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NOTE

Two Frequently Confused Species of 'Jewel Orchid' (Orchidaceae - Goodyerinae) from India

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ABSTRACT: *Zeuxine goodyeroides* and *Zeuxine nervosa* are two distinct species of terrestrial orchids but confused and misreported in some recent Indian literature. The present communication emphasizes the need of study of type specimens for fixing identity of species. A mistake repeated several times will have a chance to obscure the correct identity of a species.

KEY WORDS: Orchidaceae, *Zeuxine, Zeuxine goodyeroides, Zeuxine nervosa*.

INTRODUCTION

The genus *Zeuxine* Lindl. (Orchidaceae) is represented by about 80 species (Chen *et al*., 2009) distributed from Tropical Africa to Central Asia, West Pacific and a single species [*Z. strateumatica* (L.) Schltr.] in Americas (Govaerts *et al*., 2012). Out of these 80 species of *Zeuxine,* 18 species (Bhattacharjee and Sabapathy, 2010; Bhattacharjee and Chowdhery, 2012) are found in India.

Zeuxine goodyeroides Lindl. and *Z. nervosa* (Wall. ex Lindl.) Trimen are often praised as 'Jewel orchid' due to their leaves with white to grayish-white band along the mid-vein. Lindley (1840) described *Z. goodyeroides* based on Griffith's collection made from erstwhile 'Assam' (which in the past was used broadly to cover the present day north-eastern parts of India including Arunachal Pradesh, Assam, Meghalaya etc.). In his later publication on Indian orchids, Lindley (1857) specified that Griffith's material originated from Mishmee Hills, now part of Arunachal Pradesh. Sir J.D. Hooker (1890) as per the format of his Flora preferred a broader colonial usage of 'Assam' for distribution of *Z. goodyeroides.* Bora and Kumar (2003) recorded this species (with correct identification) from Pabitora Wildlife Sanctuary which presently comes under geo-political boundary of Assam. Overlooking this, Kalita and Borthakur (2008) reported *Z. goodyeroides* as a new record for Assam. But the description and illustration provided by Kalita and Borthakur (2008) is of *Z. nervosa*, which is also known to occur in Assam (Hooker, 1890, 1894; King and Pantling, 1898; Misra, 2004). Gogoi *et al.* (2010) erred to identify *Z. nervosa* as *Z. goodyeroides* and reported it from Saikhowa National Park, Assam. Further, Gogoi *et al.* (2012a, 2012b, 2012c) misidentified *Z. goodyeroides* based on their collection (*Gogoi et al.* 0483, GUBH) from Jeypore, Dibrugarh District, Assam which is actually *Z. nervosa*. The misidentification is very much evident from the description and photograph of *Z. goodyeroides* provided by Gogoi *et al.* (2012a). *Z. goodyeroides* is often confused with *Z. nervosa* on account of characters of leaves. Both species possess leaves with white to greyish-white band along the mid-vein, but this is not a constant character at least for *Z. nervosa* (Bhattacharjee and Chowdhery, 2012). Though frequently confused, these two species are quite distinct as shown in Table 1.

TAXONOMIC TREATMENTS

1. ***Zeuxine goodyeroides*** Lindl., Gen. Sp. Orchid. Pl.: 486. 1840. **Types:** 'Miscellaneous', *Griffith 7* (holotype: K-LINDL, photo!; isotype: K, photo!).
Fig. 1, A1–F1

Flowering and Fruiting: July–February.

Distribution: India: Arunachal Pradesh, Assam, Meghalaya, Nagaland, Sikkim, West Bengal; Bhutan, China, Nepal, Myanmar.

