

Alpinia Rda Zinia & F.H. Khan, A New Species And 25 New Records from Bangladesh

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ABSTRACT

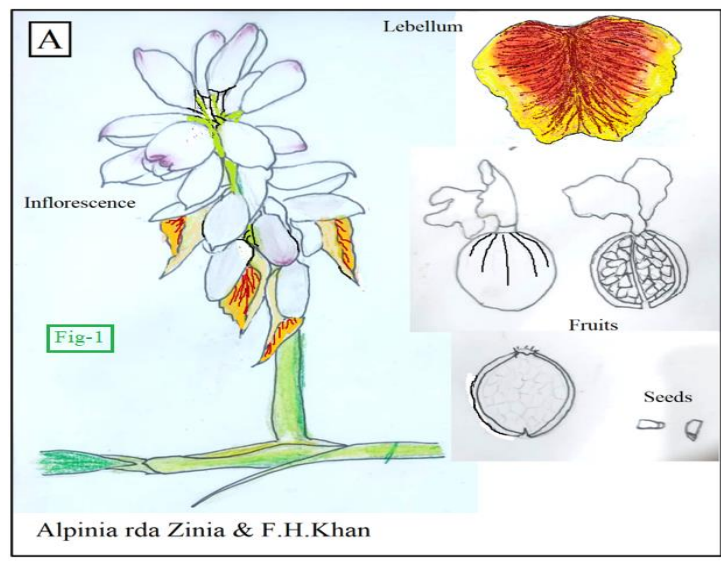
Alpinia rda Zinia & F.H.Khan is described and illustrated as a new species from the district of Bogura, Bangladesh *Zingiberaceae* family contains First published in Tekhno-Bot. Slovar 682. 1820 [3 Aug 1820] (as "*Zinziberaceae*") (1820) nom. cons. *Alpinia* Roxb. First published in Asiat. Res. 11: 350 (1810), nom. cons. *Alpinia mutica* Roxb. First published in Asiat. Res. 11: 354 (1810). Baksh-Comeau, Y., Maharaj, S.S., Adams, C.D., Harris, S.A., Filer, D.L. & Hawthorne, W.D. (2016). An annotated checklist of the vascular plants of Trinidad and Tobago with analysis of vegetation types and botanical 'hotspots'. Phytotaxa 250: 1-431. *Alpinia malaccensis* (Burm.f.) Roscoe First published in Trans. Linn. Soc. London 8: 345 (1807). Govaerts, R. (1995). World Checklist of Seed Plants 1(1, 2): 1-483, 1-529. MIM, Deurne. *Alpinia nutans* (L.) Roscoe. First published in J.E.Smith, Exot. Bot. 2: 93 (1806). Larsen, K. (1996). A preliminary checklist of the *Zingiberaceae* of Thailand. Thai Forest Bulletin (Botany) 24: 35-49. *Alpinia zerumbet* (Pers.) B.L.Burt & R.M.Sm. First published in Notes Roy. Bot. Gard. Edinburgh 31: 204 (1972). Acevedo-Rodríguez, P. & Strong, M.T. (2005). Monocotyledons and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium 52: 1-415. *Alpinia rda* Zinia & F.H.Khan is compared with those 4 *Alpinia* species: *Alpinia mutica*, *Alpinia malaccensis*, *Alpinia nutans* and *Alpinia zerumbet* with their shape, height, leaves size, inflorescence, single flower, fruits color, shape and seeds shape. Adding identical keys also proper identification. The main differences in Petal's design, Upper petal fully white and seeds shape.

INTRODUCTION

Alpinia rda Zinia & F.H.Khan is described and illustrated as a new species from the district of Bogura, Bangladesh *Zingiberaceae* family contains First published in Tekhno-Bot. Slovar 682. 1820 [3 Aug 1820] (as "*Zinziberaceae*") (1820) nom. cons. *Alpinia* Roxb. First published in Asiat. Res. 11: 350 (1810), nom. cons. *Alpinia mutica* Roxb. First published in Asiat. Res. 11: 354 (1810). Baksh-Comeau, Y., Maharaj, S.S., Adams, C.D., Harris, S.A., Filer, D.L. & Hawthorne, W.D. (2016). An annotated checklist of the vascular plants of Trinidad and Tobago with analysis of vegetation types and botanical 'hotspots'. Phytotaxa 250: 1-431. *Alpinia malaccensis* (Burm.f.) Roscoe First published in Trans. Linn. Soc. London 8: 345 (1807). Govaerts, R. (1995). World Checklist of Seed Plants 1(1, 2): 1-483, 1-529. MIM, Deurne. *Alpinia nutans* (L.) Roscoe. First published in J.E.Smith, Exot. Bot. 2: 93 (1806). Larsen, K. (1996). A preliminary checklist of the *Zingiberaceae* of Thailand. Thai Forest Bulletin (Botany) 24: 35-49. *Alpinia zerumbet* (Pers.) B.L.Burt & R.M.Sm. First published in Notes Roy. Bot. Gard. Edinburgh 31: 204 (1972). Acevedo-Rodríguez, P. & Strong, M.T. (2005). Monocotyledons and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium 52: 1-415.

