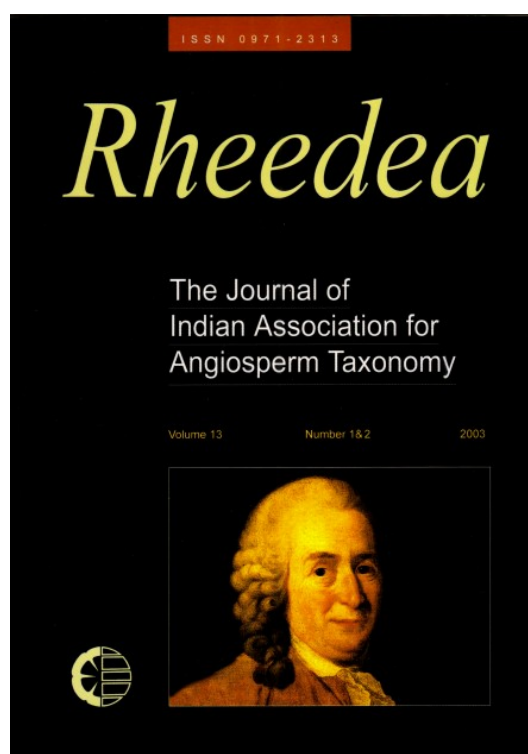




## Notes on *Zeuxine* Lindl. (Orchidaceae) from Tamil Nadu, India

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# Notes on *Zeuxine* Lindl. (Orchidaceae) from Tamil Nadu, India

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## Abstract

Four species of *Zeuxine* (Orchidaceae) - *Z. affinis* (Lindl.) Benth. ex Hook. f., *Z. flava* (Wall. ex Lindl.) Benth. ex Hook. f., *Z. gracilis* (Breda) Bl. and *Z. longilabris* (Lindl.) Benth. ex Hook. f. - are reported from Tirunelveli Hills in Southern Western Ghats of Tamil Nadu, India. All are illustrated and described based on new collections. The discovery of *Zeuxine affinis* constitutes a new distributional record for Tamil Nadu. Artificial keys for all the four species are given.

**Keywords :** *Zeuxine*, new reports, keys, Tirunelveli Hills

## Introduction

*Zeuxine* is a delicate terrestrial genus of orchids growing in the humus of lowland to the montane evergreen forests. It has 70 species widely distributed from tropical Africa and Madagascar through India, Sri Lanka, and to the Pacific Islands (Pridgeon *et al.*, 2003). Of this, 15 species are found in India (Sathish Kumar, 2001). Hooker (1890) mentioned only *Zeuxine longilabris* (Lindl.) Benth. ex Hook. f. and *Z. sulcata* Lindl. (*Z. strateumatica* (L.) Schltr.) from South India, while Fischer (1928) reported, besides the above two species, *Z. blatterii* Fischer also. Abraham and Vatsala (1981) and Henry *et al.* (1989) reported only *Z. longilabris* and *Z. gracilis*. Sathish Kumar (2000) reported only *Z. longilabris* from Tamil Nadu. Five year long floristic study conducted in Tirunelveli hills and the environs yielded three more species: *Z. affinis* (Lindl.) Benth. ex Hook. f., *Z. flava* (Wall. ex Lindl.) Benth. ex Hook. f. and *Z. gracilis* (Breda) Bl. They are described, illustrated and keyed out below.

- 1a. Lip 10-20 mm long ..... 2  
 1b. Lip 3-5 mm long ..... 3  
 2a. Lobules of lip coarsely toothed; sepals and petals 3-veined ..... *Z. longilabris*  
 2b. Lobules of lip with undulate margin; sepals and petals 1 veined ..... *Z. affinis*  
 3a. Midlobe of the lip entire ..... *Z. gracilis*  
 3b. Midlobe of the lip divaricate ..... *Z. flava*

*Zeuxine affinis* (Lindl.) Benth. ex Hook. f., Fl. Brit. India 6: 108. 1890 & IC Pl. t. 2177. 1894. Seidenf., Dansk Bot. Ark. 32: 88. 1978. Sasidharan *et al.*, Rheedea 9(2): 159. 1999. *Etaeria affinis* Lindl. in Wall. Cat. No. 7383. 1832 *nom. nud.* *Monochilus affinis* Lindl., Gen. Sp. Orch. 487. 1840. *p.p.* **Fig. 1.**

