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Lasianthus Bangladeshinensis ZMA, A new species from Bangladesh.

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Abstract

Lasianthus bangladeshinensis ZMA is described and illustrated as a new species from the district of Bogura, Latitude: 24.843559, Longitude: 89.370108 Bangladesh. It is morphologically similar to *Lasianthus* species (Trans. Linn. Soc. London 14: 125 (1823), nom. cons., but not matched to anyone. There are 2 species are recorded from Bangladesh, they are - 1. *Lasianthus hirsutus* (Roxb.) Merr (J. Arnold Arbor. 33: 229 (1952) and 2. *Lasianthus constrictus* Wight (J. Nat. Hist. 6: 515 (1846). There are some differences of those 3 species in fig-2, described below.

Lasianthus is a large genus from Rubiaceae family. There are 180 species in the Old World. Some species found in Tropical Asia. 59 species from Malay Peninsula. 37 from Indo-china. 28 species from Java and 47 recorded from Thailand. *Lasianthus* species usually grows in rainforests. Also, habitat to grow primary forests and bamboo forest. This is the interesting distribution patterns.

Keywords: *Rubiaceae, Lasianthus, New species, Bangladesh.*

Introduction

Lasianthus has about 180 species. The type species for the genus is *Lasianthus cyanocarpus*. In 2012, a revision of *Lasianthus* in Malesia described 131 species. Another 30 or so species grow elsewhere in tropical Asia. Most of these are described in Flora of China or in A Revised Handbook to the Flora of Ceylon. 14 or 15 species are native to the Western Ghats of southwestern India, including the endemic *Lasianthus agasthyamalayanus*. Fifteen species or perhaps as many as 20 species are known from tropical Africa. Two species (*Lasianthus panamensis* and *Lasianthus lanceolatus*) or possibly three, are native to the neotropics. *Lasianthus strigosus*, from Queensland, is the only species known from Australia. The Australian *Ixora baileyana* had at one time been placed in *Lasianthus* as *Lasianthus graciliflorus*. How many in Bangladesh, not known except two species. 1. *Lasianthus hirsutus* (Roxb.) Merr 2. *Lasianthus constrictus* Wight, (Rubiaceae). Uddin (2018). p. 40. Bandarban: Alikadam, Matamuhuri Forest. Native range of this species from Java and Indo-china. Because it grows in Primary Forest with other wild species in Bogura district. Bangladesh.

Taxonomic treatment:

Lasianthus sp. nov. p-13, figs.1,2,3,4

TYPE: A small tree species from Bogura district. Location: Sajapur, Shahjahanpur, Bogura district. Latitude: 24.843559, Longitude: 89.370108.

Diagnosis: Fig-1 (Botanical Illustration)

Taxonomic tree

Kingdom: Plantae

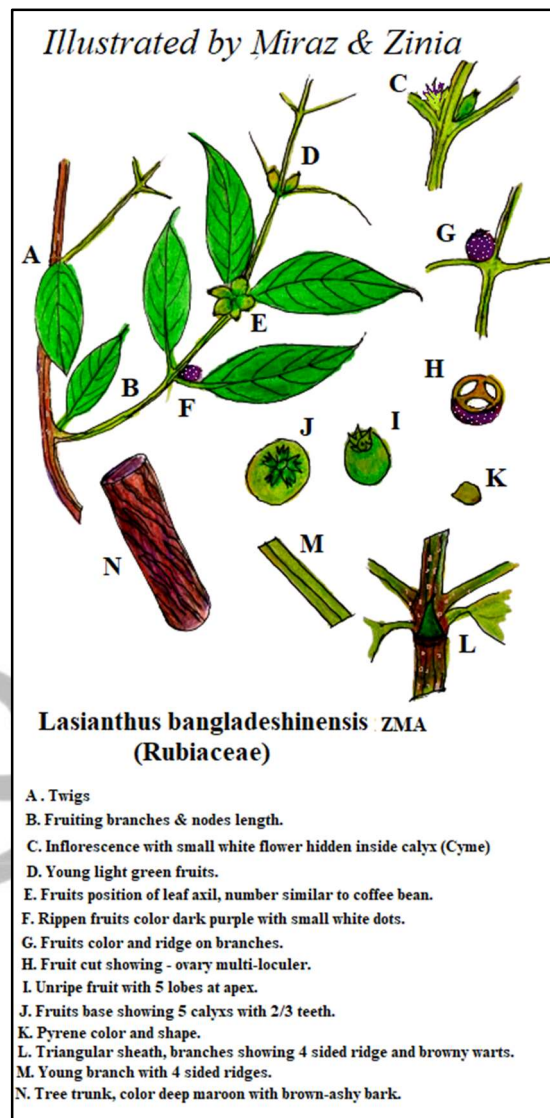
Phylum:

Class: Magnoliopsida

Order: Gentianales

Family: Rubiaceae

Genus: Lasianthus



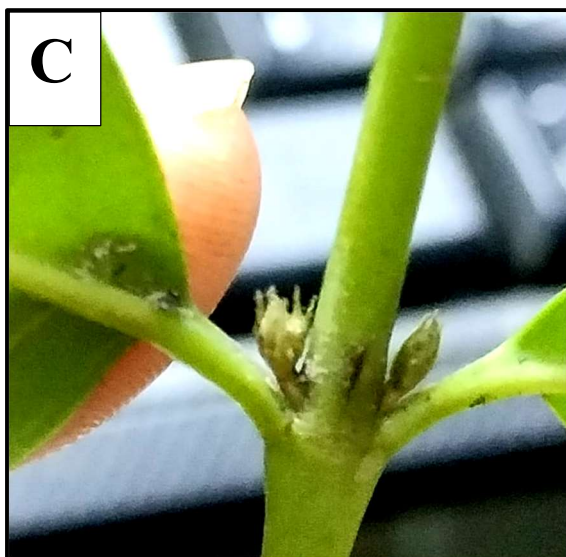
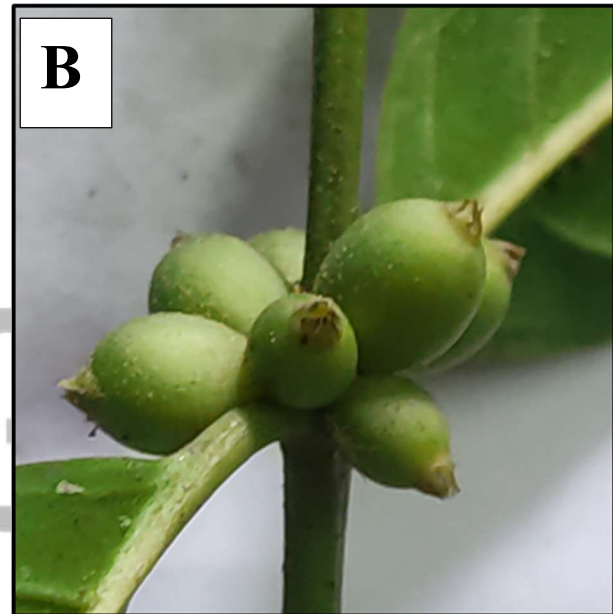
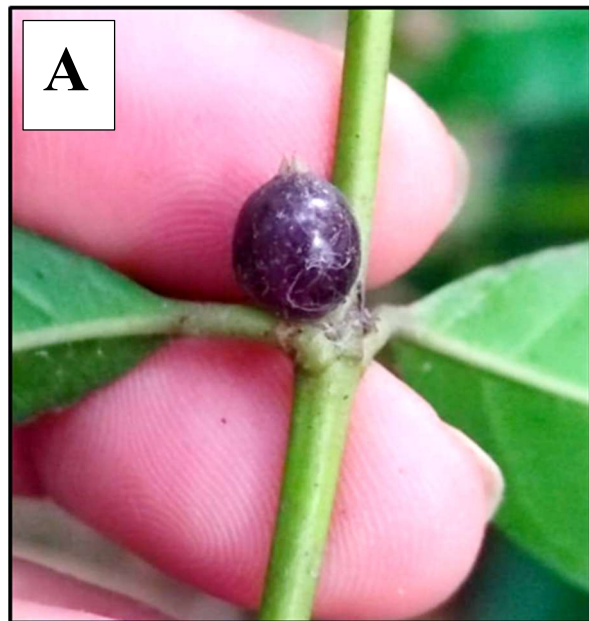
Description

