

4 new species and 10 new records from Bangladesh

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1. *Teucrium pygmea* Miraz (RCC), a new species from Bangladesh

Abstract

Teucrium pygmea Miraz (RCC), described and illustrated (Fig-1) from Rajshahi Cadet College, Rajshahi district (24.3113° N, 88.7177° E), a new species from Bangladesh from *Lamiaceae* family. First published in Sp. Pl.: 562 (1753). Compare with *Teucrium viscidum* Blume, which is native to Bangladesh, with flower color, plant size, flower size, bracts, leaves and stigma shape. This new species height is smaller than other species. So, I named it '*pygmea*' for this new species. Differences showing in botanical illustration at Fig-2 and as well as Fig-3 with table.

Keywords: *Lamiaceae*, New species, Bangladesh.

Introduction

Teucrium L. First published in Sp. Pl.: 562 (1753). Kew Includes 298 Accepted Species of *Teucrium*. *Teucrium viscidum* Blume, First published in Bijdr. Fl. Ned. Ind.: 827 (1826). *Lamiaceae* Martinov, First published in Tekhno-Bot. Slovar 355. 1820 [3 Aug 1820] (1820) nom. cons.

Description

Herbs perennial, stoloniferous. Stems erect, 7-30 cm tall, basally glabrous or subglabrous, apically glandular pubescent or glabrous. Stems sparsely pubescent. 4-angled stem. Petiole and abaxial surface of leaves pubescent. Petiole 3-4 cm, subglabrous; blade ovate to ovate-oblong, 5-7 cm, subglabrous or very sparsely puberulent, base rounded, broadly cuneate to cuneate, margin double crenate-serrate, apex acute to short acuminate. Spikes inflorescence. 7-11 cm, densely glandular pubescent; verticillasters close together. Pedicel 1-2 mm, densely glandular villous. Calyx campanulate, 4-5 × 3 mm. Corolla white 3-4 mm, tube ca. 3 mm. Pistil 5mm long. Stigma blunt. Stamens 4. Nutlets dark-brown, oblate, ca. 1 mm. Flowering time June-November.

Taxonomic treatment

Teucrium pygmea Miraz (RCC), nov. p- 9, Figs. 1, 2, 3 & map

TYPE: Bangladesh. Fig-map: Map & Location: Rajshahi Cadet College, Rajshahi district (24.3113° N, 88.7177° E).

Taxonomic tree

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Clade: Eudicots

Clade: Asterids

Order: Lamiales

Family: Lamiaceae

Subfamily: Ajugoideae

Genus: *Teucrium* L. (1753)

Type species

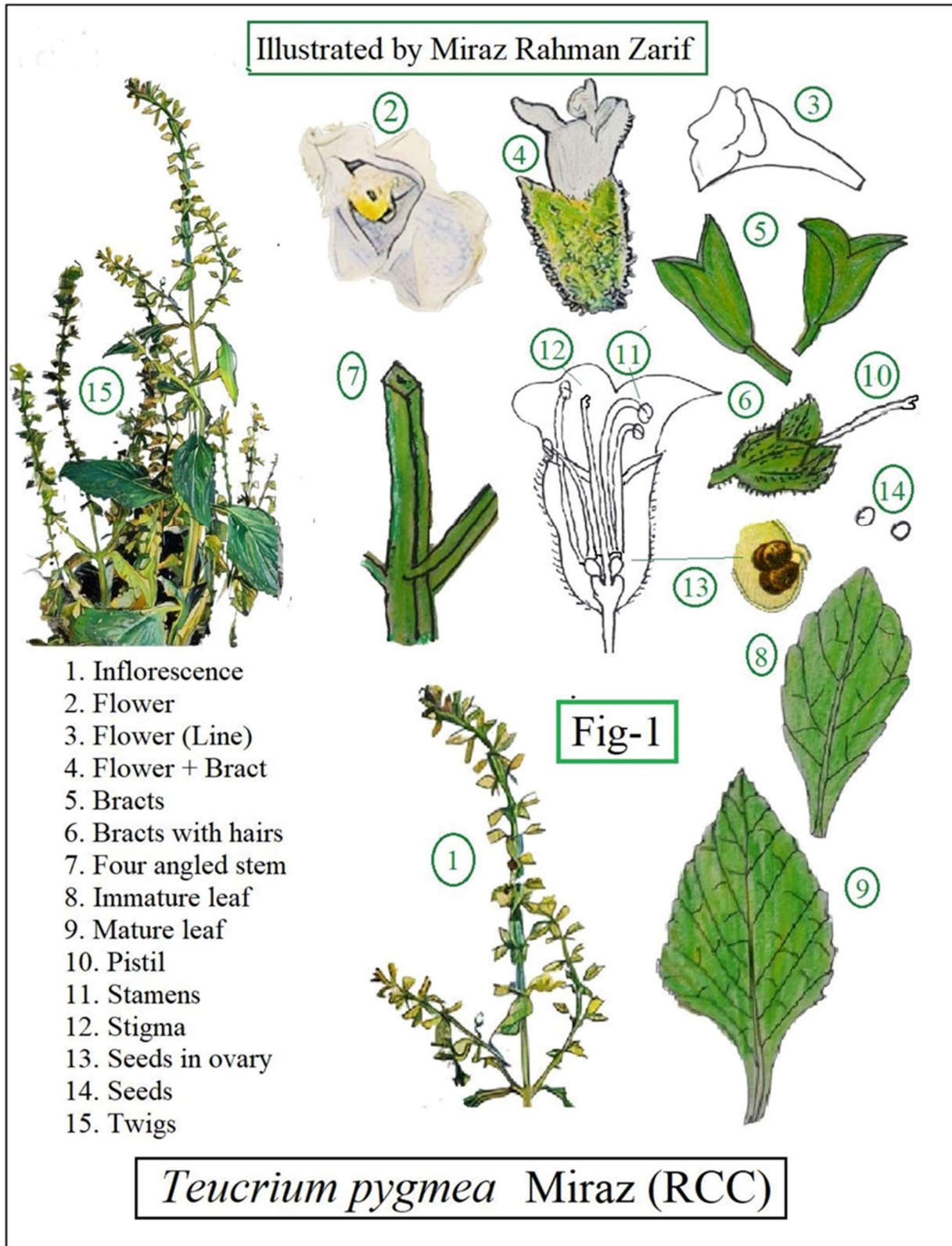
Teucrium pygmaea Miraz (RCC),

Materials and methods

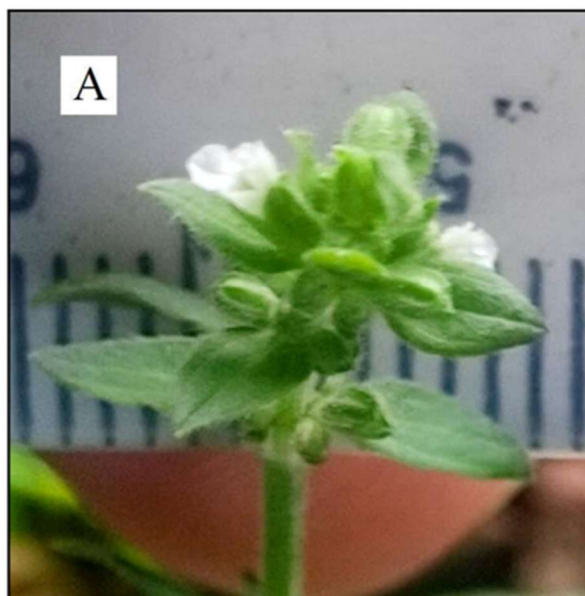
The specimens of new species were compared with similar species through a literature review, examined from dried specimens from the herbaria. The measurement of the description is based on the fresh and dry materials we collected from Rajshahi Cadet College, Rajshahi district (24.3113° N, 88.7177° E). The color photographs are taken. The plant specimens were deposited. Collection of plant parts and photos have been used to draw Botanical Illustration of this new species. Plant collected from RCC Campus, Rajshahi district. Captured all types of images. So, assure the sizes captured with scale. Drawn botanical illustration from living plant. Noted their flowering time, height, leaves size and color, flower shape, corolla color, seed color, stigma.

Identification keys

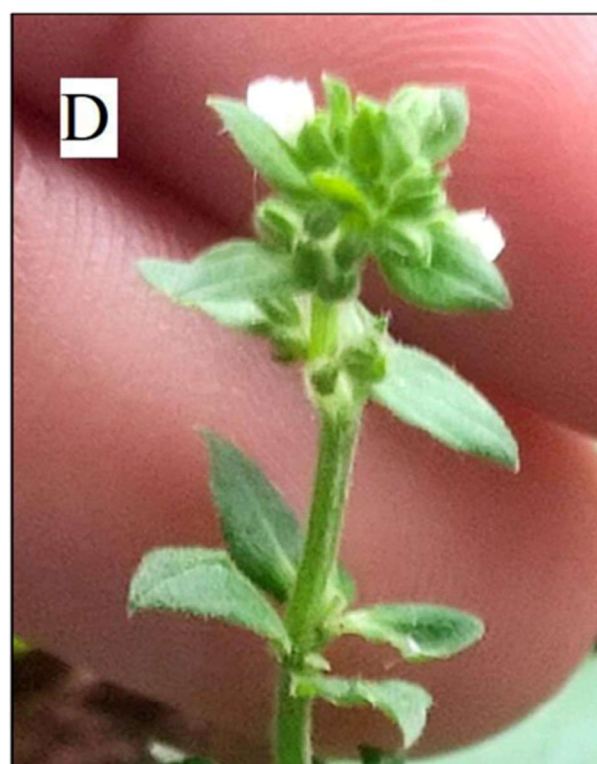
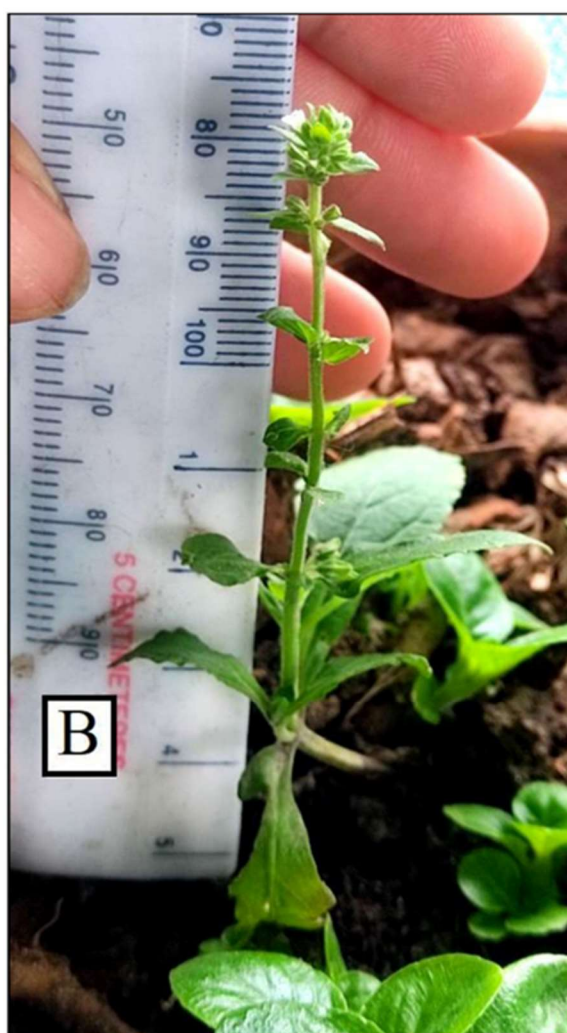
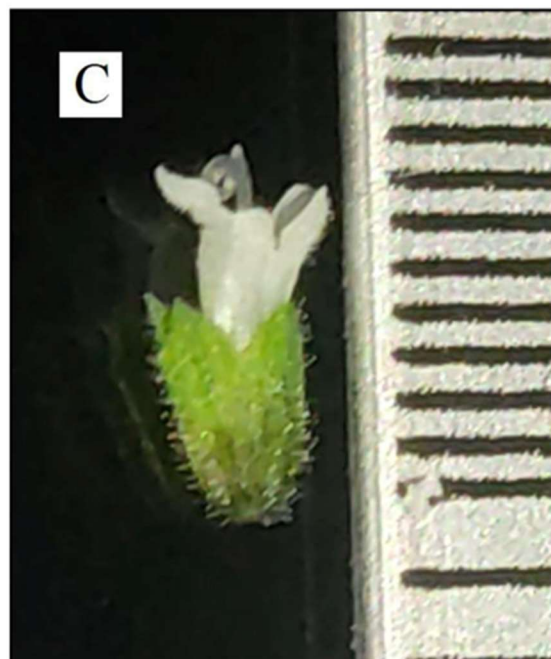
1. Plant height.
2. Flower shape.
3. Corolla color.
4. Bract shape.
5. Leaves shape.
6. Pistil size
7. Stigma shape
8. Seed size.



