



RESEARCH ARTICLE

Cheirostylis Blume (Orchidaceae): a new generic addition to the orchid flora of Manipur state, Northeast India

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Abstract

The genus *Cheirostylis*, belonging to the Orchidaceae family, is represented by numerous species distributed worldwide. In India, the genus is represented by 10 species, with two species reported from Western Ghats and Eastern Ghats, and the remaining eight species from the Northwestern Himalayas and Northeastern regions. This study reports the occurrence of *Cheirostylis griffithii* Lindl. in Manipur, Northeast India, which is a new generic record for the state. The taxon was discovered in Pudunamei village and identified based on herbarium specimens and available literature. Detailed morphological descriptions and measurements were made using living plant specimens. The taxonomic treatment includes information on plant characteristics, distribution, and a comprehensive list of Indian *Cheirostylis* species. The species is a terrestrial orchid with fleshy stems, lanceolate bracts, pubescent flowers, connate sepals forming a tube, and a 3-lobed lip with deeply lacinate lobes. The occurrence of *Cheirostylis* in Manipur expands its distributional range within India. The study contributes to the documentation of the orchid flora of Manipur, which encompasses a diverse range of orchid taxa.

Keywords

Cheirostylis griffithii; generic record; extended distribution; Manipur

Introduction

Cheirostylis Blume, belonging to the flowering plants of the family Orchidaceae, tribe Cranichideae, and sub-tribe Goodyerinae, is represented by 60 species worldwide (1, 2). It is distributed mostly in tropical Africa through Southeast Asia, Japan, Indonesia, and Pacific Islands to Australia (3–5). *Cheirostylis* are characterized by a monoliform to terete fleshy stem, connate sepals forming a sapeline tube, a hypochile of the lip with a saccate base, a column with two deeply bifid stledia, and rostellum arms (3, 4). In India, the genus *Cheirostylis* is represented by 10 species (6, 7) namely: *Cheirostylis flabellata* Wight, *C. Griffithii* Lindl., *C. gunnarii* A.N.Rao, *C. Monoliformis* (Griff.) Seidenf., *C. Parvifolia* Lindl., *C. Pusilla* Lindl., *C. sessanica* A.N.Rao, *C. tabiyahanensis* (Hayata) N.Pearce & P.J.Cribb, *C. tippica* A.N.Rao and *C. yunnanensis* Rolfe. Out of the 10 species, 2 species namely *C. flabellata* and *C. parvifolia* have been reported from the Western Ghats (8–10), Eastern Ghats (11), while the other 8 species are reported from the Northwestern Himalayas and Northeast region of India (4, 6, 7, 11–13). Three species, namely *C. gunnarii*, *C. sessanica* and *C. tippica*, are endemic to India and are reported from Arunachal Pradesh (7).

In Manipur, the orchid flora is represented by 389 taxa (including 5 varieties) belonging to 90 genera (14). The orchid flora of the state has been explored by several plant collectors and botanists (15–23). The orchid flora of Manipur state is well documented, as many orchid lovers and taxonomists have explored it extensively. However, orchid literature in the Mao areas of Senapati district, Manipur, is limited, with only fragmentary works available (24–26). During a field visit at Pudunamei village, Mao Senapati district, Manipur, the author encountered an interesting species of terrestrial orchid. Terrestrial orchid specimens were collected, and upon further investigation and consultation with the herbarium and available literature, the collected species has been identified as *Cheirostylis griffithii* Lindl., a previously unknown species in Manipur. The occurrence of this taxon is a new generic record for the state and has an extended distributional range to Manipur, Northeast India. The total number of Indian *Cheirostylis* species and their distribution are listed in Table 1.

Materials and Methods

The terrestrial orchid plants were collected, pressed, and prepared as herbarium specimens following conventional herbarium techniques (27). The herbarium specimen was deposited at the Herbarium, Botany Department of D.M. College of Science, Imphal, and at the Herbarium Botanical Survey of India, ERC, Shillong (ASSAM), for future reference. Photos of the live plants were captured using Sony SLT-A58 and Canon SX120 digital cameras, respectively. All illustrations, morphological descriptions, and measurements were based on living plant specimens.