Keywords: *Zingiberaceae*, *New species*, *Bangladesh*.

Description



Alpinia rda Zinia & F.H.Khan is a robust herb that can grow measures up to 1.2-2.4 m tall and with strong aromatic when bruised. The leaves are narrowly lance-shaped, measuring 41(-30) cm x 8(-5) cm, acuminate, no hairs in margin or underneath nor midrib or a very short few. The ligule is two lobes, up to 1-1.1 cm long, few hairies and with 3-6 cm long petiole. The inflorescence is racemose, upright, measures about 20-35 cm long, with 10-20 or more cincinni and absent bracts are on a 0.5 cm long peduncle. There are elliptic bracteoles around 3 cm long under each flower. The pedicel is 0.5-1.5 cm long. The calyx is 3.8 cm long, shortly 3-lobed. It is white. The petal is white. The tube is measuring up to 1 cm long and ciliate lobes. The lateral lobes are 3 cm x 1 cm while the dorsal lobe measures up to 2.6 cm x 1.3 cm. The labellum is broadly ovate, 3-5 cm long and at the widest part is 3 cm across, incurved sides, narrow to emarginate apex where at the base is with 2 papillose fleshy swellings that is yellow-orange with scarlet lines. The lateral staminodes are subulate and measuring up to 3.2cm long. The filament of stamen measures about 1.5 cm long. The anther connective is not prolonged into a crest. The light brown capsule is globose, up to 2.5 cm in diameter and shortly pubescent. The seed is 3-4 angular and about 7 mm long. 40-45 seeds.

Taxonomic treatment

Alpinia rda Zinia & F.H.Khan nov. p- 9, Figs. 1, 2, 3

TYPE: Bangladesh, Bogura district, RDA campus, Doshmile. Latitude. Fig-3: Map & Location: Bogura district, RDA campus, Doshmile. Latitude 24.70632° or 24° 42' 23" north. Longitude 89.39486° or 89° 23' 42" east.



Taxonomic tree

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Clade: Monocots

Clade: Commelinids

Order: Zingiberales

Family: Zingiberaceae

Subfamily: Alpinioideae

Tribe: Alpinieae

Genus: *Alpinia* Roxb., 1810

Species

Alpinia rda Zinia & F.H.Khan



A. Botanical illustration,

B. Inflorescence. C. Upright position showing. D. Details with fruits, flower, petals, seeds, leaves, etc.

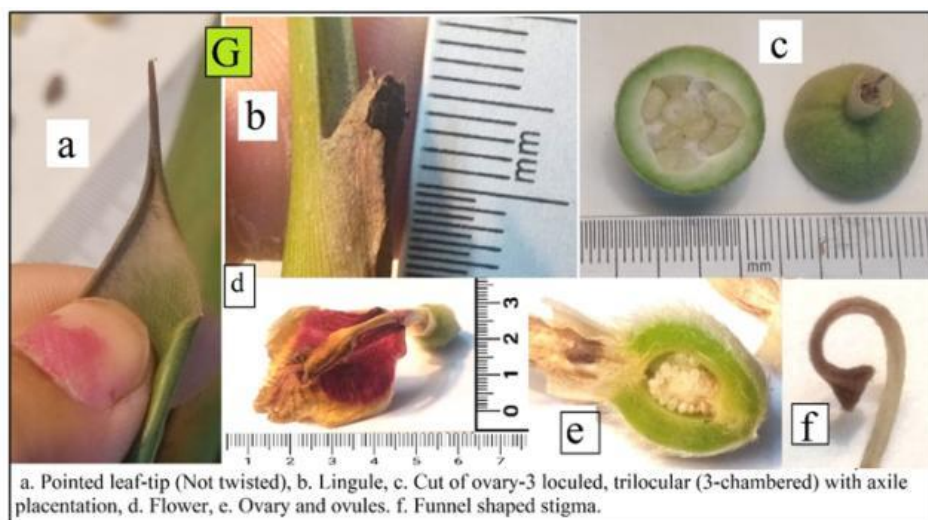


E. Mature fruits, Dry fruits, Seeds, Buds, Sepal, Calyx.

F. Showing big petal (Upper) size, Seeds' size, Calyx, Sepal, Ovary, Labellum, Stamen, Filament, Style, Stigma, Ovary and ovules in scales.