Botanical Illustration of *Teucrium pygmea* Miraz (RCC)



Teucrium pygmea Miraz (RCC)

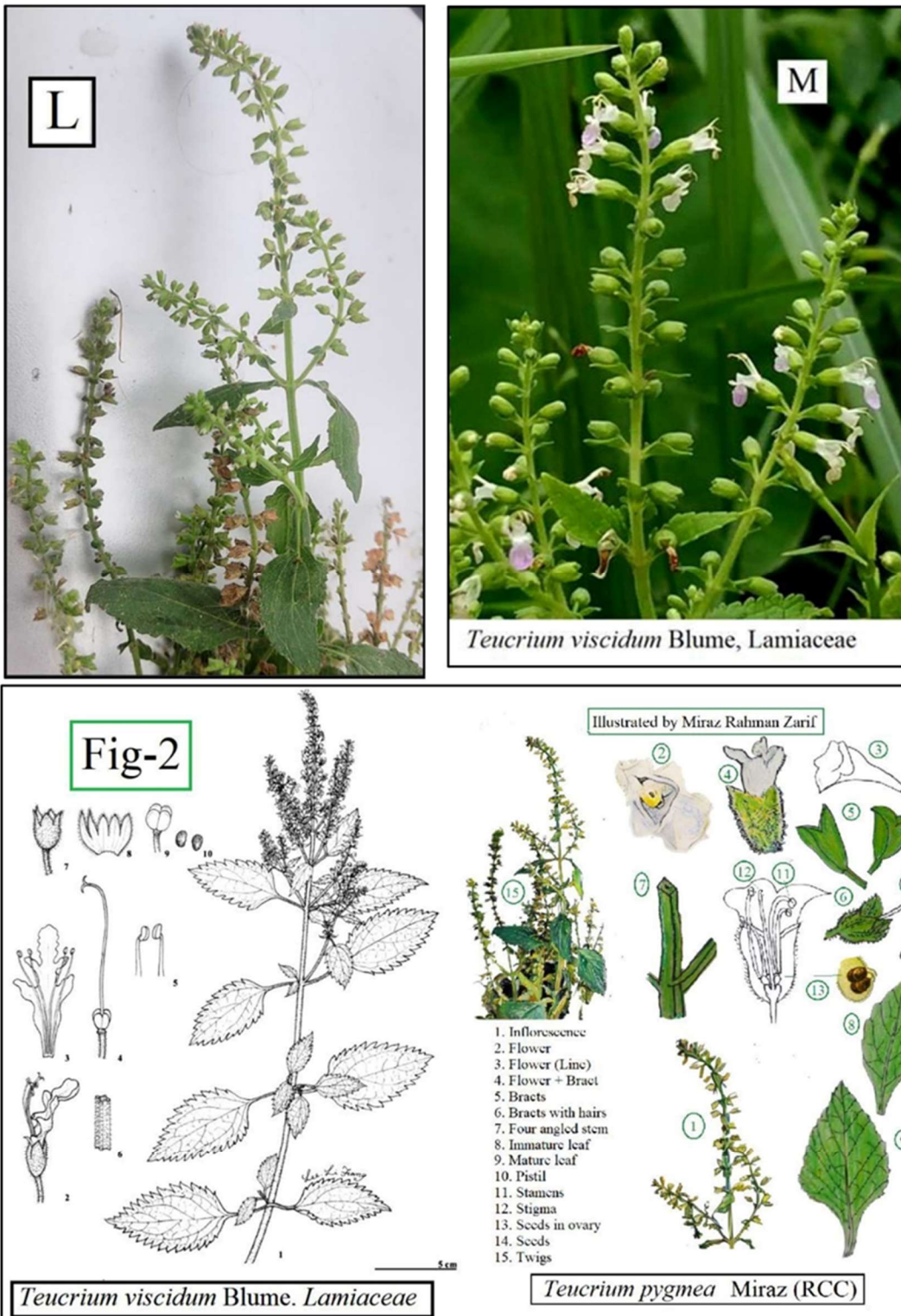


White small flowers, buds and leaves

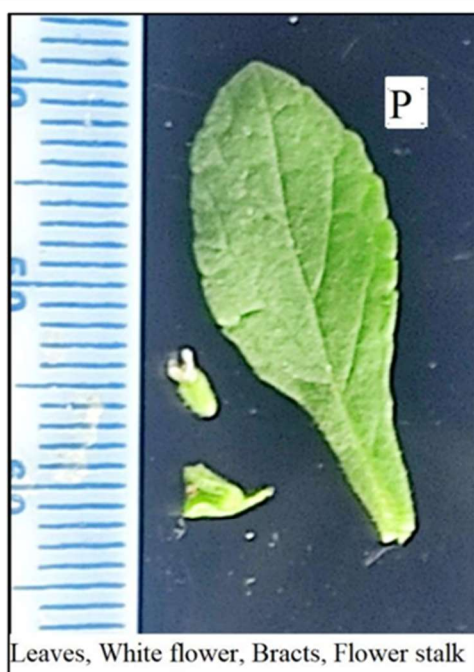
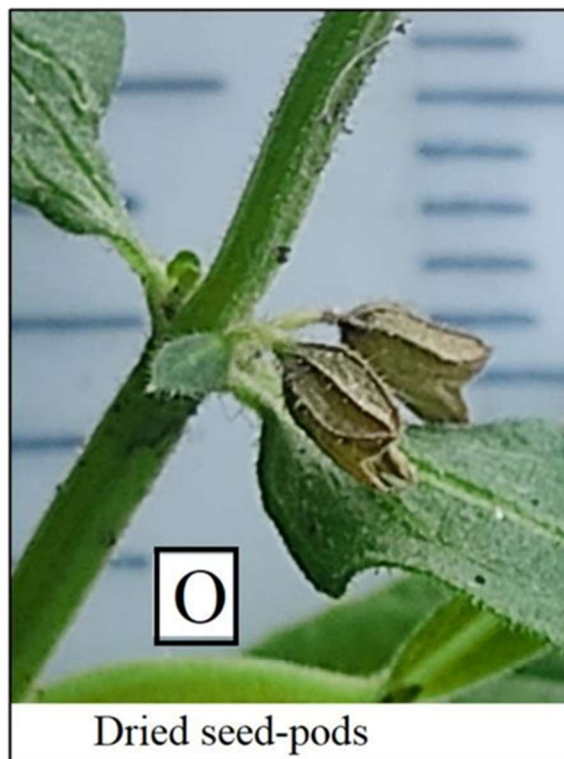
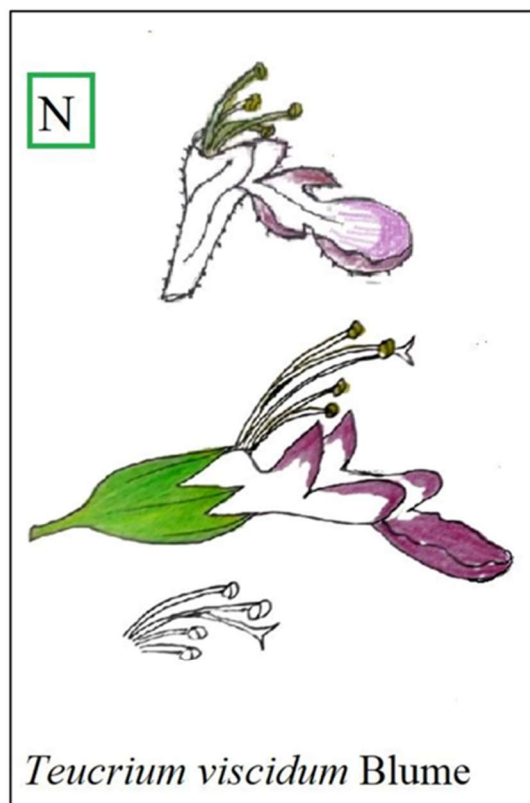
- A. *Teucrium pygmea* Miraz (RCC) flowers,
- B. Full plant with scale,
- C. Flower, bract with scale,
- D. Flower, buds, leaves.



E. *Teucrium pygmea* Miraz (RCC) – Small white flowers, Bracts, Flower stalks, Seeds with scale. F. Seeds shape and size with scale. G. Flower, Bracts with granular hairs.



L. Inflorescence and twigs of *Teucrium pygmea* Miraz (RCC), M. *Teucrium viscidum* Blume inflorescence and pink flowers. Fig-2. Botanical illustrations of *Teucrium pygmea* Miraz (RCC) and *Teucrium viscidum* Blume.



N. *Teucrium viscidum* Blume morphological images. O. Dried seed-pods of *Teucrium pygmaea* Miraz (RCC). P. Leaf, white flower, bract, flower stalk with scale. Q. White flower, bract, flower stalk with scale.



Fig-3

Compare with *Teucrium pygmea* Miraz (RCC) with *Teucrium viscidum* Blume

Subject	<i>Teucrium pygmea</i> Miraz (RCC)	<i>Teucrium viscidum</i> Blume
Height	7-30 cm tall	up to 70 cm tall.
Leaves size	3-7 cm	3–10 cm long
Petiole	3-4 cm	1–3 cm.
Flower color	White	White-purple mixed
Corolla shape	5 lobed. Lower lobe acute	Lower lobe spoon like
Corolla size	3-4 mm	6.5–7.5 mm
Calyx size	4-5 × 3 mm	2.8–4 mm long ×2.2 mm wide.
Pistil size	5mm long	-
Stigma shape	Blunt	Acute
Seeds color	Dark brown	Brown
Seeds size	1mm	1.3 mm

Acknowledgements

Thanks to Cadet and Lieutenant Mr. Miraz Rahman to assist me. Collect the plants and made herbarium sheet. Helped me to draw Botanical illustration.

Etymology

"*Teucrium*" essentially means "of Teucer" or "after Teucer". Origin: The name was adopted into New Latin from the Greek *teukrion*. 'Pygmea' meaning Pygmy. Miraz for Ex-Cadet Miraz Rahman Zarif. RCC for Rajshahi Cadet College.

Common name & Meaning

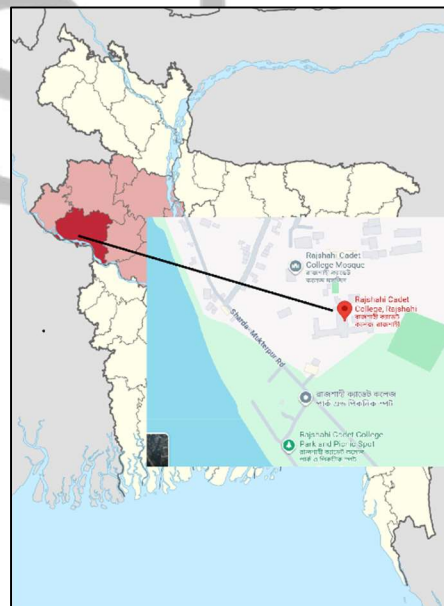
Common name and English name is RCC Germander. Miraz's Germander. Bengali name 'আরসিসি জারমান্দার' ও 'মিরাজের জারমান্দার'।

Specimen Examined

Zinia Nasrin Shumon, Herbarium sheet number – ZNS 516 (AAHBAU).

Conclusion

Teucrium pygmea Miraz (RCC), described and illustrated (Fig-1) from Rajshahi Cadet College, Rajshahi district (24.3113° N, 88.7177° E), a new species from Bangladesh from *Lamiaceae* family. Compare with *Teucrium viscidum* Blume, which is native to Bangladesh with flower color, plant size, flower size, bracts, leaves and stigma shape. This new species height is smaller than other species. So, the name 'pygmea' for this new species. Differences showing in botanical illustration at Fig-2 and as well as Fig-3 with table.



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2. *Cotula bangladeshinensis* Zinia & S. A, a new species from Bangladesh

Abstract

Cotula bangladeshinensis Zinia & S. A described and illustrated (Fig-1) from *Asteraceae* family, as a new species from RDA Campus, Bogura district (24.7047° N, 89.3959° E). This new species differs from close relative species named *Cotula coronopifolia* Linnaeus (Sp. Pl. 2: 892. 1753) with the plant size, plant shape, leaf-shape, flower head, disc florets, seed shape and size. Which is compare with points at Table-1. *Cotula coronopifolia* Linnaeus not native from Bangladesh. Compare with another *cotula* species which is native to Bangladesh named *Cotula hemisphaerica* (Roxb.) Wall. ex C.B. Clarke. Differences showing in images as well as Fig-2 with table.

Keywords: Asteraceae, New species, Bangladesh.

Introduction

50 to 80 species of *Cotula*, with recent research suggesting the higher number, though some classifications use around 50. The genus is centered in the Cape Floristic Region of South Africa but is also found in tropical Africa, Eurasia, Australia, and the Americas. *Cotula coronopifolia* L. First published in Sp. Pl.: 892 (1753). *Cotula* L. First published in Sp. Pl.: 891 (1753). *Cotula hemisphaerica* (Roxb.) Wall. ex C.B. Clarke. First published in Compos. Ind.: 150 (1876). *Asteraceae* Bercht. & J.Presl. First published in Prir. Rostlin 254. 1820 [Jan-Apr 1820] (1820) nom. cons. Sasaki, D.; Milliken, W.; Zappi, D.C.; Silveira, E.A.; Philippsen, M.; Piva, J.H. [1962] Brazil.

