

FOUR NEW ADDITIONS TO THE ORCHID FLORA OF MANIPUR, INDIA

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Abstract

This paper deals with 4 new records of orchid species i.e., *Cymbidium sinense* (Jackson ex Andrews) Willdenow, *Liparis elliptica* Wight, *Oberonia teres* Kerr and *Thelasis longifolia* Hook. f. to Manipur. A brief description, phenology, short note on the ecology, and distribution for each species is provided.

Introduction

MANIPUR, ONE of the biodiversity rich states of NorthEast India is located between 23° 68' N - 25° 68' N and 93° 03' E - 94° 78' E spreading over an area of about 22,327 km². The state is fortified on all sides by lofty mountains, the highest being Mount Tenupi of Iso which is 2999 m above the mean sea level (msl). During the field explorations in various districts of Manipur, a team of Scientists from the Orchid Research and Development Centre, Hengbung could collect some interesting orchid species. A critical study of these species based on the literature (Chen *et al.*, 2009; Chauhan, 2001; Deb, 1996; Ghatak and Devi, 1986; Hooker, 1890; Hynniewata *et al.*, 2000; Katak, 1986; Lucksom, 2007; Misra, 2007; Mukerjee, 1953; Pradhan, 1979; Sathish Kumar and Suresh Kumar, 2005; Shukla and Baishya, 1979) revealed that they are *Cymbidium sinense* (Jackson ex Andrews) Willdenow, *Liparis elliptica* Wight, *Oberonia teres* Kerr and *Thelasis longifolia* Hook. f. which are not recorded so far from Manipur. Hence, they are reported for the first time in the present paper as new additions to the state. Following is the enumeration of the species in alphabetical order with brief description and illustration. All the specimens were collected and deposited in the herbarium of Orchid Research and Development Centre, Hengbung, Manipur.

Species Description

Cymbidium sinense (Jackson ex Andrews) Willdenow, Sp. Pl. 4: 111. 1805. Fig. 1.

Epidendrum sinense Jackson ex Andrews, Bot. Repos. 3: ad t. 216. 1802.

Cymbidium sinense f. *albojucundissimum* (Hayata) Fukuy., Trans. Nat. Hist. Soc. Formosa 22: 415. 1932.

Cymbidium sinense var. *albojucundissimum* (Hayata) Masam., Trop. Hort. 3: 31. 1933.

Cymbidium sinense var. *album* T.C. Yen, Icon. Cymbid. Amoy.: F(a) 1. 1964.

Cymbidium sinense f. *aureomarginatum* T.C. Yen, Icon. Cymbid. Amoy.: E(c) 1. 1964.

Cymbidium sinense var. *bellum* T.C. Yen, Icon. Cymbid. Amoy.: E(a) 1. 1964.

Cymbidium sinense var. *haematodes* (Lindl.) Z.J. Liu and S.C. Chen, Gen. Cymbidium China: 172. 2006.

Cymbidium sinense f. *margicoloratum* (Hayata) Fukuy., Short Fl. Formosa: 287. 1936.

Cymbidium sinense var. *margicoloratum* Hayata, Icon. Pl. Formosan. 6: 82. 1916.

Cymbidium sinense f. *pallidiflorum* (S.S. Ying) S.S. Ying, Mem. Coll. Agric. Natl. Taiwan Univ. 30: 45. 1990.

Cymbidium sinense var. *pallidiflorum* S.S. Ying, Quart. J. Chin. Forest. 20 (2): 54. 1987.

Cymbidium sinense f. *taiwanianum* (S.S. Ying) S.S. Ying, Mem. Coll. Agric. Natl. Taiwan Univ. 30: 45. 1990.

Cymbidium sinense var. *taiwanianum* S.S. Ying, Quart. J. Chin. Forest. 20(2): 54. 1987.

Cymbidium sinense f. *viridiflorum* T.C. Yen, Icon. Cymbid. Amoy.: F(b) 1. 1964.

Plants terrestrial. *Pseudobulbs* 3-6 × 1.5-2.5 cm, ovoid, enclosed in leaf base; *Leaves* 3-7, 40-120 × 1.5-2.5 cm, oblong-linear, acute, dark green, thinly leathery; *Inflorescence* 30-80 cm long, erect, arising from the base of the pseudobulb; *Peduncle* 20-40 cm

