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Extended Distribution of *Habenaria gibsonii* var. *foetida* Blatt. & McCann (Orchidaceae) from Southern West Bengal, India

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The genus *Habenaria* Willd. has c. 891 accepted species scattered in tropical and subtropical to South Siberia [1]. In India, it is represented by c. 83 species [2]. Seventeen species were recorded from the then undivided Bengal [3]. Choudhury et al. in 2011 reported about 12 species from West Bengal [4]. Although in recent past, Kumar *et al.* in 2013 have recorded 9 species from the state [5]. Bankura is a westward district of West Bengal state. The district is located between 22°38' and 22°38' N latitude and between 86°36' and 87°46' E longitude. It occupies an area of 6882 sq.km. During floristic explorations in Bankura district, the authors noticed a few individuals of *Habenaria* Willd. species in the forest of Susunia hill in association with other elements of ground flora. On critical study, it was identified as *Habenaria gibsonii* var. *foetida* Blatt. & McCann.

At the time of floristic study in different areas of Bankura district a few specimens of *Habenaria* Willd. were collected from the forest floor of Susunia hill at an elevation 330 m. After laboratory examination and consultation of the pertinent literature [2, 6, 7] the plant species was identified as *Habenaria gibsonii* var. *foetida* Blatt. & McCann. The voucher specimen has been housed in the herbarium of Department of Botany, Visva-Bharati, Santiniketan, West Bengal.

A brief description along with a photo-plate of dissected floral parts of the species has been presented here for easy identification of it.

Habenaria gibsonii var. *foetida* Blatt. & McCann, J. Bombay Nat. Hist. Soc. 36: 16 (1932). (Fig 1).

Habenaria foliosa var. *foetida* (Blatt. & McCann) Bennet, J. Econ. Taxon. Bot. 5: 452 (1984).

Habenaria thailandica Seidenf., Dansk Bot. Ark. 31: 78 (1977).

Terrestrial, annual, tuberous herb, 43-50 cm high. Leaves alternate, ovate to oblong-lanceolate, 3.6-9.4 × 1.1-3.5 cm, acute apex, entire wavy at margins; leaf base sheathing. Flowers many, laxly arranged in raceme, white with a green tinge, with

a foetid smell during the day time, very shortly pedicellate. Sepals' unequal; dorsal sepal ovate-elliptic, concave, ca. 7 × 7.5 mm, greenish, hooded over the column; lateral sepal obliquely ovate-lanceolate, ca. 9 × 3.1-3.6 mm, white, tinged with green, drooping, keeled; reflexed at apex, rolled at margins. Petals 2-partite; upper pair ca. 10 × 1 mm, green, sickle-shaped, bending upwards; the lower pair ca. 9.5 × 0.5 mm, linear, white with green tips. Lip tripartite at the base with narrowly linear-filiform, subequal and wide-spreading segments; mid segment 13 – 15 × ca. 1 mm, slightly curved at obtuse apex, narrowly linear; lateral segments ca. 12.5 × 0.75 mm, spreading and narrower with pointed tips. Spur ca. 17 mm long, clavate at the base. Stigmatic processes diverging sideward, oblong, with numerous whitish appendages. Rostellum shorter than anther cells, green, 3-lobed; mid-lobe broadly triangular; lateral lobes narrow, slightly bent upwards, lying immediately below anther-cells. Anther cells diverging below, separated from each other; connective green. Pollinia obliquely obovate, 1.5 × 7.5 - 1 mm, yellow; caudicle filiform, ca. 3mm long, hyaline, curved and dilated at apex; viscidium reniform, brownish. Ovary twisted, green, curved, ribbed, 17 – 20 × ca. 2 mm.

Flowering: Late July.

Field note: The flowers release a foetid smell.

Specimen examined: West Bengal: Bankura district: Susunia hill, 23.39670°N, 86.98092°E, 330m, 29.vii.2014, coll. S. Karmakar 155.

