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Research Article

New distributional record of *Eulophia graminea* Lindl. (Orchidaceae) in Natore district, Bangladesh

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Abstract: This communication reports an extended distribution of the very rare species *Eulophia graminea* Lindl. in Lalpur Upazila, Natore district, Bangladesh. *E. graminea* belongs to the family Orchidaceae and is a potential medicinal herb. This species can simply be distinguished by its roughly globose pseudobulbs, leafless at flowering; lip spurred; apices of sepals and petals spreading; lip margin white to pale purple; inflorescences generally are 70 to 100 cm, racemose. Details of taxonomic description, phenology, distribution, use, and photograph have been given below to facilitate its easy identification.

Keywords: Lalpur, medicinal orchid, rare species

Introduction

Orchidaceae belongs to the class Liliopsida (Monocotyledons), is the most advanced and one of the largest families of flowering plants. It comprises nearly 800 genera and about 29,000 species. This family is distributed all over the world, except in extreme cold and desert regions (Wang et al., 2025). The genus *Eulophia* R.Br. consists of 230 species and is also pantropic (Chase et al., 2021). In Bangladesh, the family Orchidaceae is represented by 72 genera and 188 species. Genus *Eulophia* R. Br. ex Lindl. is one of them and represented by 9 species (Rahman et al., 2017). Among the species, *Eulophia graminea* is terrestrial in nature and indigenous to tropical and sub-tropical Asia (Pemberton et al., 2008). The state of occurrence of this species is very rare in Bangladesh, while it has been categorized as an invasive species in some countries (Giri et al., 2022). During the visit to the local vegetation of Islampur of Changdhupoil union (The smallest local government units) under Lalpur upazila in Natore district, 1st author came across a species of *Eulophia* with conspicuous green pseudobulbs at his homestead bamboo thicket, which was unknown to us. After critical examination and survey of relevant literature, it was subsequently identified as *Eulophia graminea* Lindl. It has

medicinal properties and is utilized as traditional and folk medicines to cure different ailments such as ear pain, cough, and paralysis (Bhowmik and Rahman, 2023). From Bangladesh, *E. graminea* was reported by J. D Hooker (1890) from Chattogram. D. Prain (1903) reported it from Central Bengal, East Bengal, and Chattogram. Ahmed et al., (2009) described its distribution in Chattogram in the *Encyclopedia of Flora and Fauna of Bangladesh*; Rahman et al., (2017) reported from Chattogram, Cox's Bazar, and Rangamati; Uddin and Hassan, (2018) reported it from Khagrachari, and Bhowmik and Rahman, (2023) reported from Bandarban. However, scrutiny of the literature indicates that this orchid species was reported from South-East (Chattogram region) of this country only but not yet reported from any district of Northern region of Bangladesh (Rahman, 2013; Rahman et al., 2017; Rahman et al., 2019; Khan et al., 2021; Hasan, 2023; Hasan and Uddin, 2024; Islam and Khan, 2024; Hasan et al., 2025.). Hence, the present article extends the distribution of *E. graminea* to a new location at Changdhupoil union under Lalpur upazila in Natore district, Bangladesh.

Materials and methods

The specimens, along with pseudobulbs, were collected from a bamboo thicket located at Islampur village of Changdhupoil union in between 24°14'22"N and 88°59'54"E under Lalpur upazila, Natore, in the flowering and fruiting stage. Complete study of the fresh specimens for identification was done at the Department of Botany, Rajshahi Government City College by consulting Hooker (1894); Prain (1903); Ahmed et al., (2009); Uddin and Hassan (2018), and relevant literature. Herbarium sheet was prepared according to the traditional techniques and housed at the Bangladesh National Herbarium (DACB; Figure 2).