long, with 2 lanceolate-triangular, acute sterile bracts; *Rachis* 6-8 flowers; *Floral bract* 8-10 × 2-3 mm, oblong-triangular, acute, green; *Ovary* pedicellate 1.8-2.2 cm long, curved; *Flower* 4-5 cm across, widely opening, light greenish yellow with maroon linings; *Sepals* sub equal, light greenish yellow with maroon linings, lanceolate-oblong, acute; *Dorsal Sepal* 2-2.4 × 0.8-1 cm; *Lateral Sepals* 2.2-2.6 × 0.7-0.9 cm. *Petals* 1.9-2.4 × 0.6-0.8 cm, lanceolate-oblong, acute. *Lip* 1.5-1.8 × 1.2-1.4 cm, ovate-oblong, obscurely 3 lobed; *Lateral lobes* erect, minutely clasping column, margins entire; *Mid lobe* 7-9 × 5-6 mm, recurved, ovate-round, margin undulate; disk minutely pubescent, with 2 lamellae extending from the base to the centre, apex of lamellae forming the short tube; *Column* 1-1.3 cm long, slightly arcuate; *Anther cap* 2.5-3 × 1-2.5 mm, ellipsoid, minutely papillose. *Pollinia* 4, in two pairs, ca. 1 mm long, broadly ovoid.

Flowering

July-August.

Locality

Hengbung (under cultivation at ORDC Orchidarium).

Ecology

Found growing in the shaded areas under the pine forest.

Distribution

India (Manipur, Meghalaya), China, Myanmar, Thailand.

Liparis elliptica Wight, Icon. Pl. Ind. Orient. 5: t. 1735. 1851. Fig. 2.

Liparis wightii Rchb. f. in Walpers, Ann. Bot. Syst. 6: 218. 1861.

Liparis hookeri Ridley in J. Linn. Soc., Bot. 22: 288. 1886.

Liparis concave Schltr. in Feddes Repert. Spec. Nov. Regni Veg. 9: 283. 1911.

Plant lithophytic. *Pseudobulbs* 1.5-2.0 × 0.7-1.2 cm, globose, clustered, flattened. *Leaves* 2, 8-12 × 1-2.8 cm, oblong to oblanceolate, acute, tapering towards petiolate base. *Inflorescence* 15-18 cm long, from the base of the pseudobulb; *Peduncle* 7-11 cm long, flat, winged, with many 5-6 mm long, lanceolate, acute-acuminate sterile bracts; *Rachis* laxly to subdensely many flowered, glabrous, winged; *Floral bracts* 3.5-4.5 × 9-1 mm, lanceolate, acute; *Pedicel* ovary 4-5 mm, light green, curved. *Flowers* 4-5 mm across, pale

green. *Sepals* sub-equal; *Dorsal Sepal* 4.2-4.4 × 1.5-2.0 mm, oblong, apiculate; *Lateral Sepals* 4.3-4.5 × 1.5-2.0 mm, oblong, subacute. *Petal* 4.3-4.5 × 0.4 mm, filiform-linear, acute, minutely falcate. *Lip* 4.3-4.5 × 2.4-2.6 mm, suborbicular, irregularly 3 lobed, lateral lobes undulate at margins; apical lobes ca. 1 mm long, linear-oblong, acute. *Column* 2.2-2.5 mm long, weakly curved. *Anther cap* ca. 0.6 × 0.4 mm, white with yellow at apex. *Pollinia* 4, ca. 4 mm long, transparent yellow.

Flowering

November-December.

Locality

Hengbung (1298m, Chowlu × 00428).

Ecology

Found commonly distributed in sub tropical forest.

Distribution

India (Arunachal Pradesh, Manipur, Meghalaya), China, Fiji, Java, Myanmar, Nepal, Sri Lanka, Thailand, Taiwan.

Oberonia teres Kerr, Kew Bull. 1927. 214. 1927; Seidenf., Dansk. Bot. Ark. 33 (1): 10. 1978. Fig. 3.

Stem very short, 2-4 mm long. *Leaves* jointed, 0.9-3.5 × 0.3-0.6 cm, oblong, very fleshy, acute or shortly acuminate, grooved at inner margins of lower half, terete in upper half. *Inflorescence* densely many flowered spike, 2.5-3.0 cm long, sub-erect, shorter than leaves; *Peduncle* with densely arranged, 3-4 mm long sterile bracts; *Rachis* 2.5-2.5 cm long; *Floral bract* ovate-lanceolate, acute, 1.7-2.0 × 1 mm, irregular at margins, longer than pedicellate ovary, pale yellow; *Flowers* orange-green, 1.5-2.0 mm across (between the tips of two petals); *Sepals* sub equal, orange-green; *Dorsal Sepal* 0.7-0.9 × 0.5-0.6 mm, ovate, acute; lateral sepals 0.6-0.8 × 0.5-0.5 mm, ovate, acute or apiculate. *Petals* oblong, 0.8-0.9 × 0.3-0.35 mm, acute, entire at margins, orange-yellow. *Lip* 0.8-0.9 × 1.3-1.4 mm (when spread out), 3 lobed; *Lateral lobes* divergent, sub-quadrate, 0.4-0.5 × 0.2-0.3 mm, truncate; *Apical lobe* sub-quadrate, ca. 0.4 × 0.1 mm, with two small lobules at apex separated by a broad sinus. *Column* very short, 1 mm long including the pedicelle ovary, green. *Anther cap* terminal, 2 chambered, ca. 0.25 × 0.3 mm, pale yellow. *Pollinia* 4 in two groups, 0.1 mm long, ovate-oblong, creamy