*Rhizomatous herbs*, to 30 cm high. *Rhizomes* creeping, rooting at nodes. *Leaves* 4-5, greenish-brown membranous, ovate-lanceolate, 3.5-5 x 1.5-2 cm, sheathed at base, entire, acute at apex. *Inflorescence* terminal, erect, spicate raceme, 10-15 cm long; peduncle 6-8 cm long, glandular pubescent with 2-3 sheaths; *bracts* ovate-lanceolate, acuminate, 8 x 2 mm, as long as the ovary, 1-veined, glandular pubescent. *Flowers* white; pedicel 1.5 mm long; sepals subequal glandular pubescent, 1-veined, obtuse; dorsal sepal ovate, 7.5 x 3.5 mm, lateral sepal oblong, 6 x 2 mm; petals falcately oblong, 7 x 3 mm, obtuse, 1-veined, connate with dorsal sepal; lip 12 x 10 cm, saccate at base with two cylindrical acute glands, dilating and deeply bilobed; lobes obovate, margin undulate; column 1.8 mm long; stigma with two glandular protuberances at the sides; anther 2-celled; pollinia pyriform, 1.5 mm long, with 0.5 mm stalk on a small, ovate gland at the base; rostellum oblanceolate, 0.8 mm long, slightly curved; ovary with pedicel 10 mm, ridged, pubescent. *Capsule* c. 10 mm long.

*Flowering & Fruiting*: February-March.

*Altitude*: 1400 m.

*Habitat*: Evergreen forests.

*Occurrence*: India, Tamil Nadu, Kanyakumari District.

*Distribution*: India, China, Myanmar, Thailand, Laos and Malaysia.

*Specimens Examined*: INDIA, Tamil Nadu, Kanyakumari district: Mahendragiri hills, way to Parvatham, *Manickam et al.* 18767 (XCH).

*Note*: Sasidharan *et al.* (1999) reported this species from Kerala as a new record for Peninsular India.

*Zeuxine flava* (Wall. ex Lindl.) Benth. ex Hook. f., *Fl. Brit. India* 6: 108. 1890; Seidenf, *Dansk Bot. Ark.*

