

## NEW RECORDS OF THREE AROIDS FROM BANGLADESH

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### Abstract

Three species of Araceae viz. *Colocasia oresbia* A. Hay, *Rhaphidophora grandis* Schott and *R. pertusa* (Roxb.) Schott are recorded here for the first time from Bangladesh. Correct names with important synonyms, illustrated description, flowering and fruiting times, ecology, geographical distribution and occurrence within Bangladesh for each species are provided.

### Introduction

The family Araceae, consisting of about 110 genera and 2500 species (Croat 1979), is mostly distributed in the tropics and subtropics of both the hemispheres. Bangladesh, having humid tropical climate in the S. Asia, is also rich in aroids.

While studying the specimens collected from different places of Bangladesh, the authors have come across with three species of the Araceae which are found to be new records for Bangladesh, namely, *Colocasia oresbia* A. Hay, *Rhaphidophora grandis* Schott and *R. pertusa* (Roxb.) Schott. These taxa were not reported from Bangladesh territory in the previous works by any of the following workers, viz., Hooker (1893), Prain (1903), Heinig (1925), Calder *et al.* (1926), Sinclair (1955), Rao and Verma (1976), Khan *et al.* (1994), Mia and Khan (1995), Rahman and Uddin (1997), Uddin *et al.* (1998), Uddin and Rahman (1999), Rashid *et al.* (2000), Ara (2001), Khan and Huq (2001) and Rahman (2004a, 2004b).

The illustrated taxonomic descriptions of the three species along with their local distribution are given below. Updated nomenclature, important synonyms, notes on ecology, geographical distribution and the occurrence of each species in Bangladesh are also provided.

### Materials and Methods

The plant materials have been collected from different areas of greater Chittagong Hill-Tracts and Maulvi Bazar districts during several field trips between 1998 and 2003. All the specimens are kept in the Bangladesh National Herbarium (DACB) after the study. The specimens have been identified with the help of Nicolson (1987), Karthikeyan (1989), Noltie (1994) and Hay (1996).

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**1. *Colocasia oresbia*** A. Hay, Sandakania 7: 31- 48 (1996). **(Fig. 1)**

Robust solitary evergreen herb, stem condensed, creeping to decumbent, clothed in marcescent leaf bases, 25-40 cm long, 8-12 cm diam., stolons absent. Leaves several together; petiole light green, 80-180 cm long, sheathing in the lower 1/3-1/2; blades very broadly ovate-sagittate, deeply peltate, 60-84 cm long, 50-65 cm wide, upper surface glossy green, lower surface pale green; primary lateral veins 5-6 pairs, pale green. Inflorescences produced in both juvenile and adult plants, solitary or paired; peduncles almost completely enclosed in sheath of 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 petiole. Spathe 20-36.5 cm long, tube narrowly ovoid, glaucous green, 4- 5.5 cm long, limb erect, lanceolate, 11-31 cm long, pale creamy yellow, open only at base, the rest convolute. Spadix sessile, shorter than spathe, 10-22.5 cm long; female 3.5-4 cm long, 1-1.5 cm diam., slightly tapering distally; pistils numerous (c. 150-400), interspersed irregularly in the lower half of and at the apex of the female zone 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, 2 mm diam.; sterile interstice 1-2 cm long; male zone 6-11.5 cm long, 1 cm diam., synandria ivory, irregularly rhombo-hexagonal, 1-1.5 mm diam.; appendix constricted at base, 3-4.5 cm long, 0.4 -0.5 cm diam., tapering to a point, surface slightly and irregularly rugose. Fruiting spadix aligned with peduncle; fruits numbering hundreds per infructescence, green tinged brown when ripe, seeds c. 0. 75 mm long. Flowering and fruiting time: June to September.

*Specimens examined:* **Khagrachari** district: Alutilla, 11.07.2003, Hosne Ara and Sarder Nasir Uddin HA 460 (DACB); **Maulvi Bazar** district: Madhabkundo, 05.06.1998, Hosne Ara HA 36; 05.07.2002, Hosne Ara and Sarder Nasir Uddin HA 91; **Rangamati** district: Kaptai, Rampahar, 07.07.2003, Hosne Ara and Sarder Nasir Uddin HA 359; Kaptai, Shilsori, 08.07.2003, Hosne Ara and Sarder Nasir Uddin HA 415 (DACB); Kaptai, Sitapahar, 08.07.2003, Hosne Ara and Sarder Nasir Uddin HA 428 (DACB); Rajbari area, 18.09.2004, Hosne Ara HA 1121 (DACB); Subalang forest area, 19.09.2004, Hosne ara HA 1123 (DACB).