Flowering

May

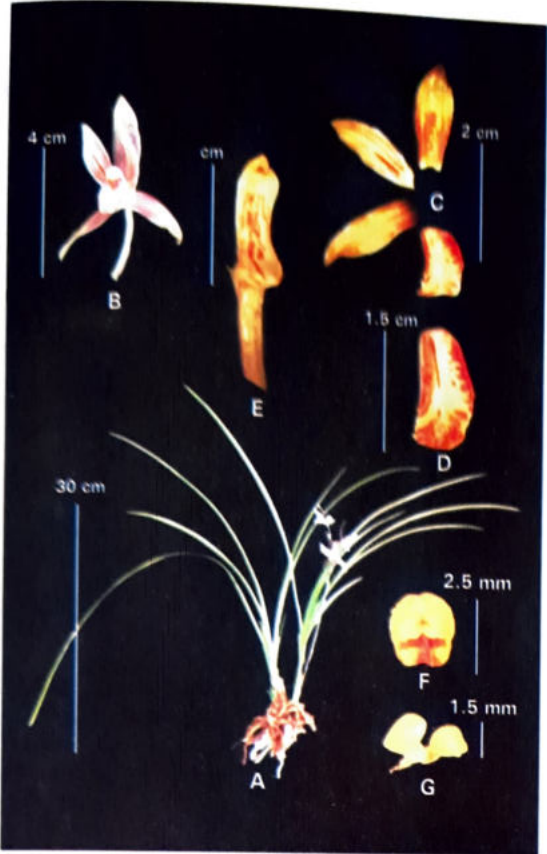


Fig.1. A-G. *Cymbidium sinense* (Jackson ex Andrews) Willdenow A, Habit; B, Flower; C, Dissected parts; D, Lip; E, Column; F, Anther cap; G, Pollinia.

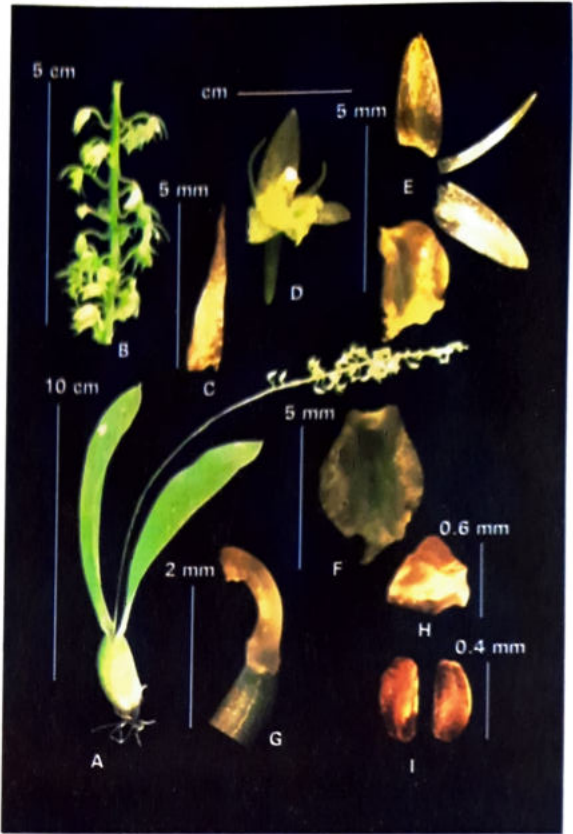


Fig.2. A-I. *Liparis elliptica* Wight A, Habit; B, Inflorescence; C, Bract; D, Flower; E, Dissected parts; F, Lip; G, Column; H, Anther; I, Pollinia.