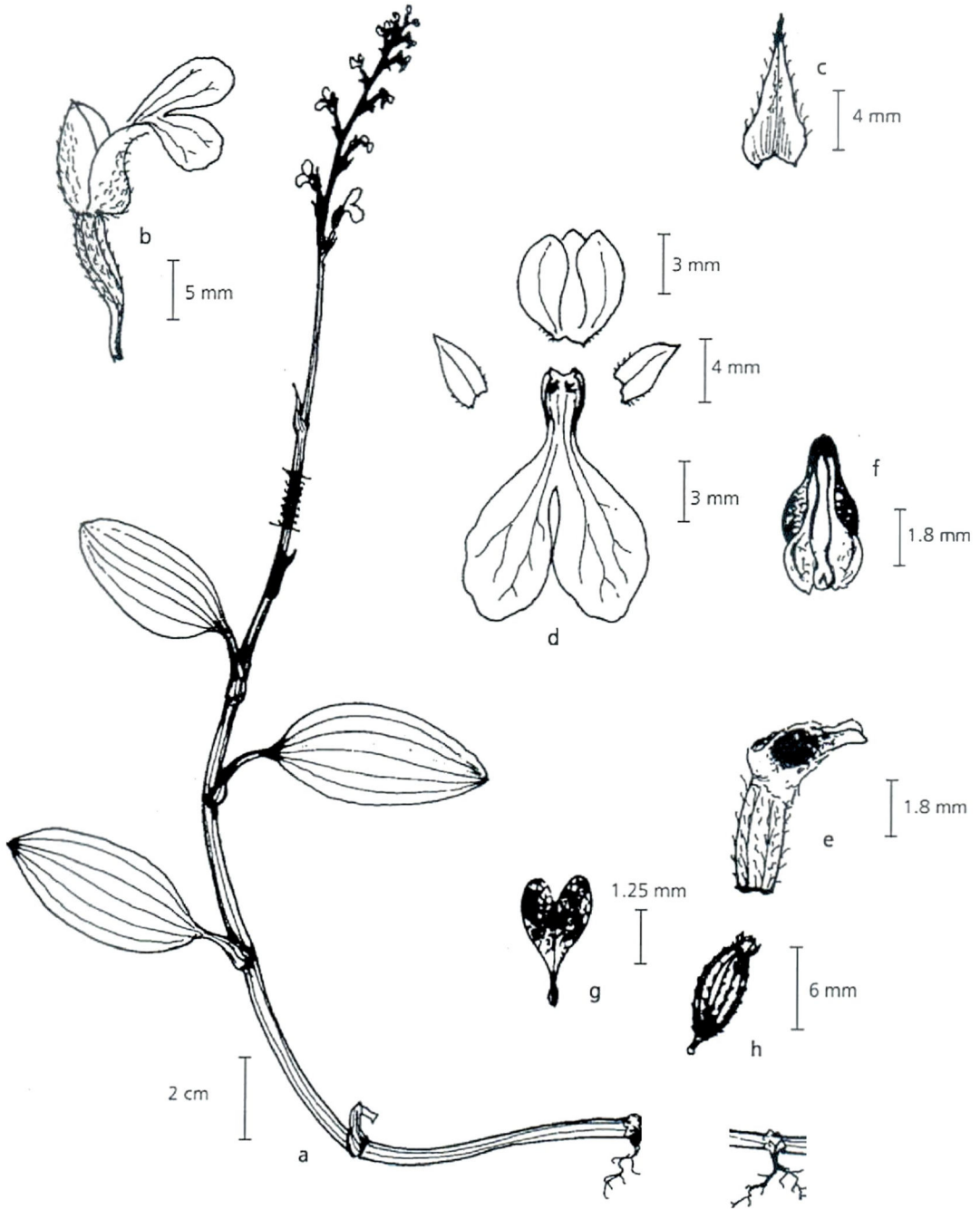


Figure 1. *Zeuxine affinis* (Lindl.) Benth. ex Hook. f. – a. Habit; b. Flower; c. Bract; d. Sepals, Petals and Lip; e. ovary with column; f. Column, front view; g. Pollinia; h. Fruit.

32: 84. 1978; Jayaweera in Dassanayake & Fosberg, *Rev. Handb. Fl. Ceylon*. 2: 328. 1981. *Etaeria flava* Lindl. in Wall. *Cat. n.* 7380. A & B. 1832, *nom. nud.* *Monochilus flavum* Wall. ex Lindl. *Gen. Sp. Orch.* 487. 1840. Fig. 2.

*Rhizomatous herbs*, 10-25 cm tall. *Leaves* 3-5, greenish brown, ovate, 4-5 x 2-5 cm, acute, 5-veined; petiole short, sheathing at node. *Inflorescence* a terminal spicate raceme, 12-15 cm long; peduncle up to 8 cm,

pubescent, with 2-3 sheath of 1.5 cm long; floral bract ovate-lanceolate, acuminate, 5 x 2 mm, 1-veined, pubescent. *Flowers* white; sepals subequal, 1-veined, obtuse, pubescent; dorsal sepal ovate, 3.5-4 x 3 mm; lateral sepals, ovate-lanceolate, 3-3.5 x 2 mm; petals oblong, 3-3.5 x 1.5 mm, 1-veined; lip orange yellow, 4-5 mm long, saccate at base with two conical calli, claw expanded into oblong, quadrate, divaricate, 3-veined wings; column 3.5 mm long; anthers 2-loculed,