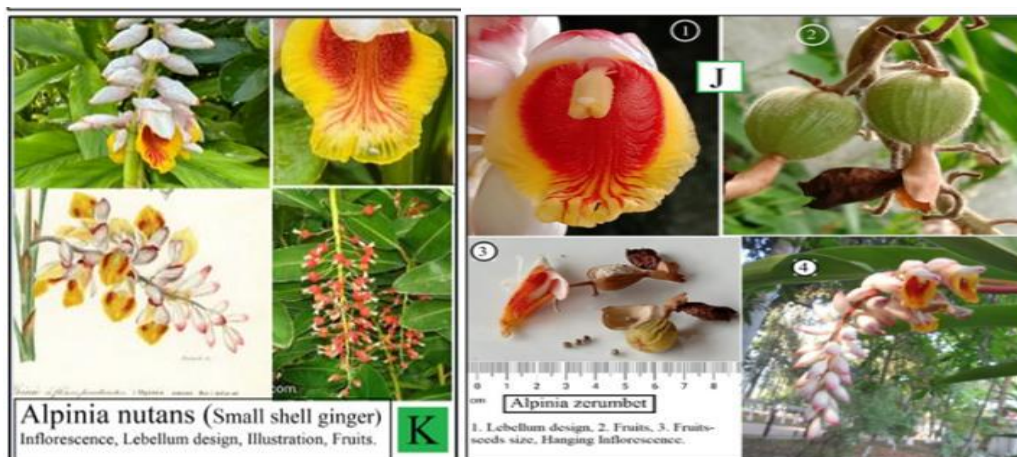


G. Leaf-tip, Ligule, Ovary-cut, Single flower, Ovary & ovules, Funnel shaped stigma.



H. Labellum design which differs in each *Alpinia* species. Upper white petal is the main characteristics of *Alpinia rda* Zinia & F.H.Khan.

I. Inflorescence, Fruits, Position, Buds.



J. Details of *Alpinia Zerumbet*, Flower design, Upper petal with pink-tip, Ribbed fruits, round seeds with scale. Hanging inflorescence.

K. *Alpinia nutans* labellum design and fruits pattern.



L. *Alpinia malaccensis* labellum, Inflorescence, Red fruits pattern. Big leaves.

M. *Alpinia zerumbet* height showing 15ft. *Alpinia zerumbet* biggest inflorescence-1-2 ft, hanging.

N. 5 different fruits of *Alpinia* species.

O. *Alpinia mutica* inflorescence, single flower, red-orange fruits. sepals, petals, upper creamy-spotted upper petal.

Key identifying characters

1. The labellum design is different with all listed species.
2. Fruits color brown,
3. Angled seeds are dark brown,
4. The seeds shapes are different also.
5. Not so height like *Alpinia Zerumbet*.
6. Rhizome differs from *Alpinia Zerumbet*.
7. Upright position of Inflorescence. Not hanging like *Alpinia Zerumbet*.
8. Upper petal white, not pink tinged like *Alpinia Zerumbet*.

Specimen examined

At RDA campus and All over Bangladesh, Zinia Nasrin Shumon, Herbarium sheet number - ZNS 508 (AAHBAU).

Fig-2

| Species | Flower (Petal) | Fruits | Seeds | Leaves-Stem | Height |
|-------------------------------------|---------------------------|---|---|---|--------------|
| <i>Alpinia rda</i> Zinia & F.H.Khan | White upper petal | Broun color (2cm) | Angled, long shape, (Blackish-brown) -4mm | Pointed Tip, Green & brown stem, (43cm-9cm) | 1.5-2m |
| <i>Alpinia zerumbet</i> | Pink color on upper petal | Orange-red (Ribbed) 1.5 - 3 cm, 3 - 7 cm. | Round shape (Ashy-brown)) - 2mm | Red stem & Inflorescence stem. 30 to 70 centimeters long and 5 to 14 centimeters wide. | 3.5-4.2 m |
| <i>Alpinia malaccensis</i> | White color upper petal | Red-round fruits, about 2.5 cm in diameter. | Relatively small-triangular shape. | Huge leaves that can reach 90 cm long and 15 cm wide. | 3 m tall |
| <i>Alpinia mutica</i> | Upper petal white | 2.2 cm long and 2 cm in diameter (Green to orange or red) | 6-7 mm long. Color: Black. | They can reach 40-60 cm in length and 10-13 cm in width. | 1.5-2 meters |
| <i>Alpinia nutans</i> | Upper petal white | Around 3 cm wide. These fruits are initially green and mature orange or red | Black, angled seeds, about 6-7 mm long. | Inflorescence stem yellow-green. It has glossy green leaves that release a spicy, cardamom-like fragrance when crushed. | 1 to 1.5m |

