spadix less than 1.0 cm long                                   | <b>gracile</b>       |
| 6. Sterile flowers filiform   | <b>7</b>             |
| - Sterile flowers finely papillose  | <b>blumei</b>        |
| 7. Staminode yellow   | <b>elatum</b>        |
| - Staminode white   | <b>trilobatum</b>    |

**Typhonium blumei** Nicolson & Sivadasan, *Blumea* 27: 494 (1981). A. Hay, *Blumea* 37: 373-375 (1993); Sriboonma *et al.*, *J. Fac. Sci. Univ. Tokyo* 3 (15): 305 (1994); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 515 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 91-92 (2007); Heng & Hetterscheid in Heng *et al.*, *Fl. China* 23: 35 (2010); *Arum trilobatum* var.  $\beta$  *auriculatum* Sims, *Bot. Mag.* 49 (1822) t. 2324; *Arum trilobatum* auct. *non* L.: Thunb., *Fl. Japon.*: 234 (1984); Curtis, *Bot. Mag.* 10 (1796) t. 339; Lodd. *Bot. Cab.* 6 (1821) t. 516; *Arum divaricatum* auct. *non* L.: Roxb. *Hort. Bengal.*: 65 (1814); *Fl. Ind.* 3: 503 (1832); Wight, *Icon. Pl. Ind. Or.* 3: 6, t. 790 (1844); *Typhonium divaricatum* auct. *non* Bl., *nom. illegit.*: Bl., *Rumphia* 1 (1837) t. 36A; Schott, *Aroid.* 12 (1855), t. 18; Hook. f., *Fl. Brit. India* 6: 510 (1893-reprint 1954); Engler, *Pflanzenr.* 73 (IV. 23F): 115 (1920); Liu, *Fl. Taiwan* 5: 815 (1978), t. 1530; Li in Wu & Li, *Fl. Reipubl. Pop. Sinic.* 13(2): 3 (1979). Pl. LXXX.

Type: Japan, Buerger and Siebold s.n. (L 898, 90..... 290 holotype, 898, 90-298 isotype).

Bengali: *Ban Kachu*

Seasonally dormant herb; stem a small terrestrial tuberous sub-cylindrical rhizome, up to 3 × 2 cm. Leaves 2-8 together, petiolate; petiole green, 20-35 cm long, 0.4-0.5 cm in diameter, basal 4 cm sheathing; leaf blade simple, membranous, green adaxially, paler green abaxially, usually ovate-sagittate, occasionally hastate to trilobed, 5-15 × 3.5-10.0 cm, the posterior lobes abruptly narrowing on the inside toward the sinus. Inflorescence appearing alongside leaves; peduncle short, 3-5 × 0.3-0.4 cm, pale green. Spathe 15-38 cm long, lower portion (tube) convolute, ellipsoid-ovoid, greenish outside and purplish inside, 1.5-3.5 cm long; limb 13-35 cm long, 4.5 cm in diameter at the base, spreading and withering, dark purple, abruptly tapering from below the middle, apex usually twisted. Spadix subequalling the spathe; pistillate (female) flower zone conic, 0.5-0.8 cm long, 0.8 cm in diameter at the base; sterile portion 1 cm long and covered with densely congested, orange, filiform, erect and slightly curved upward, finely papillose; naked interstice 1.5-3.0 cm long; staminate (male) flower zone 1.5-2.8 cm long, 0.4-0.6 cm in diameter, orange; appendix 9.5-29.0 cm long, dark purple, subsessile but often unequally somewhat swollen at the base. Infructescence surrounded by a persistent spathe tube.



Fruit a berry, pale green, with several seeds. *Fl. & Fr.*: 5-10. *Shady hill slopes beside chhara in deep rain forests.*

**Sherpur:** Jhenaigati thana, Rangtia hill, 22 vi 2004, *Hosne Ara* HA. 1026 (DACB); *ibid*, *Pavel Partha* 718 (JUH). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 01 v 2005, *Hosne Ara* HA. 1463 (DACB) [Originally collected from Rangtia hill under Sherpur district].

Eastern and southeastern Asia.

**Typhonium cochleare** A. Hay, *Blumea* 37: 365-366 (1993). Sriboonma *et al.*, *J. Fac. Sci. Univ. Tokyo* 3 (15): 310 (1994); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 515 (2002); Ara in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 92-93 (2007). Fig. 33.

Type: Australia, Northern Territory, Kapalga, 13/12/1984, D.L. Jones 1732.

Bengali: *Tin Patar Kachu*

Seasonally dormant herb; stem a subglobose tuber, up to 2 cm in diameter. Leaves simple, 5-8 together; petiole 18-30 cm long, 0.3-0.5 cm in diameter at the base; leaf blade simple, elliptic to hastate to very deeply and narrowly trilobed, with the anterior lobe c 10-16 × 5-7 cm and the posterior lobes c 9.5-14.0 × 3.5-5.5 cm, primary lateral veins 5. Inflorescence appearing alongside leaves; peduncle 3-7 cm long, 0.5 cm in diameter. Spathe 15-28 cm long; lower portion (tube) ovoid, rather thick-walled, 2.0-2.5 cm long; limb long-acuminate, spreading below, twisted above, 13-26 cm long, 2-3 cm in diameter at the base, brownish-purple outside and dark purple inside. Spadix exceeding the spathe, 7-30 cm long; basal pistillate (female) flower zone conic, 0.5 cm long and 0.6 cm in diameter at the base; then a 0.5 cm long and 1 cm in diameter zone of very fine, crowded and yellow sterile organs; then a 1.7 cm long and 0.2 cm in diameter longitudinally ridged, naked interstice; staminate (male) flower zone 0.8-1.0 cm long, 0.4 cm in diameter, coral-pink and appendix very slender and attenuate, stipe short, 26 cm long, dark purple, base of the appendix expanded forming an oblique cap like structure. Infructescence surrounded by a persistent spathe tube. Fruit a berry. *Fl. & Fr.*: 5-10. *Shady and stony hill slopes, adjacent to chhara in deep rain forests.*



Figure 33. **Typhonium cochleare** A. Hay, a) tuber, plant and leaves; b) inflorescence; c) spadix; d) male flowers; e) part of female zone and sterile flowers; f) pistil.

**Sherpur:** Ghenaigati thana, Rangtia hill, 22 vi 2004, *Hosne Ara* HA. 1030 (DACB); *ibid*, *Pavel Partha* 719 (JUH). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 05 v 2005, *Hosne Ara* HA. 1464 (DACB) [Originally collected from Rangtia hill under Sherpur district].

Northern territories of Australia.

***Typhonium elatum*** H. Ara & M.A. Hassan, *Bangladesh J. Plant Taxon.* 25 (2): 234-238 (2018). Fig. 34 & Pl. LXXXI.

*Holotype:* Bangladesh, Sherpur district, Samaschura beat, 10 x 2003, *Hosne Ara* HA 701 (DACB).

Seasonally dormant herb; stem a subglobose tuber, c 5 cm long, c 4 cm in diameter, developing several offsets. Leaf paired, petiolate; petioles to 50-64 cm long, c 1 cm in diameter, pale green; leaf blade simple, usually deeply trilobed, anterior lobe elliptic-lanceolate, to c 25 cm long, c 13 cm in diameter, posterior lobe c 19.5 cm long, c 9 cm in diameter, bright pale green adaxially, paler green abaxially. Inflorescence appearing alongside leaves; peduncle c 10 cm long, c 0.8 cm in diameter, pale green. Spathe c 40 cm long; tube and limb separated by a strong constriction; tube c 3.5 cm long, outside pale green, inside glossy dark purple; limb c 36.5 cm long, narrow lanceolate, outside pale green, inside glossy dark purple. Spadix shorter than spathe, c 29 cm long; pistillate (female) flower zone c 0.8 cm long, c 0.8 cm in diameter, flowers congested; sterile zone between female and male zones 2.7-4.0 cm long, the lower 0.5-2.2 cm with yellow staminodes, the remainder naked, light pink, longitudinally grooved; staminate (male) flower zone cylindrical, c 1.8 cm long, c 1 cm in diameter, base and top oblique, flowers congested; appendix very shortly stipitate, narrowly lanceolate, 20-24 cm long, c 1 cm in diameter at the base, top acute, base multifurcate, with surface shallowly and irregularly furrowed, dark purple, producing a strong unpleasant smell at female anthesis. Ovary elongate, cylindrical, c 1.5 mm long, 1.1-1.2 mm in diameter, white with a faint pinkish flush near the top, unilocular, with one basal ovules; stigma sessile, depressed, hemispheric, c 0.8 mm in diameter, c 0.2 mm high, papillose, pink. Stamens 0.6-0.9 mm long, light pinkish. Staminodes filiform, c 1.6 cm long, c 0.5 mm in diameter, dark

yellowish, curled. Fruit not observed, usually die before fruit formation. *Fl.*: 3-10. *Grows on the hilly area as under growth.*  $2n = 18$  (Huq *et al.* 2007).

**Sherpur:** Samaschura beat, 10 x 2003, *Hosne Ara* HA. 701 (DACB); *ibid*, 23 vi 2004, *Hosne Ara* HA. 1060 (DACB). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 02 vii 2015, *Hosne Ara* HA. 2889 (DACB) [Originally collected from Samaschura beat under Sherpur district].

Central northern parts of Bangladesh (Sherpur district).

The major morphological and cytological differences between the species *Typhonium elatum* H. Ara & M.A. Hassan and its closely allied species *Typhonium trilobatum* (L.) Schott are presented in Table-7.

**Table 7. Morphological and cytological comparison of *Typhonium elatum* H. Ara & M.A. Hassan with *Typhonium trilobatum* (L.) Schott.**

Characters	<i>Typhonium elatum</i> H. Ara & M.A. Hassan	<i>Typhonium trilobatum</i> (L.) Schott
Petiole	Green, not less than 50 cm long	Purple, not more than 45 cm long
Leaf shape	Elliptic-lanceolate	Ovate, ovate-lanceolate
Peduncle	Light green	Purple
Spathe	c 40 cm long, narrow lanceolate	15-18 cm long, ovate to broadly ovate
Spadix length	c 29 cm long	c 13.5 cm long
Appendix	Base of the appendix multifurcate	Base of the appendix truncate
Staminodes	Yellow	White
Ovary	c 1.5 mm long, c 1.2 mm in diameter, white with a faint pinkish flush near the top	c 1.0 mm long, c 0.7 mm in diameter, cream colour
Chromosome number	18 (12m + 6sm)	18 (16m + 2sm)
Satellite and DAPI	satellite 2, DAPI band 5	no satellite, DAPI band 3

m = metacentric chromosome, sm = submetacentric chromosome.

**Note:** Although the two species bear same chromosome number, they differ by the karyotype formulae and DAPI characters.