Description

Height 45/46 cm. Leaves 7 - 4 cm long and 2-4 cm wide. Leaves color whitish green & thick.

Flower head size 4 - 4.5 cm. Flower head color orange. Disc florets number 200 and more. Disc corolla size 1 cm. Disc corolla lobe number 5-lobed. Bracts shape Generally oblong with round at tip. Bracts size 1-1.5 cm. Seeds shape triangular, irregular. Seeds color black. Flowering time Feb-March. Herbs perennial, stoloniferous. Stems erect, 30-70 cm tall, basally glabrous or subglabrous, apically glandular pubescent or glabrous. Petiole 1-3 cm, subglabrous; blade ovate to ovate-oblong, 3-10 cm, subglabrous or very sparsely puberulent, base rounded, broadly cuneate to cuneate, margin double crenate-serrate, apex acute to short acuminate. Spikes on apical parts of stem and branches, 3-7 cm, densely glandular pubescent; verticillasters close together, 2-flowered; bracts lanceolate. Pedicel 1-2 mm, densely glandular villous. Calyx campanulate, 2.8-4 × 2.2 mm; teeth straight, subequal, less than 1/2 as long as calyx tube, upper 3 ovate-triangular, lower 2 triangular. Corolla white, reddish, or purplish, 6.5-7.5 mm, tube ca. 3 mm; middle lobe circular, lateral lobes ovate-triangular, obtuse. Ovary apically bullate, hairy. Style as long as stamens. Nutlets yellow-brown, oblate, ca. 1.3 mm. Fl. Jun-Nov (Jun-Sep

Taxonomic treatment

Cotula bangladeshinensis Zinia & S. A nov. p- 9, Figs. 1, 2 & map

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: Eudicots

Clade: *Asterids*

Order: *Asterales*

Family: *Asteraceae*

Genus: *Cotula*

Species

Cotula bangladeshinensis Zinia & S. A

Materials and methods

The specimens of new species were compared with similar species through a literature review, examined from dried specimens from the herbaria. (powo.science.kew.org/taxon/urn: lsid: ipni.org: names:30017050-2). The measurement of the description is based on the fresh and dry materials we collected from RDA Campus, Bogura district (24.7047° N, 89.3959° E). The color photographs are taken. The plant specimens were deposited. Collection of plant parts and photos have been used to draw Botanical Illustration of this new species. Plant collected from RDA Campus, Bogura district. Captured all types of images. So, assure the sizes captured with scale. Drawn botanical illustration from living plant. Noted their flowering time, height, leaves size and color, flower color, corolla color, seed color, stigma.

Identification keys

1. Height more.
2. Leaves shape and size.

3. Leaves thickness.
4. Flower color.
5. Disc florets.
6. Bracts shape and color.
7. Flower head
8. Seed shape.
9. Seed color.
10. Flowering time.

Acknowledgements

Thanks to Ms. Shahin Akhter for her contribution as a botanical illustrator.

Etymology

This new species “*Cotula bangladeshinensis* Zinia & S. A”, Here, Latin word cotula, which in turn derives from the Greek word kotyle (κοτύλη), meaning "small cup" or "small vessel". This name refers to the shape of the flower head's receptacle, *bangladeshinensis* for country Bangladesh. Zinia for Zinia Nasrin Shumon and S.A for Shahin Akhter a botany teacher.

Common name & Meaning

Common name of this new species “*Cotula bangladeshinensis* Zinia & S. A”, is ‘Bangladeshi golden button’ in English. সোনালী বোতাম in Bengali.

Specimen Examined

At RDA campus, Bogura district, Natore district and all over Bangladesh. Zinia Nasrin Shumon, Herbarium sheet number – ZNS 515 (AAHBAU).

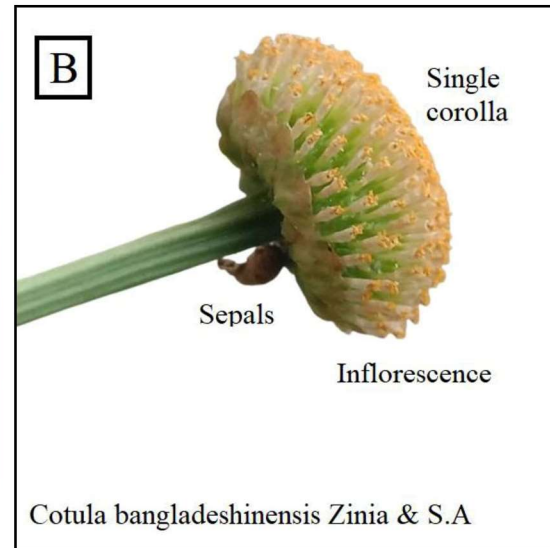
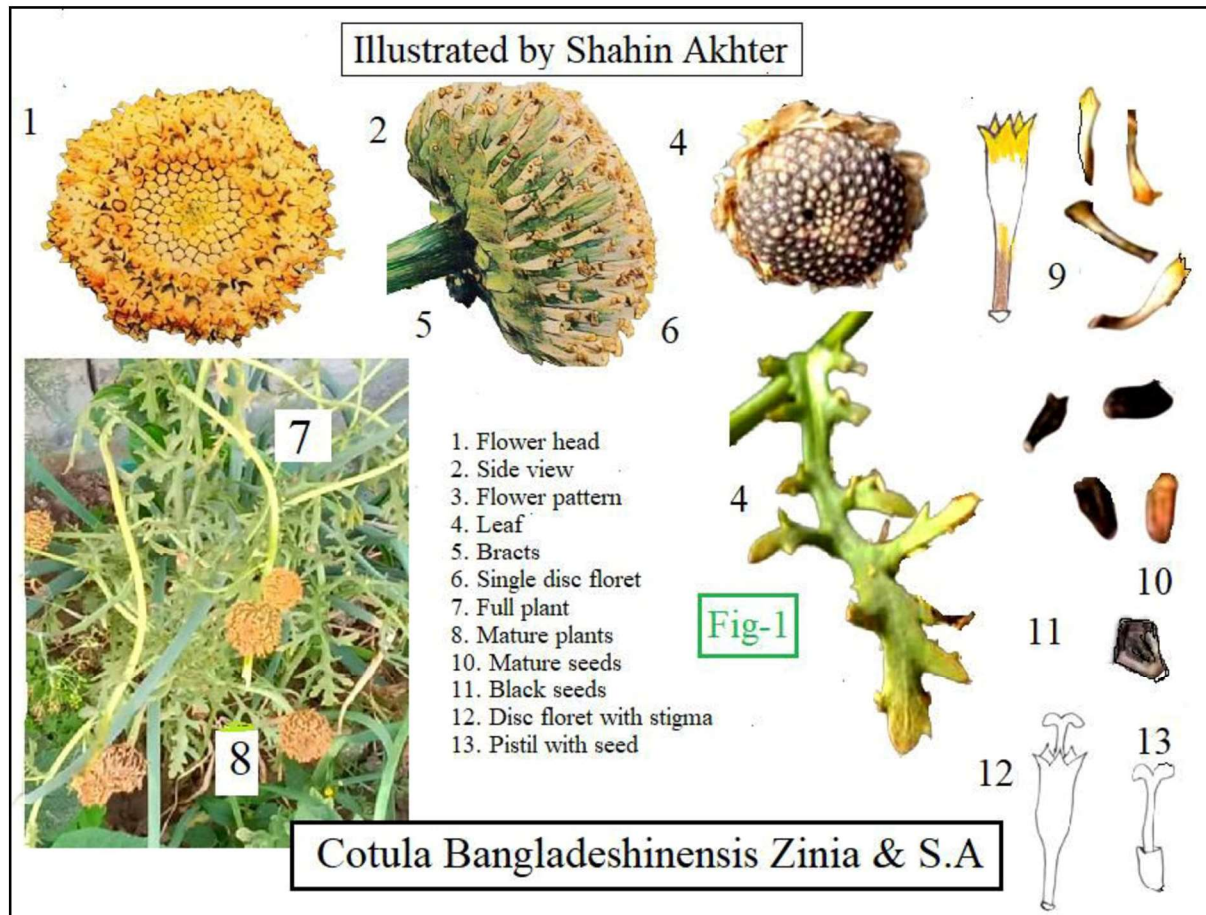
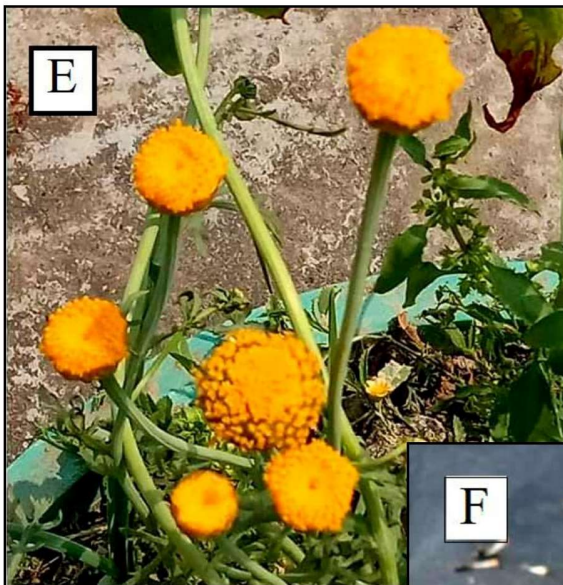
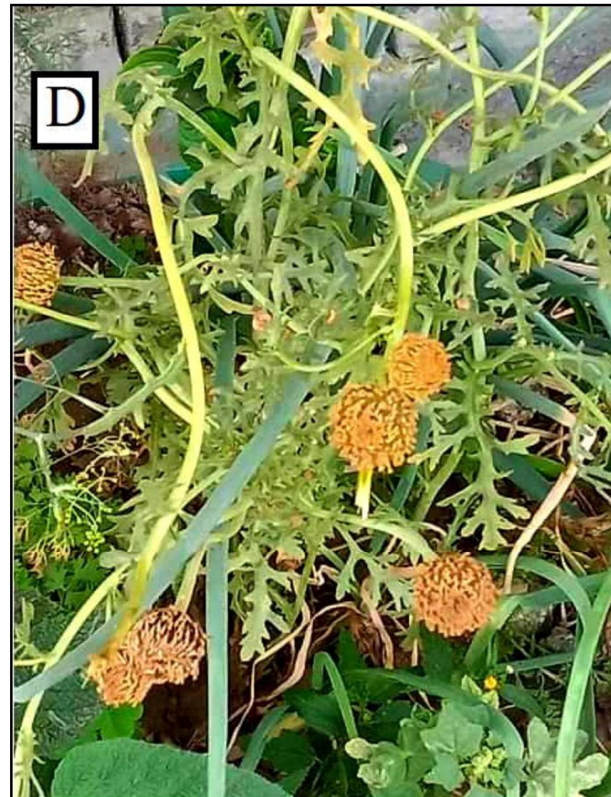


Fig-1: Botanical Illustration of *Cotula bangladeshinensis* Zinia & S. A

- A. Flower head
- B. Side view



Cotula bangladeshinensis Zinia & S.A (Full plant, branches, leaves, mature flowers)