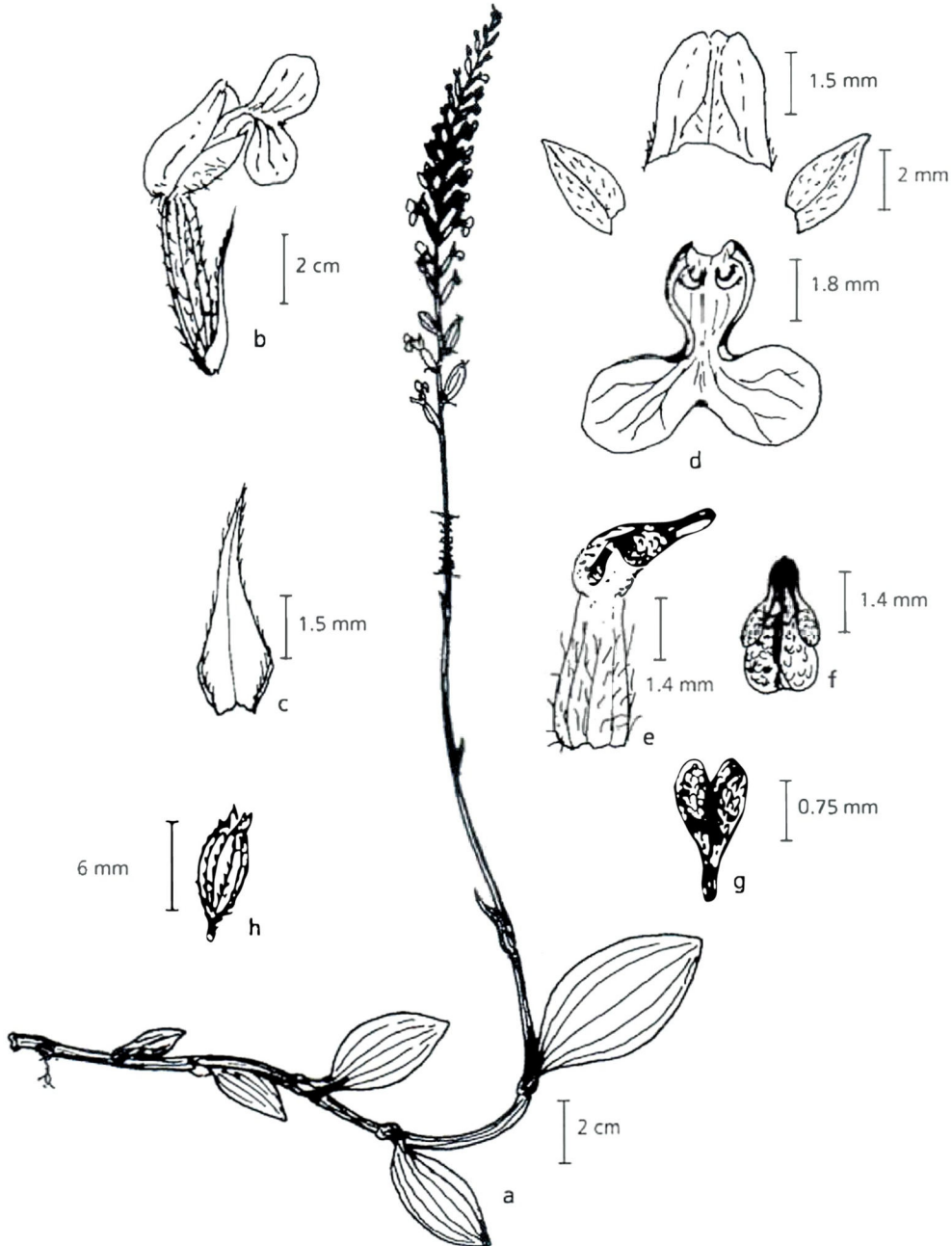


Figure 2. *Zeuxine flava* (Wall. ex Lindl.) Benth. ex Hook. f. – a. Habit; b. Flower; c. Bract; d. Sepals, Petals and Lip; e. Ovary with column; f. Column, front view; g. Pollinia; h. Fruit.

1 mm long; pollinia 2, 1.5 mm long, pyriform, shortly stipitate on oblong gland; rostellum bipartite with erect segments; ovary to 5 mm long, ridged, pubescent. Capsule ellipsoid, c. 8 mm long.

*Flowering & Fruiting*: March-April.

*Altitude*: 1000-1400 m.

*Habitat*: Evergreen forests.

*Occurrence*: India, Tamil Nadu: Tirunelveli and Kanyakumari Districts.

*Distribution*: India, Nepal, Myanmar and Thailand.

