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***Lysionotus chatungii* – a new species of Gesneriaceae from Arunachal Pradesh in North-Eastern India**

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Abstract

Lysionotus chatungii M.Taram, A.P Das & H.Tag, a new species of Gesneriaceae is described from Geku in Upper Siang District of Arunachal Pradesh in North-Eastern India. The new species is presented here along with its detailed description, habitat structure and distribution along with a plate of color photographs for its easy recognition.

Key words: Gesneriaceae, *Lysionotus chatungii*, New species, Arunachal Pradesh.

INTRODUCTION

The genus *Lysionotus* D.Don (1822) is distributed from North India and Nepal eastwards through South China, Taiwan, Bhutan, Laos, Myanmar, North Thailand, North Vietnam to South Japan (Moller *et al.* 2017). According to Moller *et al.* (2017) 6 species of *Lysionotus* are found in India and 3 species of *Lysionotus* in North East India (Sinha & Dutta 2016). Giri *et al.* (2008) recorded 3 species (*L. atropurpurea* H.Hara, *L. palinensis* G.D. Pal and *L. serratus* D.Don). Recently two new taxa of *Lysionotus* viz. *L. gamosepalous* W.T Wang var. *biflorus* A.Joe *et al.* (2017) and *L. bijantiae* D.Borah & A.Joe (2018) have been described from Arunachal Pradesh. In this article another new species of *Lysionotus* is presented from Arunachal Pradesh in North Eastern India. The new species is described here and illustrated with a plate of color photographs. With this new species described herein, there are now five species and two varieties of *Lysionotus* recorded from Arunachal Pradesh as well as from Northeastern India.

Taxonomy

Lysionotus chatungii M.Taram, A.P. Das & H.Tag, *sp.nov.* [PLATE – I]

Lysionotus chatungii is morphologically similar to *Lysionotus chingii* Chun ex W.T. Wang but can be easily distinguished by a number of characters like lamina sub-coreaceous lamina (vs. papery/chartaceous); ovate-elliptic to rounded-ovate (vs. elliptic-oblong); base obliquely-cordate to rounded (vs. cuneate); calyx divided from base (vs. calyx divided up to the middle) (Table 1)

Type: INDIA, Arunachal Pradesh: Upper Siang District, Geku. 28° 27' 483 N and 95° 82' 103 E; Elevation 873 m; 15 April 2019, *Momang Taram 0301* [Holotype CAL; Isotypes ASSAM, ARUN]