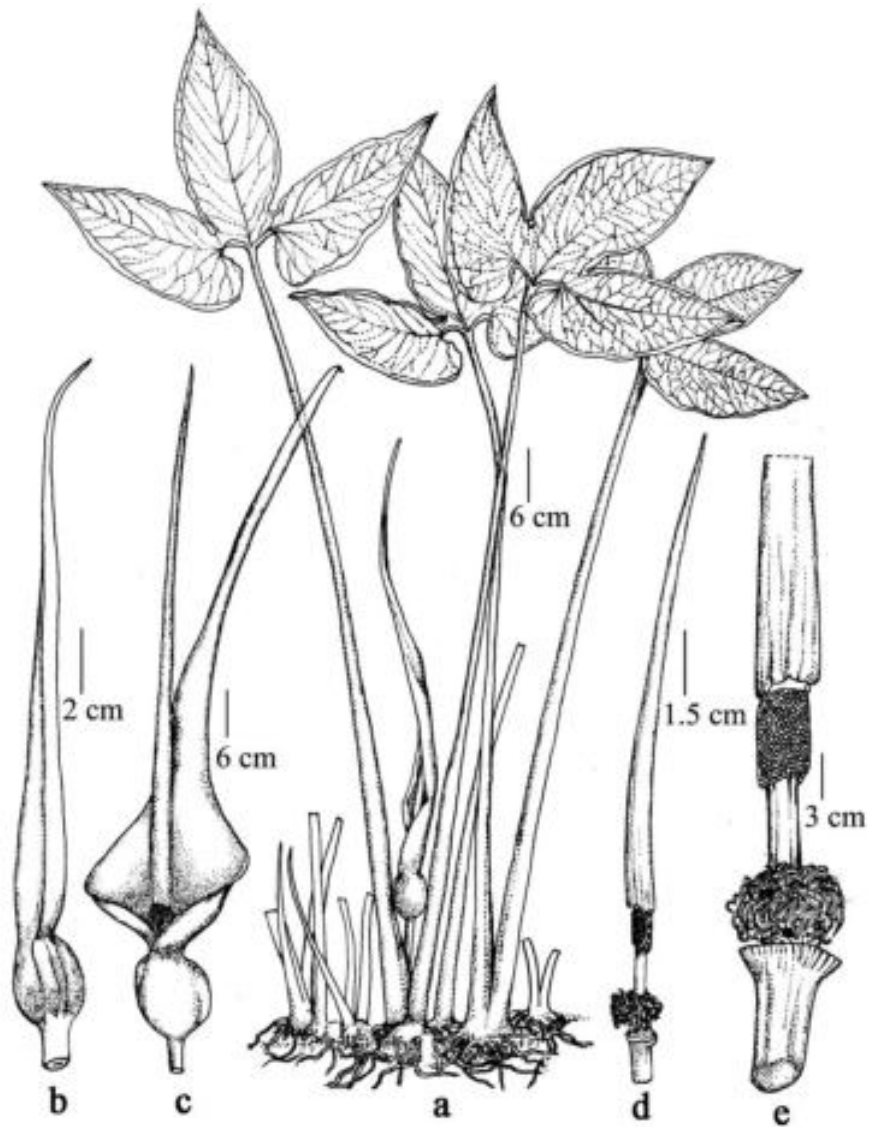


Figure 34. *Typhonium elatum* H. Ara & M.A. Hassan, a) habit sketch of a flowering plant; b) spathe; c) inflorescence; d) spadix; e) lower portion of the appendix, male zone and lower portion of the spadix.

**Typhonium flagelliforme** (Lodd.) Blume, Rumphia 1: 134 (1837). Kunth, Enum. Pl. 3: 26 (1841); Schott, Aroideae: 12 (1853); Syn. Aroid.: 19 (1856); Prodr. Syst. Aroid.: 106 (1860); Engler, Pflanzenr. 73 (IV. 23F): 112 (1920); Fischer in Gamble, Fl. Pres. Madras, 3: 1100 (1931- reprint 1967); Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 22 (1931); Mitra, Fl. Pl. E. India 1: 84 (1958); Bennet, Fl. Howrah Dist.: 94 (1979); Nicolson & Sivadasan, Blumea 27: 489-492 (1981); Bakshi, Fl. Murshidabad Dist.: 339 (1984); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 65-66 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 15 (1989); A. Hay, Blumea 37: 349-351 (1993); Sribonma, *et al.*, J. Fac. Sci. Univ. Tokyo 3 (15): 303-304 (1994); Sookchaloem, Thai For. Bull. (Bot.) 23: 24-25 (1995); A. Hay *et al.*, Blumea Supplement 8: 158 (1995); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 516 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 93 (2007); Heng & Hetterscheid in Heng *et al.*, Fl. China 23: 35 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 307-308 (2012); *Arum flagelliforme* Lodd., Bot. Cab. 4: t. 396 (1819); *Heterostalis flagelliformis* (Lodd.) Schott, Osterr. Bot. Wochenbl. 7: 261 (1857); *Arum cuspidatum* Blume, Catalogus: 101 (1823); *Typhonium cuspidatum* (Blume) Decne, Nouv. Ann. Mus. Hist. Nat. 3: 367 (1834); Hook. f., Fl. Brit. India 6: 511-512 (1893-reprint 1954); Prain, Beng. Pl. 2: 1108 (1903-reprint 2004); Cooke, Fl. Pres. Bombay 2: 823 (1908); Ridley, Fl. Malay Peninsula: 91 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 101 (1953); *T. cuspidatum* var. *ptychiurum* Blume, Rumphia 1: 134 (1837); Pl. LXXXII.

Type: Lodd., Bot. Cab. 4: t. 396 (1819).

Bengali: *Ghechu*

Seasonally dormant herb; stem a short tuberous rhizome, up to 2 cm in diameter. Leaves petiolate; petiole 10-30 cm long, distinctly sheathing in lower 2/3 parts; leaf blade simple, extremely variable, typically narrowly hastate with spreading basal lobes but sometimes elliptic, dull mid-green adaxially, paler abaxially, anterior lobe 6-25 cm long, 1-5 cm in diameter, posterior lobes horizontally spreading, 4-5 cm long, 3-5 mm in diameter. Inflorescence appearing alongside leaves; peduncle 10-15 cm long, slender. Spathe basically greenish-white and pinkish; tube ovate, globose, longitudinally keeled, 1.5-3.5 cm long, green; limb narrowly triangular-lanceolate, 10-25 cm long, sometimes

long acuminate, recurved or coiled, green on both sides, or the base flushed with purple. Spadix shorter, as long as or slightly longer than the spathe; pistillate (female) flower zone subcylindrical, slightly fusiform, 1.5-1.8 cm long, 8-10 mm in diameter; sterile interstice 1-2 cm long, covered with staminodes; staminate (male) flower zone c 5 mm long; appendix narrowly conical, subsessile, greenish-yellow, up to 20 cm long, deeply ridged and channelled, usually tapering from the base, upper part filiform, erect or horizontal or curved downwards. Ovary elongate, angular, pale green. Sterile flowers dimorphic, on the lower part of the interstice spatulate, incurved, dark or purple tipped, c 6 mm long, but those on the upper part smaller, filiform and spreading to deflexing. Inflorescence surrounded by persistent spathe tube. Fruit pale greenish, 2-3 seeded. *Fl.* & *Fr.*: 4-10. *Shady and moist areas.*  $2n = 14, 16, 50$  (Petersen, 1989).

**Barishal:** Usirpur thana, Mandapasha village, 15 iv 2004, *Hosne Ara* HA. 716 (DACB). **Bogura:** Dhunot Upazilla to Sherpur, 19 iii 2011, *Hosne Ara* HA. 2799 (DACB). **Dhaka:** Locality unknown, 19 v 1872, *C.B. Clarke* 17085 (BM); Munshiganj, Rampal, 28 v 1977, *Huq & Rahman* H 3359 (DACB); Postogola, 04 x 1956, *Abdul Ghani* 27 (CAL, DUSH); Savar Bank Town, 16 v 2003, *Hosne Ara* HA. 317 (DACB); Savar, 15 iv 2004, *Hosne Ara* HA. 715 (DACB); Savar, 26 v 2012, *Hosne Ara* HA. 2810 (DACB); Khigaon, Tilpapara (Cultivated), 22 ix 2015, *Hosne Ara* HA. 2900 (DACB) [Originally collected from Savar under Dhaka district]. **Dinajpur:** Fultala, 19 viii 2005, *Hosne Ara* HA. 2179 (DACB). **Gazipur:** Tetupara road, Baropaiha, 25 vii 2004, *Hosne Ara* HA. 1085 (DACB); Kaliakair, 19 viii 2005, *Hosne Ara* HA. 2209 (DACB). **Jashore:** Jhikorgacha-Mallikpur, 02 ix 1983, *Huq, Mia & Mahbuba* H. 6143 (DACB); Keshabpur, 30 viii 1983, *Huq, Mia & Mahbuba* H. 5992 (DACB); Jashore town area, 26 v 2012, *Hosne Ara* HA. 2837 (DACB). **Kurigram:** Baruitari village, 24 viii 2013, *Hosne Ara* HA. 2858 (DACB). **Magura:** Magura area, 26 v 2012, *Hosne Ara* HA. 2832 (DACB). **Manikganj:** Manikganj area, 26 v 2012, *Hosne Ara* HA. 2818 (DACB). **Mymensingh:** Mymensingh, 25 i 1973, *Md. Quamrul Islam* 28 (DUSH). **Narayanganj:** Deobhag, 14 ix 1973, *A.M. Huq* 1096 (DACB). **Sirajganj:** Kazipur upazilla to Charkhadah village, 18 iii 2011, *Hosne Ara* HA. 2788 (DACB). **Tangail:** Mirzapur, 19 viii 2005, *Hosne Ara* HA. 2199 (DACB).

Northeastern India, northeastern Thailand, southwestern China, Myanmar, Malesia, Philippines and northern Australia.

The tuber of the plant possesses medicinal value and is used for the treatment of cough, phlegm and chronic bronchitis. The same is crushed and turned into a paste and then applied externally on the human body to cure traumatic injury and abscesses (Heng, 1979).

**Typhonium gracile** (Roxb.) Schott, Aroideae 1: 12 (1855); Prodr. Syst. Aroid.: 108 (1860). Hook. f., Fl. Brit. India 6: 512 (1893-reprint 1954); Engler, Pflanzenr. 73 (IV. 23F): 120 (1920); Mitra, Fl. Pl. E. India 1: 84 (1958); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 20 (1976); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 15 (1989); Sriboonma *et al.*, J. Fac. Sci. Univ. Tokyo 3 (15): 308 (1994); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 516 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 93-94 (2007); *Arum gracile* Roxb., Hort. Bengal.: 651 (1814); Fl. Ind. ed. 3: 505 (1832); Wight, Icon. Pl. Ind. Or. 3: 793 (1843); *Arisaema gracile* (Roxb.) Kunth, Enum. Pl. 3: 21 (1841). Fig. 35.

Type: Rheede, Hort. Malabar. 11: t. 21 (1692).

