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### NOTE

#### THE GENUS *ZEUXINE* LINDL. (ORCHIDACEAE) IN TRIPURA STATE, INDIA

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## THE GENUS *ZEUXINE* LINDL. (ORCHIDACEAE) IN TRIPURA STATE, INDIA

S.P. Panda<sup>1</sup>, B.K. Singh<sup>2</sup>, M.U. Sharief<sup>3</sup>, S.S. Hameed<sup>4</sup> & A. Pramanik<sup>5</sup>

<sup>1,2,3,4,5</sup> Acharya Jagadish Chandra Bose Indian Botanic Garden, Botanical Survey of India, Howrah, West Bengal 711103, India  
<sup>1</sup> situ.1979@gmail.com (corresponding author), <sup>2</sup> singhbk2007@yahoo.co.in, <sup>3</sup> shariefbsi@yahoo.co.in, <sup>4</sup> saheeds\_kkm@yahoo.com, <sup>5</sup> arabinda.pramanik@yahoo.com

A plant collection tour (17–23 February 2016) under the Annual Action Plan Project of Acharya Jagadish Chandra Bose Indian Botanic Garden, Botanical Survey of India, Howrah was conducted to Tripura State for the collection of endemic, endangered and threatened species and introduction of the same in the garden considering the rich biodiversity as well as its under-explored nature. Though Tripura harbours a rich flora Orchidaceae is represented by only 23 genera with 33 species including *Zeuxine* (Deb 1983). The generic name *Zeuxine* is derived from the Greek word 'Zeuxis' which means 'joining' due probably to the partial union of the lip with the column. *Zeuxine* is a wide spread genus with 70 species (Pridgeon et al. 2009) distributed in Africa through tropical Asia to the Pacific (Misra 2014). Prior to this survey, however, the orchidaceous genus *Zeuxine* Lindl. was represented by a single species, i.e., *Zeuxine strateumatica* (L.) Schltr. in Tripura (Deb 1983). During the current exploration of different areas of Tripura a *Zeuxine* species was collected in flowering which is maintained in nursery no.1 of the AJC Bose Indian Botanic Garden, BSI, Howrah. After perusal of the literature, the taxon turned out to be *Zeuxine longilabris* (Lindl.) Trimen, Syst.

Cat. Fl. Pl. Ceylon: 90 (1885), which is an addition to the flora of Tripura State. The correct nomenclature, diagnostic characters, phenology, ecology and distribution of the species are highlighted in brief along with a dichotomous key for identification.

*Zeuxine* Lindl. Coll. Bot. (Lindley), Append no. 18 (1826); Orchid.

Scelet., 9 (1826) [as *Zeuxina*]. Type: *Zeuxine sulcata* (Roxb.) Lindl. (basonym: *Pterygodium sulcatum* Roxb.)

Perennial, terrestrial slender leafy herbs; stem fleshy, ascending and erect; rhizome creeping below, rooting at nodes. Leaves thin, reddish, sessile on a broad sheath or petiolate, ovate to lanceolate, very often withered at flowering time. Inflorescence terminal, erect, scape slender; spike or raceme few to many, lax-flowered; peduncle pubescent. Flowers small, scarcely opening. Sepals sub-equal; dorsal concave, adnate with the petals forming a hood; laterals free, enclosing the base of the lip. Petals narrower. Lip sessile, hypochile cymbiform, base adnate on the sides of the column forming a sac, containing inside 1 or 2, slender, papillose glands on each side, edges usually inflexed; epichile containing the terminal lobe (blade), sessile or clawed, transversely widened, entire or divided into two oblong, subquadrate, more or less truncate diverging lobules in 'T' or 'V' form, or with narrow decurved lobules. Column very short, without a foot, often with winged lamellar or conical appendages in front.

### 1. *Zeuxine longilabris* (Lindl.)

Trimen, Syst. Cat. Fl. Pl. Ceylon: 90 (1885); Fischer in Fl. Pres. Madras 1456.1928 (Repr. ed. 3:1018. 1957);



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Bose et al., Orchids of India, 528. 1980 (Repr. ed. 470. 1999); Chowdhery, Orch. Fl. Arunachal Pradesh 695. 1998; Chowdhery et al. (ed.), Materials for the Flora of Arunachal Pradesh 2: 167. 2009. *Monochilus longilabris* Lindl. Gen. Sp. Orch. Pl. 487. 1840 ("longilabre").

Type: Ceylon, 1829, Macrae 4 (holotype: K, photo!).

