

Cymbidium lowianum (Rchb. f.) Rchb. f. (Orchidaceae): A new record of angiosperm for Darjeeling Himalaya of West Bengal

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SUMMARY

Present paper deals with the *Cymbidium lowianum* (Rchb. f.) Rchb. f. (Orchidaceae) is collected from Todey forest and Neora Valley of Kalimpong Sub-Division of Darjeeling Himalaya of West Bengal and is reported as new angiospermic record for the Darjeeling Himalayan region of India. An updated nomenclature, important synonyms, illustrated description, photographs, habitat, flowering and fruiting, altitudinal range, specimen examined, present status and geographical distribution of species has also been given.

Key Words : New record, Orchidaceae, *Cymbidium lowianum*, Darjeeling Himalaya, India

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The Orchids have captivated human beings since times immemorial and were known and cultivated to familiarize as early as 500 BC for ornamental and medicinal purposes. The rich diversity of Orchid species and their high profitable value led to increase of more and more information on their morphology, hybridization and mass multiplication by means of micropropagation at a very fast pace all over the world during the last few decades.

It is estimated 25,000 to 35,000 Orchid species widely distributed all over the world and about 1300 species with 140 genera of Orchid species are found in India with temperate Himalayas as their natural home and is largest family of flowering plant and evolutionarily advanced among the monocotyledons with most peculiar and brilliantly attractive coloured flowers and remain flowered upto one month and high longevity in vase life condition. Therefore, Orchids are well known and high valued in floriculture industry at present and past. Apart from other genus, the genus *Cymbidium* and

its hybrid spikes capture superior position in national and international floricultural markets.

The genus *Cymbidium* was described in 1799 by Olof Swartz (1760-1818). The genus comprises about 50 species distributed in India, East through South East Asia, China, Japan, Indonesia to Australia (Pearce and Cribb, 2002). Plant epiphytic, pseudobulbs short to elongate, covered by bladeless sheaths. Leaves long, narrow, oblong or rarely lanceolate, coriaceous. Inflorescence erect or curved, suberect or pendent, racemose, one to many flowered; peduncle with numerous sheaths. Flowers often large and showy. Sepals and petals subequal, free, spreading or erect. Lip 3-lobed, sessile, adnate to the base of the column and embracing it more or less by its convolute side lobes; the apical lobe decurved, often with undulate edges, the disc usually with two ridges or lamellae. Column long, without foot. Anther 1 or imperfectly 2-celled. pollinia 2, subglobose or pyramidal, attached by a short caudicle to a broad viscidium.

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MATERIAL AND METHODS

The intensive field survey was conducted during the year 2007-2011 covering all the seasons of the year in the entire Darjeeling district including the forest areas, floral nurseries and farms of as low as Siliguri which is located at 150m to as high as Sandakphu-Phalut located at 3636m of the entire Darjeeling district of West Bengal. All the data were

recorded in the field note book with their necessary information. The relevant data from the field note books were then transferred to the labels of the herbarium sheets and computer. Normally, only 2-3 specimens of each species in flowering and fruiting stage were collected.

While working on Orchid flora of Darjeeling Himalaya, the authors came across interesting specimens of epiphytic Orchid species. After critical examination and comparison with other authenticated specimens and literatures, an unknown species of epiphytic Orchid that was identified as *Cymbidium lowianum* (Rchb. f.) Rchb. f. (Orchidaceae) and was collected from Todey forest and Neora Valley of Kalimpong Sub-Division of Darjeeling Himalaya. A perusal of earlier literature related to the Orchid flora of Darjeeling (Hooker, 1888-1890; King and Pantling, 1898; Bruhl, 1926; Hara, 1966; Hara, 1971; Ohashi, 1975; Pradhan, 1976; Pradhan and Pradhan, 1997; Bose and Bhattacharjee, 1999 and Pearce and Cribb, 2002) revealed that the occurrence of this species has not been reported earlier from Darjeeling Himalayan region and hence the present collection is its first record of occurrence as *Cymbidium lowianum* (Rchb. f.) Rchb. f. for Darjeeling Himalaya of West Bengal, India. The newly collected specimens were processed and mounted on standard herbarium sheets followed Jain and Rao (1977) and have been deposited in the Herbarium of Department of Botany, St. Joseph's College, North Point, Darjeeling and Herbarium of Taxonomy and Ethnobiology Research Laboratory, Cluny Women's College, Kalimpong for future references. The ecological status was studied following the method given by Raunkiaer (1934) were carried out in the field. Quadrate plots of 10mx10m for epiphytic Orchid species were laid down diagonally in habitat rich field to find out the current status of this species from study areas. A detailed taxonomic account of the species along with photograph, habitat, altitudinal range, current ecological status, local distribution within Darjeeling and geographical distribution is provided here to authenticate the new record and facilitate its easy identification.

RESULTS AND DISCUSSION

The results of the present study as well as relevant discussions have been presented under following sub heads:

Botanical enumeration :

Cymbidium lowianum (Rchb. f.) Rchb. f. in Gard. Chron. 11:332, 404, t. 56. 1879; Du Puy *et al.* in Kew Bull. 40: 421-434. 1985. *C. giganteum* var. *lowianum* Reichb. f. in Gard. Chron. 7: 685. 1877; Hook. f., Fl. Brit. India. 6: 13. 1890. (Fig. 1).

Plant epiphytic rarely lithophytic. Pseudobulbs 12-13x5-6cm, bilaterally flattened. Leaves 6-9, 50-90x3.5-4cm, linear-oblong, sheathing at base. Scapes suberect, longer than the leaves. Inflorescence 30-40 flowered racemes. Flowers 8-10cm, in diam., pedicellate-ovary 5-5.5x0.5-0.7cm, upper portion dark green, lower half light green. Sepals



Fig. 1: *Cymbidium lowianum* (Rchb. f.) Rchb. f.

and petals green narrowly obovate. Dorsal sepal 5.9-6.2x1.9-2.2cm, lanceolate, ovate; lateral sepals 5.2-5.5x1.5-1.8cm, ovate-elliptic, slightly falcate; lateral petals 5.3-5.7x1.3-1.7cm, lanceolate, ovate. Lip 3-lobed, 3.4-3.7x1.5-1.8cm, yellowish to white; upper margin of epichile is blackish dark coloured and at the claw red dotted marks; side lobes triangular; mid lobe cordate, with a V-shaped red patch; callus ridges 2, white. Column 2.9-3.3x0.9-1cm, winged, yellow, lower half of inner side possess red dotted marks. Anther 0.6x0.5cm, yellow. Pollinia 4 in 2 bundles, 2 are smaller than others. Capsules fusiform-ellipsoidal.

Flowering and fruiting :

February – June.

Habitat :

Epiphytic on tree trunk and branches.

Specimen examined :

Todey forest, Neora Valley of Kalimpong Sub-Division of District Darjeeling, dt. 25.03.2010 (Darjeeling, West Bengal, India).

Altitudinal range :

1200-2700m.

Current ecological status :

Rare in natural habitat and domesticated and grown in the earthen pots throughout Darjeeling Himalayan regions.

Geographical distribution :

India (Sikkim).

Conclusion :

At present, entire Orchidaceae family facing major threat in comparison to other plant species in the regions, because number of Orchid enthusiasts, researchers and traders visit the region each year in search of Orchid species. Indiscriminate collection, random felling of host trees for fire wood and timber collection, forest fire, frequent landslides, rapid urbanization, shrinkage of forest and extension of agricultural lands cause greater harm in the natural population of the Orchid species resources of Darjeeling Himalayan region of West Bengal, India.

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