Small tree with trunk about 6" inches dia. (Fig-1). Trunk is covered with rough bark with deeply parallel cracks. Purplish-brown in color. Branches drooping in nature. Mature branches purplish. Branches have 4-sided ridges. Sometimes twisting. Leaves node are long in length. Not comparable with any lasiunthus species. Size of fruiting branches up to 9"-1" (Inches). Sub-branch nodes 4'5in – 0'4inches. These are the main characteristics of this **Bogura wool flower**. Branches color deep maroon and warty in texture. Leaves simple, opposite, distichous. Undulate. 11-12 lateral veins. Branches & leaves are not hairy at all, Glossy. Size 7-13cm x 3-4cm. Pointed

tip. Petiole about 1cm. interpetiolar stipules triangular and persistent. Size - 1cm.

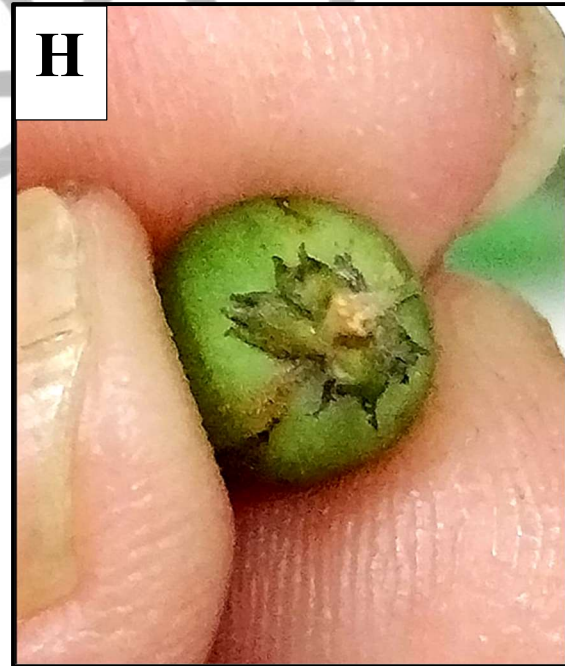
Fruiting branches node size 2-11cm. Also different from another lasianthus species. Axillary Inflorescences are sessile. Flowers are very small, white in color. Hidden inside the bracts. Half covering cymes or entirely covering cymes, Bracts 5 Calyx with 2/3 teeth, persistent. Ovary multi-loculer. Axille patterns. Fruit is a small juicy drupe about 1cm in size. Fruit has 5 lobes and a small hole in middle. Dark purple color with white dots. Stony seed has thick wall. Pyrenes 3, 4. Fruit Size 4mm dia. Fruits persistent calyx teeth 2/3.

Images





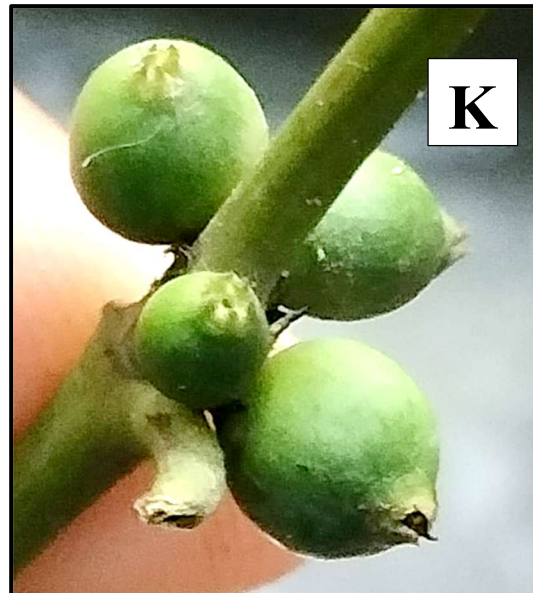
- A. *Dark purple fruit with white dots.*
- B. *Unripe fruits with 5 lobes.*
- C. *Small white flowers inside the bracts & the toothed calyx.*
- D. *Fruit cut section showing the Axille patterns of Stone & Pyrenes.*
- E. *A twigs showing Leaves shape. Leaves position nodes, 4-ridged branches.*