Bengali: *Ban Kachu*

Seasonally dormant herb; stem a short tuberous, subglobose rhizome, 1-2 cm in diameter. Leaves simple, solitary or few; petiole 20-30 cm long; leaf blade simple, trifoliolate to imperfectly 5-lobed, rachis between terminal leaflet and adjacent lateral one 5-12 mm long; leaflets elliptic, 7-10 × 2.5-5.0 cm, apex acuminate. Inflorescence appearing alongside leaves; peduncle solitary, slender, short, up to 5 cm long. Spathe constricted between the tube and the limb; tube ovoid-oblong, 2-3 × 1.0-1.3 cm; limb linear-lanceolate, 10-20 × 1.5-2.0 cm at the base. Spadix equal to the spathe; pistillate (female) flower zone c less than 11mm long; interstice c 2 cm long, covered with sterile flowers at the base, naked above; staminate (male) flower zone 5 mm long; appendix subsessile, 15 cm long or longer, up to 2 mm thick at the base, narrowed to a filiform tip. Sterile flowers filiform, slender, 5-6 mm long, curled, yellow. Fruit not seen. *Fl. & Fr.*: 4-10. *Shady and moist places of hill slopes and at the foothills.*



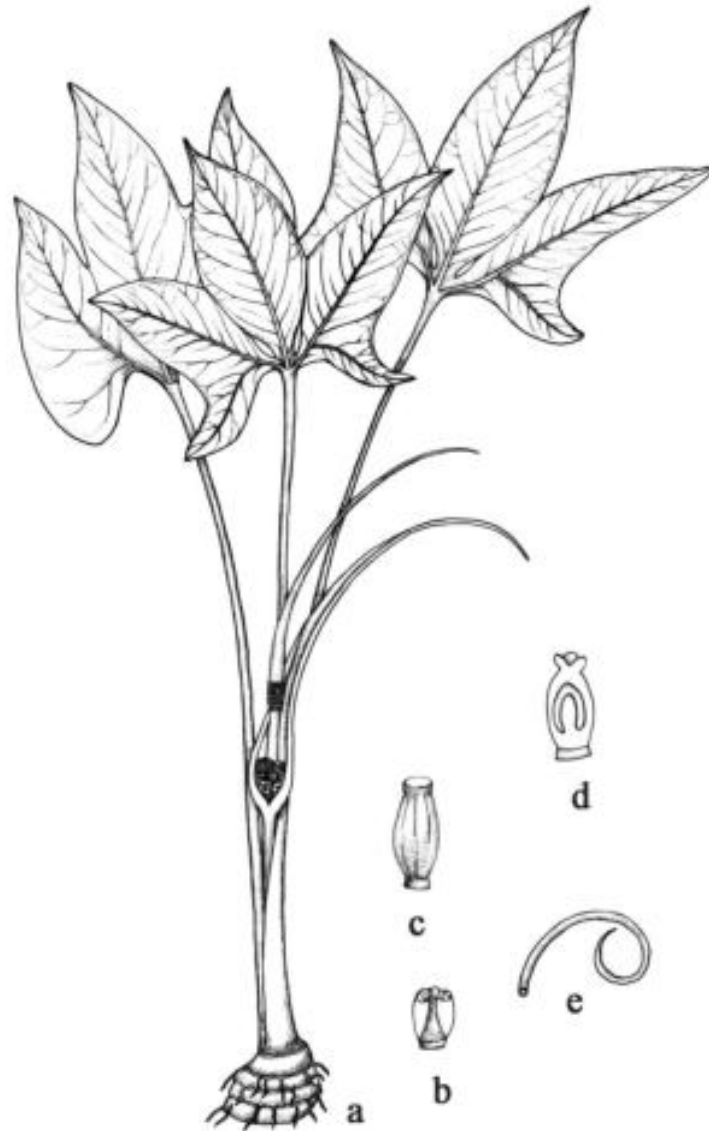


Figure 35. **Typhonium gracile** (Roxb.) Schott, a) habit sketch of a flowering plant; b) lateral view of synandrium; c) gynoecium; d) gynoecium, longitudinal section; e) sterile flower.

**East Bengal:** Bangladesh, Locality, Collection date & year unknown, *Griffith* 6000 (CAL). **Sherpur:** Gajni forest, Gandhagaon, 05 v 1982, *Mia et al.* M. 735 (DACB); 06 v 1982, *Mia et al.* M. 785 (DACB); Rangtia Range, Gazni beat, 09 x 2003, *Hosne Ara* HA. 638 (DACB); Rangtia range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 674 (DACB); Ghenaigathi thana, 21 vi 2004, *Hosne Ara* HA. 917 (DACB); Gazni beat, 21 vi 2004, *Hosne Ara* HA. 925 (DACB); Rangtia hill, 22 vi 2004, *Hosne Ara* HA. 1033 (DACB). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 02 vii 2015, *Hosne Ara* HA. 2890 (DACB) [Originally collected from Rangtia range, Gazni beat under Sherpur district]. **Sylhet:** Locality and date unknown, *Wallich* 8929 B (K).

Khasia Hills in India.

**Typhonium listeri** Prain, J. Asiat. Soc. Beng. 64: 304 (1895). Prain, Beng. Pl. 2: 1107 (1903-reprint 2004); Engler, Pflanzenr. 73 (IV. 23F): 120 (1920); Heinig, List Chittagong: 74 (1925); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 15 (1989); Mitra, Fl. Pl. E. India 1: 83 (1958); Naithani, Fl. Pl. India, Nepal & Bhutan: 455 (1990); Sriboonma *et al.*, J. Fac. Sci. Univ. Tokyo 3 (15): 294 (1994); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 517 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 94 (2007). Pl. LXXXIII.

Type: Myanmar, Chittagong, Lister 335 (CAL syntype); India, Assam, Watt s.n. (CAL syntype).

Bengali: *Ban Kachu*

Seasonally dormant herb; stem a tuberous, subglobose rhizome, 2.5-3.5 cm in diameter, cataphylls more than 3, triangular-ovate, up to 5 cm long, surrounding flowering shoot. Leaf l; petiole 25-30 cm long; leaf blade completely pedate, 5-foliolate; all leaflets about the same size, up to 15 cm long, 4-6 cm in diameter, oblong-lanceolate to lanceolate, apex acuminate, base cuneate. Inflorescence appearing alongside leaves; peduncle 1-2 cm long, purple, shorter than the petiole. Spathe constricted between the tube and the limb; tube usually persistent, c 2.5 × c 1.5 cm, oblong-ovoid, apex acute, light green outside; limb abruptly reflexed at the base, 16-22 × 5-9 cm, ovate, light green

outside with purple margin, purplish inside, marcescent. Spadix with pistillate (female) flower zone 8 mm long, 12 mm in diameter at the base; staminate (male) flower zone 15 × 7 mm; interstice c 1 cm long with filiform and reflexed, sterile flowers c 5 mm long; appendix c 11 cm long, narrowly conical, abruptly narrowed to the base. Fruit not seen. *Fl. & Fr.*: No reports available. *Moist, shady places in rain forests.*

**Chittagong Hill Tracts:** Locality & Collection number unknown, 1876, *J.L. Lister* (CAL).

Myanmar and India.

*Note:* A variant of *Typhonium listeri* Prain has been collected from Aowlachhara forest of the Muraichhara border area in Moulvibazar district. This variant is named as **Typhonium listeri** Prain var. **geniculatum** H. Ara & M. A. Hassan, **var. nov.** The chromosome number has been determined for the new variety **Typhonium listeri** Prain var. **geniculatum** H. Ara & M. A. Hassan, **var. nov.** Preliminary determination of 2n chromosome number appears as 27 (trisomic, 2n+1). Description of the aforementioned variety is mentioned below. Pl. LXXXIV.

*Holotype:* Bangladesh, Moulvibazar district, Muraichhara beat, Aowlachhara forest, 12 iii 2011, Hosne Ara HA 2778 (DACB).

Seasonally dormant herb; stem a tuberous rhizome, solitary or paired, 2.8 - 6.5 cm in diameter, 1.5-3.5 cm high, subglobose, surface irregular. Leaves petiolate; petiole 12-60 cm long, 0.3-2.0 cm in diameter, at the base, pale green, 1.5-2.5 cm long furrow at the base; leaf blade simple to pedately 3-7 dissected; leaflets sessile, elliptic to elliptic lanceolate, apex acute, margin entire; lateral leaflets gradually decrease in size; terminal leaflet 16-33 cm long, 5.0-11.8 cm in diameter, outermost leaflet 8-22 cm long, 3-8 cm in diameter, bright green adaxially, paler green abaxially, cataphylls 3, the innermost one, largest, to c 17 cm long, c 4 cm diameter, at the base. Inflorescence appearing alongside leaves; peduncle 2.5-15.0 cm long, 0.8-1.0 cm in diameter, whitish. Spathe elongate, elliptic, 16-17 cm long, 7-8 cm in diameter; tube and limb separated by a strong constriction, tube ovate, 2.0-2.5 cm long, 2.0-2.5 cm in diameter, outside pale green, smooth, inside glossy dark purple, smooth, upwards near the constriction turning pale

green; limb abruptly reflexed at the base, 10-15 cm long, acute, outside smooth, glossy pale green with a purple flush, inside smooth, dark purple, near the base pale green. Spadix longer than spathe, 12-18 cm long; pistillate (female) flower zone conical, 0.8-1.3 cm long, 1.0-1.5 cm in diameter, flowers congested; sterile part between female and male part 0.7-1.5 cm long, the lower 0.3-0.5 cm with staminodes, dark maroon in colour, tip shortly bifurcate, the remainder naked, light orange, multi-lobed; staminate (male) flower zone cylindrical, 1.3-1.9 cm long, 0.8-1.1 cm in diameter, flowers congested, light maroon in colour, sterile flowers absent above male flowers zone; appendix stipitate, stipe c 0.5 cm long, c 0.5 cm in diameter, geniculate, elongate, cylindrical-conical, 8-15 cm long, 1.0-1.1 cm in diameter at the base, base surface shallowly, irregularly furrowed, light yellow. Ovary elongate, cylindrical, c 2 mm long, 1.0-1.5 mm in diameter, whitish yellow, unilocular, with one or two basal ovules, style c 0.04 mm long, c 0.5 mm in diameter, orange, stigma not sessile, divided into two or three lobes, 0.1-15.0 mm in diameter, 0.01-0.02 mm high, yellow. Stamens 0.05-0.1 mm long, 0.08-0.10 mm in diameter, light maroon. Staminodes straight or slightly curved, c 1 cm long, 2.0-2.5 mm in diameter, dark purple, acute or subacute, tip shortly bifurcate. Inflorescence surrounded by persistent spathe tube, outside and inside dark purplish. Fruit a berry, 3-6 cm long, 2.5-3.5 cm in diameter. *Fl. & Fr.*: 3-6. *Grows on the hill slopes as undergrowth.*

**Moulvibazar:** Madhabkundo forest, 20 v 2005, *Hosne Ara* HA. 1701 (DACB); *ibid*, 06 vii 2005, *Hosne Ara* HA. 1823 (DACB); Muraichara beat, Veluachhara forest, 18 v 2008, *Hosne Ara* HA. 2743 (DACB); Aowlachara forest, 08 v 2010, *Hosne Ara* HA. 2771 (DACB); *ibid*, 12 iii 2011, *Hosne Ara* HA. 2778 (DACB). **Dhaka:** Bangladesh National Herbarium garden (Cultivated), 05 iii 2011, *Hosne Ara* HA. 2777 (DACB) [Originally collected from Aowlachara forest under Moulvibazar district].