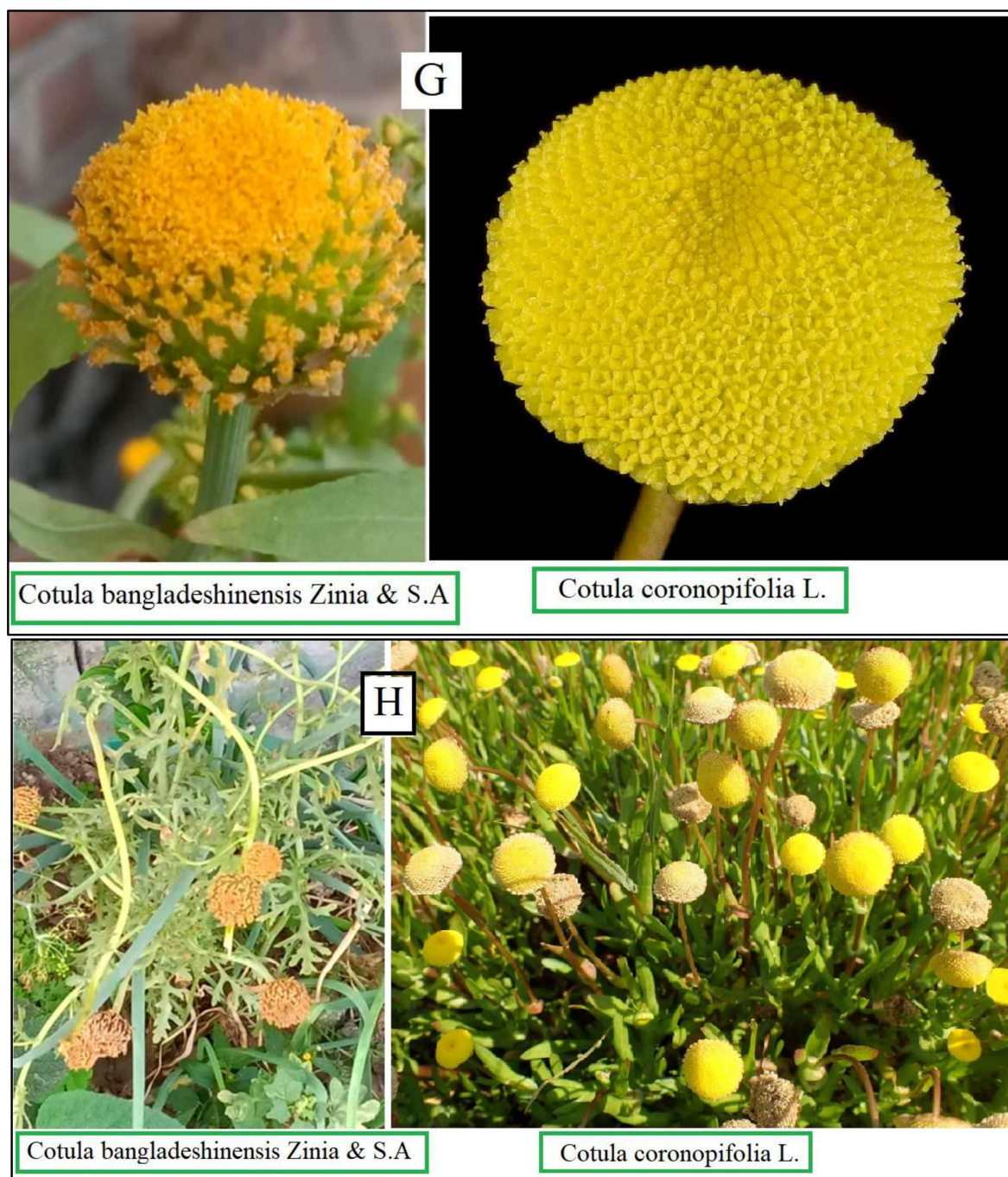
C. Flower head.

D. Full plant with twigs, mature flowers.

E. Some flowers.

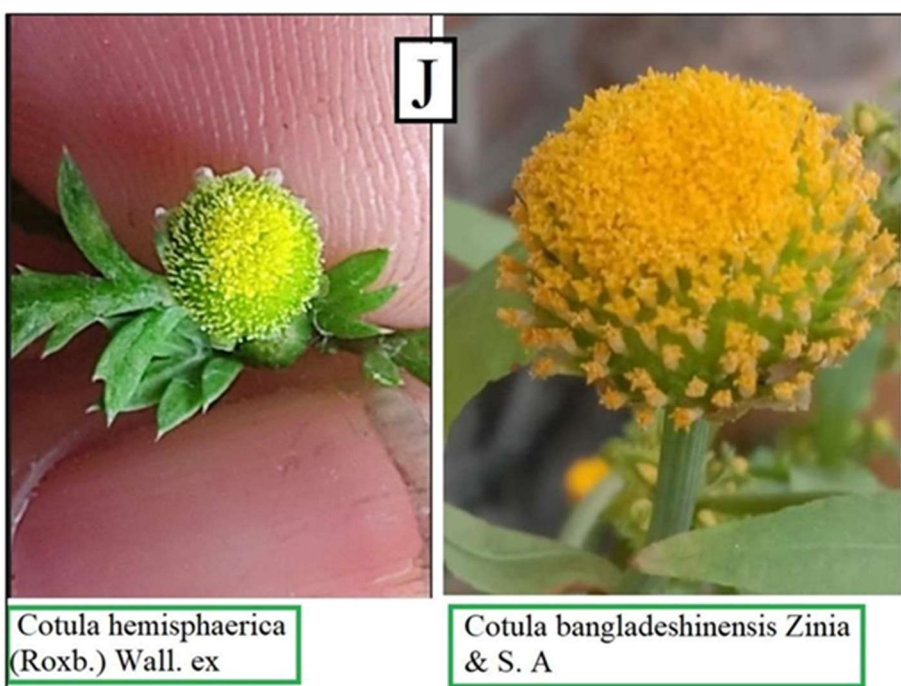
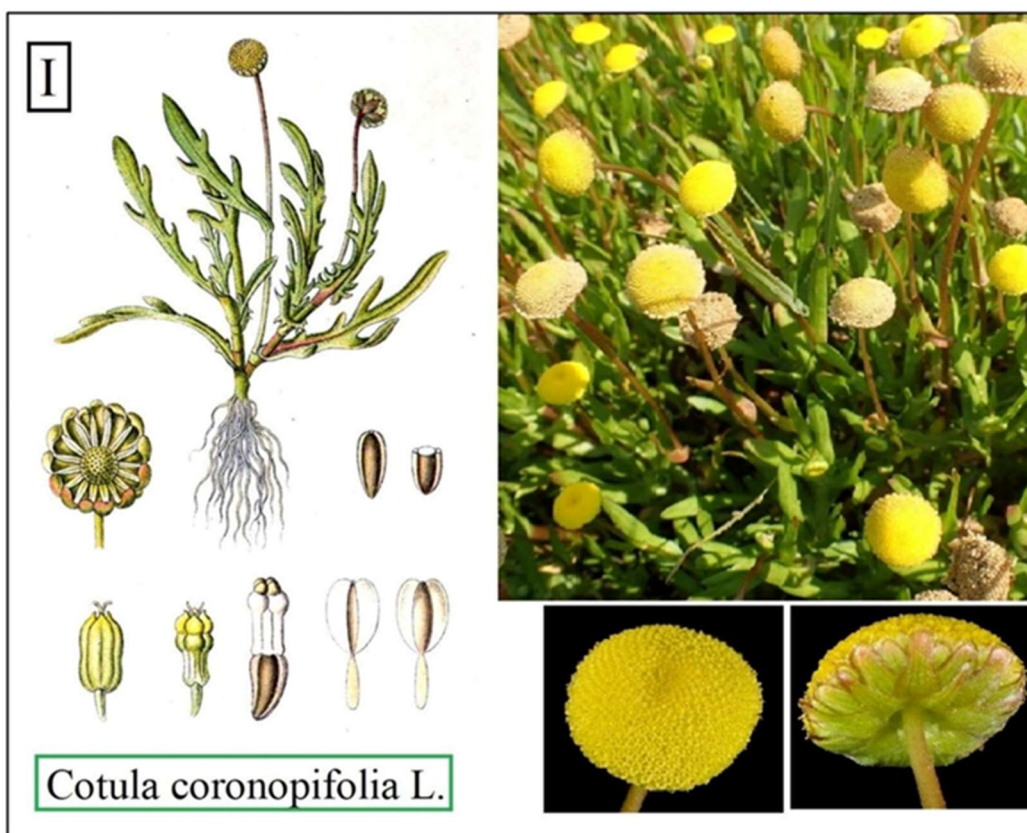
F. Flower heads, leaves, bracts, florets and seeds with scale.





G. Flower head of 2 species.

H. Habit and size of 2 species. *C. bangladeshinensis* Zinia & S.A at RDA Campus, Bogura.



I. Botanical Illustration of *C. coronopifolia*.

J. Compare of 2 species flower heads.



K. Floret patterns of *C. bangladeshinensis* Zinia & S.A with scale.

L. Flower head and florets.

M. Seeds size and shapes.

Cotula bangladeshinensis Zinia & S.A
Disc florets, seeds size and shape

Fig-2: Comparison *C. bangladeshinensis* Zinia & S.A with *C. coronopifolia* L. and *C. hemisphaerica* (Roxb.) Wall. ex C.B. Clarke

Subject	<i>C. bangladeshinensis</i> Zinia & S. A	<i>C. coronopifolia</i> L.	<i>C. hemisphaerica</i> (Roxb.) Wall. ex C.B. Clarke
Height	45/46 cm	15–30 cm	10–15 cm
Leaves	7 - 4 cm long and 2-4 cm wide	1 to 6 cm	3-5 cm long and 1-2 cm wide
Leaves color	Whitish green & thick	Mid- to bright green	Green
Flower head size	4 - 4.5 cm	5 to 11 mm in diameter	2 to 8 mm
Flower head color	Orange	Yellow	Yellow-green-white
Disc florets number	200 and more	12 to 200+	20–30-disc florets
Disc corolla size	1 cm	1 to 1.5 mm in length	0.8 mm long.
Disc corolla lobe number	5-lobd	3-4 lobed	4-lobed
Bracts shape	Generally oblong with round at tip.	Narrowly scarious (papery) apex and margins.	Generally oblong with a single brown midrib and scarious (membranous) margins that are only present at the tip.
Bracts size	1-1.5 cm	-	1.5–2.2 mm long
Seeds shape	Triangular, Irregular	Compressed and winged at the periphery of the flower head	The outer, peripheral achenes are winged and flat, while the inner, central achenes are wingless, obovate, and more compressed
Seeds color	Black	Seeds would be a less conspicuous color, such as brown, grey.	The peripheral achenes are typically brown with cream wings at maturity, and are covered in glandular hairs on both sides, whereas the central achenes are uniformly brown.
Flowering time	Feb-March	Even all year long, depending on the climate and region.	February and March

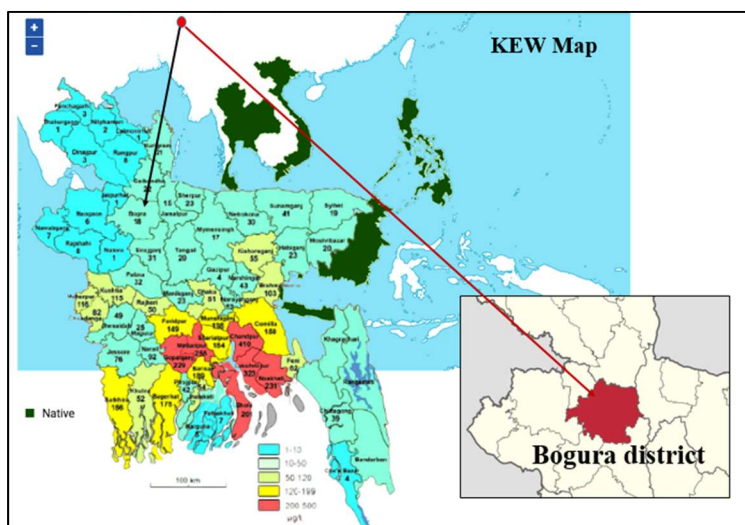
Conclusion

After all the discussion, it is sure that *Cotula bangladeshinensis* Zinia & S. A (Fig-1) is new to taxon. We illustrated and described a new species of *Cotula* genus, Family – *Asteraceae* in Bogura district, Bangladesh. There're showing differences with 2 *Cotula* species at Fig-2.

Plant height is more than *C. coronopifolia* L. Flower color different orange. Differences in leaves shape and color. Flower head's size. Disc floret's size, lobes and shape. Seeds shape and colors are differed also.

Map

At RDA Campus, Bogura district
(24.7047° N, 89.3959° E).



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3. *Dalbergia bractea* Zinia & L.S.M, a new species from Bangladesh

Abstract

Dalbergia bractea Zinia & L.S.M described and illustrated (Fig-1) from Fabaceae family, as a new species from Gazipur district 24.0958° N, 90.4125° E. This new species differs from close relative species named *Dalbergia oliveri* Gamble ex Prain, which is not native to Bangladesh. Not a big tree like *Dalbergia oliveri* Gamble ex Prain. A shrub or small tree. Clear differences with flowers, sepals, bracts, leaves and height. It is a shrub or small tree. The main characteristic is the bract of *Dalbergia bractea* Zinia & L.S.M, which publish as a new species from Bangladesh. Differences showing in images as well as Fig-2 with table.

Keywords: *Dalbergia*, *Fabaceae*, *New species*, *Bangladesh*.

Introduction

Dalbergia is a large genus of family *Fabaceae*. The genus *Dalbergia* includes approximately 275 to 300 accepted species worldwide, with recent estimates suggesting around 274 or 304 species globally. These species are found in tropical and subtropical regions and include trees, shrubs, and vines, with a high demand for the timber from some commercial species. Leaves are alternate, compound, and pinnate, consisting of several leaflets. Flowers are usually small, white to pink, and produced in axillary clusters or panicles. The fruits are flat, strap-like pods, often oblong and pointed, which typically contain one or more flat, bean-shaped seeds and do not open at maturity. *Dalbergia* L.f. First published in Suppl. Pl.: 52 (1782). Bentham in Bentham & Hooker, Gen. Pl. 1: 544 (1865). *Fabaceae* Lindl. First published in Intr. Nat. Syst. Bot., ed. 2. 148. 1836 [13 Jun 1836] (1836) nom. cons. *Dalbergia oliveri* Gamble ex Prain. First published in J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 66: 451 (1897).