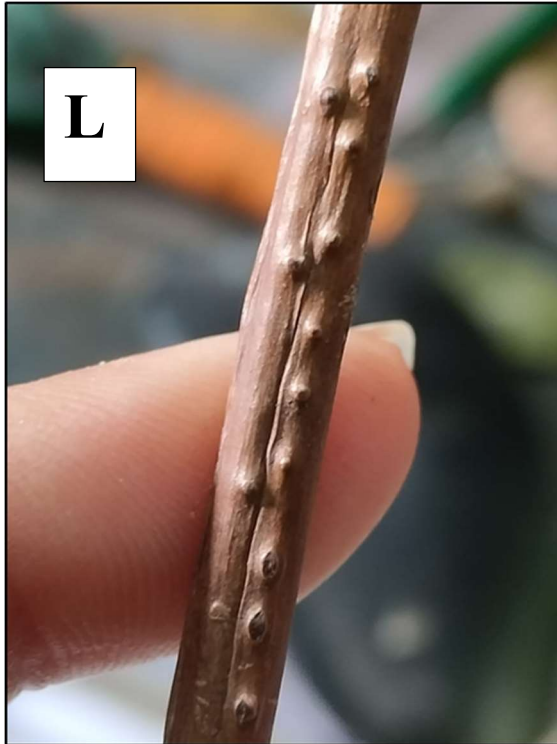


F. Opposite leaves with unripe fruits. Leaves size with scale.

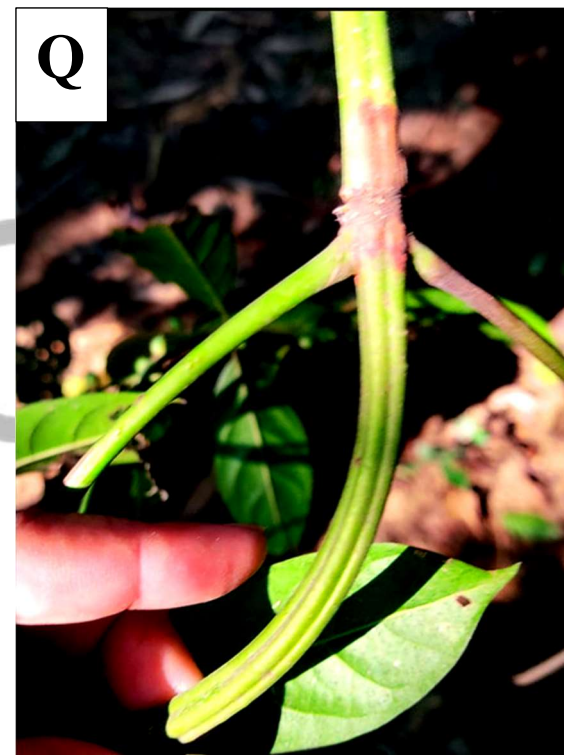
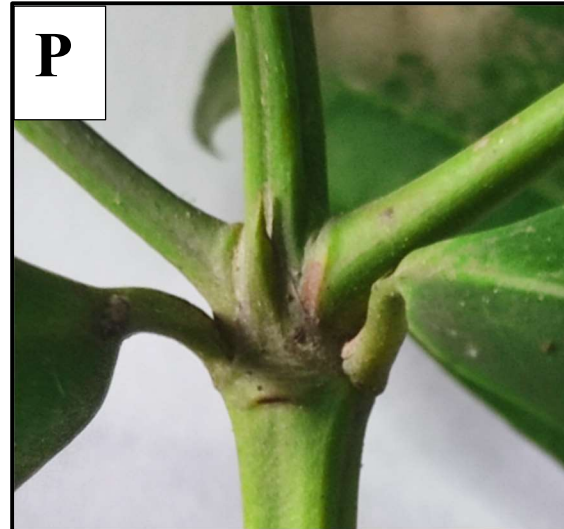
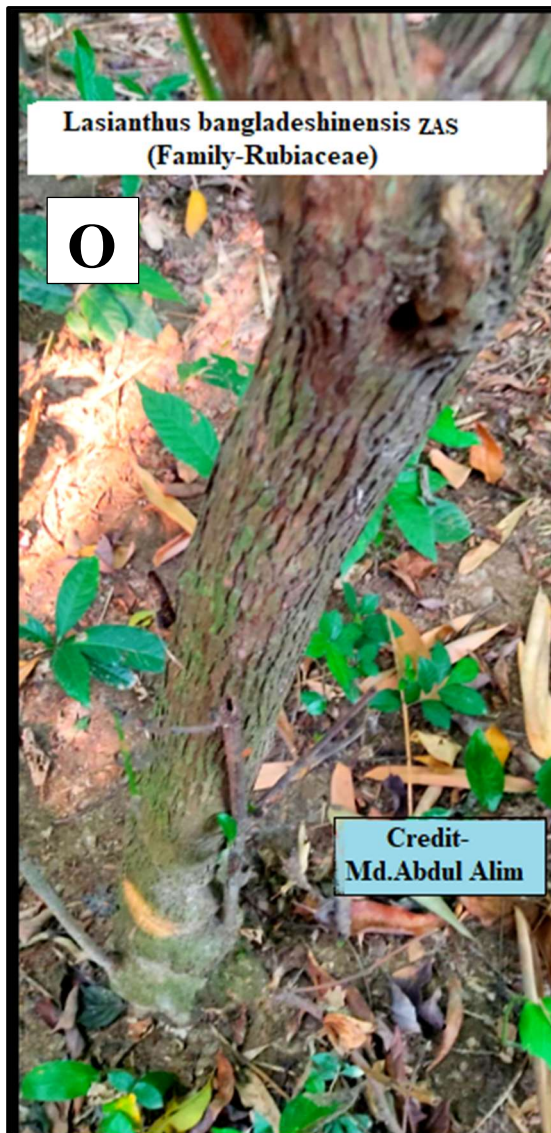
G. Ripen purple juicy layer fruit with stone.