Northeastern part of Bangladesh, Moulvibazar district (within greater Sylhet).

The variety is named after its geniculate character of appendix.

The major morphological differences between two varieties of *Typhonium listeri* Prain are outlined in Table 8.

**Table 8. Morphological comparison of *Typhonium listeri* Prain var. *geniculatum* H. Ara & M.A. Hassan, var. nov. with *Typhonium listeri* Prain var. *listeri*.**

Character	<i>Typhonium listeri</i> Prain var. <i>geniculatum</i> H. Ara & M.A. Hassan, var. nov.	<i>Typhonium listeri</i> Prain var. <i>listeri</i>
Number of cataphyll	3	more than 3
Peduncle length and colour	2.5-15 cm long, whitish.	1-2 cm long, purplish.
Sterile flower	Sterile flowers absent above male flowers.	Sterile flowers present above male flowers.

***Typhonium roxburghii*** Schott, Aroid. 1: 12 (1855) excl. t. 17; Syn Aroid.: 18 (1856); Prodr. Syst. Aroid.: 106 (1860). Hook. f., Fl. Brit. India 6: 510 (1893-reprint 1954); Trimen, Handb. Fl. Ceylon 4: 353 (1898); Prain, Beng. Pl. 2: 1108 (1903-reprint 2004); Engler, Pflanzenr. 73 (IV. 23F): 119 (1920); Ridley, Fl. Malay Peninsula: 90-91 (1925); Mitra, Fl. Pl. E. India 1: 84 (1958); Nicolson & Sivadasan, Blumea 27: 492-494 (1981); Mayo, Fl. Trop. E. Africa: 6 (1985); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 66-67 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 15 (1989); A. Hay, Blumea 37 (2): 373 (1993); Sriboonma *et al.*, J. Fac. Sci. Univ. Tokyo 3 (15): 305 (1994); A. Hay *et al.*, Blumea Supplement 8: 160 (1995); Sookchaloem, Thai For. Bull. (Bot.) 23: 34-36 (1995); Deshpande *et al.*, Fl. Mahabaleshwar Adjoin., Maharashtra: 618-619 (1995); Govaerts & Frodin, World Checkl. Bibliog. Arareae: 518 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 95 (2007); Heng & Hetterscheid in Heng *et al.*, Fl. China 23: 36 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 314-315 (2012); *Arum trilobatum sensu* Roxburgh, Hort. Beng. 65 (1814), non Linnaeus (1753); Fl. Ind. 3: 505 (1832); Wight, Icon Pl. Ind. Or. 3: 7, t. 803 (1844); *Arum diversifolium* Blume, Catal. 102 (1823), non *Typhonium diversifolium* Wall. ex Schott (1855); *Arum divaricatum sensu* Moon, Cat. 64 (1824), non Linnaeus (1753); *Typhonium divericatum* Blume in Decne., Nouv. Ann. Mus. Hist. Nat. Paris. 3: 367 (1834), *nom. illeg.* (incl. type of *Arum diversifolium* Blume (1823)); *Arum roxburghii* (Schott) Thw., Enum. Pl. Zeyl. 432 (1864); *Typhonium divericatum* var. *roxburghii* (Schott) Engler in A.DC. & C.DC., Monogr. Phan. 2: 612 (1879); *Typhonium motleyanum*

Schott, Prodr. 106 (1860); Hook. f., Fl. Brit. India 6: 510 (1893-reprint 1954); *Typhonium schottii* Prain, J. Asiat. Soc. Beng. 67: 303 (1898), Beng. Pl. 2: 1108 (1903-reprint 2004); *Typhinum trilobatum* var. *schottii* (Prain) Engler, Pflanzenr. 73 (IV. 23F): 118 (1920); *Typhonium amboinense* Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 23 (1931), *nom. illeg.* (incl. type of *T. roxburghii* Schott, 1855); *Typhonium trilobatum* auct., non (L.) Schott (1829); Backer & Bakhuizen van den Brink, Fl. Java 3: 123 (1968). Fig. 36.

Lectotype: Ceylon, Thwaites, C.P. 3764 (K), basis of Schott's t. 17; dupl. (BM, PDA), vide Nicolson and Sivadasan, Blumea 27: 492 (1981).

Bengali: *Ban Kachu*

English: Voodoo Lily

Seasonally dormant herb; stem a tuberous, subglobose rhizome, up to 3.5 cm in diameter, rooting at top. Leaves several together, petiolate; petiole up to 30 cm long, basal part sheathing in the lower third; leaf blade simple, reniform-hastate, triangular in outline, shallowly or deeply 3-lobed, lobes ovate to ovate-lanceolate, anterior lobe 6-12 cm long, posterior lobes smaller, dark green adaxially, yellowish green abaxially. Inflorescence appearing after the leaves; peduncle 2-8 cm long, creamy red with dark purple dots. Spathe 8-17 (-22) cm long; tube oblong, 2.0-3.5 cm long, 1.5 cm in diameter, outside whitish or pale green with purple stripes, inside purple; limb ovate to ovate-lanceolate, long acuminate, 6-15 × 5 cm, dark red to purple inside, abruptly tapering from below the middle, usually twisting at the tip, withering. Spadix as long as the spathe; pistillate (female) flower zone c 4-5 mm long; interstice 1.5-2.5 cm long, covered with sterile flowers in the lower 5-10 mm, naked above; staminate (male) flower zone 7-12 mm long; appendix narrowly conical, 8-15 cm long, with stipe of 1 cm long, dark purple. Ovary ovoid, white or yellowish, stigma purple, unilocular, uniovulate. Male flowers coral pink. Sterile flowers weakly papillose, yellowish to reddish, c 5 mm long, curved downward. Spathe base persistent in the infructescence. Fruit a berry, ovoid or ellipsoid, 1-2 seeded, pale green at first, white when mature. *Fl. & Fr.*: 5-10. *Shady and moist hill slopes*.  $2n = 52$  (Petersen, 1989).

**Chattogram:** Joy pahar, Sarsan road, 30 iv 1998, *Rahman's collector, Rashid* 2841B (HCU). **Bandarban:** Keochia, Chimbuk, 08 ix 1999, *Boyce, Toha & Rahman* 5764 (HCU, K).



Figure 36. *Typhonium roxburghii* Schott, a) habit sketch; b) inflorescence; c) spadix.

South India, Sri Lanka, south and central Malaysia. Introduced into northeast India, Luzon, East Africa (Zanzibar) and Neotropics (Brazil) (Sriboonma *et al.*, 1994).

The tuber of the plant is taken along with bananas to serve as a medicine for rheumatism.

**Typhonium trilobatum** (L.) Schott in Weiner, Kunst. 3: 72 (1829). Schott, Aroideae 1 (1853); Syn. Aroid.: 18 91856); Prodr. Syst. Aroid.: 108 (1860); Kunth, Enum. Pl. 3: 26 (1841); Hook. f., Fl. Brit. India 6: 509-510 (1893-reprint 1954); Prain, Beng. Pl. 2: 1107 (1903-reprint 2004); Engler, Pflanzenr. 73 (IV-23F): 117-119 (1920); Haines, Bot. Bihar and Orissa: 865 (1924-reprint 1978); Heinig, List Chittagong: 74 (1925); Fischer in Gamble, Fl. Pres. Madras 3: 1100 (1931-reprint 1967); Blatter & McCann, J. Bombay Nat. Hist. Soc. 35: 22-23 (1931); Ridley, Fl. Malay Peninsula: 90 (1945); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 101 (1953); Mitra, Fl. Pl. E. India 1: 83 (1958); Hu, Dansk Bot. Arkiv 23 (4): 450 (1968); Rao & Verma, Bull. Bot. Surv. India 18 (1-4): 19 (1976); Hara *et al.*, Enum. Fl. Pl. Nepal 1: 92 (1978); Bennet, Fl. Howrah Dist.: 94-95 (1979); Nicolson & Sivadasan, Blumea 27: 488-489 (1981); Deb, Fl. Tripura State 2: 406 (1983); Bakshi, Fl. Murshidabad Dist.: 339 (1984); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 67-69 (1987); Karthikeyan *et al.*, Fl. India Enum. in Fl. India ser. 4: 15 (1989); Parmar in Shetty & Singh, Fl. Rajasthan 3: 869 (1993); Sriboonma *et al.*, J. Fac. Sci. Univ. Tokyo 3 (15): 306 (1994); Sookchaloem, Thai For. Bull. (Bot.) 23: 37-38 (1995); Saxena & Brahmam, Fl. Orissa 4: 2054 (1996); Hajra & Verma, Fl. Sikim 1: 195 (1996); Pullaiah, Fl. Andra Pradesh 3: 1029-1030 (1997); Bhattacharyya & Sarkar, Fl. W. Champaran Dist. Bihar: 405 (1998); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 519 (2002); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 95-96 (2007); Heng & Hettterscheid in Heng *et al.*, Fl. China 23: 36 (2010); Boyce *et al.*, Fl. Thailand 11 (2): 318-319 (2012); *Arum trilobatum* L., Sp. Pl. 965 (1753); Curtis, Bot. Mag. 10: t. 339 (1796); Wight, Icon. Pl. Ind. Or. 3: 7, t. 803 (1844); Roxb., Fl. Ind. 3: 505 (ed. 2, 1832); *Arum orixense* Roxb. ex Andrews, Bot. Reposit. 5: t. 356 (1804) ('orixensis'); Roxb., Fl. Ind. 3: 503 (1832); Wight, Icon. Pl. Ind. Or. 3: 6, t. 801 (1844); *Typhonium orixense* (Roxb. ex Andrews) Schott, Wiener Z. Kunst



3: 72 (1829); *T. triste* Griff., Not. Pl. Asiat. 3: 145 (1851); *T. siamense* Engl. in A.DC. & C.DC., Monogr. Phan. 2: 615 (1879). Pl. LXXXV.

Type: Sri Lanka, Herm. Icon. 177.

#### KEY TO THE VARIETIES

- |  |                   |
|--|-------------------|
| 1. Tip of the spathe twisted, base of the appendix crenulate or multifurcate, stigma light yellowish cream | <b>fulvus</b>     |
| - Tip of the spathe not twisted, base of the appendix truncate, stigma purple                              | <b>trilobatum</b> |

#### var. **trilobatum**

Bengali: *Ghet Kachu, Ghekul*

Seasonally dormant herb; stem a short tuberous, subglobose or subcylindrical rhizome, up to 5 cm in diameter, producing few annual offsets or splitting up. Leaves simple, several together, petiolate; petiole up to 25-40 cm long, purple, sheathing at the basal part; leaf blade simple, usually deeply trilobed, united for about 1/4-1/3 of the length of the anterior lobe, anterior lobe ovate to lanceolate-ovate, up to 20 cm long, 10 cm in diameter, posterior lobe slightly smaller than anterior lobe. Inflorescence appearing alongside leaves; peduncle slender, up to 5-10 cm long, elongating somewhat in fruit. Spathe 15-18 cm long; tube convolute, ovoid or ellipsoid, persistent, greenish outside and purplish inside, 2-5 cm long, constricted at the top; limb dark red inside, greenish outside, ovate to broadly ovate, gradually tapering from the middle, acuminate, 15 × 5-9 cm, spreading and soon withering. Spadix erect, shorter than the spathe; pistillate (female) flower zone c 1 cm long, pinkish, slightly conical; interstice 1-2 cm long, densely covered with sterile flowers in the lower part, upper 1.0-2.5 cm naked; staminate (male) flower zone 2-3 cm long, pink; appendix dark red, narrowly conical, 5-10 cm long, base truncate, with 0.5 cm long stipe. Ovary yellowish green or yellowish white, stigma sessile, disciform, dark or mid purple. Male flowers pink with coral-coloured pollen. Sterile flowers filiform, whitish, curled, 1 cm long. Infructescence surrounded by the

persistent spathe tube. Fruits ellipsoid, at first green with purple spots, white when mature. *Fl. & Fr.*: 4-10. *Damp moist places*.  $2n = 18$  (Kumar and Subramaniam, 1986).