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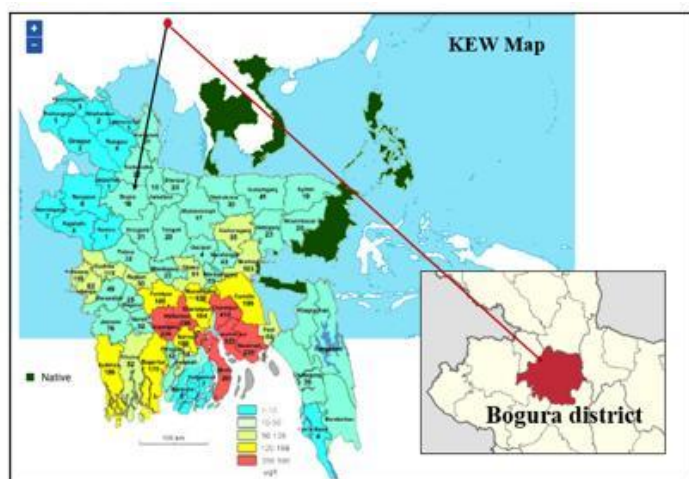
AKM Zakaria, Firoz Hossain to make RDA campus green with planted many wild species. This's why RDA campus known as "Green RDA".

Common name & Meaning

Common name of this new species "*Alpinia rda* Zinia & F.H.Khan", rda=Rural Development Academy, Bogura. Zinia for the Author. F.H.Khan = Ferdous Hossain Khan. Common name "RDA Galangal" in English and "আরডিএ গালাঙ্গল"।

CONCLUSION

After all the discussion, it is sure that *Alpinia rda* Zinia & F. H. Khan is new to taxon. We illustrated and described a new species of *Alpinia* genus, Family - Zingiberaceae in Bogura district, Bangladesh. There're showing differences with 4 *Alpinia* species.



Distribution Map (Fig-3)

Bogura district, RDA campus, Doshmile. Latitude 24.70632° or 24° 42' 23" north. Longitude 89.39486° or 89° 23' 42" east.

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New Records from Bangladesh

ABSTRACT

These 25 new records are described shortly as new records from all over Bangladesh. *Artemisia vulgaris* L. Asteraceae. *Artocarpus elasticus*. Moraceae. *Carallia pectinifolia*. Rhizophoraceae. *Cardamine flexuosa* With. Brassicaceae. *Cookeina tricholoma*. Sarcoscyphaceae. *Dendrobium scabrilingue* Lindl. Orchidaceae. *Dicliptera brachiata*. Acanthaceae. *Elatostema cuneatum* Wight. Urticaceae. *Famea occidentalis* (L.) A. Rich. Rubiaceae. *Ficus cyrtophylla* (Miq.) Miq. Moraceae. *Ficus obscura* Blume. Moraceae. *Ficus retusa* L. Moraceae. *Ficus trimenii* King ex Trimen. Moraceae. *Hedygium flavescens* Carey ex Roscoe. Zingiberaceae. *Jasminum adenophyllum* Wall. ex C.B. Clarke. Oleaceae. *Jasminum angustifolium* (L.) Willd. Oleaceae. *Jasminum elongatum* (P.J.Bergius) Willd. Oleaceae. *Jasminum malabaricum* Wight. Oleaceae. *Jasminum simplicifolium* G. Forst. Oleaceae. *Lecanthus obtusus* (Royle) Hand. -Mazz. Urticaceae. *Morinda angustifolia* Roxb. Rubiaceae. *Panus strigellus*, Panaceae. *Persicaria capitata*. Polygonaceae. *Persicaria maculosa* Gray. Polygonaceae. *Phragmites australis* (Cav.) Trin. ex Steud. Poaceae. *Scyphosyce manniana* Baill. Moraceae. *Terminalia microcarpa* Decne. Combretaceae. *Wrightia religiosa* (Teijsm. & Binn.) Benth. ex-Kurz. Apocynaceae.

Specimen examined

From all over Bangladesh. Zinia Nasrin Shumon, Herbarium sheet number – ZNS 530-555 (AAHBAU).

Methods

Description of this species is based on living plant. All the Images captured from plants, flowers, leaves, seeds collected from living trees. Also, from Scientific Illustrations of those species.