Taxonomic description

Eulophia graminea Lindl., Gen. Sp. Orchid. Pl.: 182.1833); Hook.f., Fl. Brit. India 6:2.1890; Prain, Beng. Pl. 2:1903; Heinig, Pl. list Chitt. Coll. & HT.:69.1925; Ahmed *et al*. (ed.), Encycl. Fl. Fauna Bangladesh 12:68. 2008; Uddin and Hassan (ed.) Vascular Fl. Chitt. HT.:1: 802. 2018; *Eulophia decipiens* Kurz, J. Asiat. Soc. Bengal, Pt. 2. Nat. hist. 45(2):155.1876; *Eulophia sinensis* Miq., J. Bot. Neerl. 1:91. 1861; King & Pantl. Ann. Roy. Bot. Gard. Calcutta 8: 176. Pl. 238. 1898; Gamble, Fl. Pres. Madras 1435 (1003). 1928; Abraham & Vatsala, Introd. Orchids 296. 1981; Vajravelu, Fl. Palghat Dist. 478. 1990; Sivarajan & Mathew, Fl. Nilambur 686. 1997 (Figure 1; Figure 3).

Terrestrial, pseudo-bulbous herb up to 80 cm tall. Pseudobulbs borne above ground or partially underground, erect, ovoid, conical, 2-5.6 × 1-3.5 cm, several-noded, producing erect, aerial stems. Stems become leafless at the time of flowering. The leafy stems bear about 3-4 leaves. Leaves linear, acute, 10-30 × 0.5-1 cm. Inflorescence 25-70 cm tall, slender, erect, branched or unbranched, racemose, bearing many 6-10 flowers that are about 1.5-2 cm apart from each other on a glaucous, grey rachis; floral bracts linear-lanceolate, apex acuminate, 4-6 × 1-2 mm, shorter than ovary. Flowers pedicellate, 2 cm across; sepals and petals olive-green with dark green venation; lip white with purplish red lamellae. Dorsal sepal narrowly oblong to oblanceolate, 10-15 × 1.5-3 mm, apex acuminate; lateral sepals similar to dorsal sepal, usually slightly longer. Petals curved outward above middle, narrowly

ovate, 9-10 × 2-3 mm, apex shortly acuminate; lip obovate-oblong, 8-10 × 3-5 mm, spurred, 3-lobed at or below middle; lateral lobes small; mid-lobe orbicular, apex with an acute mucro; spur usually curving forward, cylindric or slightly clavate, 3-3.5 mm, apex acute to obtuse. Column straight, slender, 4-5 mm long. Ovary 8-15 mm long. Capsules pendulous, ellipsoid 15-25 × 5-10 mm.