**Bandarban:** Locality, Collection number & year unknown, *J. Ilwood*, 1890 (CAL); Locality unknown, 03 v 1977, *A.M. Huq* 3353 (DACB); Keochia, Chimbuk, 08 ix 1999, *Boyce, Toha & Rahman* 5763 (HCU, K). **Barishal:** Rajapur, 18 v 1979, Sh-202 (DACB). **Bengal:** Locality, Collection date, year & number unknown, *J.D. Hooker & Thomson* (K). **Bogura:** Beltola, 18 iii 2001, *Rezia Khatun* RK. 2876 (DACB); Shibgonj area, 19 viii 2005, *Hosne Ara* HA. 2184 (DACB); Dhunot Upazilla to Sherpur, 19 iii 2011, *Hosne Ara* HA. 2798 (DACB). **Chittagong Hill Tracts:** Locality, Collection date & number unknown, 1880, *J.J. Wood* (CAL). **Cumilla:** Jashpur, 26 ix 2004, *Hosne Ara* HA. 1390 (DACB). **Dhaka:** Dhaka Station, 11 x 1868, *C.B. Clarke* (CAL); 19 v 1872, *C.B. Clarke* 17082 (K); Purana Palton, 22 v 1946, *Sukdev*, Collection number unknown (DUSH); Dhaka, June 1952, *P. Sensarme*, Collection number unknown (DUSH); 30 vi 1960, *A Mozmaier* 213 (DUSH); Kurmitola, 22 iv 1964, *G. Hussain* 147 (DUSH); Dhaka University Botanical garden, 26 v 1965, *A Malek* 102 (DUSH); Savar, 05 v 1968, *Mozahar* 111 (DUSH); 05 v 1968, *A. Hassan* 45 (DUSH); Balda garden, 25 v 1969, *Moiz* 141 (DUSH); 25 v 1969, *M.H. Rahman* 130 (DUSH); Savar, 19 iv 1970, *M.A. Rahman* 84 (DUSH); Dhaka High Court, 18 vii 1970, *Nazim* 238 (DUSH); Farmgate, 16 iv 1988, *Momtaz Begum* (DACB); Dhaka University Botanical garden, Curzon Hall, 04 vi 1999, *B.M. Rezia Khatun* 1817 (DACB); Fakirapul, *Md. Akhtar Hossain*, Collection date & number unknown (DUSH); Savar, 26 v 2012, *Hosne Ara* HA. 2809a (DACB); Khilgaon, Tilpapara (Cultivated), 04 vii 2015, *Hosne Ara* HA. 2891 (DACB) [Originally collected from Lawachara reserve forest under Moulvibazar district]. **Dinajpur:** Singra forest, 18 viii 2005, *Hosne Ara* HA. 2070 (DACB); Near Birgonj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2131 (DACB); Fultala, 19 viii 2005, *Hosne Ara* HA. 2178 (DACB). **Faridpur:** Near Goalandaghat, 01 vii 1973, *A.M. Huq* 1025 (DACB); Goalando, 16 vi 1981, *Mia, Huq, Halim & Begum* H. 526 (DACB). **Gazipur:** Joydebpur, 02 viii 1969, *M.M.R. Bhuiyan* 140 (DUSH); Tetupara Road, Baropaiha, 25 vii 2004, *Hosne Ara* HA. 1084 (DACB); Kaliakair, 19 viii 2005, *Hosne Ara* HA. 2207 (DACB); Rajendrapur, 04 xii 2009, *M. Khatun* 554 (DUSH). **Habiganj:** Kalenga beat, Kalenga, 06 iii 2003, *Hosne Ara* HA. 314 (DACB); 16 v 2005, *Hosne Ara* HA. 1540 (DACB); Satchari, 17 v 2005, *Hosne Ara* HA. 1576 (DACB). **Jashore:** Jashore town area, 26 v 2012, *Hosne Ara* HA. 2836 (DACB). **Khagrachari:** Pathachara, 11 ix 2006, *Rafiqul Islam* 323 (DUSH). **Kurigram:**

Singhimari village, 20 v 2013, *Hosne Ara* HA. 2845 (DACB); Baruitari village, 24 viii 2013, *Hosne Ara* HA. 2857 (DACB). **Kushtia:** Meherpur-Baradi, Koolpala, 10 vi 1974, *Khan & Huq* K. 3887 (DACB). **Lower Bengal:** Locality & Collection number unknown, 04 vi 1896, Seed house mallies (CAL); Locality & Collection number unknown, July 1962, *S. Kurz* (CAL). **Magura:** Magura area, 26 v 2012, *Hosne Ara* HA. 2831 (DACB). **Manikganj:** Manikganj road, near Manikganj, 12 xi 1975, *Huq, Rahman & Mia* H. 1474 (DACB); Near Nayarhat Ceramic factory, 28 viii 1977, *Khan & Rahman* K. 4539 (DACB); Manikganj, 09 vi 1981, *Huq & Mia* H. 5167 (DACB); Manikganj area, 26 v 2012, *Hosne Ara* HA. 2817 (DACB). **Moulvibazar:** Sreemangal, Lawachara reserve forest, 15 v 2005, *Hosne Ara* HA. 1496 (DACB); Adampur beat, Kawargola forest, 18 v 2005, *Hosne Ara* HA. 1629, 1620 (DACB); Muraichara, 19 v 2005, *Hosne Ara* HA. 1677 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1721 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1749 (DACB); Madhabkundo, 06 vii 2005, *Hosne Ara* HA. 1825 (DACB). **Mymensingh:** Haluaghat thana, Koroitoli, 20 vi 2004, *Hosne Ara* HA. 910 (DACB). **Narshingdi:** Narshingdi Sadar, 07 vii 2005, *Hosne Ara* HA. 1888 (DACB). **Narayanganj:** Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1918 (DACB); Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1918 (DACB). **Netrakona:** Durgapur thana, Bijoypur, 16 vi 2004, *Hosne Ara* HA. 752 (DACB); Attrakhali, 17 vi 2004, *Hosne Ara* HA. 779 (DACB); Dargapur thana, Vabanipur, 18 vi 2004, *Hosne Ara* HA. 851 (DACB); Dhahapara, 18 vi 2004, *Hosne Ara* HA. 863 (DACB); Vabanipur, 18 vi 2004, *Hosne Ara* HA. 864 (DACB). **Nowabganj:** Sonamosjid area, 02 ix 2002, *Rezia, Momtaz, Bushra & Harun* RK. 3743 (DACB). **Patuakhali:** Patuakhali Sadar SDO Road, 15 v 2005, *M. Sultana* 760 (DUSH); Mirzagonj, Amragasia, 16 v 2005, *M. Sultana* 770 (DUSH); Dumki, Srirampur, 17 v 2005, *M. Sultana* 924 (DUSH); Bauphal, Bogha, 03 vi 2006, *M. Sultana* 1363 (DUSH); Dasmina, Ranggopaldi 02 ii 2007, *M. Sultana* 1524 (DUSH). **Rajbari:** Rajbari area, 26 v 2012, *Hosne Ara* HA. 2826 (DACB). **Rangamati:** Locality unknown, 2005, *Sajsdha Roy* R. 63 (DACB). **Sherpur:** Bakshigonj, Lawchapra, Dumurtola, 08 x 2003, *Hosne Ara* HA. 594 (DACB); Rangtia Range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 684 (DACB); Rangtia range, Gazni beat, 21 vi 2004, *Hosne Ara* HA. 926 (DACB); Koshba village, 22 vi 2004, *Hosne Ara* HA. 994 (DACB). **Sirajganj:** Kazipur upazilla to Charkhadah village, 18 iii 2011, *Hosne Ara* HA. 2787 (DACB). **Sunamganj:** Town area, 06 vi 1998, *Hosne Ara* HA. 43 (DACB). **Tangail:** Madhupur, Dulail, 05 viii 1976, *Khan & Huq* K. 4185 (DACB); Madhupur Sal forest, 02 vi 1978, *Khan & others* K. 4932 (DACB); Sakhipur, 20 vi 1978, *Reaz* 59 (DACB);

Madhupur, pargacha, 14 vi 1989, *M.K. Mia* 209 (DACB); Modhupur, Dokhola, 06 x 2003, *Hosne Ara* HA. 551 (DACB); Mirzapur, 19 viii 2005, *Hosne Ara* HA. 2197 (DACB).

From India to south China, Nepal, Thailand, peninsular Malaysia and Sri Lanka. Introduced in the Philippines, West Borneo, Singapore, West Africa (Ivory Coast) and the Neotropics.

Young leaf and petiole of this plant are used as a vegetable.

Both tuber and root of the plant are acrid and a stimulant when fresh. These are used to cure piles. In case of tumours, the tuber is used as a poultice. The tuber serves as a good medicine to cure diseases of the stomach if taken along with bananas. It is also an effective drug in case of venomous snake bites when applied externally and internally (Ghani, 2003).

***Typhonium trilobatum*** (L.) Schott var. ***fulvus*** H. Ara & M.A. Hassan, Bangladesh J. Plant Taxon. 26(1): 23-26 (2019). Fig. 37 & Pl. LXXXVI.

*Holotype*: Bangladesh, Netrakona district, Farangpara, 18 vi 2004, *Hosne Ara* HA 865 (DACB).