*Specimens Examined*: INDIA, Tamil Nadu, Tirunelveli District: Kothayar hills, *Manickam et al.* 12499 & 12548 (XCH); Papanasam hills, Valayar, *Manickam et al.* 18884 (XCH); Kalakad hills, Kakkachi path, *Manickam et al.* 19597

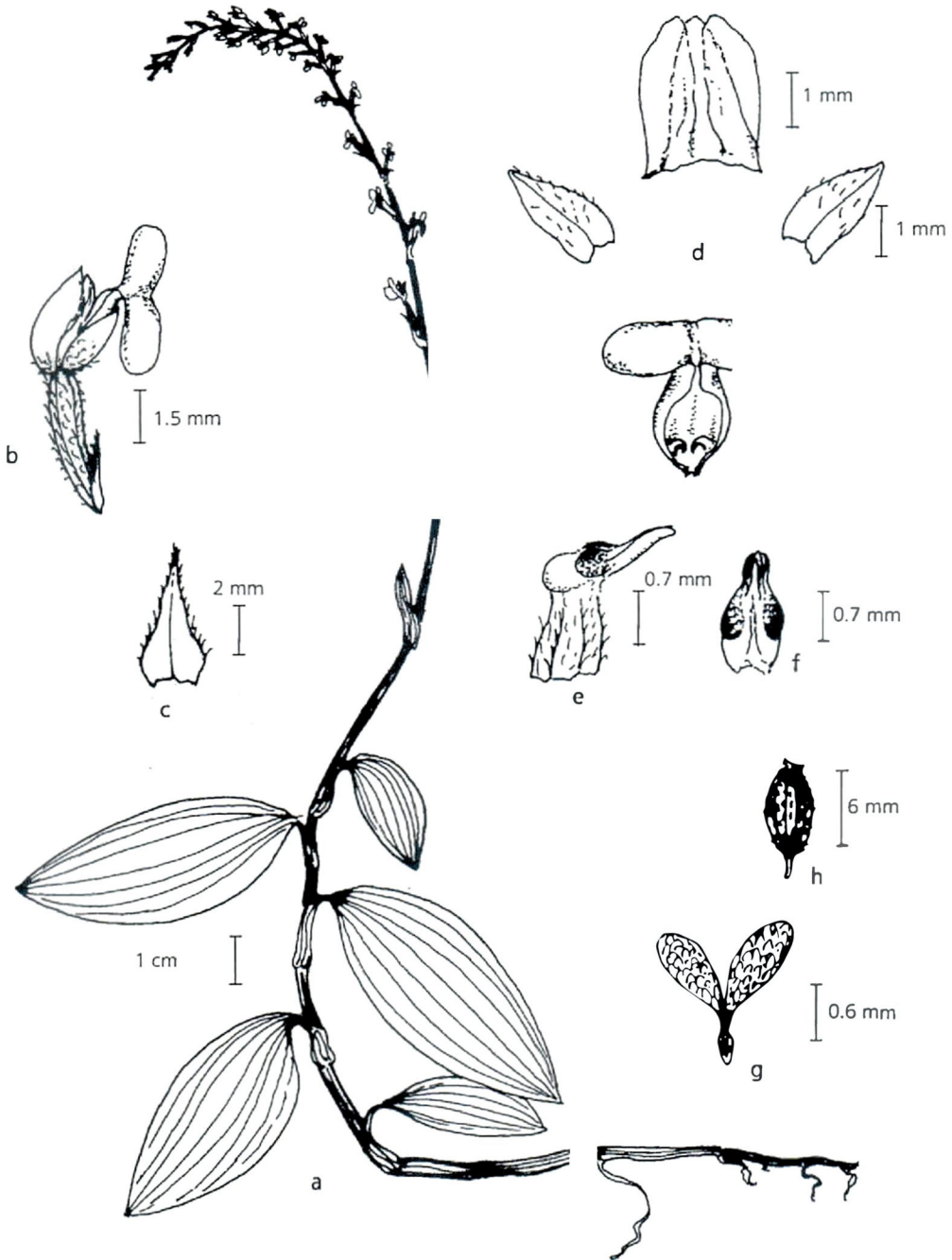


Figure 3. *Zeuxine gracilis* (Breda.) Bl. – a. Habit, b. Flower; c. Bract; d. Sepals, Petals and Lip; e. Ovary with column; f. Column, front view; g. Pollinia; h. Fruit.

(XCH); Kanyakumari District: Mahendragiri hills, Manickam et al. 18597 (XCH).