*Ecology:* Grows in rain forest, shady places of hill slope and foot hill.

*Geographical distribution:* Indonesia.

**Note:** Four species of *Colocasia*, previously reported from Bangladesh territory (Ara 2000, 2001 and Ara *et al.* 2003), are *C. affinis*, *C. esculenta*, *C. fallax* and *C. heterochroma*. *C. oresbia* is different from the above mentioned four species and it can easily be identified by its non-waxy, wettable leaf blades, rather long stout stem thickly clothed in old leaf bases, lack of stolons, much more robust infructescence, straight fruiting peduncle and montane plants.

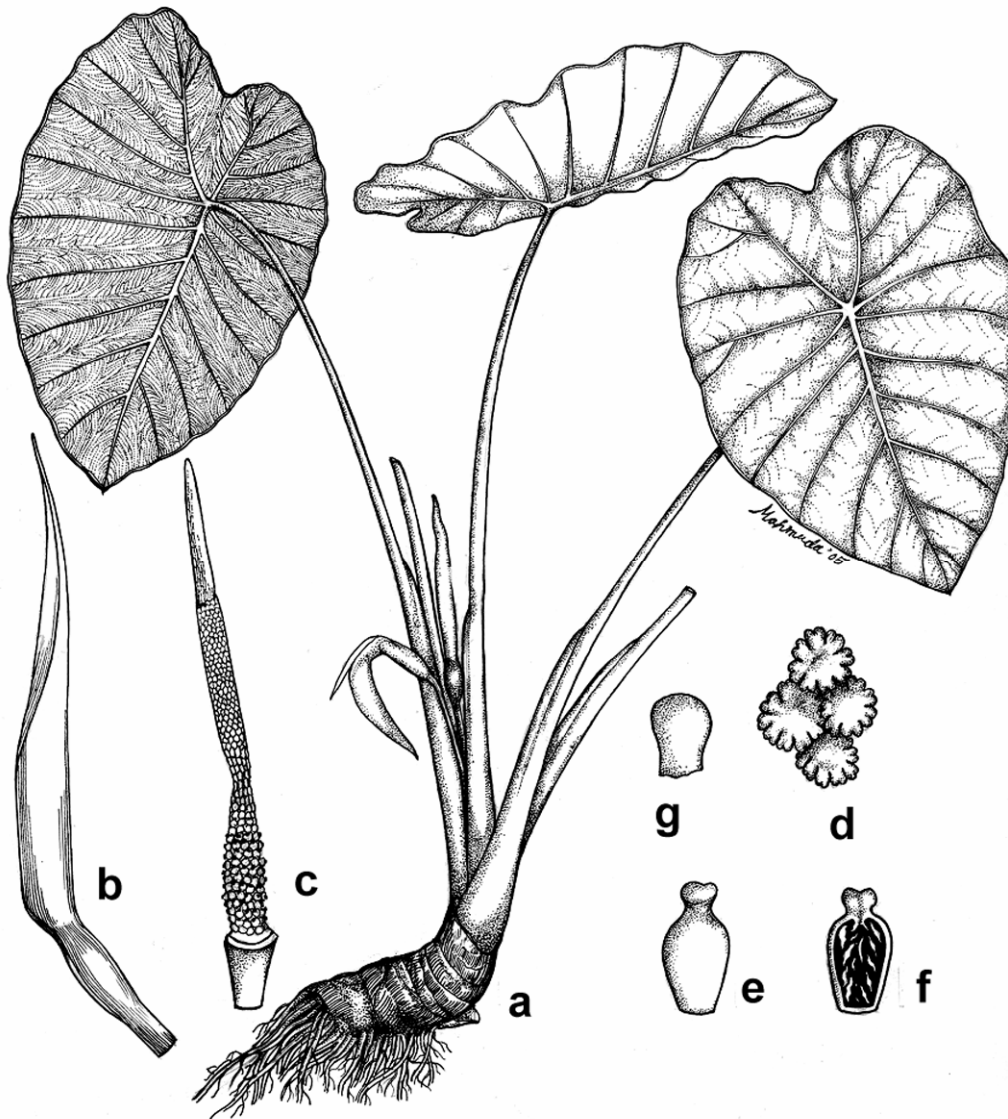


Fig. 1. *Colocasia oresbia* A. Hay. (a) habit sketch of a flowering plant ( $\times 0.05$ ); (b) inflorescence ( $\times 0.17$ ); (c) spadix ( $\times 0.22$ ), (d) top view of synandria ( $\times 4$ ); (e) pistil ( $\times 6$ ); (f) longitudinal section of pistil ( $\times 6$ ); (g) sterile flower ( $\times 3$ ).

