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Cheirostylis Blume is a genus of flowering plants belonging to the family Orchidaceae. It is distributed in tropical Africa, through Southeast Asia, Japan, Indonesia and the Pacific Islands to Australia represented by 50 species (Chen et al. 2009; Bhattacharjee 2013a; Pridgeon et al. 2003), 55 species (Gale et al. 2013), and 52 species (Govaerts et al. 2014). In India this genus is represented by nine species namely, *Cheirostylis flabellata* (A. Rich.) Wight, *C. griffithii* Lindl., *C. gunnarii* A.N. Rao, *C. moniliformis* (Griff.) Seidenf., *C. parvifolia* Lindl., *C. pusilla* Lindl., *C. sessanica* A.N. Rao, *C. tippica* A.N. Rao and *C. yunnanensis* Rolfe (Bhattacharjee 2010). The generic name is derived from the Greek word 'cheiros' (hand) and 'stylos' (column), referring to the hand like 'pillars' (stelidia) on the column; whereas the specific epithet is derived from the Latin word 'parvus' (little, puny) and '-folius' (-leaved), referring to the small sized foliage of the plant. It is one of the so-called jewel orchids (Belitsky & Bersenev 1999). This is a very distinct genus, characterized by its connate sepals to forming a sepaline tube, lip with a saccate base containing one to numerous papillae on either side and column with two deeply bifid stelidia.

Cheirostylis parvifolia Lindl., a member of the tribe Cranichideae and subtribe Goodyerinae was first

CHEIROSTYLIS BLUME (ORCHIDACEAE), A NEW GENERIC RECORD FOR THE EASTERN GHATS, INDIA

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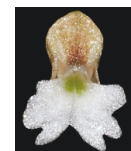
described by Lindley (1839), based on a single specimen collected by Loddiges from Sri Lanka. The species is highly variable with respect to its labellum where the margins of epichile lobules vary from nearly entire to 2–4 lacerate. So far the distribution of the species is severely fragmented and restricted to the Western Ghats and Sri Lanka (Bhattacharjee 2013). Bhattacharjee (2013b) assessed the species as Near Threatened (NT) according to IUCN Red List Categories and Criteria (IUCN 2012).

The floristic studies of southern Odisha was considered incomplete though it was sporadically



DATA DEFICIENT	LEAST CONCERN	NEAR THREATENED	VULNERABLE	ENDANGERED	CRITICALLY ENDANGERED	EXTINCT IN THE WILD	EXTINCT
DD	LC	NT	VU	EN	CR	EW	EX

Cheirostylis parvifolia



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approached by Gamble (1921), Haines (1921–25), Mooney (1950) and subsequent workers (Saxena & Brahmam 1996; Rout et al. 2008). During a regular survey, an interesting plant was collected from Mahendragiri Hills in the Paralakhemundi division of Gajapati District, part of the Eastern Ghats, Odisha. A critical analysis and scrutiny of the relevant literature revealed the species to be *Cheirostylis parvifolia* Lindl. The current discovery of this species from the Eastern Ghats shows its extended range of distribution from the Western Ghats and Sri Lanka to the Eastern Ghats.

Mahendragiri is the amalgamation of biodiversity representing species from northern and southern India, the Himalaya and the Nilgiris. With an annual rainfall of 1551.6mm the area is spread over an area of over 2,000km² bordering Andhra Pradesh. This majestic micro-environmental terrain is occupied with over 25 small and big hills among which, Mahendragiri (1601m), Singaraj (1516m), and Devagiri (1392m) are the highest peaks in the region forming a golden triangle symbolizing the area's immense ecological asset. The lush green tropical forests (semi-evergreen to moist and dry deciduous type) of Mahendragiri acts as a transitional zone between flora of southern India and the Himalaya making the region an ecological estuary of genetic diversity. The area provides livelihood to the Sauras, one of the 13 primitive tribal groups (PTG's) of Odisha (Padhy 1993; Panda & Tripathy 1993). The Mahendragiri hilly terrain is located in 84.9'30''–84.3'E & 18.52'–19.6'30''N in Paralakhemundi division of Gajapati District, Odisha. This area comes under the Deccan region of Hooker's (1904) nine botanical provinces of British India. Gamble & Fischer (1915–35), while recognizing five floristic divisions of the Madras Presidency, placed Mahendragiri in their Sal forest region. Orchidaceous flora of Odisha virtually remained unknown prior to the works of Mooney (1950) and Panigrahi et al. (1964) who enumerated 32 and 25 species respectively from the state. Later Misra (2004) published a book - 'Orchids of Orissa' out of his detailed exploration of orchids from 1968 to 2001. He reported 130 species of orchids under 48 genera from different parts of the state. Kapoor (1964), however, described only two species of orchids from this region namely, *Dendrobium bicameratum* Lindl. and *Eria bambusifolia* (Lindl.) Kuntze. Later Misra (1983, 1993) and Panda et al. (2010) documented 36 species of orchids from Mahendragiri.