Artemisia vulgaris L. Asteraceae নাগদোনা/নাগদামিনী

Description: A fast-growing, hardy, perennial herb. Can reach 2-6 feet (60-180 cm) tall. Stems are erect, ribbed, and purplish-brown. Leaves alternate, deeply lobed, and divided. The upper surface is dark green and

pubescent, while the underside is covered with dense, white-silver hairs. Flowers are Small, yellow-green to reddish-brown flower heads arranged in dense, branched panicles. Possesses a well-developed rhizome that spreads easily.



Artocarpus elasticus Reinw. ex-Blume Moraceae

ময়ূরের পাখা বট

Description: Can grow up to 45 meters (150 ft) tall, with a trunk diameter of up to 1 meter (3 ft) and buttresses reaching up to 3 meters high. Leaves are dimorphic, they differ between juvenile and mature trees. Juvenile leaves produce enormous, deeply lobed leaves, resembling white oak leaves.

Mature leaves have leathery, entire, oval to oblong leaves.

Fruit size globose or cylindrical, with soft, backward-pointing spines. The fruit contains edible seeds covered in a white, succulent flesh. Produces a sticky, white latex sap when the bark is wounded. Termite-resistant wood.



Carallia pectinifolia W.C.Ko Rhizophoraceae

খাঁজ পাতার ক্যারালিয়া

Description: It is described as a shrub or small tree. The branches and branchlets are purplish-brown when dried and have visible, fusiform lenticels. The leaves are oblong to oblanceolate, papery in texture, and have serrate margins and an acuminate apex. The flowers are borne in dichasial cymes, typically 1.5-2 cm long, with 2 or 3 flowers crowded at the apex of branchlets. The flowers are shortly pedicellate, with minute, membranaceous bracteoles, white petals about 2 mm long, and a 6 or 7-lobed calyx. The fruit is a red, globose

drupe, about 7 mm in diameter, with a persistent red calyx at its apex. The fruit contains seeds that are reniform.



Cardamine flexuosa With. Brassicaceae

সাদা ক্ষুদে সরিষা

Description: An herbaceous annual, biennial, or perennial herb, often growing to 50 cm tall. The stems are flexuous (wavy or zig-zagging), especially where they bear flowers. Leaves are imparipinnate (compound with an odd number of leaflets). Basal leaves form a loose rosette. Stem leaves have 5 or more pairs of leaflets. Leaflets are typically gland-toothed or lobed. Flowers are small, white petals, approximately 2.5-3 mm long. Sepals have narrow white margins. It is hermaphrodite (has both male and female parts). Fruit is a siliqua (pod) measuring 10-25 mm long. Seeds: are very narrowly winged.



Cookeina tricholoma. Sarcoscyphaceae.

শ্যাম্পেন মার্শরুম

Description: Cup-shaped, with a distinct stem (stipitate).

Color: Bright pink to reddish.

Hairs: Covered in many long, pale, bristly hairs, especially around the margin of the cup and on the stem, which gives it its common name. Habitat: Grows on dead tree trunks and twigs. Found in tropical and

subtropical areas across the globe. The copious, long hairs on the exterior of the cup are the most distinguishing characteristic of *Cookeina tricholoma*.



***Dendrobium scabrilingue* Lindl. Orchidaceae**

লিভির ডেনড্রোবিয়াম

Description: Stems are clavate grooved, tufted, and can be up to 30 cm long. They are covered with tightly packed, black-hirsute (hairy) leaf sheaths, which eventually become glabrous (smooth).

Leaves are linear-oblong, leathery and up to 8.5 cm long. They are usually persistent but shed from the bottom as new shoots grow. Flowers are waxy, fragrant, and typically 1-3 per inflorescence. Each flower is about 3.75 cm wide, resupinate, and features white, broad sepals and petals. The most distinguishing feature is the 3-lobed labellum (lip) with erect side lobes and a somewhat decurved middle lobe.



***Dicliptera brachiata* Spreng. Acanthaceae**

ময়ূর শিখা

Description: An herbaceous perennial, meaning it lives for more than two years but dies back to the ground in winter. Grows from 1 to 3 feet tall. The leaves are opposite, meaning they grow in pairs from the stem, and

are typically elliptic, ovate, or oblong in shape. Flowers are Small, tubular flowers that are white, pink, or purple. They bloom in few-flowered clusters. Develops into a capsule that contains small, dark brown seeds.