2. ***Rhaphidophora grandis*** Schott in Öst., Bot. Zeitschr. 349 (1858) *et* Prodr. 386 (1860). Noltie in Fl. Bhut. 3 (1): 128 (1994); Karthikeyan *et al.*, Fl. Ind. Enu. Monocot.: 13 (1989); Engler and Krause, in Engler, Pflanzenr. 37 (IV. 23B): 51(1908); *R. eximia* Schott, in Bonplandia 5: 45 (1857); Prodr. 387 (1860); Hook. f., Fl. Brit. Ind. 6: 547 (1893). (Fig. 2)

Perennial evergreen liane to 12 m, but often less. Stem 4 cm diam., internodes elongated. Leaves scattered, with one foliage leaf at each node; blade larger, 40-100 x 39-

64 cm, oblong, not glaucous below, bright green on both surfaces; pinnae 6-10(-12) pairs of obliquely truncate, acute, unicostate and many nerved segments. Petiole very stout, 15-50 cm long. Peduncle stouter, 15-25 cm long. Spathe 20-30 x 5-10 cm, oblong-ovate, acuminate, widely open, orange-yellow on both surfaces. Spadix large, 17-23 x 3-5 cm, cylindrical, sessile, apex truncate-rounded, base slightly tapering, dull cream. Stamens