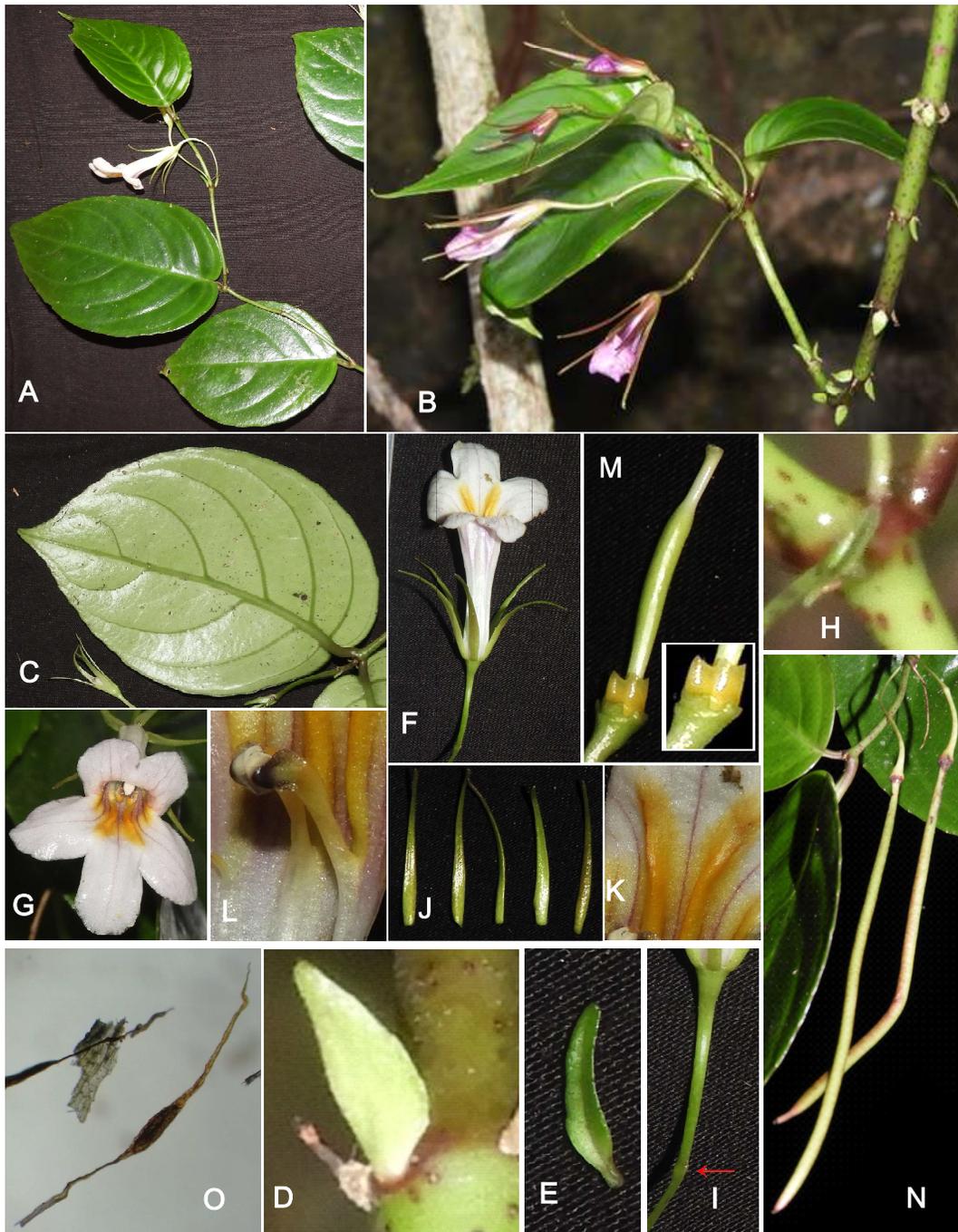


PLATE - I. *Lysionotus chatungii* M.Taram, A.P. Das & H.Tag: **A.** Twig with alternate leaves; **B.** Twig with opposite leaves and 4-nate in prophyll bearing portion; **C.** Lamina with unequal and slightly cordate base; **D & E.** Prophylls; **F.** Flower in lateral view; **G.** Flower in front view; **H.** Emergence of peduncle from axiles of petiole and prophyll; **I.** Union of peduncle and pedicel with articulation showed by arrow (bract absent); **J.** Sepal lobes; **K.** Corolla throat inside with two calli; **L.** Two stamens with adherant anthers; **M.** Pistil with disc; **N.** Mature follicles; **O.** Seed.

Epiphytic, or on rocky-walls, root-climbing or creeping sub-shrub, 150 – 300 cm long, terete, much branched, glabrous, young stem green with purple irregular blotches, mature stem brown; internodes 2 – 12 cm. Leaves mostly opposite, but may be alternate, even ternate or in whorl of 4; sometimes two leaves of normal shape and size are alternating with prophylls; 4 or more prophylls occur at every node in lower non-leafy part of branches; Petioles 0.5 – 1 cm, glabrous, purple; Lamina ovate-elliptic to rounded ovate, 7 – 20 × 5 – 12 cm, nearly entire to minutely dentate to obscurely serrate, shortly caudate-acuminate, base rounded to shallowly cordate, generally oblique, lateral veins sub-opposite 4 – 8 on each side of midrib, adaxially dark green, abaxially whitish green with purple blotches, glabrous, sub-coreaceous. Inflorescence axillary, 2 – 4 in each node, 1-flowered (cymose-solitary) each; peduncle slender, 3.0 – 4.0 cm long, terete, green with purple irregular blotches, glabrous, attachment with pedicel prominently articulated; pedicel slender but slightly thicker, 2.0 – 2.5 cm long, terete, purple, glabrous. Peduncles not arising from leaf-axile are with a ovate to oblong prophyll (0.4 – 1.0 cm x 0.1 – 0.3 cm) at base. Calyx divided into 5 lobes from base; each lobe slender-linear to linear-subulate, anterior 3 longer [1 - 2 cm x 0.1 - 0.2 cm], posterior 2 shorter [0.7 – 1.3 cm x 0.1 – 0.2 cm], or sometimes all equal, entire, narrowly acuminate, glabrous, purple. Corolla bilabiate, 3 + 2, anterior lip deeply 3-lobed, 0.6 – 1.2 cm long, sub-equal, ovate, more or less entire, rounded; posterior lip obscurely 2-lobed, 0.4 – 0.8 cm long, glabrous, white-purplish with deep-purple reticulation, tube 1.6 – 2.3 cm long, slightly inflated upwards, 4 – 4.3 cm long, glabrous, purplish with deep-purple stripes and 2 yellow elongated calli at throat alternating with anterior lobes. Stamens 2, included, filaments 0.5 – 0.7 cm long, attached to corolla tube along the two margins of the anterior lip, terete, yellow, glabrous, curved and blackish at the tip, connected to the middle of anther; anthers broadly oblong (oblate), cohering each-other face-to-face, white,