H. Unripe fruit with persistent toothed calyx.





- I. A twig with tree trunk.*
J. Pyrenes with scale.
K. Unripe with apex 5 lobes and a small hole in the middle.
L. Hairless dark brown branch with warty texture.



- M. Triangular sheath with reddish coating.*
N. Leaves shape variation and petiole length with scales
O. Tree trunk. Purplish cracking trunk of small tree.
P. Interpetiolar stipules triangular and persistent.
Q. Ridged branches with coating reddish color in joint.
R. Lasianthus hirsutus (Roxb.) Merr with white big flowers and blue fruit.
S. Fruiting branch with big leaves.



Fig-2: Compare between *Lasianthus bangladeshensis* ZMA, *Lasianthus hirsutus* (Roxb.) Merr & *Lasianthus constrictus* Wight

Characters	<i>Lasianthus bangladeshensis</i> ZMA	<i>Lasianthus hirsutus</i> (Roxb.) Merr	<i>Lasianthus constrictus</i> Wight
Leaf size	7-13cm x3-4cm	14-20 x 5-7 cm	10-15X3'5-4'5cm
Tree size	Small tree	Small shrub-Big shrub	Small shrub-Big shrub
Flower-size	2mm	15mm	Not known
Veins	11-12 pairs	8-11 pairs	6-7 pairs
Fruit-size	4mm (dia)	4-5mm (dia)	5mm (dia)
Fruit color	Dark purple	Blue	Blue
Pyrenes	4	5	4

Materials & Methods

This new species collected from a primary bamboo forest in Sajapur, Bogura district. Bogura Latitude: 24.843559, Longitude: 89.370108.(Fig-3) There are 200 wild plants there. This species area flooded with nearby Bhadraboti (ভদ্রাবতী) river. With the local relatives, survey that area. There are more shrubs there, but this is a small tree with a trunk with bark. This is an uncommon characteristic among another *Lasianthus* species. Survey of this area taken time 2022 (May) – 2023(October). Fruiting time of this new species. Watch Table-1 also for comparison.

Etymology

Word “bangladeshensis” for Latin name of Bangladesh. “Z” for Zinia nasrin Shumon. “A” for Ashrafuzzan. M for “Miraz”. A for Alim also. Generic name *Lasianthus* comes from the Greek

lasios, which means "shaggy, velvety and hairy". Anthos = "flower". This genus was named in 1823 by Botanist William Jack.