Taxonomic enumeration

Cheirostylis parvifolia Lindl. in Edward's Bot. Reg. (Misc.) 19. 1839; Hook. f., Fl. Brit. India 6: 105. 1890; Karthik. et al., Fl. Ind. Enum. Monocot. 118. 1989; Puneekar in J. Econ. Taxon. Bot. 26(1): 105. 2002; Av. Bhattacharjee in Candollea 67: 32. 2012; Av. Bhattacharjee in IUCN/SSC OSG Orchid Cons. News 2: 4. 2013; Type: SRI LANKA "Ceylon": *Loddiges* s.n. [holo: K(K000718267), photo!]. *Cheirostylis seidenfadeniana* C.S. Kumar & F.N. Rasm. in Nordic J. Bot. 7: 409. 1987; Type: INDIA. Kerala: Ponmudi, Trivandrum Dist., 950m, 25.x.1983, C. Sathish Kumar CU 36960 (holo-: TBGT; iso: C, CALI). (Image 1; Fig. 1).

Terrestrial herbs, 7–18 cm tall, rhizomatous. Rhizome 2–7 cm long, 4–8 mm thick, pale brownish-green, creeping, sometimes slightly moniliform or with thickened internodes, rooting from internodes. Roots minute, arranged in tufts, fibrous. Stem 2–7 cm long, 4–8 mm thick, pale brownish-green, unbranched, glabrous. Leaves 2–8, 1–4 cm long, upper ones smaller, withered during flowering, glabrous; petioles 0.3–1 mm long, sheathing at base; lamina 0.8–3.5 × 0.3–2.5 cm, ovate to ovate-lanceolate, base obtuse to truncate, apex acute or acuminate, brownish-green to reddish-brown with pale yellow tinge, reticulate, 3 to 5-veined. Inflorescence terminal raceme, sub-densely 2 - many flowered, sometimes secund, glandular, pubescent; peduncle 0.5–10 cm long, pale green, with 2–3 sheathing bracts; sheathing bracts 0.8–2.5 cm long, light pink, apex acuminate, pubescent, 1-veined; rachis 0.3–1 cm long, pale green. Floral bracts 5–8 × 1.8–2.5 mm, ovate, apex acuminate, light pink, sparsely pubescent, 1-veined. Flowers 0.7–1.3 cm long, resupinate. Sepals connate to form a sepaline tube, apex free, pale green to greenish-white with a pinkish tinge at apex, pale pink during maturity, glabrous to laxly glandular pubescent outside near the base, 1-veined; dorsal sepal 2–2.8 × 0.9–1.3 mm, broadly ovate to ovate-lanceolate, apex sub-acuminate to obtuse; lateral sepals 2–2.8 × 0.7–1 mm, lanceolate, apex sub-acute to obtuse. Petals 2.2–3 × 0.5–1 mm (widest portion), obliquely oblong-spathulate to narrowly obovate-falcate, apex obtuse, white, membranous, glabrous, 1-veined. Labellum 3–4 mm long, white, with two pale green spots near the base of epichile; hypochile 0.4–0.6 × 0.5–0.7 mm, saccate, with 2–4 papillose calli inside on each side; mesochile 0.7–1 × 0.5–0.7 mm, linear, lateral margins folded adaxially; epichile 1–1.5 × 1.3–2 mm, semicircular, two lobed, lobules more or less entire to irregularly 2–4 dentate, with minute hairs near the base. Column c. 2mm long; rostellum c. 0.9mm long, deeply bifid, arms

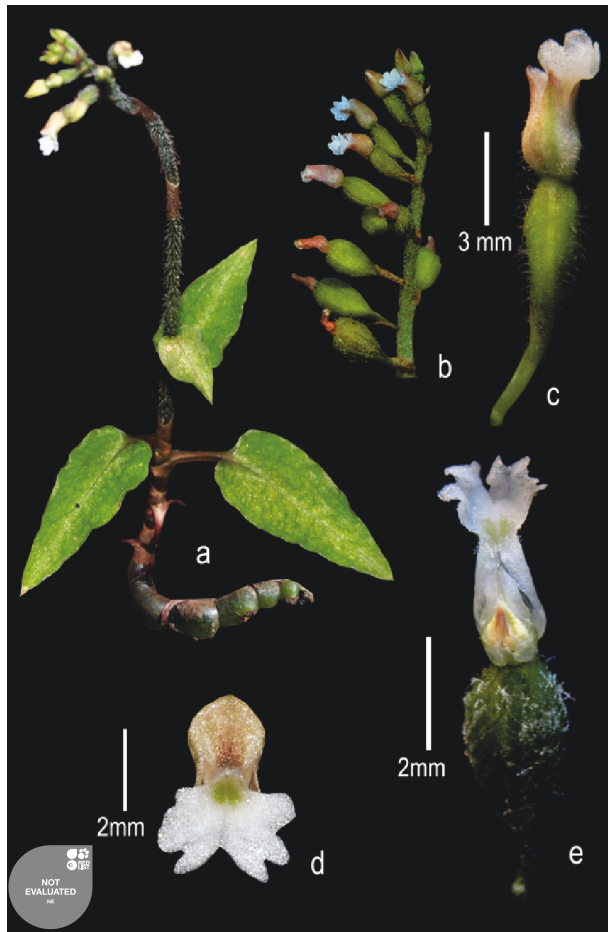


Image 1. *Cheirostylis parvifolia* Lindl.