Bengali: *Ban Kachu*

Seasonally dormant herb; stem a short tuberous, subglobose or subcylindrical rhizome, c 5 cm long, c 4 cm in diameter. Leaves simple, several together, petiolate; petiole 15-55 cm long, c 0.8 cm in diameter, green; leaf blade simple, usually deeply trilobed, anterior lobe ovate-lanceolate, to c 18.0 cm long, c 9.5 cm in diameter, posterior lobe c 18 cm long, c 8 cm in diameter, green. Inflorescence appearing alongside leaves, paired; peduncle c 4 cm long, c 1 cm in diameter, green. Spathe c 17 cm long, tube and limb separated by a strong constriction; tube c 3 cm long, outside green, inside light green; limb c 14 cm long, c 8 cm in diameter at the middle, outside dark green, inside light purple, tip of the spathe twisted up to 4 cm. Spadix shorter than spathe, c 11 cm

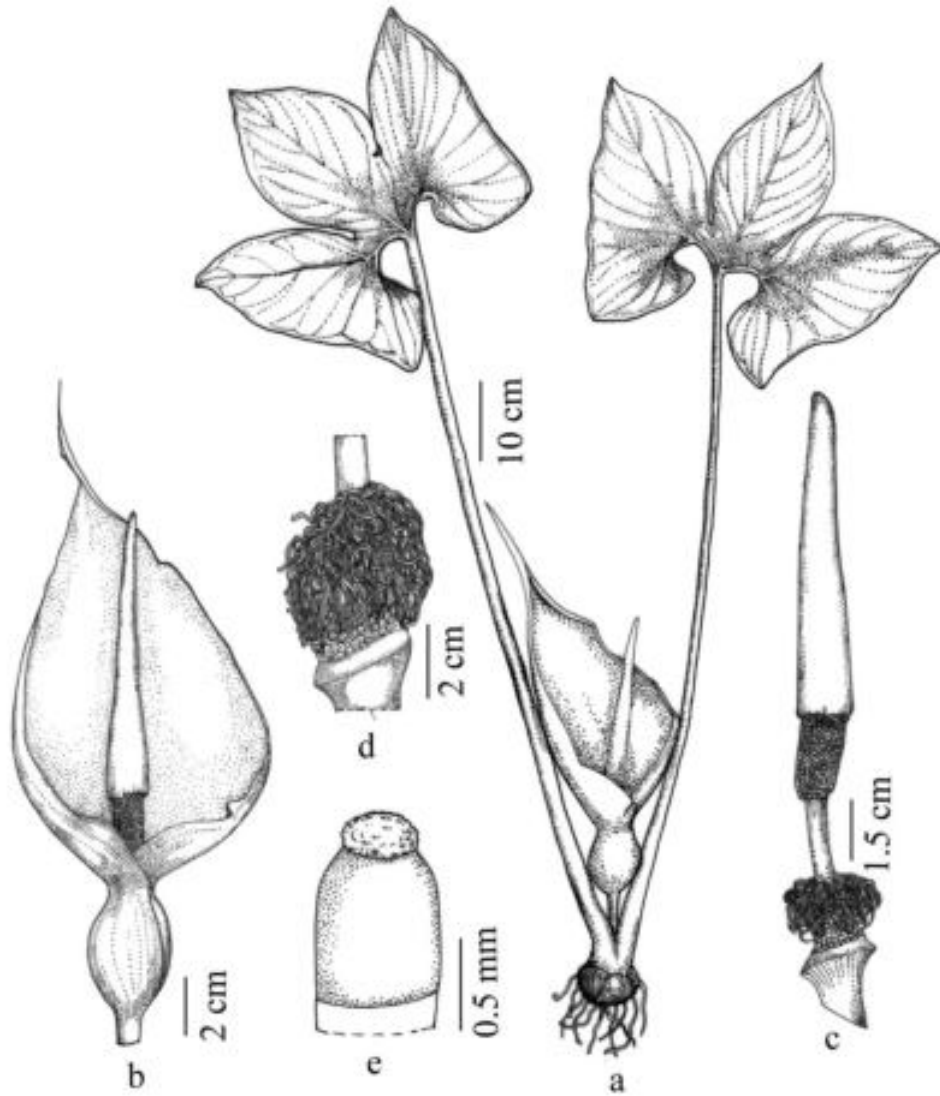


Figure 37. *Typhonium trilobatum* (L.) Schott var. *fulvum* H. Ara & M.A. Hassan, a) habit sketch of a flowering plant; b) inflorescence; c) spadix; d) lower portion of the spadix; e) gynoecium.

long; pistillate (female) flower zone c 1 cm long, c 1 cm in diameter, flowers congested; sterile zone between female and male zone 2.3-2.5 cm long, the lower 0.8-1.0 cm densely covered with staminodes, the remainder naked, cream colour, longitudinally grooved; staminate (male) flower zone cylindrical, c 1.6 cm long, c 1.0 cm in diameter; base and top oblique, flowers congested; appendix very shortly stipitate, stipe c 1 mm long, elongate conical, c 6.5 cm long, c 1.3 cm in diameter at the base, pale purple, top acute, base crenulate or multifurcate, producing a strong unpleasant smell at female anthesis. Ovary cylindrical, c 1 mm long, c 1 mm in diameter, yellowish green, unilocular, with one basal ovules; stigma sessile, large, discoid, with a central depression, 0.8 mm in diameter, 0.2 mm long, densely shortly papillose, light yellowish cream. Staminode filiform, c 1.5 cm long, c 0.3 mm in diameter, creamy white or light yellowish, curled. Fruit an ovoid berry. *Fl. & Fr.*: 4-11. *Shady moist areas*.  $2n = 18$  (Warasy and Alam, 2009).

**Netrakona:** Durgapur, Farangpara, 18 vi 2004, *Hosne Ara* HA. 865 (DACB).

**Dhaka:** Khilgaon, Tilpapara (Cultivated), 30 v 2006, *Hosne Ara* HA. 2648 (DACB); *ibid*, 22 ix 2015, *Hosne Ara* HA. 2902 (DACB) (Originally collected from Farangpara under Netrakona district).

Northern part of Bangladesh.

Young leaf and petiole of this plant are used as a vegetable.

The major morphological and cytological differences between two taxa of *Typhonium trilobatum* (L.) Schott are outlined in Table 9.

**Table 9. Morphological and cytological comparison of *Typhonium trilobatum* (L.) Schott var. *fulvus* H. Ara & M.A. Hassan with *Typhonium trilobatum* (L.) Schott var. *trilobatum*.**

Character	<i>Typhonium trilobatum</i> (L.) Schott var. <i>fulvus</i> H. Ara & M.A. Hassan	<i>Typhonium trilobatum</i> (L.) Schott var. <i>trilobatum</i>
Tip of the spathe	Twisted up to 4 cm	Not twisted
Appendix	Pale purple, stipe 1 mm long, base crenulate or multifurcate	Glossy purple or reddish, stipe 2-3 mm long, base truncate
Sterile zone	Densely covered with staminode	Loosely covered with staminode
Stigma colour	Light yellowish cream	Purple
Chromosome number	18 (16 m + 2ac)	18 (16m + 2sm)
Acrocentric chromosome	Present	Absent
CMA	CMA-band absent	CMA-band present

m = metacentric chromosome, sm = submetacentric chromosome, ac = acrocentric chromosome.

**Note:** Although the two taxa of *Typhonium trilobatum* (L.) Schott bear same chromosome number, they differ by the karyotype formulae.

**Xanthosoma** Schott in Schott & Endlicher,  
Melet. Bot. 19 (1832).

**Type (Lectotype) species:** *X. sagittifolium* (L.) Schott  
("sagittae-folium"; *Arum sagittae-folium* L.; Nicolson 1975).

Small to gigantic, sometimes arborescent, evergreen or seasonally dormant herbs with milky sap; stem either a thick, sub-cylindrical, hypogeal tuber often producing smaller tubers on stoloniferous side branches. Leaves several together, petiolate; petiole sheathing below, sheath persistent; leaf blade cordate, sagittate, hastate, trifid, trisect, pedatifid to pedatisect, rarely linear-lanceolate to ovate with emarginate base, rarely peltate, venation reticulate with secondary veins forming a zigzag connecting vein between the primary lateral veins. Inflorescence 1-many in each floral sympodium,

always appearing with leaves; peduncle usually rather short, rarely long. Spathe strongly constricted; the lower tube with convolute margins, ovoid to ellipsoid, persistent; the upper limb boat-shaped, oblong to oblong-lanceolate, spreading and withering. Spadix shorter than the spathe, densely flowered; the lower pistillate (female) flower zone cylindrical-conoid, often obliquely inserted onto the peduncle, separated from the staminate (male) flower zone by longer, conoid to attenuate, basally thicker zone of sterile male flowers; the upper staminate (male) flower zone cylindrical-conoid, longer than the pistillate (female) flower zone, usually fertile to the apex, rarely with a few sterile flowers at the extreme apex. Flowers unisexual, perigone absent. Ovary ovoid, 2-4 locular, more rarely 1-locular, ovules (12-) 20-numerous, anatropous or hemianatropous, funicles rather long, placentae usually pseudo-axile, or sometimes parietal or axile basally, stylar region broader than ovary, stigma sub-hemispheric or 2-4 lobed, yellow, narrower than the style. Male flowers 4-6 androus, stamens connate into a truncate-obpyramidal synandria with marginal thecae, anthers lateral, dehiscing by sub-apical pore or short slit. Sterile male flower composed of obpyramidal, truncate, laterally compressed synandrodies, lowermost larger, uppermost narrower and more elongated (in sense of spadix axis). Fruit a berry, cylindrical, 3-4 celled, the cells many-seeded, whitish to orange. Seeds ovoid, testa costate.

About 57 species are distributed throughout tropical and southern subtropical America, West Indies (Mayo *et al.*, 1997). In Bangladesh, this genus is represented by 4 species.

#### KEY TO THE SPECIES

- |  |                      |
|--|----------------------|
| 1. Plant with above ground long stem   | <b>2</b>             |
| - Plant with above ground short stem   | <b>3</b>             |
| 2. Leaf blade hastate, outside of the spathe tube greenish   | <b>sagittifolium</b> |
| - Leaf blade cordate-sagittate, outside of the spathe tube pinkish   | <b>undipes</b>       |
| 3. Leaf blade sagittate-ovate, upper portion of leaf blade green   | <b>violaceum</b>     |
| - Leaf blade arrow-shaped, hastate, oblong, upper portion of leaf blade grey-green with white veins and midrib | <b>lindenii</b>      |



**Xanthosoma lindenii** (André) Engler in Fl. Bras. 1. c. 191 (1840). Engler & Krause in Engler, Pflanzenr. 71 (IV. 23E): 57 (1920); Graf, Tropica, edn. 57: 130, 1108 (1978-reprint 2003); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 97 (2007); *Phyllotaenium lindeni* André in III Hortic. 19, t. 88 (1872). Pl. LXXXVII.

Type: Colombia.

Bengali: *Bahari Patar Kachu*

A perennial evergreen herb with tuberous short stem. Leaves several together, petiolate; petiole sheathing below, sheath persistent, 25-30 cm long; leaf blade arrow-shaped, hastate, oblong, 25-35 × 7-15 cm, adaxially grey-green, with white veins and midrib. Inflorescence 1-3 together; peduncle circular, 15 cm long. Spathe in two parts; the lower tube convolute, tube oblong, 4.0-4.5 cm long, persistent; the upper limb spreading, oblong lanceolate, 7-9 cm long, 2 cm in diameter and quickly withering. Spadix in three parts: pistillate (female) flower zone below, 2.5 cm long; staminate (male) flower zone above with a constricted sterile area in between, 7-8 cm long, 6-8 mm in diameter; sterile flowers 2.5-3.0 cm long. Pistil 2.5 mm long, ovary 2-4 locular, ovules many. Synandria 2 mm in diameter. Fruit sub-cylindrical. Seeds many, ovoid. *Fl. & Fr.*: 5-10. *Shady moist areas*.  $2n = 26$  (Kumar and Subramaniam, 1986).