Habitat

In Primary bamboo forest. Sweet water swamp forest. River side. (Fig-3) showing all over Bangladesh.

Key identifying characters

1. The fruits purple color with small dots.
2. Branches, leaves nodes are larger than other species.
3. Not hairy at all.
4. It is a small tree, not a shrub.

Specimen examined

At Sajapur, Bogura district, Bangladesh. Herbarium sheet number - ZNS 502 (AAHBAU)

Distribution

The genus distributed in Bangladesh and Indo-Chinese countries. The genus Lasianthus (Rubiaceae) consists of approximately 180 species, of which the greatest species diversity is found in tropical Asia.

Economic uses/values/harmful aspects

It is related to coffee family. Edible fruits. Some of the Lasianthus species have been used in folk medicine to treat tinnitus, arthritis, fever, and bleeding.

Ethical approval

Sample collected from live tree at Sajapur, Bogura river side primary Bamboo Forest. Location: Sajapur, Shahjahanpur, Bogura district. Latitude: 24.843559, Longitude: 89.370108.

Author's contribution

Zinia Nasrin Shumon completed the manuscript and prepared the images. Dr Md Ashrafuzzaman did the final proceedings.

Conflicts of interests

The author declares that there are no conflicts of interest.

Funding

The study has not received any external funding.

Data and materials availability

All data associated with this study are present in the paper.

Common name & Meaning

According to its Greek name, English name is “Wool flower”. These wool flowers may be Velvety, Hairy & Thick hairy or wooly. So, we named its name “Bogura wool flower” – বগুড়া উল ফুল. Collected from Bogura district. *Lasianthus hirsutus* (Roxb.) Merr common name – “রোমশ উল ফুল”, *Lasianthus constrictus* Wight – “ভেলভেট উল ফুল”।

Acknowledgements

At first thanks to Sir Dr. Md Ashrafuzzaman for writing technique of new species. Also, Mohammad Salah Uddin for his contribution. Dr. Mahbuba Sultana also.

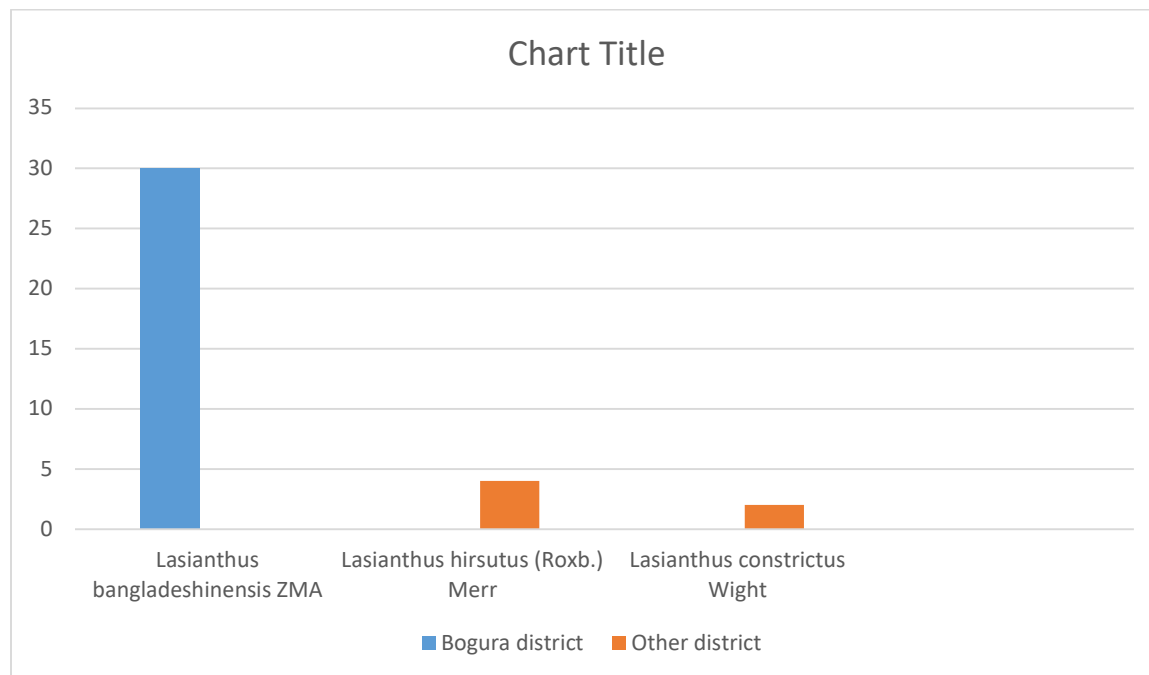
Mr. Miraz made herbarium sheet. Botanical Illustration also done by him. Thanks to Mr. Md Alim for finding this tree with his curiosity for plants. Made herbarium sheet with his help. Thanks also to one of his relative. Alim made & sell medicine from fresh plants available those area. Thanks to Mr. Mahfuz Russel for his photography of *Lasianthus hirsutus* (Roxb.) Merr.