a - habit; b - rachis with flowers; c. flower (side view); d - flower (front view); e - flower exposing lip and anther (sepals & petals removed).
Photo credit: a,b,d - P.K. Dash; c,e - A. Bhattacharjee

subulate, apex acute; stylidia 2, c. 0.8mm long, as long as or sometimes slightly shorter than the rostellar arms, thick, apex sub-acute. Anthercap c. 2.5×1.5 mm, ovate, two loculed, dull yellowish-white with reddish tinge. Pollinarium c. 1.7mm long; pollinia 2, c. 1mm long, ovate-oblong to pyriform, yellowish-white; caudicles reduced, yellowish-white; tegula c. 0.8mm long, semi-transparent with yellowish tinge at pollinial end, linear-oblong, with viscidium at distal part; viscidium c. 0.2mm long, white, oblong. Stigma lobes 2, separated. Ovary including pedicel 0.5–2.1 cm long, 1.5–2.5 mm thick, obconical to cylindrical-fusiform, pale green, twisted, glandular pubescent.

Specimens examined: Kerala: Idukki District: Peermedu, 1219m, 09.xii.1970, Sivadasan 557 (CALI!); Peruvanthanum, 500m, 28.xi.1996, Mohanan & Ravi 24772 (TBGT); Thiruvananthapuram District: Koviltherimala, Agasthyamala, 900m, 23.xii.1987, Mohanan 9220 (TBGT); Ponmudi, 28.x.1993,

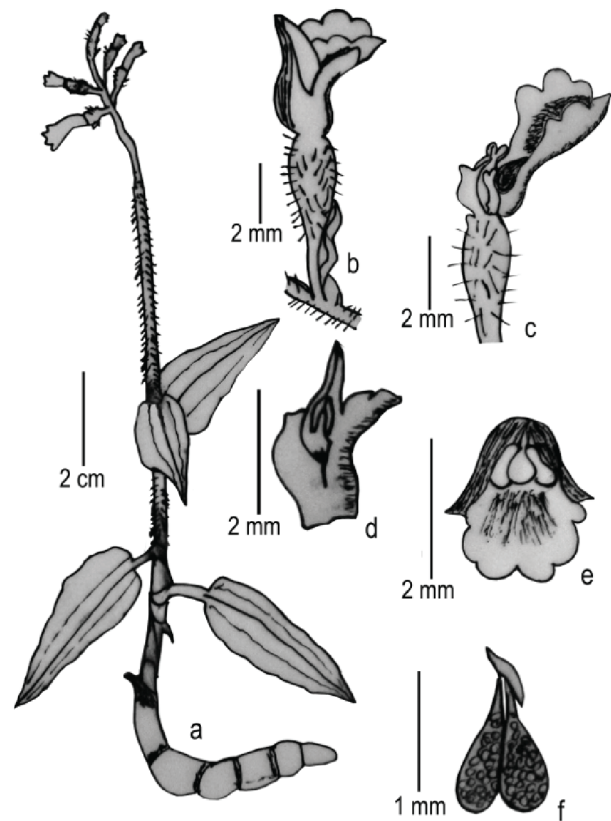


Plate 2. *Cheirostylis parvifolia* Lindl.

a - habit; b - flower (side view); c - flower exposing lip and anther (sepals & petals removed); d - column (side view); e - flower (front view); f - pollinarium.

Gangaprasad 18437 (TBGT!); Ponmudi, 950m, 25.x.1983, C. Sathish Kumar CU 36960 (TBGT); Vallakkadavu, 800m, 03.xii.1993, Henry 12722 (CALI); Pallode, TBGRI campus, November 2007, Sathish Kumar s.n. (TBGT, spirit); Pallode, TBGRI campus, 15.xi.2007, A. Bhattacharjee 38142A, 38142B (CAL); Waynad District: Lakkidi, 900m, 18.xi.1985, Naseem 5632 (CALI). Odisha: Gajapati District, Mahendragiri Hills, 07.xii.13, 1000m, Prasad RPRC9959/2014 (Regional Plant Resource Centre, Bhubaneswar) (Image 2).

Flowering & Fruiting: August–January.

Habitat and ecology: The species was found growing under the shades of trees on humus and also on wet rocks in shades, near the streams and on fallen moist tree trunks in moist evergreen to semi-evergreen forests between 700–1000 m of elevation.

Distribution: India: Odisha (present report), Kerala, Maharashtra (Punekar 2002); Sri Lanka.



Image 2. Herbarium of *Cheirostylis parvifolia*

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