Description

Height 6-10 meters tall. Shrub or Small tree. Leaves Size composed of 9, square-oblong leaflets that are 4-5 cm long and 1-1.5 cm wide. Leaves color bright green. Flower color pink. Flower size 1 cm. Bud's color dark maroon. Petals pink with maroon lines. Sepals 4-5 mm. 2 bracts. 2 Bracteoles with leaflike structure, light green color. Stamens 10, in 2 lateral bundles of 5+5. Ovary hairy at base and along the sutures; ovules 3–4; stipe hairy. Seedpod shape not so pointed, 10 cm long & 2.5 cm wide. Seeds are long shape. Seed's size 3mm. 1 seed only. Not timber type.

Materials and methods

The specimens of new species were compared with similar species through a literature review, examined from dried specimens from the herbaria. (powo.science.kew.org/taxon/urn:lsid:ipni.org:names:490372-1) The measurement of the description is based on the fresh and dry materials we collected from Gazipur district 24.0958° N, 90.4125° E, from Bangladesh. The

color photographs are taken. The plant specimens were deposited. Collection of plant parts and photos have been used to draw Botanical Illustration of this new species. Herbaceous plants, often with low-growing or prostrate stems, that typically feature finely divided, aromatic leaves and button-like, yellow or greenish-brown flower heads composed of many small, tubular, disc florets.

Fig-2: Compare *Dalbergia bractea* Zinia & L.S.M with *Dalbergia oliveri* Gamble ex Prain

Subject	<i>Dalbergia bractea</i> Zinia & L.S.M	<i>Dalbergia oliveri</i> Gamble ex Prain
Height	6-10 meters tall	15-30 meters tall
Plant type	Shrub or Small tree	Big tree
Leaves Size	Composed of 9, square-oblong leaflets that are 4-5 cm long and 1-1.5 cm wide.	Composed of 9-13, ovate-oblong leaflets that are 4-8 cm long and 1.5-3 cm wide.
Leaves color	Bright green	Dark green
Flower color	Pink color	Lilac or purplish-pink, with the standard (petals) being orbicular.
Flower size	1 cm	1 cm
Bud's color	Dark maroon	Purple to Pink
Petals	Pink with maroon lines	Purplish-white
Sepals	4-5 mm	-
Bracts	2 bracts	Small
Bracteoles	2 Bracteoles with leaflike structure, light green color	Small
Seedpod shape	Not so pointed	2 sides pointed tip
Seedpod size	10 cm long & 2.5 cm wide	6-8 cm long & 1.7 cm wide
Seeds shape	Long shape	Mango shaped/Reniform
Seed's size	3mm	1 cm or 12mm
Seed's number	1 seed only	1-3 seeds.
Timber type	Not timber type	Known for its valuable timber.

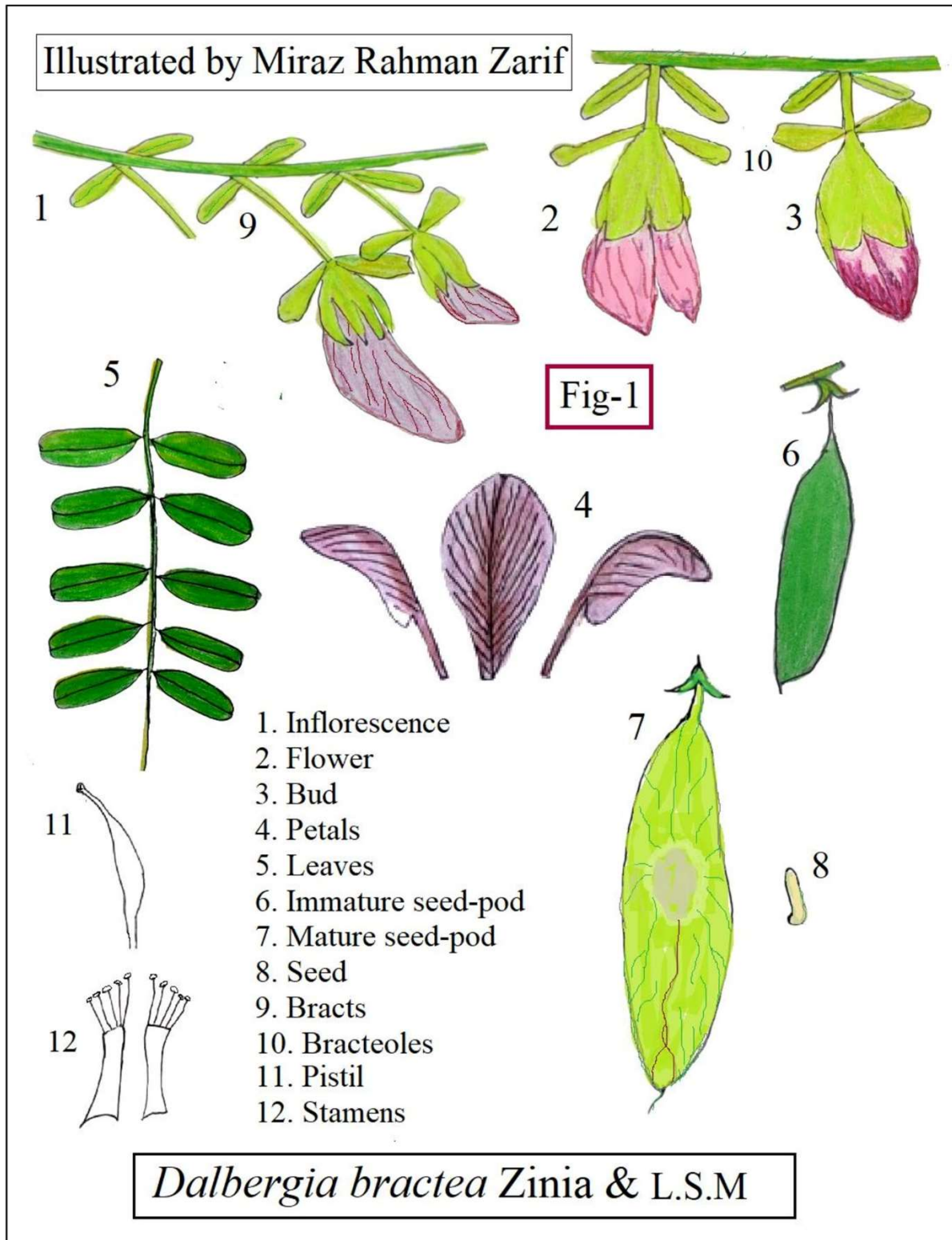
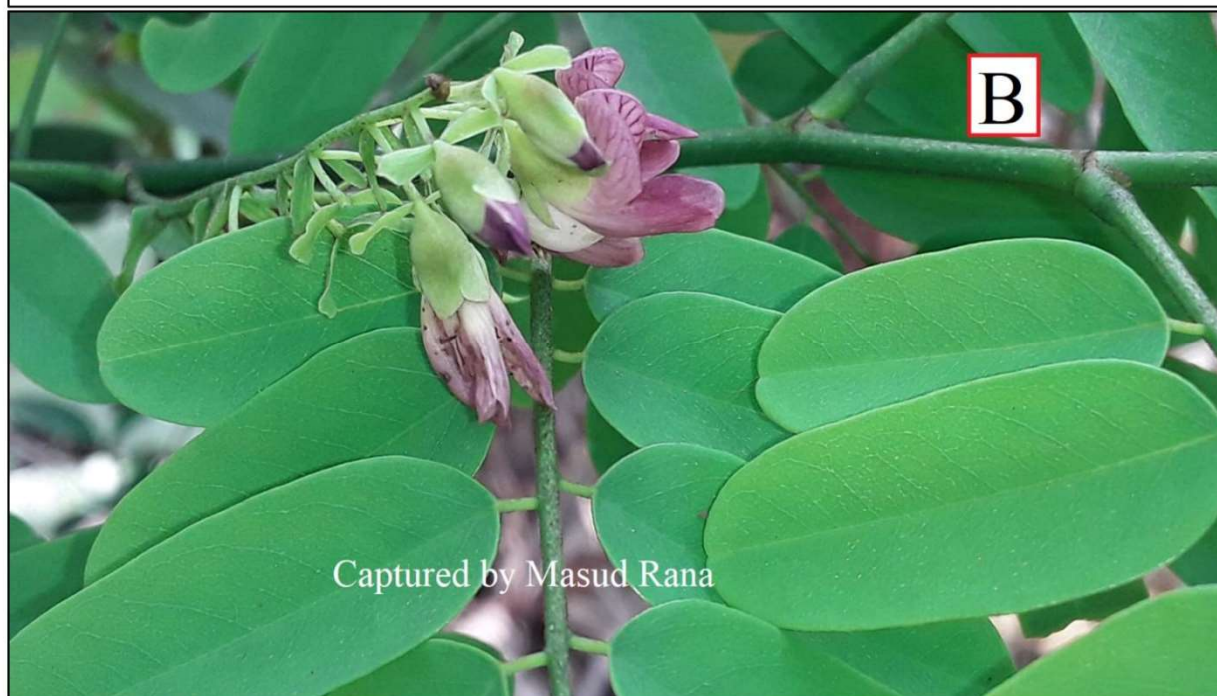