Taxonomic Treatment

***Cheirostylis griffithii* Lindl.**, J. proc. Linn. Soc., Bot. 1: 188. 1857. (Fig. 1 & Fig. 2)

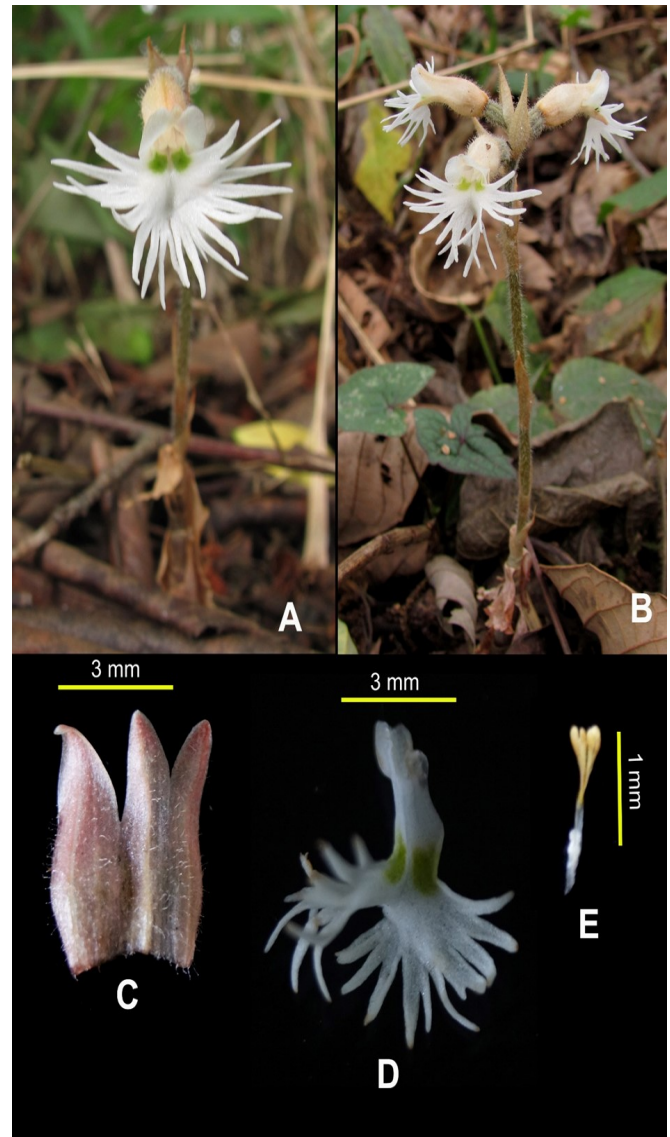


Fig. 1. *Cheirostylis griffithii* Lindl. A. Plant habit with a single flower; B. Plant habit with three flowers; C. Sepal dorsal view; D. Labellum; E. Pollinia.

Table 1. List of Indian *Cheirostylis* species and their distribution (7).

S. No.	Name	Distribution
1	<i>Cheirostylis flabellata</i> Wight	Karnataka, Kerala, Maharashtra & Tamil Nadu.
2	<i>C. griffithii</i> Lindl.	Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Sikkim, Uttarakhand, West Bengal, Manipur [present report].
3	<i>C. gunnarii</i> A.N.Rao	Arunachal Pradesh (Endemic to India).
4	<i>C. monoliformis</i> (Griff.) Seidenf.	Arunachal Pradesh, Sikkim & West Bengal.
5	<i>C. parvifolia</i> Lindl.	Kerala, Maharashtra, Tamil Nadu & Odisha.
6	<i>C. pusilla</i> Lindl.	Arunachal Pradesh, Meghalaya & Nagaland.
7	<i>C. sessanica</i> A.N.Rao	Arunachal Pradesh (Endemic to India).
8	<i>C. tabiyahanensis</i> (Hayata) N.Pearce & P.J.Cribb	Nagaland.
9	<i>C. tippica</i> A.N.Rao	Arunachal Pradesh (Endemic to India).
10	<i>C. yunnanensis</i> Rolfe	Arunachal Pradesh, Sikkim & West Bengal.