Elatostema cuneatum Wight. Urticaceae

রাইটের বিছুটি

Description: Annual herb, or a short perennial herb. 2.5-25 cm tall, depending on conditions. Stem is erect, simple, and sometimes 3-angled, often with short hairs towards the apex. Leaves are alternate, obliquely rhombic-obovate, 1-3.5 cm long, with a rounded or broader base. Leaf margin is toothed with 2-5 teeth, and the apex is acute or obtuse. Small mineral deposits on the leaf surface, described as conspicuous or obscure. **Dioecious:** Plants have either only male or only female flowers.



Faramea occidentalis (L.) A.Rich. Rubiaceae

ফারামিয়া

Description: Shrub or slender, slow-growing tree.

Height: 1.5-4 meters as a shrub, but can grow into a tree reaching 8-12 meters. Bark is light brown, with slightly flattened, glabrous twigs that dry to a blackish color.

Leaves are simple, opposite, elliptical, with entire margins, an abruptly acuminate-caudate apex, and well-developed drip tips. Petioles are 6-12 mm long. Flowers are fragrant, white, with a nearly trumpet-shaped, 7-

12 mm long tube. The flowers are borne in compound cymes. Fruit is a purplish-black berry, 8-10 mm wide, crowned by the persistent calyx.



Ficus cyrtophylla (Miq.) Miq. Moraceae.

ছিট ডুমুর/ব্রণ ডুমুর

Description: Shrub or small tree.

Height: Typically grows to 3-7 meters.

Bark: Gray and smooth.

Branchlets: Densely covered with short, stiff, brownish to whitish hairs. Shape: (Sub)globose to ovoid.

Surface: Densely puberulous, covered with short stiff hairs.

Color: Yellowish-orange when mature.

Ostiole: Flat, 2-3 mm in diameter.



Ficus obscura Blume. Moraceae

কুড়া ডুমুর

Description: Can grow as a sub-canopy tree, a climber, or an epiphyte. Stems have white sap and are rough or woolly-hairy.

Leaves are alternate, simple, and penni- to triple-veined. Possess a rough, sandpaper-like texture due to being hairy. Exhibit a highly asymmetrical base, with a distinct projecting part on one side. Have wavy or toothed margins. The apex is usually acuminate to caudate. Figs are globose, 7 mm in diameter, and covered in hairs. Grow along the twigs and are orange-red when ripe.



***Ficus retusa* L. Moraceae**

ভোতা পাতার ডুমুর

Description: A broad-headed, rounded, evergreen shrub or tree, often hemi-epiphytic.

Height: Can reach up to 10 meters (33 ft) tall.

Trunk: Features a smooth, light grey trunk, which can grow to about 1 meter in diameter.

Leaves: Medium-sized, spirally arranged, and spirally arranged, with a glossy, dark green, leathery texture. They are blunt at the apex and measure between 4–15 cm in length.

Figs: Small, 1–1.5 cm in diameter, ripening from orange to dark red, with a distinctive sunken area (ostiole) at the apex.

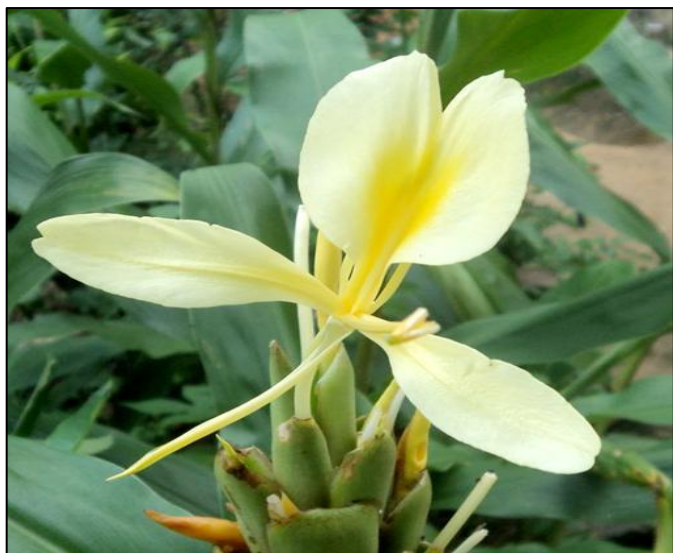


***Ficus trimenii* King ex Trimen. Moraceae**

ত্রিমেনীর ডুমুর

Description: A medium-sized evergreen tree with a distinctive weeping habit.

Leaves: The leaves are glossy, dark green, and thin or slightly leathery. They have a smooth margin and are often grouped at the ends of twigs. The fruit is a fig, though specific details are limited in the provided snippets.