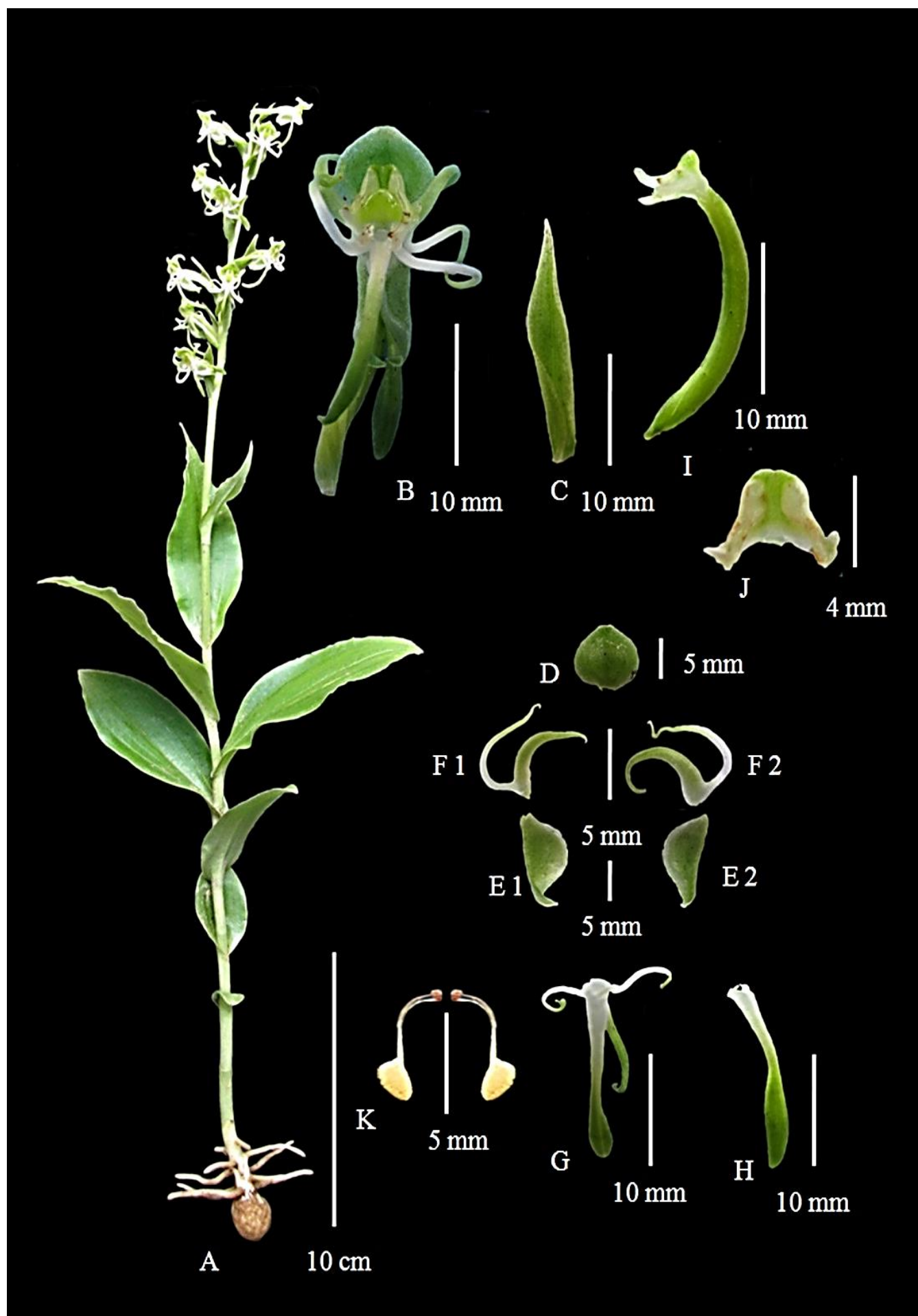
Habitat and ecology: It grow in the tropical dry deciduous *Sal* (*Shorea robusta* Gaertn.) forest of Susunia hill in association with *Croton persimilis* Müll.Arg., *Curculigo orchoides* Gaertn., *Peristylus constrictus* (Lindl.) Lindl., *Hemidesmus indicus* (L.) R.Br., *Lagerstroemia parviflora* Roxb., etc.

Distribution: Indian subcontinent: India: East Himalaya (Darjeeling District, West Bengal), Jharkhand [8], Karnataka [9], Madhya Pradesh [10], Maharashtra [11-12], Odisha [2,6] Rajasthan [13] West Himalaya [1]; Indo-China Region: Cambodia, Laos, Thailand and Vietnam [7].

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Fig 1 *Habenaria gibsonii* var. *foetida* Blatt. & McCann

A. Habit; B. Flower; C. Bract; D. Dorsal sepal; E1 & E2. Lateral sepal; F1 & F2. Petal; G. Lip with spur; H. Spur; I. Column with ovary; J. Anther cells; K. Pollinia

In India, *Habenaria gibsonii* var. *foetida* Blatt. & McCann is distributed in different states like Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, and West Bengal. In West Bengal, this species has been first reported from Darjeeling district at an altitude of 1800 – 2600 ft [14]. Darjeeling district is a northernmost district of West Bengal and falls under a cold temperate type of climate. Present authors have searched the herbarium specimens of *Habenaria* Willd. housed in CAL, but could not find any specimens of this species from West Bengal. In the present study, this species has been reported from Bankura district which is located to a different climatic zone, i.e., Southern tropical region of West Bengal. Therefore, the study indicates the new report on distribution of the taxon from Southern West Bengal and also highlights the extended distribution of *Habenaria gibsonii* var. *foetida* Blatt. & McCann from the temperate northern part (Darjeeling district) to the tropical southern belt (Bankura district) of the state. It has also been noticed that there is no report of its distribution in the temperate climatic conditions from the Indian states other than West Bengal. Although, recorded distribution of this taxon of *Habenaria* genus clearly elucidates its occurrence from tropical to temperate regions in the countries such as Cambodia, Laos, Thailand and Vietnam.

Conservation status

Habenaria gibsonii var. *foetida* Blatt. & McCann was earlier considered as an endemic to Western Ghats of India [9]. Now the plant species has been found in different countries like Cambodia, Laos, Thailand, and Vietnam [7] which rejects the endemic status of the taxon to India.

The conservation status of this plant has been determined only from the Western Ghats of India and placed in the critically endangered (CR) category [9]. But there are no reports available regarding its conservation from the other states of India and from the countries other than India also. Furthermore, *Habenaria gibsonii* var. *foetida* Blatt. & McCann has been

included under Appendix II of CITES (Convention on International Trade in Endangered Species of wild fauna and flora). The Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India has incorporated it in the negative list of exports [15]. Considering all the facts it is understood that this orchid species needs a proper attention in this regard to assess its conservation category and to frame the strategies for its conservation.

SUMMARY

Habenaria gibsonii var. *foetida* Blatt. & McCann (Orchidaceae) is reported here from a hilly tropical forest of southern West Bengal (Susunia Hill, Bankura district). Although it was earlier recorded only from Darjeeling, the northernmost district of the state, falls in the temperate belt. So, it is the first report of this taxon in southern region of West Bengal and the report highlights the extended occurrence of this species from northern temperate belt to the southern tropical of the state. Present article embodies the additional distributional report of the species along with its concise description and photographs of different floral parts for its easy identification.

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