Table 1. Comparison of *Lysionotus atropurpureus* and *Lysionotus chingii* with the new species *Lysionotus chatungii*

Characters	<i>Lysionotus atropurpureus</i> Hara	<i>Lysionotus chingii</i> Chun ex W.T. Wang	<i>Lysionotus chatungii</i> sp. nov.
Habit	Epiphyte	Climbing sub-shrubs	Climbing sub-shrubs
Stem length	Up to 25 cm	Up to 9 m	Up to 3 m
Petiole	0.5 – 1.5 cm	Longer, up to 2.3 cm	Up to 1.0 cm
Lamina shape	Oblong lanceolate to narrowly elliptic	Elliptic to oblong	Ovate-elliptic to rounded-ovate
texture	Papery	Papery	Sub-coriaceous
margin	Denticulate	Entire to denticulate with small glands	Entire to minutely dentate to sub-serrate without glands
base	Cuneate	Broadly cuneate to cuneate	Rounded to obliquely and shallowly cordate
apex	Acuminate	Acuminate	Shortly caudate-acuminate
Inflorescence	Cymes 1 – 4 flowered	Solitary	Solitary
Bracts	Linear	Orbicular- ovate	Ebracteate
Peduncle	5.5 – 7.5 cm	1.4 – 2.8 cm	2.7 – 4.0 cm
Pedicel	0.7 – 2 cm	0.2 – 0.7 cm	1.4 – 2.5 cm
Calyx	Divided from base	Divided above middle; lobes equal; tube 1.2 – 1.8 cm	Divided from base; posterior 2 lobes shorter; tube absent
Corolla	Purple	Tinged greenish; 3.3 cm long	White-purplish with deep-purple reticulation; tube 1.6 – 2.3 cm long
Disc	Ring-like with entire margin	Ring-like with entire margin	4-lobed, lobes oblong with conical tips
Flowers & fruits	July – October	July – September	March – August

dehiscing longitudinally, unappendaged; staminodes 2, 0.1 – 0.3 cm long, linear, yellow. Ovary 2 cm long, shortly stipitate, cylindrical, greenish, glabrous; style 0.5 cm long, terete, glabrous; stigma slightly bilamellate. Nectary 4-lobed, lobes erect, oblong with conical tip. Capsules 10 – 12 cm long, linear, glabrous, dehiscing longitudinally; Seeds 0.3 – 0.4 cm long, linear, with along slender funiculus at base and long brownish hair-like appendage at the tip.

Affinities: The habit and solitary inflorescence of new species *Lysionotus chatungii* is similar with *Lysionotus chingii*. However, the new species is distinguished from it by much shorter stem length; sub-coriaceous leaves; ovate-elliptic to rounded-ovate lamina with rounded to obliquely-cordate base; calyx segments divided to the base.

Another somewhat similar looking species, *Lysionotus atropurpureus* Hara is also available in North-east India including Arunachal Pradesh (Giri *et al.* 2008). However, structurally/morphologically it is a completely different plant as in numerous important characters like habit, leaf structure, inflorescence, flower structure etc. the new species is completely unique.

Table 1 shows the differences of the new species, *Lysionotus chatungii* with that of *L. chingii* and *L. atropurpureus*.

Flowering and Fruiting: Flowering start from March and fruiting ends in August.

Etymology: This species is named after Late **Taro Chatung**, the first and the most famous journalist of Arunachal Pradesh whose contribution in journalism for this remote state is immense.

Distribution, Threat-status and Ecology: So far, the new species known only from its Type-locality in the Upper Siang district of Arunachal Pradesh in Northeastern India and can be treated as endemic. The plant was found growing on rocks and on tree-trunks in moist shaded areas along the margin of a narrow but perennial stream. The estimated area of its occurrence is less than 3 km² and the population is thought to be less than 100 individual. It was growing in association with Mosses, *Asplenium* sp., some epiphytic ferns, *Aeschynanthus parviflorus* (D. Don) Spreng., *Codonanthe devosiana* Lem., etc.

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