Fig – 1: Botanical Illustration of *Dalbergia bractea* Zinia & L.S.M

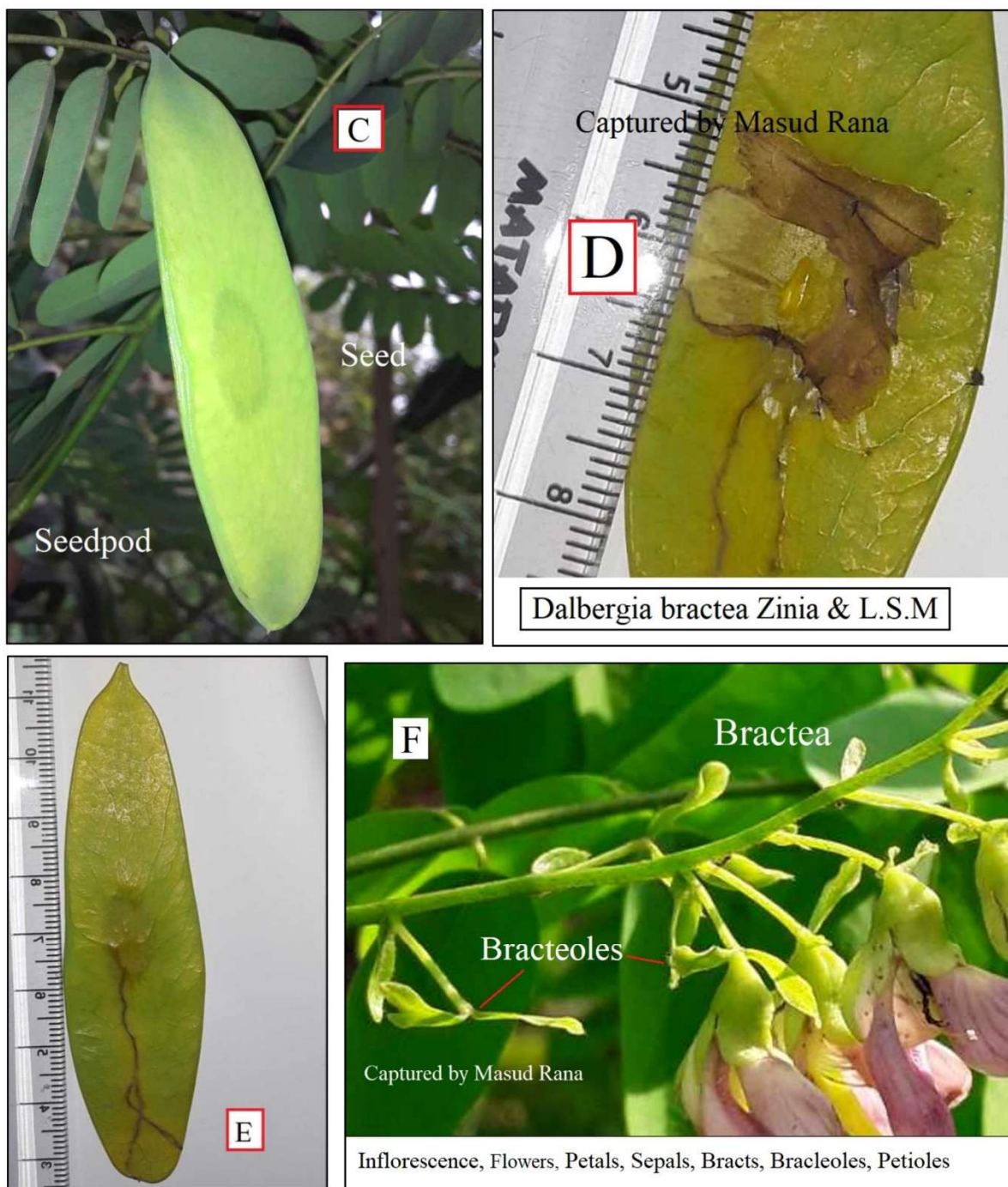


Dalbergia bractea Zinia & L.S.M inflorescence

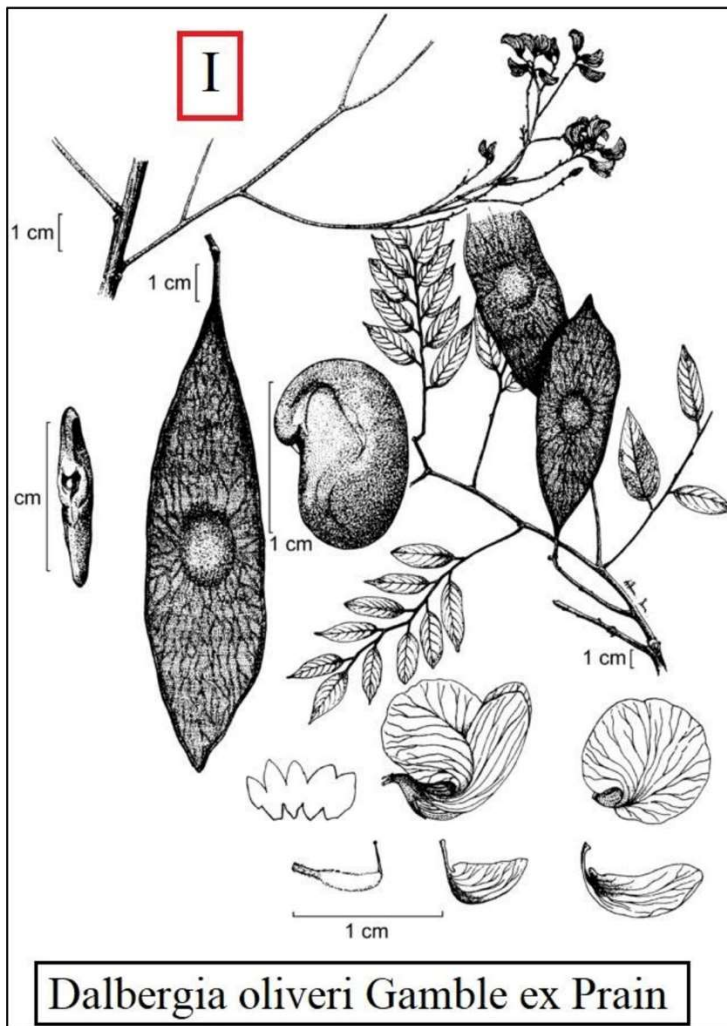
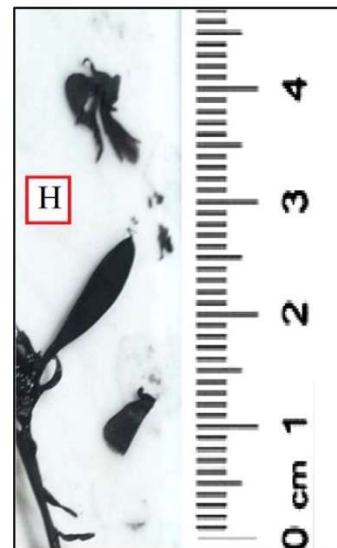


A. Inflorescence, Single flower, Petals, Sepals, Bracts, leaves.

B. Inflorescence, Single flower, Petals, Sepals, Bracts, leaves.



- C. Seedpod and seed position,
D. Only one seed inside in the middle,
E. Seedpod with scale, F. Showing the bracts.



G. Bract of *Dalbergia bractea* Zinia & L.S.M

H. Flower, sepal, bracts with scale

I. *Dalbergia oliveri* Botanical

Illustration, J. Herbarium sheet.



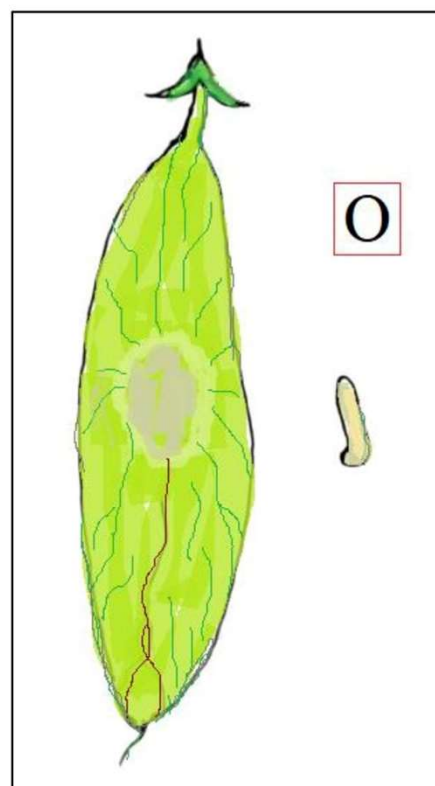
K. *Dalbergia oliveri*
Inflorescence,

L. *D. oliveri* seedpod,

M. *D. oliveri* mature seedpod
and seeds,

N. *D. bractea* Zinia & L.S.M
seedpod,

O. *D. bractea* Zinia & L.S.M
seedpod and seed.



Identification keys

1. It's a shrub or small tree
2. Leaves shape is different
3. Petals have maroon color lines
4. 2 bracts with the joint of petiole
5. 2 bracteoles which is the characteristic of this new species.
6. Seedpod shape
7. Seed size
8. Seed shape
9. Seed number
10. Not a timber.

Specimen examined

At Gazipur district, Bangladesh. Zinia Nasrin Shumon.

Herbarium sheet number – ZNS 516 (AAHBAU).

Acknowledgements

Thanks to Ms. Laila Shahana Minu for her contribution. And thanks to Mr. Masud Rana for his contribution.

Etymology

This new species *Dalbergia bractea* Zinia & L.S.M. The word *Dalbergia* itself doesn't have a specific Latin meaning; rather, it is a New Latin genus name for a group of trees, named after Nils Dalberg, a Swedish physician who died around 1819. The '-ia' ending is a common New Latin suffix used for forming genus names in botany. *Bractea* meaning bracts and bracteoles. Zinia for Zinia Nasrin Shumon (Author). L.S.M for Laila Shahana Minu, a Botany teacher.

Common name & Meaning

Common name of this new species “*Dalbergia bractea* Zinia & L.S.M” Ajob seem or Ajob Sisso Seem in English. আজব শিশু সিম in Bengali.

Conclusion

After all the discussion, it is sure that *Dalbergia bractea* Zinia & L.S.M. (Fig-1) is new to taxon. We illustrated and described a new species of *Dalbergia* genus, Family – Fabaceae at Gazipur district, Bangladesh. There're showing differences with one *Dalbergia* species at Fig-2. Plant height is only a shrub or small tree. Not big tree like *Dalbergia oliveri* Gamble ex Prain. The flower color is different pink. Differences in leaves shape and color. Bracts and bracteoles. Seedpod shape. Seeds shape and colors are differed also.

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- 17.

4. *Celosia bangladeshinensis* Zinia & Fiona, a new species from Bangladesh

Abstract

Celosia bangladeshinensis Zinia & Fiona, was described and illustrated (Fig-1) as a new species from Paba, located at 24.4417°N 88.6278°E in the district of Rajshahi, Bangladesh. It belongs to the family *Amaranthaceae*. Closely related to *Celosia argentea* L, is native to Bangladesh. But differences with inflorescence shape, leaves shape and color, spreading habit, flower color, long pistil and stigma. *Celosia argentea* L inflorescence shape is spear shape. But *Celosia bangladeshinensis* Zinia & Fiona is round/globose shape and quite long. The color we named the light pink fair color is 'Fiona' here.

Keywords: *Celosia*, *Amaranthaceae*, New species, Bangladesh.

Introduction

Celosia genus First published in Sp. Pl.: 205 (1753). It is a small genus of edible and ornamental plants in the *amaranth* family, *Amaranthaceae*. Its species are commonly known as wool flowers. Includes 46 Accepted Species in Kew. Govaerts, R. (1999). World Checklist of Seed Plants 3(1, 2a & 2b): 1-1532. MIM, Deurne. *Celosia argentea* L. First published in Sp. Pl.: 205 (1753). Wu, Z. & Raven, P.H. (eds.) (2003). Flora of China 5: 1-505. Science Press (Beijing) & Missouri Botanical Garden Press (St. Louis). *Amaranthaceae* Juss. First published in Gen. Pl. [Jussieu] 87. 1789 [4 Aug 1789] (1789) nom. cons. *Amaranthaceae* Juss. Gen. Pl. 87â€ “88. 1789. (4 Aug 1789).

Taxonomic treatment:

Celosia bangladeshinensis Zinia & Fiona sp. Nov, p- 9, Figs.1, 2 Table-1, Map

TYPE: Bangladesh, Paba Upazila, Rajshahi district, 24.4417°N 88.6278°E.

Diagnosis: Morphologically *Celosia bangladeshinensis* Zinia & Fiona (Fig-1) compared with *Celosia argentea* L. (Table-1)

Taxonomic tree:

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Clade: Eudicots

Order: Caryophyllales

Family: *Amaranthaceae*

Genus: *Celosia*

Species: *C. bangladeshinensis* Zinia & Fiona

Binomial name

Celosia bangladeshinensis Zinia & Fiona

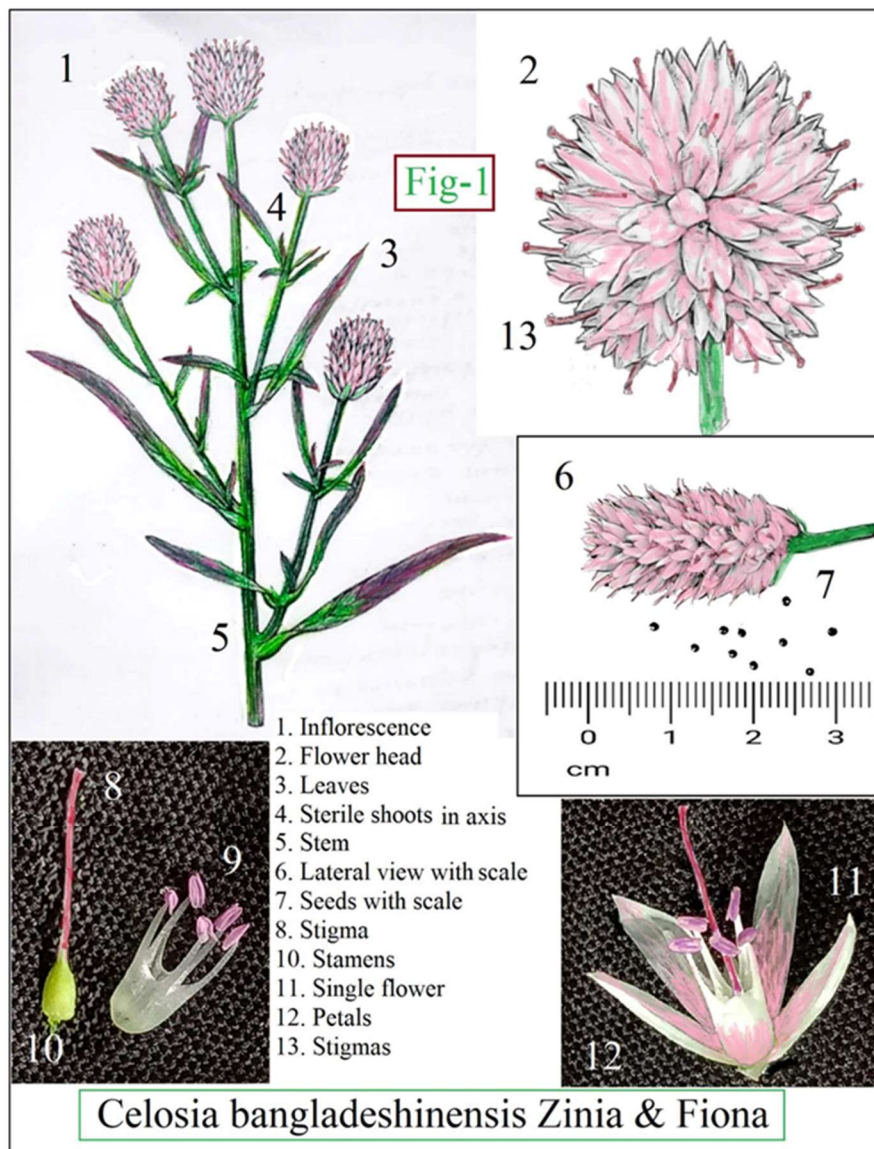
Description

Herbs annual, 20 cm tall. Stem erect, green with red, glabrous, branched. Widely spread about 25 cm. Leaves reddish, petiole absent to 1.5 cm. leaf shape -linear, 2-4.5cm x 2-3 mm, apex acuminate or acute. Spikes globose, 8x8 mm, not branched. Flowers dense. Bracts and bracteoles light pink, shiny, lanceolate, 3-4 mm, with midvein, apex acuminate. Tepals pink, oblong-lanceolate, 6-8 mm, with midvein, apex acuminate. Filaments 5-6 mm, free part 2.5-3 mm;

anthers purple. Ovary shortly stalked; style purple, 3-5 mm. Stigma 3 lobed and maroon color. Seeds compressed-reniform, ca. 1 mm in diam. Black and shiny. 10 and more in number. Fl. May-Aug, fr. Jun-Oct. Found in sand on river side, Padma.