**Dhaka:** Mirpur Botanical Garden, 02 x 2004, *Hosne Ara* HA. 1448 (DACB).

Colombia.

The plant is widely used for ornamental purposes in public places and homesteads.

**Xanthosoma sagittifolium** (L.) Schott, Schott & Endl., Melet. Bot.: 19 (1832). Schott, Syn. Aroid. 56 (1856); Prodr. Syst. Aroid. 179 (1860); Engler, Pflanzenr. 71 (IV. 23E): 45-47 (1920); Bailey, Manual Cultivat. Pl.: 188 (1949); Nicolson, Fl. Vitiensis Nova 1: 459 (1979); Watters *et al.*, European Gard. Fl. 2(2): 100 (1984-reprint 2003); Nicolson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 6: 52-53 (1987); Matthew, Excursion Fl. Cent. Tamilnadu Ind. 543 (1991); Matthew, Fl. Palni Hills 3: 1373 (1999); Govaerts & Frodin, World. Checkl. Bibliog. Araceae: 536 (2002); Acevedo-Rodriguez and Nicolson in Acevedo-Rodriguez and Strong, Contrib. U. S. Nat. Herb. 52: 50 (2005); Ara

in Siddiqui *et al.*, *Encycl. Fl. Fauna Bangladesh* 11: 97-98 (2007); *Arum sagittifolium* L., Sp. Pl. 966 (1753); *Arum xanthorrhizon* Jacq., Pl. Rar. Hort. Schoenbr. 2: 32, t. 188 (1797); *Caladium xanthorrhizon* (Jacq.) Willd. Sp. Pl. 4: 490 (1800); *Caladium sagittifolium* (L.) Vent. Arch. Bot. Roemer 2(3): 351 (1801); *Xanthosoma xanthorrhizon* (Jacq.) Koch, *Bonplandia* 4: 4 (1856). Pl. LXXXVIII.

Lectotype: Jamaica. Illustr. in Sloane, *Voy. Jamaica Nat. Hist.* 2: t. 106, f. 2 (1725).

Bengali: *Dudh Kachu*                      English: Tannia, Tanier, Yautia, Coco-yam, Yantia-blanca

Perennial herb with caulescent or tuberous long stem which bears up to 10 or more lateral tubers or cormels. Leaves several together, petiolate; petiole 1 m long, sheath persistent, 40 cm long, attached at the base of sinus; leaf blade simple, hastate or compound, milky latex present in the tissue, dull dark green adaxially, glaucous abaxially, anterior lobe 30-50 × 20-26 cm, posterior lobes smaller, the posterior midrib not denuded. Inflorescence in clusters; peduncled, peduncle 30 cm long, 2 cm in diameter, green. Spathe with a constriction between a basal convolute, 7-8 cm long persistent tube, outside green, inside light green and an upper, deciduous, cream in colour, 14.0-17.5 cm long cymbiform limb. Spadix sessile, equal to or shorter than the spathe; pistillate (female) flower zone at the base, 3-4 cm long; neuters at the middle, 3.5-5.5 cm long and staminate (male) flower zone at the top, 11-13 cm long and no terminal sterile appendix. Ovary 0.2 × 0.2 cm, cream, 2-4 locular, ovules many, style short, dilated, stigma small, disc-like, light yellow. Neuters sub-synandrioid. Synandria truncate, hexagonal, formed of 4-6 united stamens. Fruit sub-cylindrical. Seeds many, ovoid. *Fl. & Fr.*: 5-10. *Shady and moist areas*.  $2n = 26$  (Petersen, 1989).

**Barishal:** East Narayanpur and Dostani village, 22 ii 2008, *Hosne Ara* HA. 2663 (DACB); Kashipur, Lakaotta, 23 ii 2008, *Hosne Ara* HA. 2717 (DACB). **Bogura:** Beltola, 06 ii 2003, *Hosne Ara & Rezia Khatun* HA. 160 (DACB); Shibgonj area, 19 viii 2005, *Hosne Ara* HA. 2188 (DACB); Dhunot Upazilla to Sherpur, 19 iii 2011, *Hosne Ara* HA. 2797 (DACB). **Chattogram:** Chunati, 26 ix 2005, *Hosne Ara* HA. 2223 (DACB); Herbang, 26 ix 2005, *Hosne Ara* HA. 2269 (DACB); Baramashi teastate area, on the way of Hazarikhil, 27 ix 2005, *Hosne Ara* HA. 2304 (DACB); Fatiqchari, 27 ix 2005, *Hosne Ara* HA. 2309 (DACB); Hathazari, Nandirkir, 27 ix 2005, *Hosne Ara* HA. 2317 (DACB); Chittagong University area, 28 ix 2005, *Hosne Ara* HA. 2335 (DACB); BCSIR Campus

area, 29 ix 2005, *Hosne Ara* HA. 2343 (DACB); Bariadhala, 01 x 2005, *Hosne Ara* HA. 2574 (DACB); Bara Kumira, 01 x 2005, *Hosne Ara* HA. 2581 (DACB); Sitakundo, 01 x 2005, *Hosne Ara* HA. 2594 (DACB); Mirsarai, 01 x 2005, *Hosne Ara* HA. 2601 (DACB); Town area, 01 x 2005, *Hosne Ara* HA. 2613 (DACB); Foliage lake area, 01 x 2005, *Hosne Ara* HA. 2617 (DACB). **Cox's Bazar:** Ramu, 26 ix 2005, *Hosne Ara* HA. 2284 (DACB); Punnagram, 26 ix 2005, *Hosne Ara* HA. 2289 (DACB); Teknafe Game Reserve, Whykeon Range, Rhykong beat, 29 ix 2005, *Hosne Ara* HA. 2360 (DACB); Upper Rezu range, 29 ix 2005, *Hosne Ara* HA. 2404 (DACB); Chotta Inani, 30 ix 2005, *Hosne Ara* HA. 2436 (DACB); Bara Inani, 30 ix 2005, *Hosne Ara* HA. 2466 (DACB); Swankhali, 30 ix 2005, *Hosne Ara* HA. 2503 (DACB); Cox's Bazar town area, 30 ix 2005, *Hosne Ara* HA. 2564 (DACB). **Dhaka:** Khilgaon area, 15 iv 1988, *Hosne Ara* HA. 3 (DACB); Uttara, 11 v 1998, *M.S. Khan* 9950 (DACB); Khilgaon, Tilpapara, 26 viii 1999, *Hosne Ara* HA. 41 (DACB); Bangladesh National Herbarium Garden, 25 ii 2008, *Hosne Ara* HA. 2729 (DACB); Savar, 26 v 2012, *Hosne Ara* HA. 2808 (DACB); Bangladesh National Herbarium garden (Cultivated), 22 ix 2015, *Hosne Ara* HA. 2901 (DACB) [Originally collected from Bijoypur under Netrokona district]. **Dinajpur:** Town area, 17 viii 2005, *Hosne Ara* HA. 2032 (DACB); Ramsagar, 17 viii 2005, *Hosne Ara* HA. 2066 (DACB); Singra forest, 18 viii 2005, *Hosne Ara* HA. 2077 (DACB); Near Birgonj, Sal forest, 18 viii 2005, *Hosne Ara* HA. 2130 (DACB); Ranigonj, 19 viii 2005, *Hosne Ara* HA. 2166 (DACB); Fultala, 19 viii 2005, *Hosne Ara* HA. 2175 (DACB). **Gazipur:** Kaliakair, 19 viii 2005, *Hosne Ara* HA. 2205 (DACB). **Habiganj:** Satchari, 17 v 2005, *Hosne Ara* HA. 1600 (DACB); 07 vii 2005, *Hosne Ara* HA. 1872 (DACB). **Jashore:** Jashore town area, 26 v 2012, *Hosne Ara* HA. 2840 (DACB). **Khagrachari:** Narikal Begun Collage road, 12 vii 2003, *Hosne Ara & Sarder Nasir Uddin* HA. 504 (DACB). **Magura:** Magura area, 26 v 2012, *Hosne Ara* HA. 2833 (DACB). **Manikganj:** Manikganj area, 26 v 2012, *Hosne Ara* HA. 2812 (DACB). **Moulvibazar:** Madhabkundo, 07 vii 2002, *Hosne Ara & Sarder Nasir Uddin* HA. 126 (DACB); Adampur beat, Kawargola forest, 18 v 2005, *Hosne Ara* HA. 1641 (DACB); Muraichara, 19 v 2005, *Hosne Ara* HA. 1675 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1722 (DACB); Gazipur beat, Hararganj reserve forest, *Hosne Ara* HA. 1743 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1772 (DACB); Lawachara reserve forest, 04 vii 2005, *Hosne Ara* HA. 1788 (DACB); Gazipur beat, Hararganj

forest, 05 vii 2005, *Hosne Ara* HA. 1806 (DACB); Mabhabkundo, 06 vii 2005, *Hosne Ara* HA. 1833 (DACB); Muraichara beat, Awolachara punji, 07 v 2010, *Hosne Ara* HA. 2767 (DACB). **Mymensingh:** Haluaghat thana, Koroitoli, 20 vi 2004, *Hosne Ara* HA. 909 (DACB). **Narsingdi:** Narsingdi Sadar, 07 vii 2005, *Hosne Ara* HA. 1884 (DACB). **Narayanganj:** Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1913 (DACB). **Netrakona:** Durgapur thana, Bijoypur, 16 vi 2004, *Hosne Ara* HA. 754 (DACB); Attrakhali, 17 vi 2004, *Hosne Ara* HA. 777 (DACB); Durgapur thana, Vabanipur, 18 vi 2004, *Hosne Ara* HA. 850 (DACB). **Panchagarh:** Banglabanda, Tetulia upazilla, 17 viii 2005, *Hosne Ara* HA. 1980 (DACB). **Rajbari:** Salmara, 12 iii 2006, *M. Khatun* 401 (DUSH); Rajbari area, 26 v 2012, *Hosne Ara* HA. 2825 (DACB). **Sherpur:** Rangtia range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 697 (DACB). **Sirajganj:** Kazipur upazilla to Charkhadah village, 18 iii 2011, *Hosne Ara* HA. 2785 (DACB). **Sunamganj:** Town area, 06 vi 1998, *Hosne Ara* HA. 41 (DACB). **Tangail:** Mirzapur, 19 viii 2005, *Hosne Ara* HA. 2195 (DACB). **Thakurgaon:** Dharmagar, 17 viii 2005, *Hosne Ara* HA. 2010 (DACB).

The West Indies and South America.

From ancient time, this plant is under cultivation and used as foodstuff in the tropics. Some varieties of this plant have been developed for superior starchy corms while some are planted as pot herbs for their beautiful foliage (Plowman, 1969).