Hedychium flavescens Carey ex Roscoe

Zingiberaceae

হলুদ দোলনচাঁপা

Description: 1-2.5 meters in height. Rhizomes is massive, fleshy, taro-like, and spread to form dense beds. Stems are erect, unbranched, soft, and can have a short pinkish collar at the base. Leaves are large, shiny, alternate, and lanceolate. They are sessile, with a long, membranous, slightly hairy sheath and ligule. Inflorescence is an oblong spike or cone-like cluster, measuring 15-20 cm long. Bracts are overlapping bracts are oblong to ovate and concave. Flowers are fragrant, creamy-white to pale yellow, with a long corolla tube and linear lobes. Yellow stamens are prominent. No fruit is produced.



Jasminum adenophyllum Wall. ex C.B.Clarke. Oleaceae

এডেনা জুই

Description: A fast-growing, woody, evergreen vine, as a climber. Can form roots when its stems touch the ground (layering), which allows for easy propagation.

Leaves are dark green, glossy, and smooth, typically 5-7 cm long. Oppositely arranged along the stem. Flowers are white. Large, measuring 5-7 cm in diameter. Petals are narrow and have a slight curl. Highly fragrant and very attractive to bees and butterflies.

Bloom: Flowers are typically arranged in a 1- to 3-flowered inflorescence.

Fruit is small berries that are blue to black and shiny when ripe.



***Jasminum angustifolium* (L.) Willd. Oleaceae**

পাতা বৃতির জুঁই

Description: A small, wild, scandent (climbing or trailing) shrub. Stems are smooth and woody, with young branchlets that are minutely pubescent (covered in fine, whitish hairs).

Leaves are simple, opposite, and simple in arrangement, ovate-lanceolate. Adaxial (upper) surface is glossy and smooth; the margins and mid-vein regions are minutely puberulent.

Size: 13–51 mm long by 9–25 mm broad.

Flowers are typically in cymes (clusters) of 1–5 flowers, mostly on axillary shoots. White flowers sometimes with a pinkish tinge on the bud exterior. Highly fragrant. Petals: 6–9 in number, linear-elliptical with an acute apex. Fruits are green berries that ripen to a purplish-black color.



***Jasminum elongatum* (P.J.Bergius) Willd. Oleaceae**

লাল জুঁই

Description: Shrub or woody climber, young shoots finely to strongly pilose. Leaves ovate to narrowly lanceolate, (2–11) cm long, 1.5–6 cm broad; base rounded or sometimes obtuse or subcordate; apex long acute to acuminate; appressed pilose to glabrous below, scattered pilose to glabrous above, midrib and main

veins pilose; primary veins 2–4 on each side of the midrib, curving round below the margin, raised below, sunk above, otherwise venation obscure; without domatia; petioles 3–10 mm long, finely to strongly pilose. Inflorescence terminal on side shoots, cymose-corymbose, dense, 3- to about 10-flowered, pilose to finely pilose; bracts leaf-like, 0.5–1 cm long; pedicels 0.5–3 mm long. Calyx tube 1.5–2 mm long; lobes filiform, (2–)4–11 mm long, densely to finely pilose. Corolla tube 15–25 mm long; lobes 7–9, 6–12 mm long, 2–4 mm broad. Fruits are ellipsoid, 8 x 6 mm.



Jasminum malabaricum Wight. Oleaceae

মালাবার জুঁই

Description: A large, straggling, climbing shrub.

Flowers are white or creamy yellow, fragrant, and star-shaped, appearing in terminal, trichotomous cymes.

Leaves are membranous, cordiform (heart-shaped) to deltoid-elliptic, glabrous, and typically with 7 to 9 pairs of main nerves. Fruits are

Berries. Oblong-globose, shiny, and dark-purple or nearly black.



Jasminum simplicifolium G.Forst. Oleaceae

সিম্পল জুঁই

Description: It can grow as a shrub or a climbing vine. Leaves are evergreen, opposite, and ovate, with a waxy, shiny, and bright green appearance.

Flowers are small, tubular, white, and 8–13 mm long. They are typically fragrant. Fruits are dark purple and about 1 cm in diameter.



***Lecanthus obtusus* (Royle) Hand. -Mazz. Urticaceae**

ভোতা পাতার বিছুটি

Description: A dwarf, annual herb.

Stems are delicate, erect, and often nearly hairless. Leaves are opposite, membranous, almost stalkless, crowded at the top of the stem. They are elliptic-ovate, 0.3-0.6 x 0.2-0.5 cm in size, with a toothed margin and 3 to pinnately nerved veins. Flowers are minute, pale green, and borne in 1-2 sexual disk-like heads.

Inflorescence: Flowers are crowded on disk-like heads carried on stalks 0.6-2.5 cm long. Fruit is tiny, red-brown achenes. Flowering: August to September.