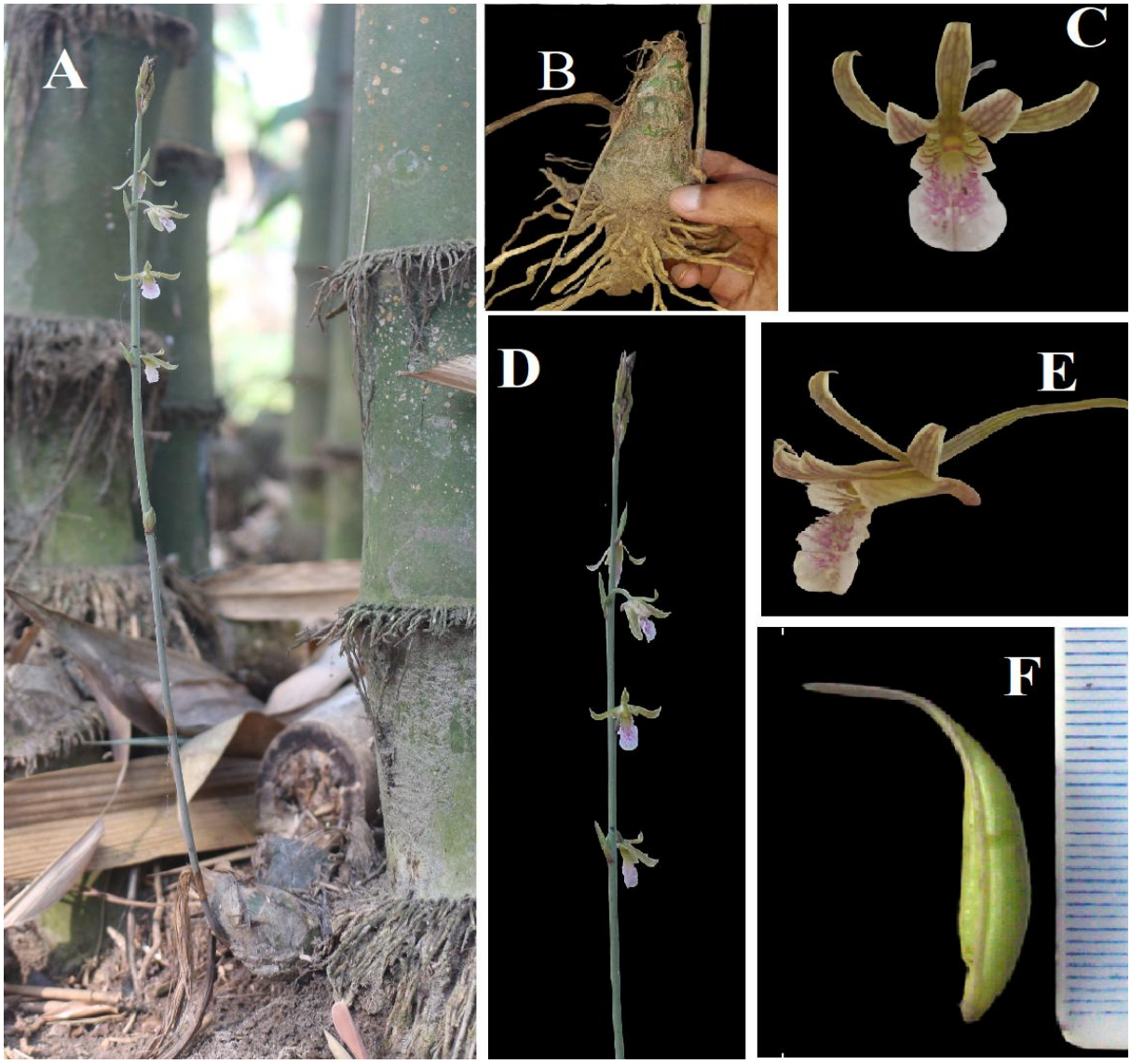

Figure 1: Morphology of collected specimen; A. Habitat of *Eulophia graminea*, B. Pseudobulb with an inflorescence, C. Front view of flower, D. Inflorescence, E. Side view of flower, and F. Fruit

Flowering & fruiting: March - April

Chromosome number: 2n= 54 (Mehra, 1983)

Common name: Chinese Crown Orchid or Grass-Leaved Eulophia.

Bangla name: Dhani paranda, Akgulta

Habitat: Terrestrial, Bamboo thickets

Potential value: Medicinal (Bhowmik and Rahman, 2023).



Figure 2: Herbarium sheet of *Eulophia graminea.*

Occurrence in Bangladesh: Chittagong, Cox's Bazar, Bandarban, Khagrachari, and Rangamati.

Worldwide distribution: Tropical and sub-tropical Asia.

Species examined: Natore, Lalpur, Changdhupoil, Islampur, 10 April 2025, Alam et al., Jafor-08 (DACB-135378), and 12 April 2025, Alam et al., Jafor-10. (Dept. of Botany, Rajshahi Govt. College, Rajshahi).