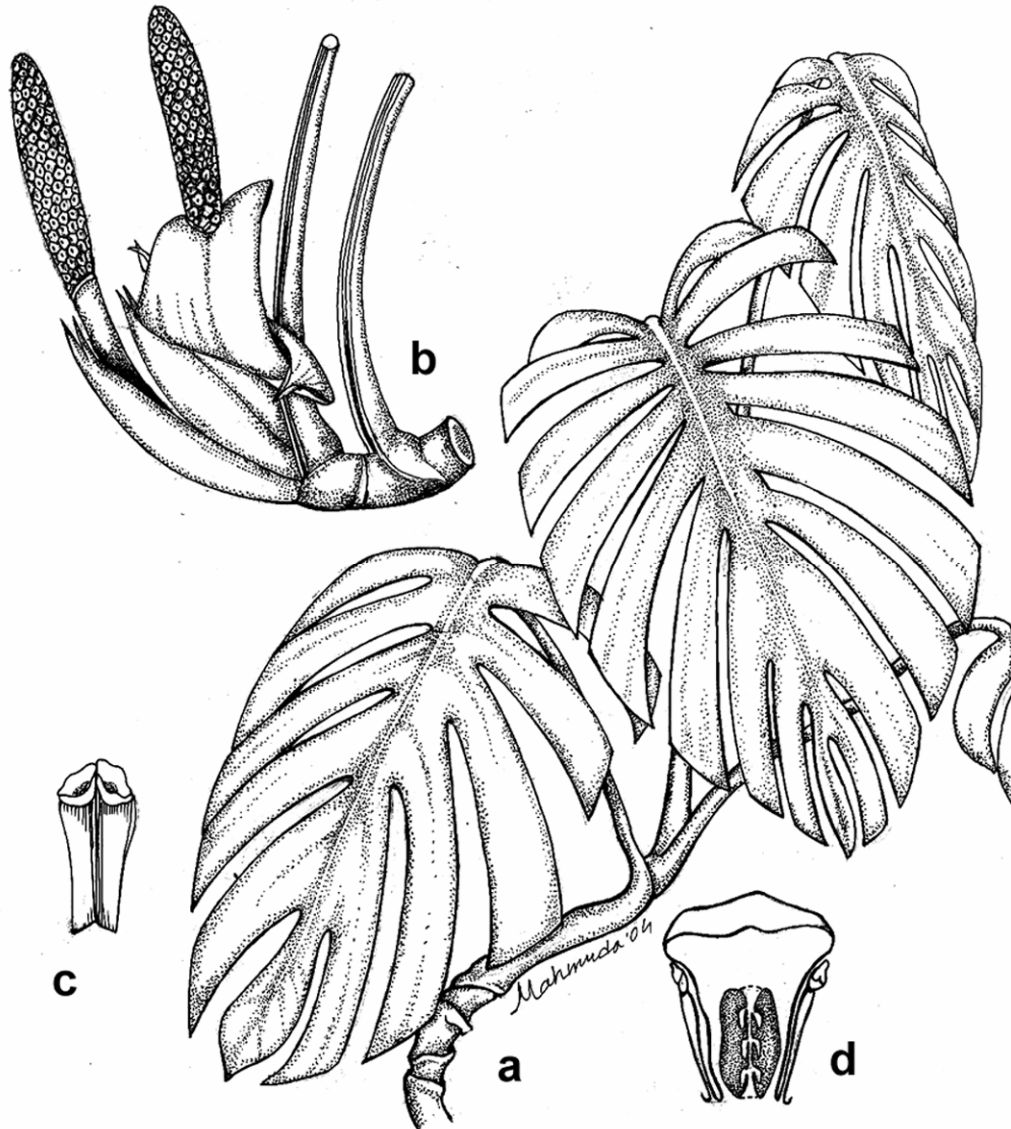


Fig. 2. *Rhapsidophora grandis* Schott. (a) habit sketch of a plant ( $\times 0.04$ ); (b) inflorescences and associated stem ( $\times 3$ ); (c) dorsal view of stamen ( $\times 4$ ); (d) whole flower and longitudinal section of pistil ( $\times 4$ ).

four per flower, filaments flat, anthers much shorter than filaments, thecae dehiscing by longitudinal slit. Ovaries long, fibrous, apex up to 6 mm diameter, domed so stigma raised. Ovules anatropous on parietal placentation. Flowering and fruiting time: May to February.

*Specimens examined:* **Khagrachari** district: Alutila, 11.07.2003, Hosne Ara and Sardar Nasir Uddin HA 463 (DACB); **Maulvi Bazar** district: Lewachara forest, 02.05.2003, Hosne Ara HA 201 (DACB).

*Ecology:* Scrambling or climbing on trees in shady and moist situations in the subtropical and tropical humid or rain forest or deciduous forest.

*Geographical distribution:* Bhutan, India.

**Note:** *Rhaphidophora grandis* Schott closely resembles *R. glauca* Schott but differs by its leaf blade over 40 cm and pinnately cut, not glaucous beneath, pinnae up to 6-12 per side and spadix over 13 cm long.

- 3. *Rhaphidophora pertusa* (Roxb.) Schott**, Bonplandia 5: 45 (1857); Nicolson, Rev. Handb. Fl. Ceylon 6: 31-32 (1987); Karthikeyan *et al.*, Fl. Ind. Enu. Monocot.: 13 (1989); Hook. f., Fl. Brit. Ind. 6: 546 (1893); Hook. f. in Trimen, Handb. Fl. Ceylon 4: 361 (1898); *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, Ic. Pl. Ind. Or. 3: 5, t. 781 (1844). **(Fig. 3)**

Usually a large, evergreen, epiphytic climber with stems up to 3.5 cm thick, internodes 5-10 cm long; blades of juvenile leaves ovate, oblong-ovate or oblong-elliptic, entire and not perforated; petioles of adult leaves 20-35 cm long with a withering sheath, geniculate at apex, pulvinate at leaf blade. Blade broadly ovate-oblong to almost rounded-ovate, 20-50 cm long and 15-25 cm wide, acute or usually cuspidate-acuminate and rounded or subcordate at base, simple, unequal sided, entire or irregularly and shallowly lobed, occasionally with large holes and some of the perforations usually extending to the margin. Peduncles 5-18 cm long. Spathe coriaceous, oblong, acuminate, 15-20 cm long, 10 cm wide when expanded, greenish at first, becoming whitish or yellowish, soon withering and deciduous. Spadix cylindrical, 10-15 cm long and 1.5-2.5 cm in diameter. Flowers naked, bisexual. Stamens 4, free, filaments oblong-linear, 0.3 cm long, anthers much shorter than filaments, 0.15 cm long, dehiscing by longitudinal slit. Ovary unilocular, 0.4 cm long, ovules many, anatropous, parietal placentation; stigma punctate, subimmersed in the truncate style. Berries many-seeded; seeds oblong. Flowering and fruiting time : August-September.

*Ecology :* Grows on trees in wet lowland forest.

*Specimen examined :* **Maulvi Bazar** district: Madhabkundo, 05.06.1998, Hosne Ara HA 29 (DACB); Bangladesh National Herbarium (Cultivated), 07.09.2004, Hosne Ara HA 1090 (DACB).