Specimens examined: **INDIA**: Arunachal Pradesh: East Siang District, Pasighat, above upper Rengging Camp, *ca.* 1128 m, 28.01.1912, *I.H. Burkill 36339* (CAL); West Kameng District: Sessa, 17.10.1992, *A.N. Rao 4752* [Orchid Herbarium, Tipi (OHT); not in 'Index Herbariorum']. Sikkim: North District: Chungthang, *ca.* 1829 m, August 1895, *Pantling 189* (CAL); Yumthang, 1901, *Prain's coll. 357* (CAL); South District: Tendong, *ca.* 1829 m, July 1892, *Pantling 189* (CAL); Burmick, *ca.* 1219 m, 01.12.1908, *W.G. Craib 469* (CAL); West District, Yoksum, 24.09.1992, *R.C. Srivastava 10626* (BSHC); without precise locality, *ca.* 1829 m, 25.09.1876, *King* s.n. (CAL); without precise locality, *ca.* 1829 m, 25.09.1876, *King 3051* (CAL);

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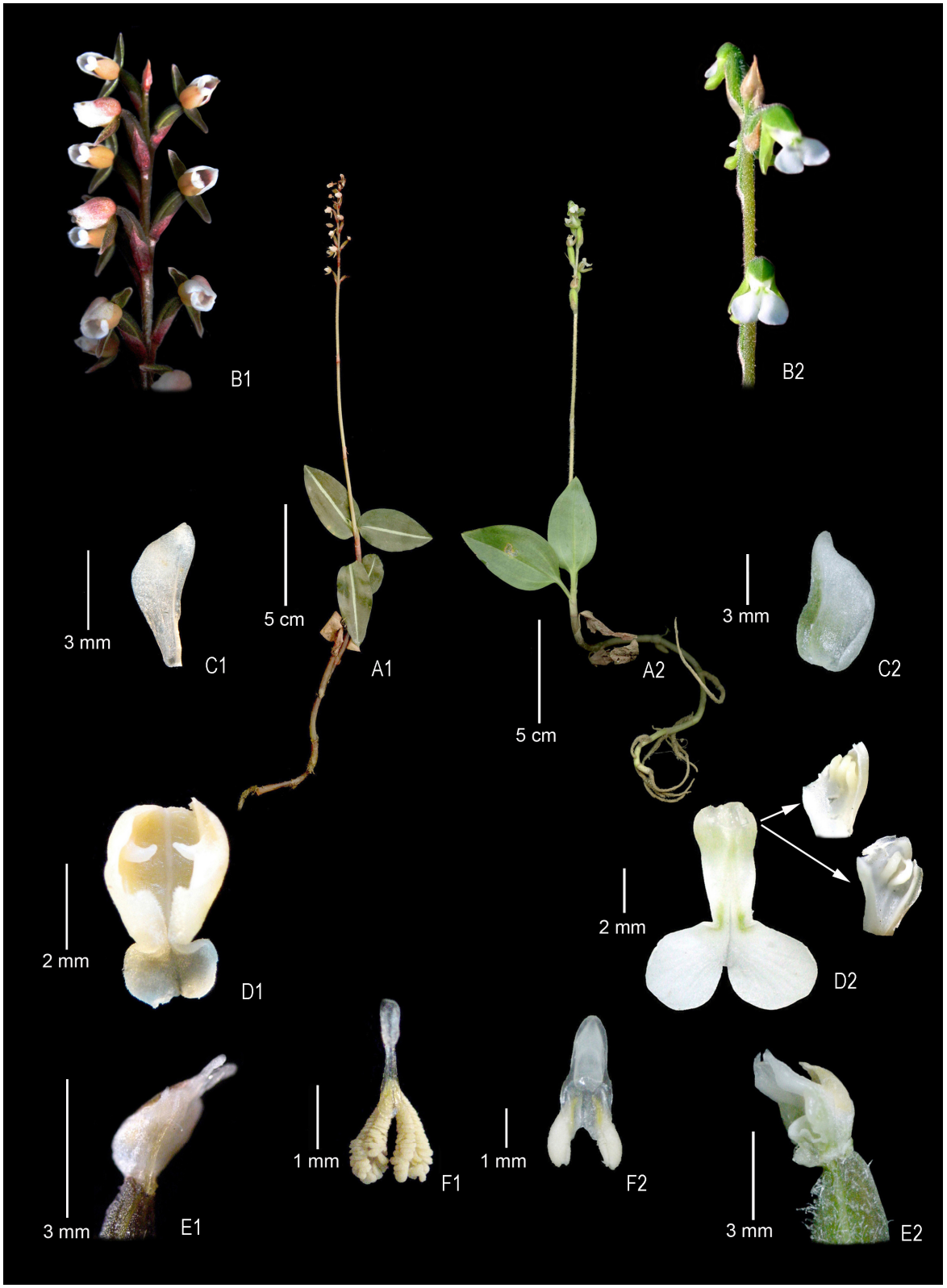