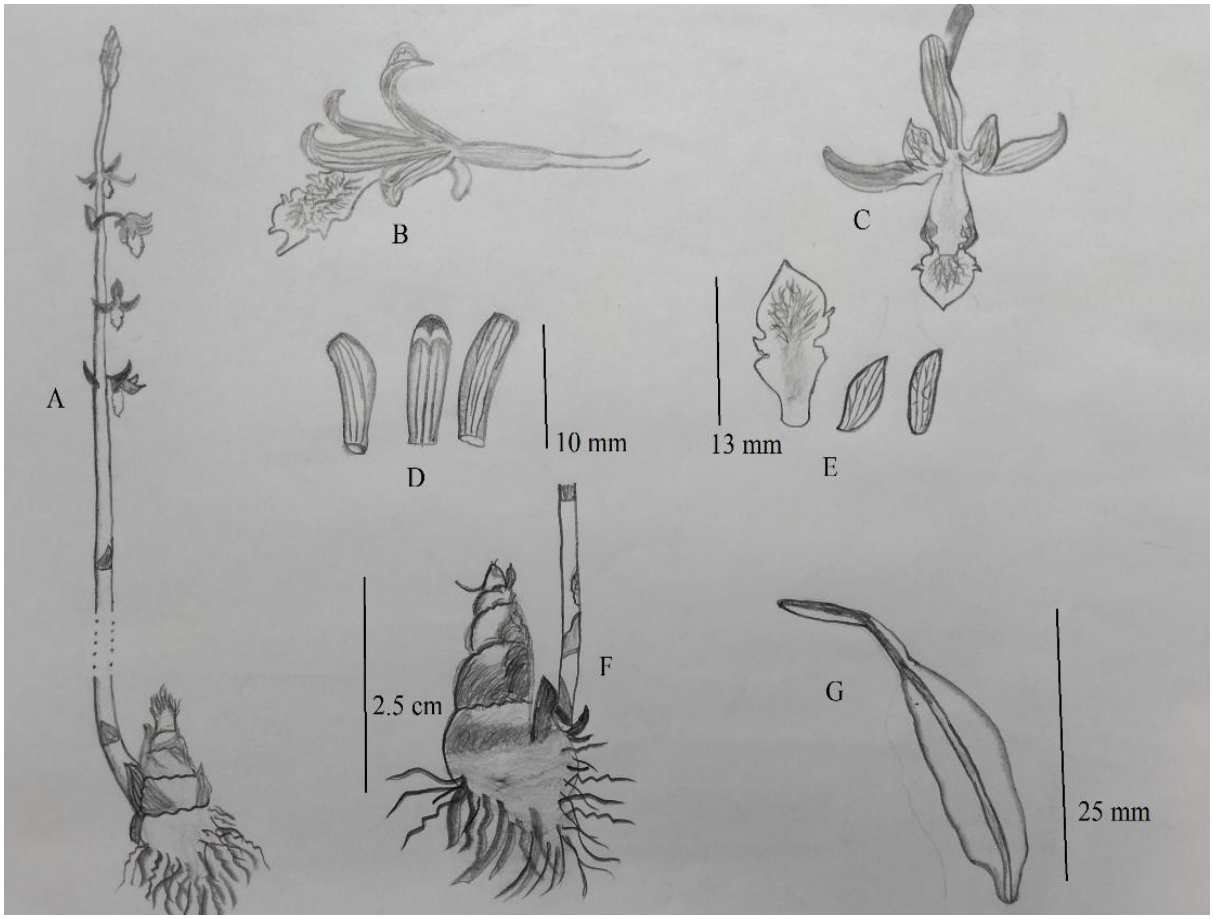

Figure 3: Illustration of *Eulophia graminea* A. Entire plant; B. Side view of flower; C. Front view of flower; D. Sepals; E. Petals; F. Pseudobulb and G. Fruit. (Drawn by Mst. Shamima Aktar)

Note: *Eulophia graminea* can be simply distinguished by its roughly globose pseudobulb, leafless at flowering; lip spurred; apices of sepals and petals spreading; lip margin white to pale purple; inflorescences generally are 70 -100 cm, racemose.

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