Terrestrial herbs up to 15–20 cm tall. Rhizome fleshy, greenish, creeping below. Leaves crowded at base, thin, green, petiolate, ovate-lanceolate, acute. Inflorescence terminal raceme, erect, laxly 3–4 flowered; scape 15–20 cm tall, slender, terete, with long white retrorse hairs. Bracts 7–9 mm long, equally or slightly longer than ovary, with a few hairs outside. Flowers 15–20 mm long, resupinate. Sepals sub-equal, pubescent; dorsal sepal ovate, sub-triangular, fused with the petals forming a hood; lateral sepals ovate-lanceolate, acute, enclosing base of lip. Lip tri-lobed; hypochile cymbiform, adnate to the column forming a sac; one papillose gland on each side; mesochile long with folded margins; epichile shortly clawed, distinctly 2-lobed, white, with reddish-green tinge at base, margin mostly irregularly serrate.

Flowers: February.

Specimen examined: 18.ii.16, Suryamani Nagar (at the back of Tripura University campus), Agartala, Tripura, coll. Panda et al. The species is growing live in the nursery no. 1 of AJCBIBG for conservation and introduction.

Ecology: Terrestrials, on the margin of forests under shade, on leaf litters.

Distribution: India (Arunachal Pradesh, Assam, Bihar, Karnataka, Kerala, Maharashtra, Odisha, Tamil Nadu, West Bengal); Bangladesh, Cambodia, Myanmar, Laos, Malaysia, Nepal, Sri Lanka, Thailand (Bhattacharjee & Sabapathy 2010).

Note: The species is unique as compared to other species of its kind in having irregular, deeply dentate margin of the lip. *Z. choudherii* has a close resemblance to *Zeuxine longilabris* (Lindl.) Trimen but can be easily distinguished mainly in having ovate-lanceolate lateral sepals; broadly elliptic petals with rounded apex and epichile lobules with entire margins as compared to ovate-oblong to awl-shaped lateral sepals; oblong falcate petals with sub-acute to obtuse apex and serrated epichile margins of the latter. Although the degree of serration of epichile margin varies in *Z. longilabris*, it is never entire. Further, the colour of sepals of *Z. choudherii* is pinkish-red whereas in *Z. longilabris* it varies from greenish-white to greenish-brown (Bhattacharjee and Sabapathy, 2010).

## 2. *Zeuxine strateumatica* (L.)

Schltr. Engl. Bot. Jharb. 45: 394.1911; Katakai, Orchids

of Meghalaya 201.1986; Chowdhery, Orch. Fl. Arunachal Pradesh, 695.1998; Bose et al., Orchids of India, 472. 1999; Chowdhery et al. (ed.), Materials for the Flora of Arunachal Pradesh 2: 168. 2009. *Orchis strateumatica* L., Sp. Pl. 943.1753. Type: Herb. Hermann 2: 35 no. 319 [lectotype: BM, photo!, designated by: P.J. Cribb in S. Cafferty & C.E. Jarvis in Taxon 48(1): 49. 1999].

*Pterygodium sulcatum* Roxb., Hort. Bengal.: 63. 1814, nom. nud. & in Carey (ed.), Fl. Ind. ed. 1832, 3: 452. 1832, ('*sulcata*'). *Zeuxine sulcata* (Roxb.) Lindl. ex Wight, Cat. Ind. Pl.: 123. 1836; Lindl., Gen. Sp. Orchid. Pl.: 485. 1840 & in J. Proc. Linn. Soc., Bot. 1: 186. 1857.

Type (Icon.): '*Pterygodium sulcatum*' Roxburgh 1086 (holotype: CAL!; isotype: K).

Terrestrial, short, erect, grass-like herbs, 2–9 cm high, growing from upper node of an ascending stem like rhizome. Leaves grass like, 2–6, clasping, erect, alternate, sessile, linear-lanceolate, acuminate, passing upward into foliar sheaths. Inflorescence terminal, erect, 15–33 mm long, peduncle 5–10 mm; spike 3–14 flowered, dense. Flowers sessile, not opening well, perianth oblique on ovary, white. Sepals unequal, obtuse; dorsal ovate, base saccate; laterals obliquely oblong-ovate, cymbiform. Petals falcately oblong-lanceolate, subacute, cohering with dorsal sepal to form a hood over the column. Lip tongue shaped, with upturned sides, yellow; basal part saccate, bearing inside two obliquely oblong, blunt pillar glands; middle part contracted to a short claw; terminal lobe short, hunch-backed, ovate in outline, mucronate, hammer headed, two-lobed, the lobes upturned, sub-quadrangle; epichile 2-lobed, sometimes appearing 1-lobed, subreniform, yellow or greenish-yellow or brownish-white, margin entire.

Flowers: January–March.

Locality: Jampui Ranges, Tripura (fide Deb 1983).

Ecology: Commonly found in meadows, or on the edges of rice fields, often in association with grasses; in sandy soil.

Distribution: India (Arunachal Pradesh, Assam, Bihar, Delhi, Gujarat, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh, West Bengal); Afghanistan, Bangladesh, Bhutan, Borneo, Brazil, Cambodia, China, Cuba, Indonesia, Iran, Japan, Laos, Malaysia, Mexico, Myanmar, Nepal, New Guinea, Pakistan, Philippines, Saudi Arabia, South Africa, Sri Lanka, Tadjikistan, Taiwan, Thailand, United States Of America, Uzbekistan, Vietnam.