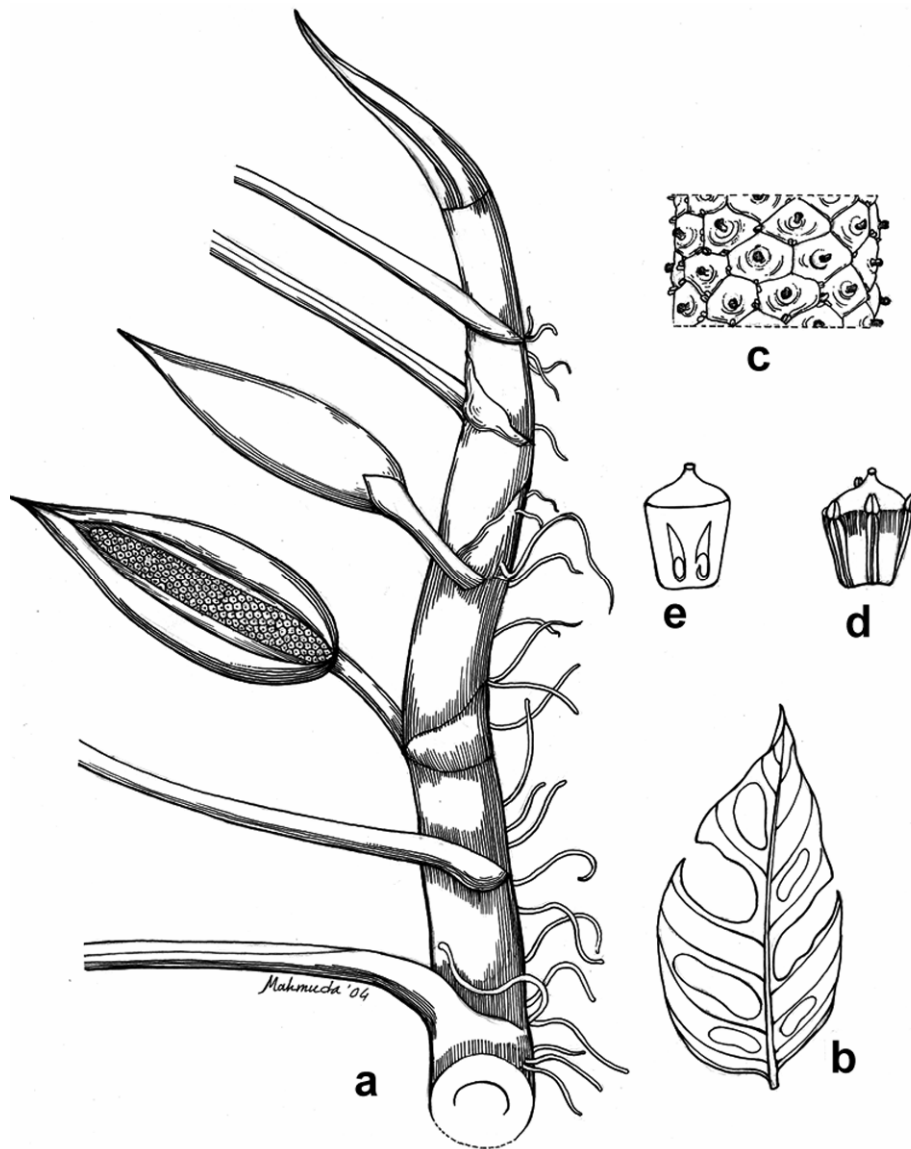


Fig. 3. *Rhapsidophora pertusa* (Roxb.) Schott. (a) a portion of flowering shoot ( $\times 0.3$ ); (b) leaf ( $\times 0.03$ ); (c) detail of spadix ( $\times 0.5$ ); (d) flower ( $\times 3.5$ ); (e) longitudinal section of pistil ( $\times 3.5$ ).

*Distribution:* Southern India, Sri Lanka, Southern Mexico to West Indies and Southern Brazil.

**Note :** Six species of *Rhapsidophora*, previously reported from Bangladesh (Ara 2001 and Uddin *et al.* 2001), are *R. affinis*, *R. calophyllum*, *R. decursiva*, *R. glauca*, *R. hookeri* and *R. hongkongensis*. *R. pertusa* differs from all the above mentioned six

species and it can easily be separated by its leaves entire or only shallowly or irregularly pinnatifid, occasionally with large holes and stigma sessile, not stalked.

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