



## *Zeuxine longilabris* (Orchidaceae): a new record for the flora of Uttar Pradesh, India

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### Abstract

*Zeuxine longilabris*, a terrestrial orchid, is known to show wide global distribution. The species also occurs in India but, so far, it has not been recorded from Uttar Pradesh. In our survey the species was found on the forest floor of natural sal-dominated forest in Sohagi Barwa Wildlife Sanctuary of north-eastern Uttar Pradesh. The species stands as a new addition and thus a new distributional record to the flora of Uttar Pradesh. In this short communication the species is described with the help of suitable illustrations and photographs to facilitate the identification in the field.

### Résumé

*Zeuxine longilabris*, une orchidée terrestre, est connue pour avoir une large distribution mondiale. L'espèce est également présente en Inde mais, jusqu'à présent, elle n'a pas été observée en Uttar Pradesh. Dans notre étude, l'espèce a été trouvée sur le sol d'une forêt dominée par le sal (*Shorea*

*robusta*) dans le réserve naturelle de Sohagi Barwa, au nord-est de l'Uttar Pradesh. Cette découverte se présente comme une nouvelle addition à la flore de l'Uttar Pradesh et élargit l'aire de distribution de l'espèce. Dans cette courte note, l'espèce est décrite à l'aide d'illustrations et de photographies appropriées pour faciliter l'identification sur le terrain.

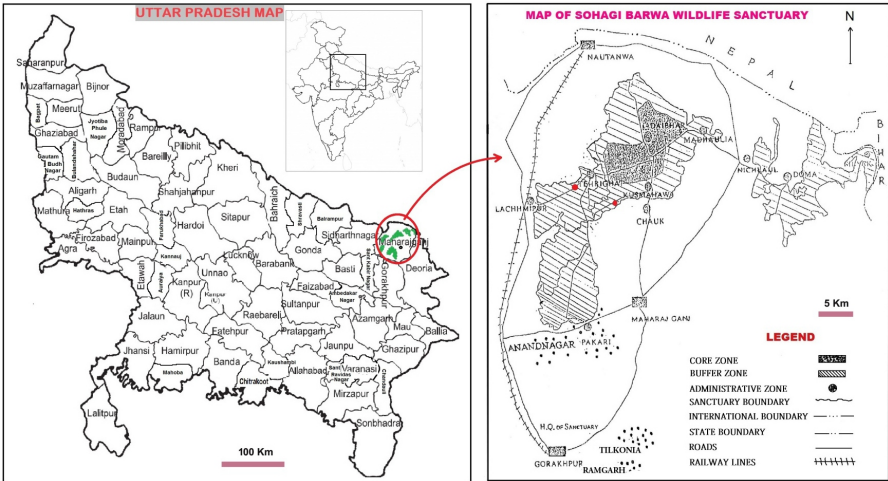
**Mots clés :** orchid, Sohagi Barwa Wildlife Sanctuary.