Identification keys

1. Plant height
2. Plant wide
3. Inflorescence shape - globose
4. Inflorescence color – Light pink
5. Long pistil
6. Pistil color
7. Flower size small
8. Leaves shape
9. Leaves color.
10. Seeds size



1. Botanical illustration of *Celosia bangladeshinensis* Zinia & Fiona.

Table-1: Differences between *Celosia bangladeshinensis* Zinia & Fiona and *C. argentea* L.

Subject	<i>C. bangladeshinensis</i> Zinia & Fiona	<i>C. argentea</i> L (Wild)
Height	20 cm	30 and 100 cm
Widely spread	25 cm	-
Leaves shape	2-2.5 cm x 2-3 mm	2-15 x 0.1-3.2 cm
Leaves color	Reddish (Less greenly)	Green when white flower
Inflorescence shape & Size	Globose 2 cm	2.5-20 x 1.5-2.2 cm Conical at first but becoming cylindrical in full flower
Inflorescence color	Light pink	Silvery to pink
Flower color	Light pink	Pinkish white to silvery white and sometimes bright pink at the tip of the flower spikes.
Flower size	4 mm	1 cm +
Bracts	Pink	3-5 mm
Tepals color	Pink	Silvery-white or pinkish tepals
Pistil color	Dark maroon	White or pinkish color
Pistil size	5-6 mm (Longer than tepals)	5-7 mm long
Sigma lobes	3	2
Filaments	Creamy	Creamy to magenta
Seeds number	10 + more	4 to 10 seeds.
Seeds size	1 mm	1.25-1.5 mm

Methods

Description of this new species is based on living plant. All the Images captured from 2/3 plants, from the same species. Full plants, flowers, leaves, seeds collected from living plants. Captured photos with hand and scale. Compare with another species that seen in Bangladesh, *C. argentea* L. Also, from Scientific Illustration of this species. Color Illustration painted by Miraz Rahman Zarif on the base of living plants at the location, Rajshahi district. Measurement showing in images with scales. That's also help to complete the full description. Mr. Saiful Islam collected all the herbarium sheet elements. Plant, leaves and seeds. Mr. Saiful Islam also collected most of photographs from plants. Paba Upazila, Rajshahi district. 24.4417°N 88.6278°E. River Bed/Char of The Padma River.

Etymology

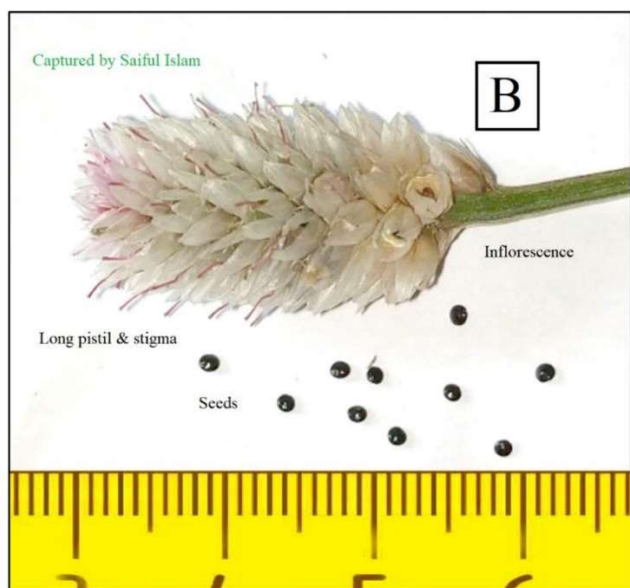
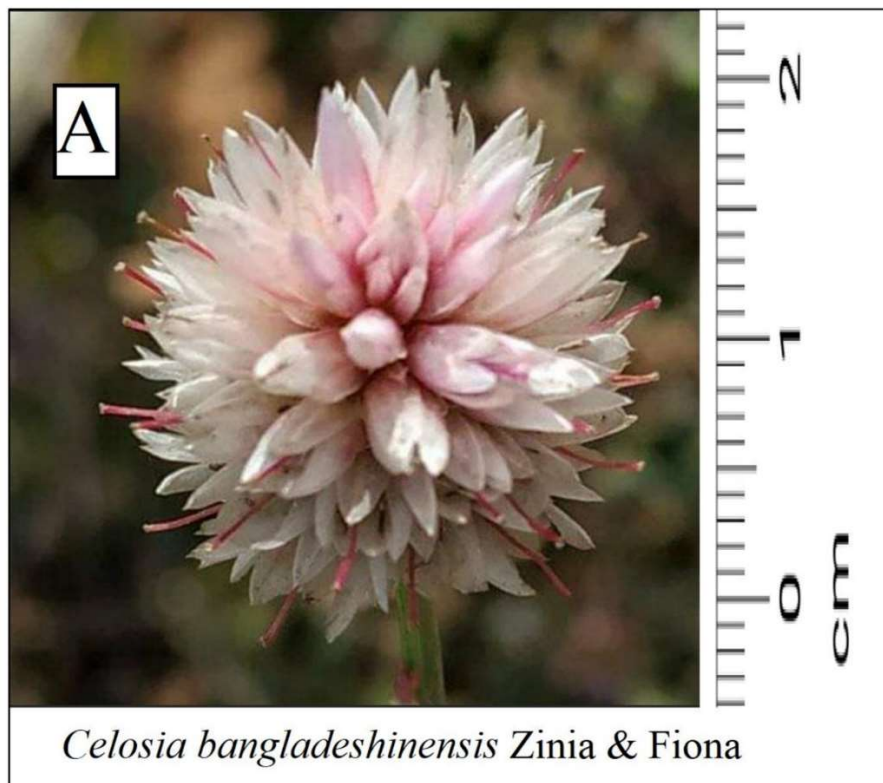
The generic name 'Celosia' is derived from the Ancient Greek word κήλεος (kéleos), meaning "burning", and refers to the colorful flame-like flower heads. The species name *Celosia bangladeshinensis* Zinia & Fiona. *Bangladeshinensis* for country 'Bangladesh'. *Zinia* for Zinia Nasrin Shumon (Author) and *Fiona* for fair color – light pink color – Fiona.

Common name and meaning

Common name of this new species is 'Fiona's Morogful'. ফিওনার মোরগফুল ও ফিওনার গোল ফুলী।

Acknowledgement

Thanks to Mr. Saiful Islam for his contribution.



A. Showing inflorescence, single flowers, pink petals (Fiona) long red pistil and three headed stigmas with scale.

B. Lateral view of inflorescence, flower-shape, red pistils and black seeds with scale.



CELOSIA ARGENTEA, Linn.
FIG. 106.—Figs. 1. Branch. 2. Flower bud. 3. Flower with bract and bracteoles. 4. Bract. 5. Perianth lobe. 6. Stamens, united at base and surrounding pistil. 7. Pistil. 8. Longitudinal section of pistil. 9. Anthers. 10. Fruit dehiscing. 11. Longitudinal section of fruit. 12. Seed.

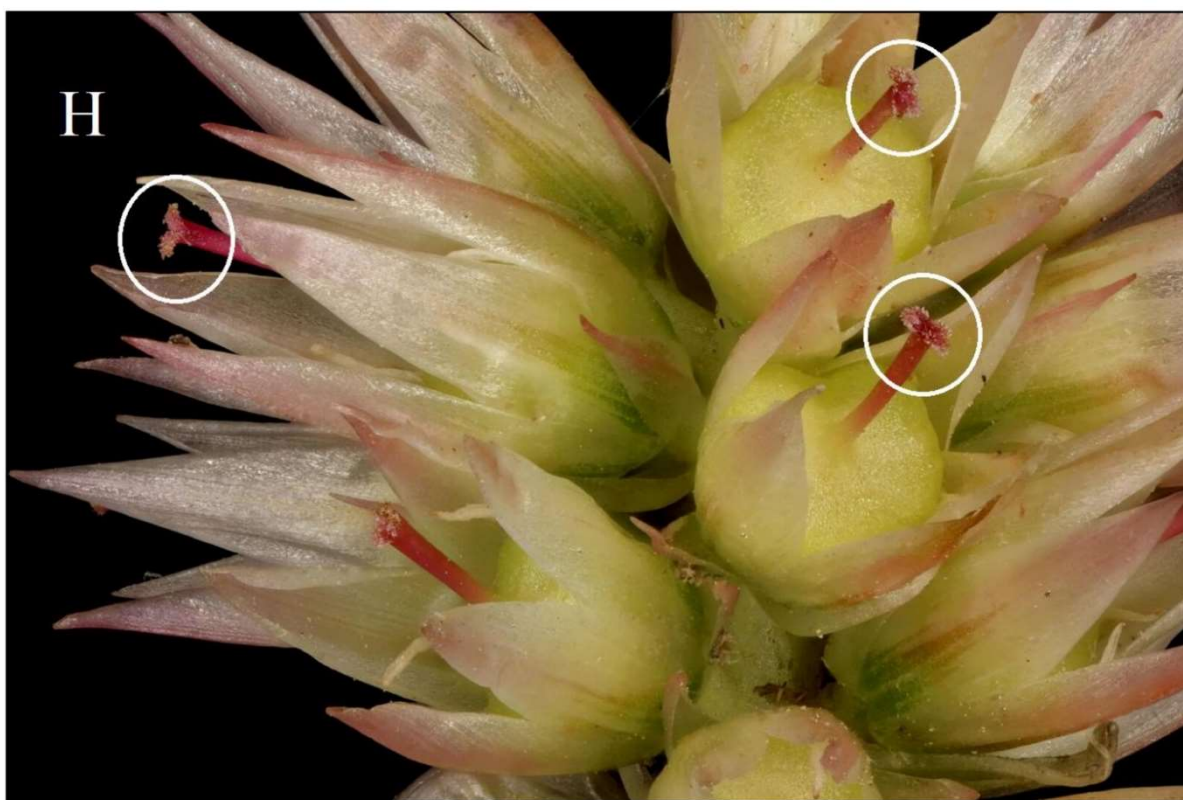
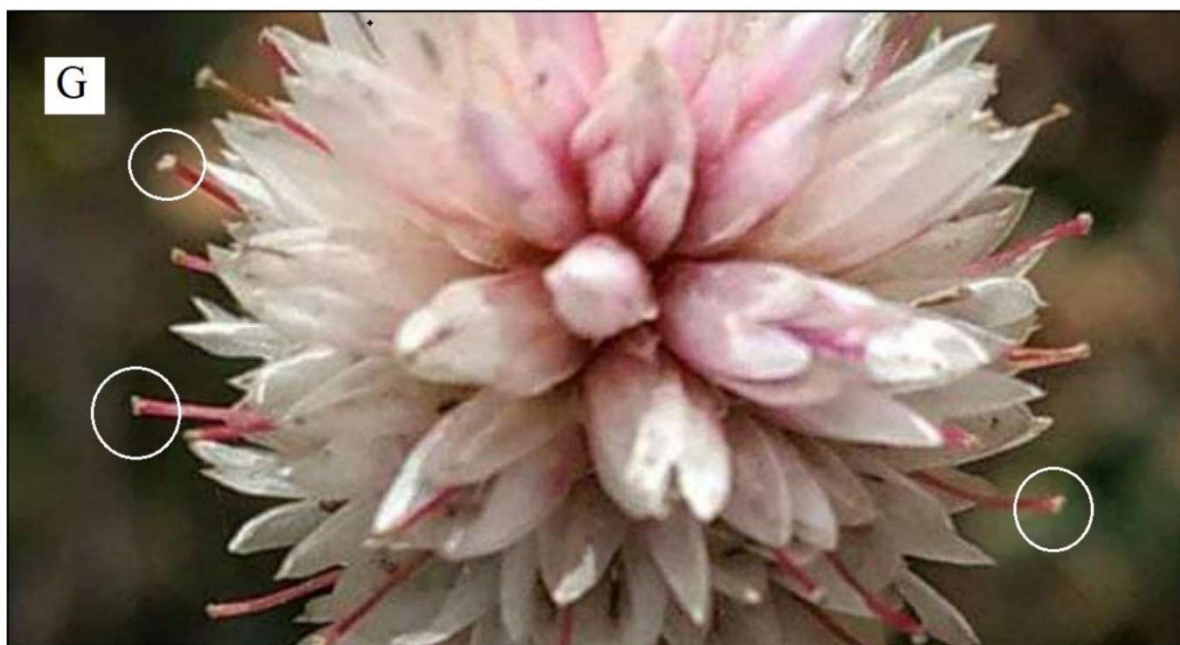