*Zeuxine gracilis* (Breda) Bl., Coll. Orch. Ind. Arch. 69, T. 18, Fig. 2 & T. 23. D. 1858; Abraham & Vatsala, Introd. Orch. 205. 1981; Joseph & Ansari in Henry et al., Fl. Tamil Nadu 3: 26. 1989. *Psychechilos gracile* Breda, Gen. Sp. Orchid Asclep. t. 9. 1827. *Zeuxine blatterii* Fischer, Kew Bull. 1928: 76. 1928 & in Gamble's Fl. Pres. Madras 3: 1456. 1928.

*Rhizomatous herbs*, 10-25 cm tall. *Rhizome* creeping, rooted at nodes. *Leaves* 2-5, greenish brown, ovate-lanceolate, 3-6 x 2-2.5 cm, acute. *Inflorescence* a terminal spike to 12 cm; peduncle to 5 cm, glandular with 2-3 basal sheaths; floral bracts lanceolate, acuminate, 6 x 1 mm, pubescent. *Flowers* white; sepals subequal, pubescent, 1-veined, acute; dorsal sepal ovate, 3-4 x 2 mm; lateral sepals ovate-lanceolate, 2.5-3 x 2 mm; petals ovate, 3-3.5 x 2 mm,

Fig. 3.