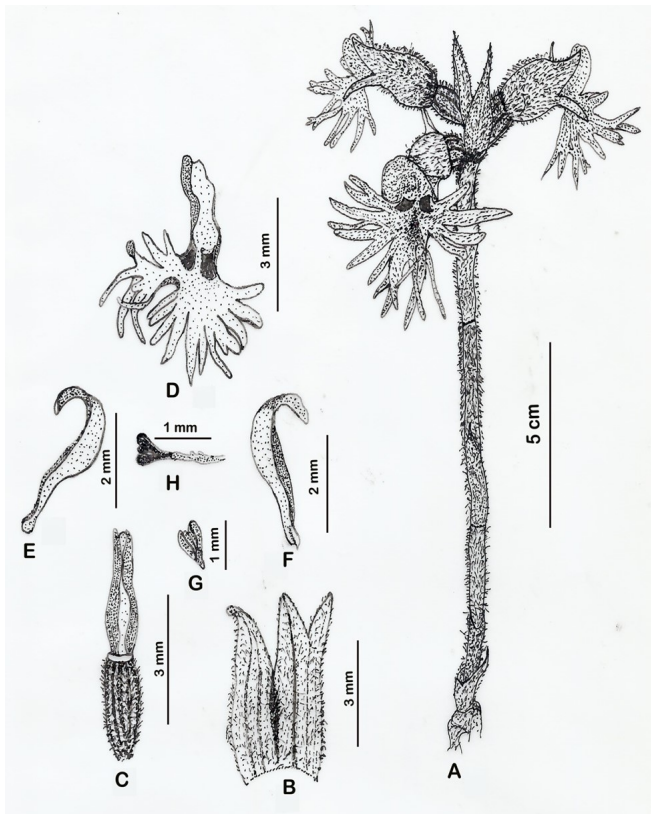


Fig. 2. *Cheirostylis griffithii* Lindl. A. Habit; B. Sepal dorsal view; C. Column with ovary; D. Labellum; E-F. Petals; G. Anther cap; H. Pollinia.

Plants 15–30 cm tall; rhizome creeping, terete to torose; roots hair like at the rhizome internode. Stem erect, fleshy, with withered leaves at anthesis. Inflorescence ca. 15 cm long, 2–3 sterile bracts, rachis 1–2 cm, with 1–3 flowers in terminal raceme, bracts lanceolate, 0.6–0.9 cm, flower whitish, large pubescent. Sepals 1–1.5 cm, lower portion connate in $\frac{1}{2}$ forming a tube, upper portion spreading, surface pubescent, apex acute. Petals are oblong, oblique, falcate, with obtuse to round apex. The lip or labellum is 3-lobed with deeply lacinate lobes having 9–11 divisions. The column measures 0.2–0.3 cm and has straight, linear stelia, rostellum arms, and an anther with two sectile pollinia. The pollinia are attached with a tegula that has viscidia at the distal end.

Flowering

February–March.

Fruit

Not seen.

Distribution

INDIA: (Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Sikkim, Uttarakhand, West Bengal, Manipur [present report]).

Specimen examined

India, Manipur, Pudunamei-Mao, 1650–1750 m, 25°31'77.40"N and 94°09'10.18"E, KE100005.

Ecology

The orchid plants were found growing in the deciduous forest at an altitude ranging between 1650–1750 m.

Discussion

The orchid flora of Manipur is well documented, with several researchers having studied the orchids of Manipur state. The most recent work, the “Updated Checklist of Orchid Flora of Manipur” carried out (14), documented 389 taxa belonging to 90 genera. They classified the orchid genera of Manipur into four subfamilies, thirteen tribes, and fourteen sub-tribes based on the classification of Orchidaceae (28). According to this classification, the genus *Cheirostylis* Blume falls under the sub-family Orchidoideae, tribe Cranichideae, and sub-tribe Goodyerinae. Within the sub-tribe Goodyerinae, six genera, namely *Anoectochilus* Blume, *Erythrodes* Blume, *Goodyera* R. Br., *Myrmechis* Blume, *Odontochilus* Blume and *Zeuxine* Lindl. were reported from Manipur state. The occurrence of the genus *Cheirostylis* Blume has not been reported by any workers from Manipur state so far. Therefore, the occurrence of a taxon *Cheirostylis* represents a new generic record for the state and extends its distributional range to Manipur.

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Compliance with ethical standards

Conflict of interest : Author does not have any conflict of interest to declare.

Ethical issues: None.

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