**Xanthosoma undipes** (K. Koch) K. Koch, *Bonplandia* 4: 3 (1856). Nicolson, *Taxon* 24: 347 (1975); *Fl. Vitiensis Nova* 1: 459-460 (1979); Govaerts & Frodin, *World Checkl. Bibliog. Araceae*: 537 (2002); Acevedo-Rodriguez and Nicolson in Acevedo-Rodriguez and Strong, *Contrib. U. S. Nat. Herb.* 52: 50-51 (2005); *Alocasia undipes* K. Koch, *App. Gen. Sp. Nov.* 1854: 5 (1854-55); *Xanthosoma jacquinii* sensu Schott, *Syn. Aroid.* 57 (1856), non Schott in Schott & Endlicher, *Melet. Bot.* 19 (1832), *nom. illeg.*, non Kunth (1841). Pl. LXXXIX.

Type: Cultivated material grown in Berlin and Potsdam (Sanssouci).

Bengali: *Bara PatarKachu*

English: Tall Elephant's Ear

Herb with milky sap, erect, 2 m tall, mature plants with a thick, starchy stem to 1.0-1.5 m long, with numerous leaf scars and aerial roots at the base. Leaves several together, petiolate; petioles erect, 45-100 cm long, green, sheathing below; leaf blade 40-70 × 30-50 cm, simple, cordate-sagittate, chartaceous, dark green adaxially, grayish green abaxially, margin undulate. Inflorescences 1-3, axillary; peduncle to 30 cm long. Spathe constricted, 25-31 cm long; tube 8-13 cm long, thickened, oblong-ovoid, deep pink on both sides, persistent; limb erect, concave, outside pink, inside cream to white, shortly acuminate at apex, deciduous. Spadix slightly shorter than the spathe, 30 cm long; pistillate (female) flower zone yellowish, 3.0-5.5 cm long, cylindrical; sterile zone pink, 7.5 cm long, conical; staminate (male) flower zone light pink, 17 cm long, elongated. Ovary ovoid, 2.2 × 2.0 mm, cream, 2-4 locular with many ovules, anatropous, stylar region broader than ovary, usually discoid-thickened, stigma hemispheric-discoid, 2-4 lobed, yellow, narrower than style. Synandria hexagonal, truncate, formed of 6-8 united stamens. Fruit a berry, cylindrical, many seeded. Seed ovoid. *Fl. & Fr.*: 5-7. *Grows in shady and moist places of village area.*

**Gazipur:** Kamesshor village, 17 v 2009, *Hosne Ara* HA. 2749 (DACB). **Dhaka:** Khilgaon, Tilpapara (Cultivated), 30 v 2011, *Hosne Ara* HA. 2780 (DACB) [Originally collected from Kamesshor village under Gazipur district].

Native to tropical America.

The plant is used as a vegetable for its large edible tuber.

The indigenous people of Bangladesh use the tuber of the plant in curries.

**Xanthosoma violaceum** Schott, Oesterr. Bot. Wochenbl. 3: 370 (1853). Schott, Syn. Aroid. 58 (1856); Prodr. Syst. Aroid. 180 (1860); Engler, Pflanzenr. 71 (IV. 23E): 50 (1920); Standley, Fl. Panama, Ann. Missouri Bot. Gard. 31 (1): 40 (1944); Bailey, Manual Cultivat. Pl.: 188 (1949); Birdsey, Cultivat. Aroids.: 129 (1951); Standley & Steyermark, Fl. Guatemala, Fieldiana, Bot. 24 (1): 362 (1958); Graf, Exotica, edn. 8: 238 (1976); Walters *et al.*, European Gard. Fl. 2 (2): 100 (1984-reprint 2003); Govaerts & Frodin, World Checkl. Bibliog. Araceae: 537 (2002); Acevedo-Rodriguez and Nicolson in Acevedo-Rodriguez and Strong, Contrib. U. S. Nat Herb. 52: 51 (2005); Ara in Siddiqui *et al.*, Encycl. Fl. Fauna Bangladesh 11: 98 (2007); *Arum nigrum* Vell., Fl. Flumin. 9: 386, t. 1c07 (1831 publ. 1881), *nom. illeg.*; *Xanthosoma nigrum* Stellfeld., Tribuna Farm. 12: 201 (1944). Pl. XC.

Type: Unknown; representative material of this species and a good candidate for a lectotype of its name is Schott, *Icones Aroideae*, t. 3432 (*NYBG. neg.* 4288). Possibly from cultivated material, collected by Schott in Brazil (1817-1821).

Bengali: *Dudh Kachu*

English: Blue Taro, Purple-stem Taro

Terrestrial perennial herb; stem a tuberous, hypogeal, short and thick rhizome. Leaves several together, petiolate; petioles 30-70 cm long, 1-4 cm in diameter at the base, long-vaginate, brownish-violaceous; leaf blade at first somewhat pruinose, becoming green, paler abaxially, sagittate-ovate, 20-50 cm long and 15-45 cm in diameter or larger, shortly acuminate-apiculate, glabrous, the basal lobes somewhat triangular, obtuse, separated by an open, acute sinus, the nerves and costa violaceous. Inflorescence 1-3 together; peduncle 15-20 cm long. Spathe in two parts; the lower tube of the spathe c 10 cm long and 3.5-4.0 cm in diameter, oblong, glaucous, often tinged with violet or dark purple; the upper limb oblong-lanceolate, yellowish-white, 15-20 cm long, 6-7 cm in diameter. Spadix shorter than spathe; pistillate (female) flower zone of the spadix whitish, c 4 cm long, c 2 cm in diameter; the fertile staminate (male) flower zone c 15 cm long and the sterile zone c 4 cm long. Ovary short-ovoid. Fruit not seen. *Fl. & Fr.*: 4-11. *Shady, moist places and village thickets.*

**Bandarban:** On the way of Betchari, 22 ix 2004, *Hosne Ara* HA. 1252 (DACB). **Barishal:** East Narayanpur village and Dostani village, 22 ii 2008, *Hosne Ara* HA. 2662 (DACB); Kashipur, Lakaotta, 23 ii 2008, *Hosne Ara* HA. 2718 (DACB). **Bogura:** Beltola, 06 ii 2003, *Hosne Ara & Rezia Khatun* HA. 159 (DACB); Shibgonj area, 19 viii 2005, *Hosne Ara* HA. 2187 (DACB); Dhunot Upazilla to Sherpur, 19 iii 2011, *Hosne Ara* HA. 2796 (DACB). **Cumilla:** Jashpur, 26 ix 2004, *Hosne Ara* HA. 1391 (DACB). **Dhaka:** Khilgaon area, 15 iv 1988, *Hosne Ara* HA. 2 (DACB); Savar, 26 v 2012, *Hosne Ara* HA. 2809 (DACB); Mirpur 1, Chiriakhana road, 06 viii 2015, *Hosne Ara* HA. 2893 (DACB); Bangladesh National Herbarium garden (Cultivated), 15 vii 2015, *Hosne Ara* HA. 2892 (DACB) [Originally collected from Jashpur under Cumilla district]. **Dinajpur:** Town area, 17 viii 2005, *Hosne Ara* HA. 2031 (DACB); Singra forest, 18 viii 2005, *Hosne Ara* HA. 2076 (DACB); Kantazir Mandir area, 18 viii 2005, *Hosne Ara* HA. 2109 (DACB); Near Birgonj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2129 (DACB); Near Nawabgonj Sal forest, 18 viii 2005, *Hosne Ara* HA. 2139 (DACB); Fultala, 19 viii 2005, *Hosne Ara* HA. 2176 (DACB). **Gazipur:** Tetupara Road, Baropaiha, 25 vii 2004, *Hosne*

*Ara* HA. 1083 (DACB); Kaliakair, 19 viii 2005, *Hosne Ara* HA. 2204 (DACB). **Habiganj:** Satchari, 17 v 2005, *Hosne Ara* HA. 1601 (DACB). **Jashore:** Hashimpur, 05 i 2004, *M. Khatun* 385 (DUSH); Jashore town area, 26 v 2012, *Hosne Ara* HA. 2839 (DACB). **Kurigram:** Singhimari village, 20 v 2013, *Hosne Ara* HA. 2848 (DACB); Baruitari village, 24 viii 2013, *Hosne Ara* HA. 2855 (DACB). **Magura:** Magura area, 26 v 2012, *Hosne Ara* HA. 2834 (DACB). **Manikganj:** Manikganj area, 26 v 2012, *Hosne Ara* HA. 2811 (DACB). **Moulvibazar:** Adampur beat, Kawargola forest, 18 v 2005, *Hosne Ara* HA. 1640 (DACB); Murai chara, 19 v 2005, *Hosne Ara* HA. 1676 (DACB); Madhabkundo, 20 v 2005, *Hosne Ara* HA. 1723 (DACB); Gazipur beat, Hararganj reserve forest, 21 v 2005, *Hosne Ara* HA. 1742 (DACB); Adampur beat, Kawargola forest, 03 vii 2005, *Hosne Ara* HA. 1752 (DACB); Lawachara forest, 04 vii 2005, *Hosne Ara* HA. 1797 (DACB); Gazipur beat, Hararganj reserve forest, 05 vii 2005, *Hosne Ara* HA. 1811 (DACB); Madhabkundo, 03 xii 2014, *Hosne Ara* HA. 2876 (DACB). **Narayanganj:** Sonargaon, 07 vii 2005, *Hosne Ara* HA. 1912 (DACB). **Narsingdi:** Narsingdi Sadar, 07 vii 2005, *Hosne Ara* HA. 1883 (DACB). **Panchagarh:** Banglabanda, Tetulia upazilla, 17 viii 2005, *Hosne Ara* HA. 1779 (DACB). **Patuakhali:** Patuakhali Sadar, Lohalia, 17 xi 2004, *M. Sultana* 450 (DUSH); Galachipa Basbunia, 01 iii 2005, *M. Sultana* 627 (DUSH). **Rajbari:** Rajbari area, 26 v 2012, *Hosne Ara* HA. 2824 (DACB). **Rangamati:** Tourist spot, Hanging bridge area, 18 ix 2004, *Hosne Ara* HA. 1093 (DACB); Rangamati, DC Bangloo area, 20 ix 2004, *Hosne Ara* HA. 1160 (DACB). **Sherpur:** Bakshiganj, Lawchapra forest, Dumurtola, 08 x 2003, *Hosne Ara* HA. 597 (DACB); Rangtia range, Samaschura beat, 10 x 2003, *Hosne Ara* HA. 698 (DACB); Rangtia Range, Gazni beat, 21 vi 2004, *Hosne Ara* HA. 924 (DACB). **Sirajganj:** Kazipur upazilla to Charkhadah village, 18 iii 2011, *Hosne Ara* HA. 2786 (DACB). **Tangail:** Mirzapur, 19 viii 2005, *Hosne Ara* HA. 2196 (DACB). **Thakurgaon:** Dharmagar, 17 viii 2005, *Hosne Ara* HA. 2009 (DACB).

The West Indies and South America.

Petiole and leaf blades are commonly used as a vegetable in Bangladesh.

The Mayna Jivaro tribal people of Peru use the leaves as a pain reliever, especially to treat rheumatic pain in the legs. The juice from the split peduncle of the plants is used to cure itchy skin and the juice from the split fruits is used to remove tapeworms from the skin of dogs (Croat, 1994).

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