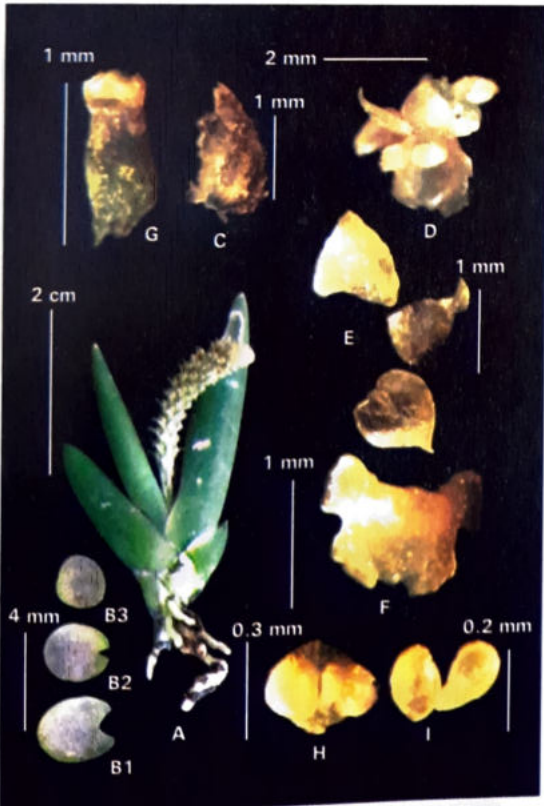


Fig.3. A-I. *Oberonia teres* Kerr A, Habit; B1-3, T.S. of leaf at 3 places from base to apex; C, Bract; D, Flower; E, Dissected parts; F, Lip; H, Anther; I, Pollinia.

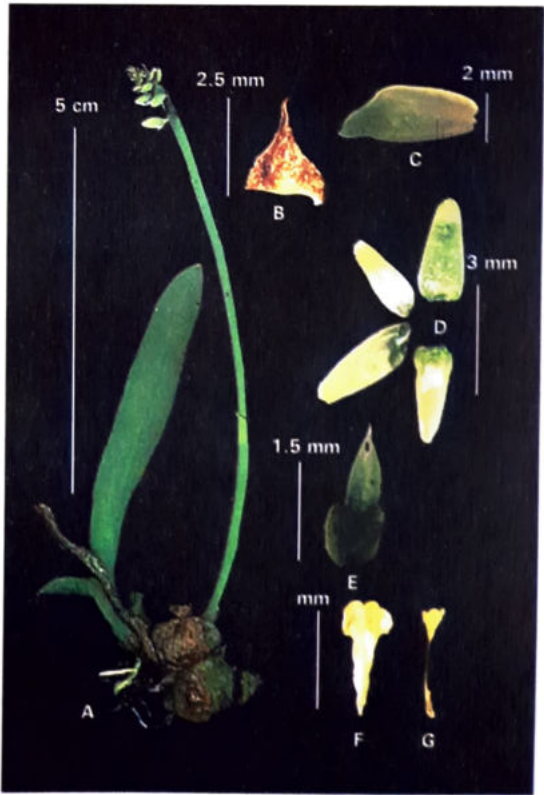


Fig.4. A-G. *Thelasis longifolia* Hook. f. A, Habit; B, Bract; C, Flower; D, Dissected parts; E, Column; F, Anther cap; G, Pollinia.

Locality

Oklong (1592 m, Chowlu× 00358).

Ecology

The present new species grows on moss covered tree branches in association with other orchid species of *Dendrobium*, *Pholidota*, *Coelogyne* and some fern species in sub tropical rainforest at 1592 m altitude.

Distribution: India (Manipur), Thailand.

Thelasis longifolia Hook. f., Fl. Brit. India 6 (1): 87. 1890; Pearce & Cribb in Orch. Bhutan 397. 2002. Fig. 4.

Pseudobulbs 1.0-1.5 × 1.5-2.0 cm, conical, closely arranged. **Leaves** solitary, 8-15 × 1.5-2.3 cm, narrowly oblong-oblancheolate, acute, thick, tapering to sessile base. **Inflorescence** 10-18 cm long, arising from the newly developing pseudobulb, erect; **Peduncle** 7-14 cm long, erect, glabrous, with 2-3, 4 mm long, lanceolate-triangular, acute, membranous sterile bract; **Rachis** glabrous, many flowered; **Floral bract** 4-4.5 × 2-2.5 mm, broadly ovate-triangular, acute-acuminate, green; **Ovary** pedicellate 3-3.5 mm long, green. **Flower** 3-4 mm across, green. **Sepals** subsimilar, green; **Dorsal Sepal** 4.0-4.5 × 1.5 mm, ovate-elliptic, obtuse; **Lateral sepals** 4.0-4.5 × 2.0 mm, ovate, acute. **Petals** 3.5-4.0 × 1.2 mm, narrowly ovate, acute, light green. **Lip** 4-4.5 × 2-2.5 mm, simple, elliptic-ovate, entire, thick, green, tapering to a minutely emarginated apex. **Column** 2-2.5 mm long, green, tapering towards the apex. **Anther cap** 2.0-2.5 × 0.8 mm, long beaked, pale yellow. **Pollinia** 8, ca. 2 mm long, with a long caudicle, yellow.

Flowering

June-July.

Locality

Ngтан (1256 m, Kipgen×00540)

Ecology

Commonly growing on moss covered tree trunks and branches of tropical to subtropical forest along with other orchids and ferns.

Distribution

India (Arunachal Pradesh, Manipur, Sikkim, West Bengal).

Acknowledgements

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