**Keywords:** orchidées, Réserve naturelle de Sohagi Barwa.

## Introduction

*Zeuxine* Lindley is a large genus comprising about 80 species (Chen *et al.*, 2009) belonging to the family Orchidaceae Jussieu, out of which as many as 19 species occur in India (Bhattacharjee *et al.*, 2011). Most of the species are widely distributed from Tropical Africa to Central Asia and West Pacific, mostly growing in humid grasslands (Govaerts *et al.*, 2018; [http://www.eol.org/data\\_objects/31893912](http://www.eol.org/data_objects/31893912)). During the survey of forest vegetation (24 February & 7 March 2009) of Sohagi Barwa Wildlife Sanctuary (27.28°N & 83.59°E at about 95 m elevation), a few individuals of a *Zeuxine* species were spotted on the forest floor below the understorey of sal (*Shorea robusta* C.F. Gaertner) -dominated forest of the Terhighat and Kushmahawa areas under Lachhamipur and South Chowk Ranges of Gorakhpur Forest Division. The sites, however, now politically fall under Maharajganj District of Uttar Pradesh (Fig. 1). After critically studying the literature (Hooker, 1894; Trimen, 1885; Punekar, 2002; Bhattacharjee & Sabapathy, 2010) and comparing our plant with the online herbarium image available on Digital Flora of Karnataka (<http://florakarnataka.ces.iisc.ernet.in/hjcb2/herbsheet.php?id=3079&cat=1>), Kew Herbarium London (<http://apps.kew.org/herbcat/getImage.do?imageBarcode=K000895717>), Muséum National d'Histoire Naturelle, Paris, France (<http://coldb.mnhn.fr/catalognumber/mnhn/p/p00345084>), the collected specimen was identified as *Zeuxine longilabris* (Lindley) Trimen. Scrutiny of regional floristic works published earlier (Duthie, 1915; Kanjilal, 1933; 1966; Srivastava, 1976; Mishra, 1978; Shukla & Pandey, 2000; Saini *et al.*, 2010; Kumar *et al.*, 2015) revealed that the species had not been reported from Uttar Pradesh. However, a plant specimen was collected in April 1975 from Nagwa area, which falls under Madhulia Forest Range of Sohagi Barwa Wildlife Sanctuary, by Anis Ahamad Ansari and was submitted in the herbarium of

the Department of Botany, Gorakhpur University (now D.D.U. Gorakhpur University) with deposit number G.P.U. 2986 (Fig. 2). At that time the plant could not be identified. This species has been reported from eight States in India, namely Arunachal Pradesh, Assam, Karnataka, Kerala, Maharastra, Tamil Nadu, Tripura and West Bengal along with Nepal, Sri Lanka, Cambodia, Myanmar and Thailand (Govaerts *et al.*, 2018). Our voucher specimen has been deposited in the angiospermic herbaria of the Department of Botany, D.D.U. Gorakhpur University (DDUGKP-AH), Gorakhpur with deposit no. DDUGKP-AH 035.



**Fig. 1. Location of Sohagi Barwa Wildlife Sanctuary in Uttar Pradesh**  
2 red spots within sanctuary showing places of occurrence of *Zeuxine longilabris*

## Taxonomic description

*Zeuxine longilabris* (Lindley) H. Trimen in *Journal of the Ceylon Branch Royal Asiatic Society* 9: 90 (1885); J.D. Hooker, *Flora of British India* 6: 107 (1894); J.S. Gamble, *The flora of the Presidency of Madras*: 1456 (1018) (1928); A. Abraham & P. Vatsala, *Introduction to orchids with illustrations and descriptions of 150 South Indian Orchids*: 202 (1981); K.S. Manilal, *Flora of Silent Valley: Tropical Rain Forest of India*: 308 (1988); E. Vajravelu, *Flora of Palghat District*: 495 (1990); M. Mohanan & A.N. Henry, *Flora of Thiruvananthapuram District*: 472 (1994); V.V. Sivarajan & P. Mathew, *Flora of Nilambur*: 702 (1997); H.J. Chowdhery, *Orchid Flora of Arunachal Pradesh*:



**Fig. 2. Herbarium specimen**

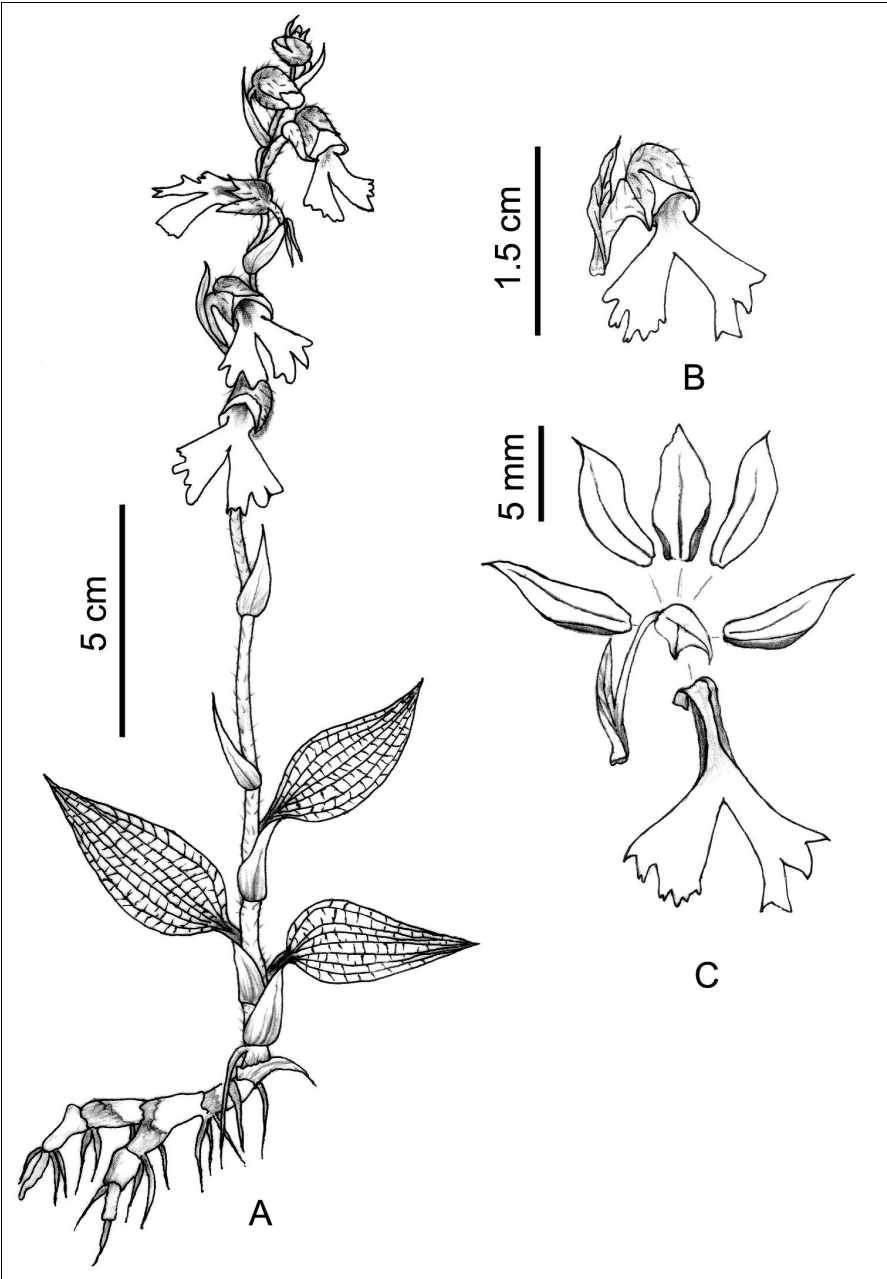
submitted by Anis Ahamad Ansari in the herbarium of the Department of Botany, Gorakhpur University (deposit number G.P.U. 2986)

695 (1998); C.S. Kumar, *Orchids of Silent Valley in Silent Valley-Whispers Reason*: 213 (1999); N. Sasidharan, *Floristic studies in Parambikulam Wildlife Sanctuary*: 340 (2002); C.S. Kumar & K.S. Manilal, *Orchids of Kerala, India in Orchid Memories - A Tribute to Gunnar Seidenfaden*: 231 (2004); C.N. Sunil & M. Sivadasan, *Flora of Alappuzha District, Kerala, India*: 680 (2009); M.K.R. Narayanan, *Floristic study of Wayanad district with special emphasis on conservation of rare and threatened flowering plants*: 857 (2010).

Synonyms: *Monochilus longilabris* Lindley, *The genera and species of orchidaceous plants*: 487 (1840); *Haplochilus longilabris* (Lindley) D.N.F. Dietrich, *Synopsis plantarum* 5: 173 (1852).