Fig. 1: *Zeuxine goodyeroides* (A1–F1): A1: Habit. B1: Portion of an inflorescence. C1: Petal. D1: Labellum. E1: Column. F1: Pollinarium [*A. Bhattacharjee 24847A*; CAL]. *Zeuxine nervosa* (A2–F2): A2: Habit. B2: Portion of an inflorescence. C2: Petal. D2: Labellum and close-up of lateral appendages (of one side) inside hypochile. E2: Column. F2: Pollinarium [*C.M. Sabapathy 38101*, *38102;* CAL].

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Table 1. Morphological difference between *Zeuxine goodyeroides* Lindl. and *Zeuxine nervosa* (Wall. ex Lindl.) Trimen

Zeuxine goodyeroides	*Zeuxine nervosa*
Sepals pinkish-green.	Sepals pale green.
Petals obliquely lanceolate-falcate, not abruptly and unilaterally narrowed just below apex.	Petals obliquely oblong-ovate to sub-orbicular to sub-rectangular, abruptly and unilaterally narrowed just below apex.
Hypochile with 1 hook-like appendage inside in each side; mesochile highly reduced to form a flap-like structure between hypochile and epichile; epichile 1-lobed to weakly 2-lobed, lobules (when present) very small.	Hypochile with 2–3 oblong-filiform appendages inside in each side; mesochile distinct, narrowly oblong; epichile distinctly 2-lobed, lobules large.
Column without any wing.	Column with distinct wings.
Tegula of pollinarium linear-oblong, not emarginate at pollinial end but slightly constricted near middle.	Tegula of pollinarium oblong-deltoid, emarginate at pollinial end and widened near middle.

without precise locality, *ca.* 1829 m, September–October 1898, *Pantling 189* (CAL). West Bengal: Darjeeling District: Darjeeling, *ca.* 2438.5 m, October 1881, *J.S. Gamble 9990* (CAL); Mahaldaram, *ca.* 1829 m, 1892, *Pantling 189* (CAL); Mahaldaram, *ca.* 1829 m, July 1892, *Pantling 189* (CAL); Surail, *ca.* 1829 m, September 1898, *Pantling 189* (CAL); Mongpu, 1901, *Prain's coll. 206* (CAL); Surail, *ca.* 1676.4 m, 23.09.1908, *W.W. Smith 82* [Lloyd Botanical Garden Herbarium, Darjeeling (LLOYD); not in 'Index Herbariorum']; *Chowbhanjan, ca.* 2743 m, 30.01.1911, *Cave* s.n. (LLOYD); Ghoom, *ca.* 2316.4 m, 20.09.1917, *Cave* s.n. (LLOYD); Sonada road, 13.10.1940, *K. Biswas 4671* (CAL); Surail, 14.10.1940, *K. Biswas 4704* (CAL); Tonglu, *ca.* 2438.5 m, *S. Kurz* s.n. (CAL); Tonglu, *ca.* 2133.6–2438.5 m, *S. Kurz* s.n. (CAL); without precise locality, 2200 m, 23.08.1962, *J. Renz 10098* (RENZ, photo); Mongpoo, 27.08.2005, *A. Bhattacharjee 37012* (CAL); Mongpoo, 02.09.2007, *A. Bhattacharjee 24847A*, *24847B* (CAL); Darjeeling/ Jalpaiguri District, Jaldhaka Valley, *ca.* 1829 m, August 1894, *Pantling 189* (CAL).