Discuss & Conclusion

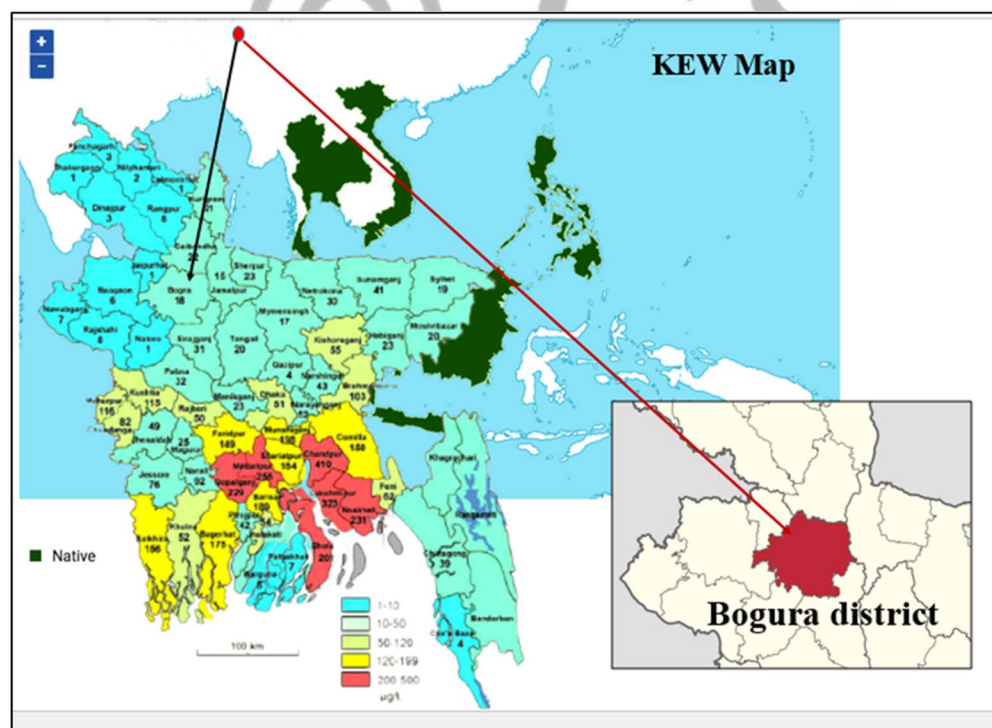
On the Basis of the Malesian species of the genus *Lasianthus* total of 131 species (H. Zhu1, M.C. Roos2, C.E. Ridsdale). Also, from (Dang, Van-Son & Naiki, Akiyo, 2023, A revision of the genus *Lasianthus* Jack (Rubiaceae) from Vietnam, *Phytotaxa* 581 (1), pp. 1921-1935: 1921-1935) asianplant.net/Rubiaceae/Lasianthus_constrictus.htm

After analysis all this information, Sizes, Description, flower size, fruits color—etc, nothing matched with this new species. Also mentioned in Table-1, carefully discussion that, This *Lasianthus* species id new to world. With live herbarium with scales, Illustration from living tree and more information of that area. A primary forest nearby river, became a swamp forest in rainy season. A good environment of this genus.

Fig-3



Distribution Map (Fig-4)



Location: Sajapur, Shahjahanpur, Bogura district. Latitude: 24.843559, Longitude: 89.370108

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