C. Full plant in habitat at Rajshahi

D. Reddish axis shoots and leaf.

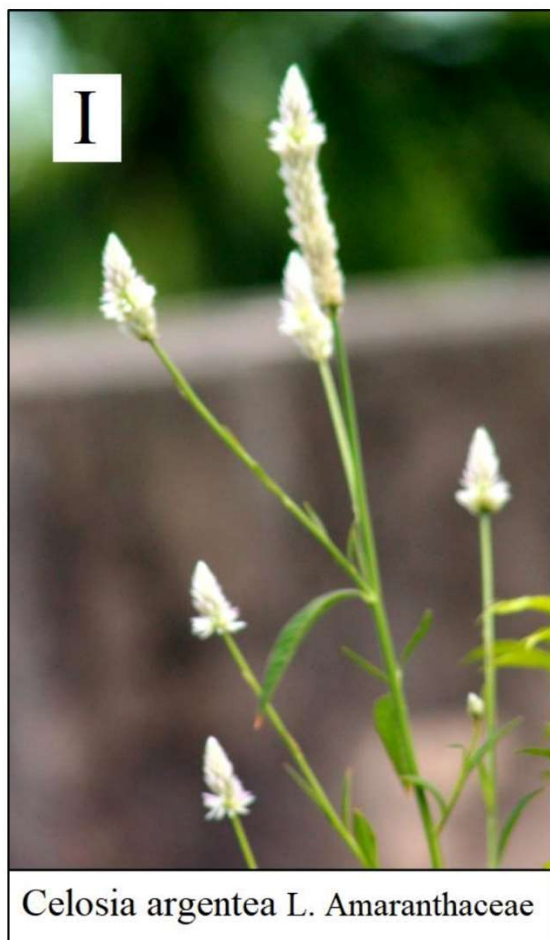
E. Botanical illustration of *Celosia argentea* Linn.

F. Whitish inflorescence, single flowers, violet anthers, green leaves of *C. argentea* Linn. With scale.



G. 3 lobed stigma and red color pistil of *C. bangladeshinensis* Zinia & Fiona.

H. 2 lobed stigma of *C. argentea* L.



I. Inflorescence of *C. argentea* L.



J. Single flower of *C. argentea* L.

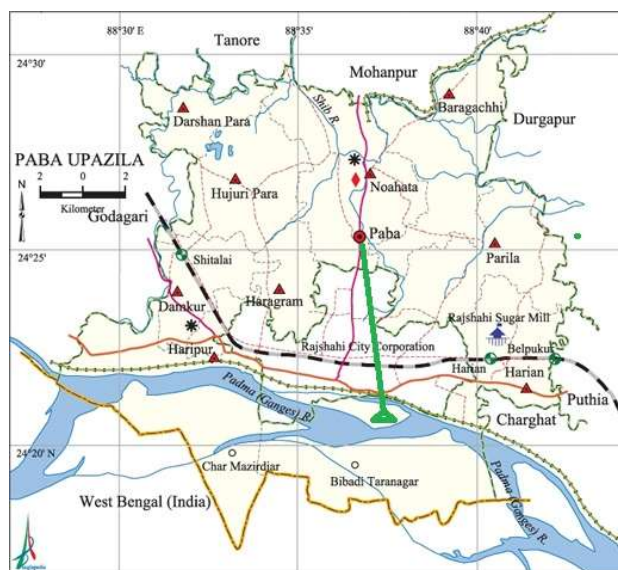


K. Maroon color pistil, stigma and anthers of *C. bangladeshinensis* Zinia & Fiona.

Conclusion

Celosia bangladeshinensis Zinia & Fiona, was described and illustrated (Fig-1) as a new species from Paba, located at 24.4417°N 88.6278°E in the district of Rajshahi, Bangladesh. It belongs to the family *Amaranthaceae*. Closely related to *Celosia argentea* L, is native to Bangladesh. But differences with inflorescence shape, leaves shape and color, spreading habit, flower color, long pistil and stigma. *Celosia argentea* L inflorescence shape is spear shape. But *Celosia bangladeshinensis* Zinia & Fiona is round/globose shape and quite long. The Inflorescence size is small, height small, long pistil than tepals. These differences and identification keys proved that this *Celosia bangladeshinensis* Zinia & Fiona is new to taxon.

Map (Fig-2)



River Bed/Char of The Padma River.

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10 New records from Bangladesh



1. *Abrus fruticulosus* Wall. ex-Wight & Arn. Family – Fabaceae.

সৌম্যা

Description

A prostrate subshrub or a woody climber that can reach up to 6 meters in length. Stems: Woody and sometimes with a sparse white covering. Leaves compound, once-pinnate leaves. Leaflets: (10-)12-34 leaflets that are oblong, obovate-oblong, or ovate. Apex: Truncate to broadly rounded. Stipules: Persistent, narrow, and hairy. Inflorescence: Slender, often straight clusters on reduced branchlets. Corolla cream, yellow, pale purple, mauve, blue, or light violet. Wings: Usually darker than the standard. Seeds: 4-12 in number, greyish-brown to reddish-brown, and often speckled.



2. *Combretum nanum* Buch. -Ham. ex D. Don. Family – Combretaceae.

ভুইদাউদি

Description

It is a low-lying, woody herb that typically grows up to 60 cm tall and is found in grasslands and forest undergrowth. It has stout rootstock, with branches that are decumbent (lying on the ground). Its leaves are elliptic to ovate, shining, and can be opposite or alternate. The plant produces small, white flowers and a distinctive pinkish-

red fruit with four broad, papery wings.



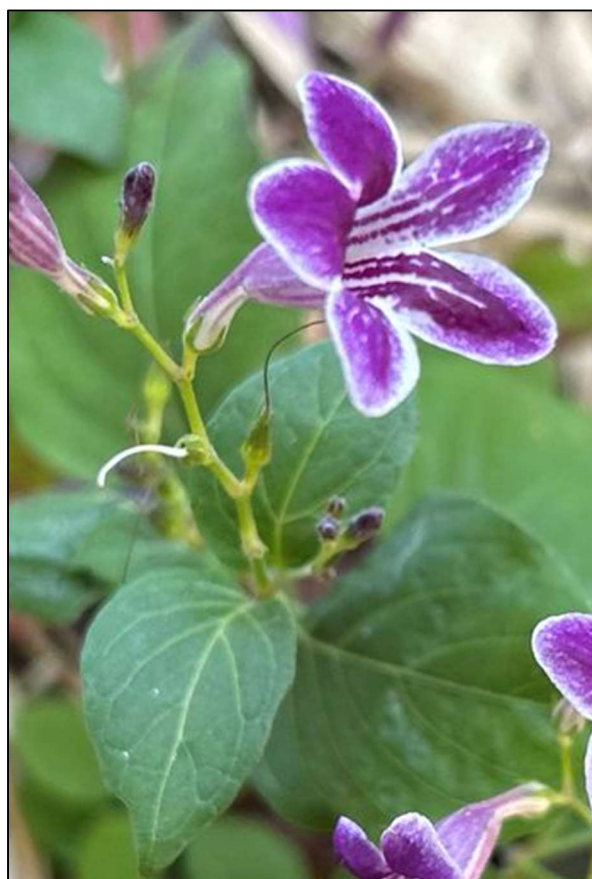
3. *Amanita malayensis*. Family – Amanitaceae.

ম্যালেনিয়ার এমেনিটা।

Description

Cap: Ash grey to brownish-grey, with dark grey to greyish-black universal veil remnants on its surface.

Stipe: Central and covered with several rows of recurved scales at the base. Gills: White to cream, closely packed, and free from the stipe. Spores: Broadly ellipsoid to ellipsoid, with a length of 9–12.5 μm and a width of 8–10.5 μm .



4. *Asystasia nemorum* Nees. Family – Acanthaceae.

রানাং

Description

A perennial herbaceous plant growing up to 1 m tall. Leaf blade ovate to lanceolate, measuring 6-12 x 3-5 cm, pilose on underside of leaf along the veins, glabrous or pilose on upper side of leaf along the veins, apex acuminate, base attenuate, margin undulate-crenulate.



5. *Barleria gibsonii* Dalzell. Family – Acanthaceae.

গিবসনের রুয়েলিয়া

Description

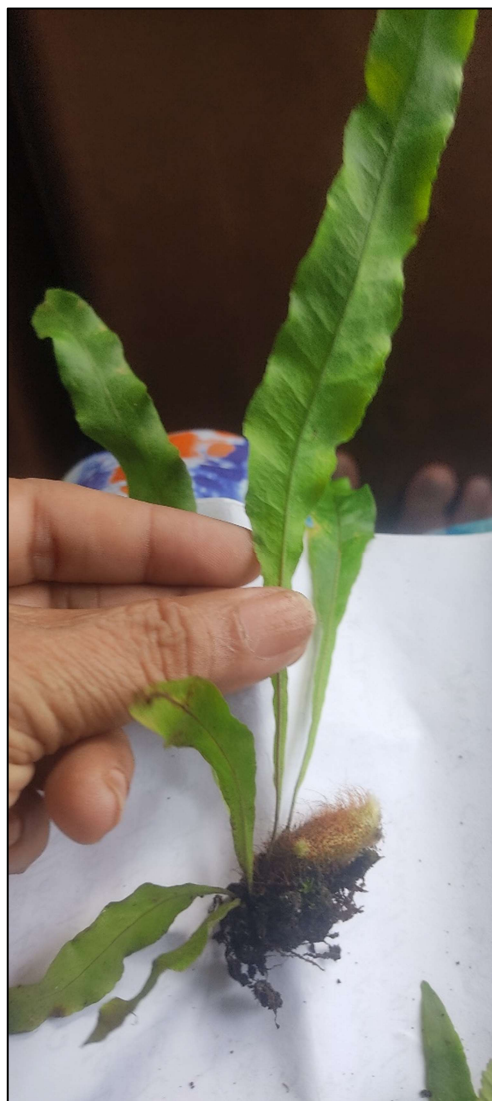
It is an undershrub native to India, often found on grassy hilltops and slopes in the Deccan Peninsula. It is characterized by its pinkish-purple flowers, which are 6–8 cm long with a 3–4 cm tube and can have darker spots on the petals. The

leaves are ovate or elliptic, hairless, and grow opposite each other, while the plant has purplish, leafy bracts surrounding the flowers.

6. *Elaphoglossum succubus* Mickel. Family – Polypodiaceae
সাকুবাস ফার্ণ

Description

It is a type of fern, described as an epiphyte that grows in the wet tropical biome. Its native range is Central America to Venezuela. Key features include having scales on the upper surface of the frond that radiate, and the fertile frond may not expand much even when mature.





7. *Elsholtzia fruticosa* (D.Don) Rehder.

Family – Lamiaceae.

সানোসিলাম

Description

It is a bushy shrub or herb that can grow up to 2 meters tall, with many branches and aromatic foliage. It features oblong-elliptic leaves and produces creamy white or greenish flowers in slender, spike-like inflorescences. The plant has medicinal uses and is grown as an ornamental.

8. *Strobilanthes clarkei*
J.R.I.Wood. Family –
Acanthaceae
নীল পরী

Description

It is a shrub with glossy, violet, curved, hairless flowers and unequally paired, sawtoothed, hairless leaves that are dark green on top and paler underneath. It has a panicle inflorescence, meaning it produces flowers in a branched cluster.





9. *Strobilanthes heyneana* Nees.

Family – Acanthaceae.

নীলম ঘন্টি

Description

It is an undershrub, growing to nearly a meter in height. The stems are grooved and often covered with hairs (hirsute). The leaves are arranged oppositely on the stem and are unequal in size. They are broadly elliptic, ovate, hairy, and have a serrated or crenate (rounded teeth) margin. The flowers are blue and urn-shaped (about 1–1.2 cm long). They occur in axillary spikes (clusters originating from where the leaf meets the stem) on trichotomous peduncles. The five sepals are combined at the base, and the flower

tube is swollen in the middle and white, with five rounded petals. It has four stamens with hairy filaments at the base. The fruit is a capsule, which is glabrous (hairless) and contains winged seeds. Flowering from September to December.

10. *Trevesia sundaica* Miq. Family – Araliaceae.



সুন্দাই এরালিয়া

Description

It is an evergreen shrub or small tree native to Indonesia, characterized by its large, snowflake-patterned leaves and thick stems that are often covered in sharp, conical spines. It can grow up to 8 meters tall and is sometimes unbranched. The plant is valued for its unique appearance, particularly the deeply lobed, symmetrical leaves that give it the common name, and its young shoots are consumed locally as a vegetable.

II. Urera nitida (Vell.) P.Brack. Family – Urticaceae.



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