***Morinda angustifolia* Roxb. Rubiaceae**

লামা ফুল

Description: 3-6 meters tall. Young branches are smooth and greenish, while older branches are smooth or shallowly fissured, brownish to grey.

Stipules are triangular, acuminate, and usually persistent. Leaves are elliptic, oblong, or obovate, 19-25 cm long by 3-7 cm wide, with a tapering or cuneate base and a pointed apex. They are light green and dry to a dark brown.

Flowers are solitary or paired, fragrant, and bisexual. The corolla is white to pink, funnel-shaped, with a long tube.

Fruits are a composite fruit, which can be sub-globose or ellipsoid-oblong and partially fused or nearly separate.



Panus strigellus, Panaceae

রোমশ ফানেল মাশরুম

Description: Cap is fan-shaped to semicircular, 2-6 cm in diameter, with a velvety or hairy texture and a wavy margin. Color ranges from beige to dark brown, with a dark reddish-brown color being a distinguishing feature. Gills are crowded and decurrent, running down the stem. Stem is hairy, tapered at the base.



Persicaria capitata. Polygonaceae

মুন্ডু বিষকাঁটালী

Description: A prostrate scrambling herb that spreads to form a dense ground cover.

Stems are weakly hairy with spreading branches. Leaves are ovate in shape, measuring 1–6 cm long and 0.7–3 cm wide. Often marked with pink or red bands or blotches. Short, scattered hairs on both surfaces. Flowers are

bright pink and borne in dense, ovoid or globose (round) spikes, 5–10 mm long. The spikes are terminal and axillary, appearing over a long season.

Fruits are dark brown to black, three-angled achene.



Persicaria maculosa Gray. Polygonaceae

মাকুল বিষকাঁটালী

Description: An annual herb that grows erect or ascends, with stems up to 90 cm (3 ft) tall, sometimes becoming floppy. Stems are often glabrous (smooth), though sometimes hairy, with swollen joints and a reddish-brown color. Leaves are alternate, narrowly ovate to lanceolate, pointed at both ends, with smooth margins and a characteristic dark purplish blotch in the center. Stipules are fused into a stem-enclosing sheath, typically appressed-hairy and ciliate (fringed with hairs) at the upper margin. Inflorescence is short-cylindrical, dense spikes of flowers, usually pink to white. Flowers are consisting of 4-5 pink or whitish perianth segments (like petals or sepals), with 6 stamens. Fruit is a shiny, black, three-angled (trigonous or biconvex) achene.

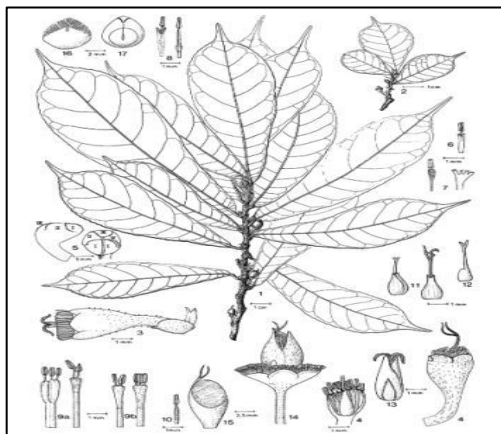


Phragmites australis (Cav.) Trin. ex Steud. Poaceae

অস্ত্রিয় নলখাগড়া

Description: Tall, cane-like stems that are round and hollow, typically growing 2 to 4 meters (6.5 to 13 feet) high. Leaves are long (up to 60 cm or 24 inches), flat, strap-like, and blue-green, tapering to a long point.

Inflorescence (Flower Head): A large, dense, and initially dark purple panicle that can be 15–40 cm (6–15 inches) long. At maturity, the flowers are covered in numerous long, silky, silvery hairs, giving the inflorescence a feathery, grey appearance and aiding in seed dispersal.



Scyphosyce manniana Baill. Moraceae.

মান্নি বট



Terminalia microcarpa Decne.



Combretaceae

বেগুনী হরিতকি

Description: A deciduous tree, sometimes reaching up to 30-40 meters in height. Bark is hard, black, and fissured. Leaves are smooth, pointed at both ends, and typically 6-15 cm long.

Flowers are small and yellowish-white.

Fruit is small, dark red, fleshy, and sweet-sour.



Wrightia religiosa (Teijsm. & Binn.) Benth. ex-Kurz. Apocynaceae

পূজার পালাম

Description: *Wrightia religiosa* is an evergreen shrub with slender branches; it can grow up to 3 meters tall.

The plant is cultivated in many parts of the world for medicinal use and is also often grown in southeast Asia as an ornamental, hedge and temple flower.

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