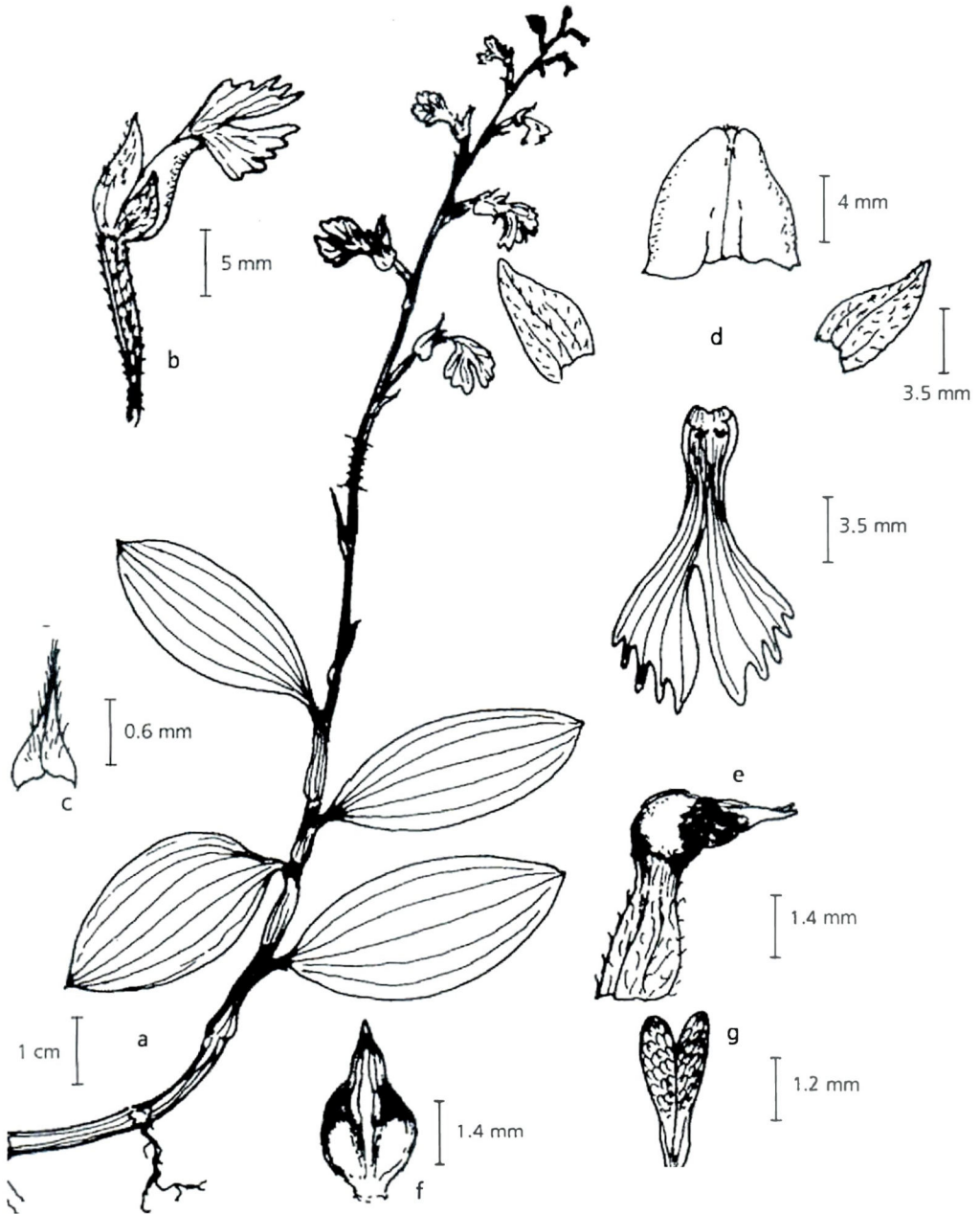


Figure 4. *Zeuxine longilabris* (Lindl.) Benth. ex Hook. f. – a. Habit, b. Flower; c. Bract; d. Sepals, Petals and Lip; e. Ovary with column; f. Column, front view; g. Pollinia.

1-veined; lip 3-3.5 mm long, saccate at base with two pointed calli; lobules white, orbicular, entire, sac of the lip yellow; column 1.8 mm long Anther with two locules, 1 mm long; pollinia 2, pyriform, 1 mm long, attached to an oblong gland; stigma fleshy; rostellum bipartite; ovary 4 mm long, glandular pubescent. *Capsule* ellipsoid, c. 8 mm long.

*Flowering & Fruiting*: February - April.

*Altitude*: 900m.

*Habitat*: Evergreen forests.

*Occurrence*: India, Tamil Nadu, Tirunelveli District.

*Distribution*: India to Malesia.

*Specimens Examined*: INDIA, Tamil Nadu, Tirunelveli District: Agasthiar hills, *Manickam et al.* 19057 (XCH); Muthukuzhyvayal *Manickam et al.* 21518 (XCH).

*Zeuxine longilabris* (Lindl.) Benth. ex Hook. f., *Fl. Brit. India*. 6: 107. 1890; Fischer in Gamble's *Fl. Pres. Madras* 3: 1456. 1928; Seidenf., *Dansk Bot. Ark.* 32: 91. 1978; Abraham & Vatsala, *Introd. Orch.* 202. 1981; Joseph & Ansari in *Henry et al.*, *Fl. Tamil Nadu* 3: 26. 1989. *Monochilus longilabre* Lindl., *Gen. Sp. Orchid. Pl.* 487. 1840. *M. affinis* sensu Wight,  *Ic. Pl. Ind. Or.* 5(1): 16. t. 1728. 1851 non Lindl. 1840. Fig. 4

*Rhizomatous herbs*, 15-30 cm high. *Rhizome* creeping and rooted at nodes. *Leaves* 3-4, ovate, acuminate, brownish green, membranous, 5.5 x 2 cm, 7-veined. *Inflorescence* a terminal spike, to 10 cm; peduncle pubescent; floral bracts lanceolate, 8 mm long, pubescent, 3-veined. *Flowers* white, 20-25 mm across; sepals subequal, 3-veined, obtuse; dorsal sepal, oblong, 6-8 x 3-3.5 mm, 3-veined; lateral sepals ovate, 5-6 x 2-2.5 mm; petals oblong, 5-6 x 2.5-3 mm, obtuse, 3-veined; lip 15-20 mm long, saccate at the base with two acute calli, two lobed, midlobe cuneate, margins of the lobe coarsely toothed; column 3.5 mm long; stigmatic lobes two, elongated, marginal, fleshy; anther 2-loculed; pollinia 2, 1.2 mm long, subglobular, with a gland at the base; rostellum 1 mm, oblanceolate, bifid; ovary to 10 mm long, ribbed, glandular pubescent.

*Flowering & Fruiting*: February-April.

*Altitude*: 800-1000 m.

*Habitat*: Evergreen forests.

*Occurrence*: India, Tamil Nadu, Tirunelveli District.

*Distribution*: India, Sri Lanka, Cambodia and Thailand.

*Specimens Examined*: INDIA, Tamil Nadu, Tirunelveli District: Sivagiri hills, *Manickam et al.* 19988 (XCH).

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