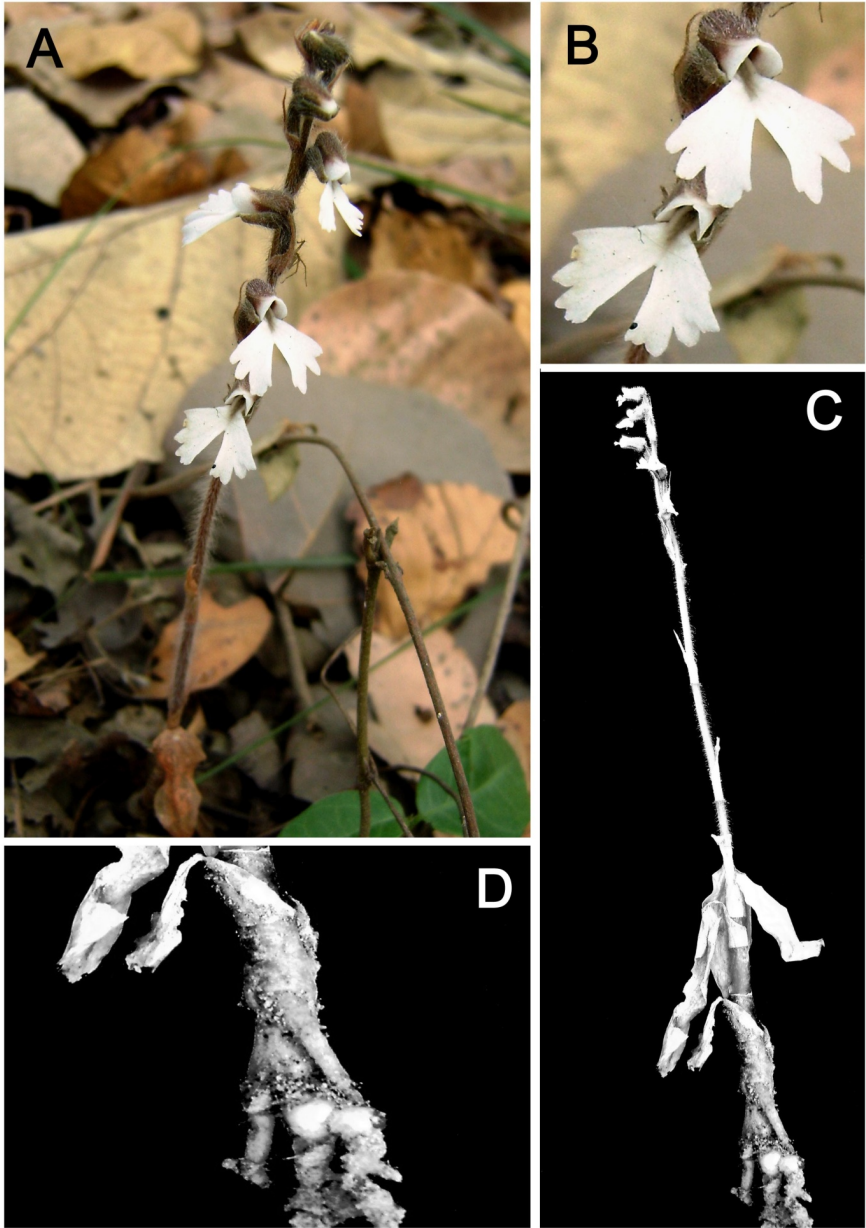
Type: Sri Lanka, near Julio Mts, *Macrae s.n.* (K).