2. *Zeuxine nervosa* (Wall. ex Lindl.) Benth. ex Trimen in J. Ceylon Br. Roy. Asiat. Soc. 9: 90. 1885. **Types:** Derwani, 11 March 1809, coll. *Buchanan-Hamilton* Wall. Cat. Numer. List no. 7381 a [lectotype: K, photo!; designated by: Seidenf. in Dansk. Bot. Ark. 32 (2): 80. 1978]. *Monochilus nervosus* Wall. ex Lindl., Gen. Sp. Orchid. Pl.: 487. 1840, ('*nervosum*'). Fig. 1, A2–F2

Flowering and Fruiting: November–June.

Distribution: India: Andaman and Nicobar Islands, Arunachal Pradesh, Assam, Manipur, Nagaland, Orissa, Sikkim, West Bengal; Bangladesh, Bhutan, China, Japan, Nepal, New Guinea, Sri Lanka, Taiwan, Thailand, The Philippines, Vietnam.

Specimens examined: **INDIA**: Andaman and Nicobar Islands: Little Andaman: Krishna Nallah, *L. Rasingam 20981* (CAL, PBL); Bishnu Nalah Dam, on the way to Bamboo Tikkiri, *ca.* 20 m, 26.05.2008, *G.K. Upadhyay 37534A*, *37534B* (CAL). Arunachal Pradesh: Changlang District, Motijheel (Namdapha), 20.03.1996, *A.N. Rao 28339* (OHT); East Kameng District, Kimi, 18.11.1997, *A.N. Rao 30364* (OHT); Upper Siang District: Mouling National Park, near Ramsing, 19.04.2006, *C.M. Sabapathy 38101*, *38102* (CAL); Kokpen area (Mariyang), 14.04.2007, *R.K. Choudhary 18383* [(Herbarium of Botanical Survey of India, Arunachal Pradesh Regional Centre, Itanagar (ARUN); not in 'Index Herbariorum']. Assam: Burachapori, near Chinimari beel, 19.11.2005, *M. Bhaumik 110254* (ASSAM); without precise locality, coll.? (CAL). Nagaland: Twensang *District:* Jabocka, *ca.* 1829 m, March 1899, *Hock 100* (CAL); Jabocka, *ca.* 610 m, March 1899, *Prain's coll. 821*(CAL). Sikkim: North District, below Namgah (Nanga), *ca.* 1219 m, June 1897, *Pantling 307* (CAL); Without precise locality, *ca.* 305–1219 m, *J.D. Hooker* s.n. (CAL, MH). West Bengal: Darjeeling District, Kumai, near Jaldhaka river, *ca.* 610 m, February 1896, *Pantling 307* (CAL); Jalpaiguri District: Dooars, East of Jaldhaka river, February 1896, *Pantling 307* (CAL); Terai, Laxarbari, 04.03.1910, *Ribu and Rhomon 3783* (LLYOD); Kodalbasti, 28.02.1976, *J.K. Sikdar 4405* (CAL); Titi, 200 m, 02.03.1976, *J.K. Sikdar 4470* (CAL).

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印度兩種易混淆的寶石蘭（蘭科斑葉蘭亞族）

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摘要：白肋線柱蘭與芳線柱蘭是兩種不同的陸生蘭，但最近在印度的文獻中卻常常將其搞混而錯誤回報。本文強調研究此兩物種的模式標本在鑑定過程中的必要性，以確保兩物種之身分確定，因鑑定上的錯誤不斷被重複，很有可能造成此兩物種身分的模糊。

關鍵詞：蘭科、線柱蘭屬、白肋線柱蘭、芳線柱蘭。

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