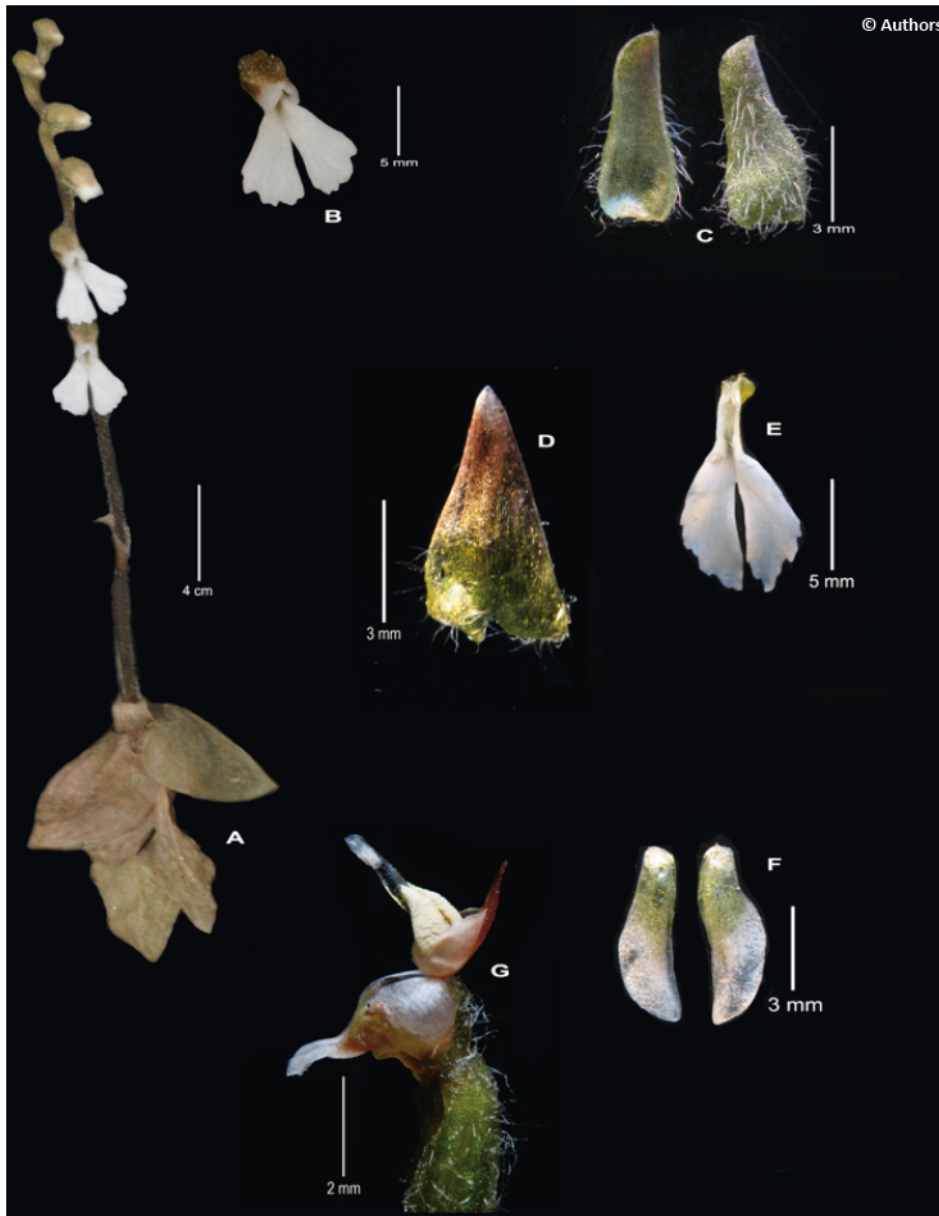


Image 1. *Zeuxine longilabris* (Lindl.) Trimen:  
A - plant habit; b - flower;  
c - sepals (lateral); d - sepal (dorsal); e - lip; f - lateral sepals;  
g - column & pollination

#### Key to the species

- 1a. Herbs with grass-like linear-lanceolate, sessile leaves; epichile of lip 2-lobed, sometimes appearing 1-lobed, sub-reniform, yellow or greenish-yellow or brownish-white, margin entire ..... *Z. strateumatica*
- 1b. Herbs with ovate-lanceolate, petiolate leaves; epichile of lip is distinctly 2-lobed, white, with reddish-green tinge at base, margin mostly irregularly serrated ..... *Z. longilabris*

Other specimens studied from Tripura: Deb 27407 (ASSAM), 02.ii.1962, c. 640m, North Tripura District, Ananda Bazar to Sakhan-Tiangsang.

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