Terrestrial leafy herb, perennial, rhizomatous, 13-35 cm tall; rhizomes up to 3-5 cm long, 4-10 mm thick, fleshy, greenish brown, swollen at the nodes with thick roots; roots 1-3 cm long, 2-4 mm thick, brown black, fleshy with distinct root-hairs; stems 4-6 cm long, 1.5-3 mm thick, brownish green turning into copper white when dry, erect above, unbranched, tomentose, with a few membranous sheaths formed by leaf-bases; leaves generally 3-5, crowded at the base of the inflorescence, yellowish green or olive green, subcoriaceous, with whitish green midrib often becoming paper-like membranous on drying, 3-5 × 1.2-2 cm, ovate-lanceolate, acute, entire, 7-nerved, mid nerve prominent with 3 faint, lateral ones; petioles loosely sheathing the base of the stem, up to 2 cm long with several nerves; inflorescence a terminal raceme, laxly 4-8 flowered, greenish brown, pubescent, peduncle 8-22 cm long, terete, densely and retroversly villous tomentose; floral bracts 0.5-2.5 cm long, ovate, lanceolate, acute, entire, 3-nerved; flowers 1-2 cm long (including ovary), resupinate; sepals oblique, greenish brown, 1-nerved, the dorsal one 7 × 5 mm, concave, ovate rhombic, the lateral ones 5 × 2.5 mm, ovate, subfalcate; petals greenish white, 7 × 2.5 mm, slightly shorter than the dorsal sepal; lip white, longer than the sepals, 11 mm long, claw 3-5 mm long with a small globose pouch-like sac at the base, pubescent outside, conduplicate, spreading into a broad white limb which is about 8 × 4-6 mm and 2-lobed, lobules obliquely oblong, irregularly toothed on the outer margin; pollinia 2, pyriform, clavate or oblong, lamellate with an oblong tapering caudicle and a small, ovate-orbicular gland; stigmatic surfaces 2, pale brown in color; ovary brownish green, 1-1.5 cm long with long woolly hairs. Fig. 3 & 4.



**Fig. 3. *Zeuxine longilabris***

A. Habit; B. A single flower; C. Sepals and petals with lip (Dr. Balmukund Chaurasia)



**Fig. 4. *Zeuxine longilabris***

A. plant in natural habitat; B. enlarged view of flower; C. uprooted whole plant; D. enlarged view of rhizome (Photo: Dr. Balmukund Chaurasia)

Other specimens examined: India: Uttar Pradesh, Maharajganj, Terighat Forest (within Sohgi Barwa Wildlife Sanctuary) 07.03.2009, *B. Chaurasia DDUGKP-AH 035* (DDUGKP); Karnataka, Mysore, Yethinahalla, 11.03.1971, *T.P. Ramamoorthy, HFP 1476* (CES, IISc., Bangalore); Karnataka, Mysuru, Stream before Devalkore, 28.01.1971, *T.P. Ramamoorthy, HFP 1383* (CES, IISc., Bangalore); Malabar, Concan, *J.E. Stocks & J.S. Law s.n.* (P 00345084); Sri Lanka: *J.D.H. Hooker 332* (K); 13.03.1985, *J.G. Champion s.n.* (K 000895715); *J.G. Champion s.n.* (K 000895716); 1829, *J. Macrae 4* (K 000895717).

Common English name: Long-lipped Zeuxine.

Habitat and Ecology: The species is found growing among decaying leaves and loamy soil of the moist forest floor under the shade of understorey vegetation of sal-dominated forests.

Flowering: February–March.

Uses: Entire plant is used to prepare medicine for whooping cough by the Kadar tribe of southern India (Rajendran *et al.*, 1997).

Occurrence & conservation: The plant was found at Terhighat and Chowk areas (Fig. 1) during the dry period of winter (February–March 2009). A trip was made to the same localities during the same period the following year. The species was present in Terhighat area but it could not be found in the Chowk area. The sites were visited for the third time in 2011. This time the species was found but about 6 km away from the original site in Terhighat. It could not be traced at Chowk site. The species, evidently, is uncommon across the region. Due to high human pressure and disturbances such as unregulated forest destruction, live-stock grazing, recurrent fire and urban expansion in the area, the species habitat is largely fragmented and might have led to the rapid depletion of orchid habitats and orchid populations. This may result in local extirpation of the species. Thus, its habitat needs special attention for its conservation in this region.

## Acknowledgments

The authors wish to express sincere thanks to Dr. Abhishek Bhattacharjee, Central National Herbarium Botanical Survey of India, A.J.C.B. Indian Botanic Garden Howrah West Bengal, for identification of the species and valuable suggestions. They are also thankful to Prof. Leonid Averyanov, Komarov Botanical Institute of the Russian Academy of Science, St. Petersburg, for his kind support, and to the Range Officers and Divisional Forest Officers of Gorakhpur Forest Division for their permission and active cooperation during the forest survey and field observations.

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