Present Status of Orchid Species Diversity Resources and Distribution in Dibrugarh District of Assam of North East India

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Abstract Present paper deals with the present status of Orchid diversity resources in Dibrugarh District of Assam of North East India. A total of 113 Orchid species under 50 genera have been recorded from the regions. Of them, 29 species with 17 genera are terrestrial and the rest 84 species with 33 genera are epiphytic. This attempt is the first step to correct taxonomic identification and assessment to workout currently accepted botanical names, Voucher specimen, habitat, phenology and locality of Orchid species occurring in Dibrugarh District of Assam of North East India.

Keywords Orchid Species, Present Status, Diversity Resources, Dibrugarh District, Assam, N.E. India

1. Introduction

Orchids belong to the family Orchidaceae is considered to be the most highly evolved in the floral specialization and diversified form among the monocotyledons. In India, Orchids from 9% of our flora and are the largest and highly advanced botanical family of higher plants. It is estimated that at about 25,000-35,000 species with 800-1,000 genera are distributed throughout the world. About 1331 species with 184 genera of Orchid species are found in India with temperate Himalayas as their natural home. North-East India constitutes an orchid hotspot, with nearly 70 percent of the total Orchids found in India are found in this region[1] and Assam is the second largest state of North East India and is a rich storehouse of Indian Orchids. The forests of Assam possess a large number of beautiful important Orchids. The total number of Orchid species may be around 193 under 71 genera out of which 27 are endemics.

1.1. Study Area

Dibrugarh District is located in the eastern part of upper Assam with an area of 3381 sq. km. The district extends from 27°5’ N to 27°42’ N latitude and 94°33’ E to 95°29’ E longitude. It is bounded by Dhemaji district on the north, Sivasagar district on the south and south east, Tinsukia district on the east and Lakhimpur district on the west. The area stretches from the North bank of the mighty Brahmaputra, which flows for a length of 95 km. Through the northern part of the district in the Patkai foothills in the south. At the foothills the altitude is 200m MSL and the Burhidihing river bank is 99m MSL (Fig. 1).

Figure 1. Map of Dibrugarh district (study area) of Assam
Joypur Reserve forest forms a part of the world heritage of tropical/sub-tropical wet evergreen forest, classified as 1B/CI, multistoried in structure and rich in biodiversity, more popularly known as ‘Rain forest’ (Fig. 2). The forest is rich in biodiversity and one of the greatest reservoirs of Orchid germplasm due to its high rainfall, relative humidity etc. All these forests are close to the bank of river Buridihing or touching it.

1.2. Climate

Dibrugarh District has a unique photographic element, the area experiences subtropical monsoon climate with mild winters, warm and humid summer. The maximum rainfall is in summer (2740mm-3640mm) and the minimum rainfall is during winter (430mm-700mm). The maximum temperature ranges between 33°C to 37°C and minimum temperature between 8°C to 10°C.

The climate can be classified into four seasons of the year,

a. Winter: From November to January. The maximum temperature ranges between 27°C to 29°C and the minimum temperature between 8°C to 10°C.

b. Pre-Monsoon: From March to May constitute this season. Temperature start raising, which ranges between 28°C to 32°C.

c. Monsoon: From June to August constitute this season. The maximum temperature ranges between 33°C to 37°C. Maximum rainfall recorded at its peak is 3000mm.

d. Retreating monsoon: From the last week of September or the first week of October the monsoon starts retreating until winter arrives.

Thus the cycle repeats year after year.

2. Materials and Method

The intensive field survey works were carried out during 2006-2011 covering all the seasons of the year in all parts of Dibrugarh district of Assam including floral nurseries, floral farms and forest areas. Collected Orchid specimens were made into standard mounted herbarium sheets following the procedure of[3]. The authors have done photographs and sketch the available Orchid species from the region. The relevant data from the field notebooks were then transferred to the labels of the herbarium sheets and computer. Normally, 2-3 specimens of each species in flowering or fruiting stage were collected and life form photographs were prepared. The specimens were identified, described and nomenclature checked with the help of the genera and species of Orchidaceous plants[4]; Folia Orchidacea[5]; Contributions to the Orchidology of India-I[6]; Contributions to the Orchidology of India-II[7]; The orchids of the Sikkim Himalayas[8]; Orchids of India-II: Biodiversity and Status of Bulbophyllum[9]; A Guide to the Orchid of Sikkim[10]; The Orchids of Thailand[11]; The Orchid Flora of North-West Himalaya[12]; Notes on Cirrhopetalum[13]; Indian Orchids Guide to Identification and Culture[14]; Indian Orchids Guide to Identification and Culture[15]; Orchids of Mussoorie[16]; Orchids of Arunachal Pradesh[17]; Flora of British India[18]; Orchids of Kumaun Himalaya[19]; The Orchids of Indo-China[21]; A Catalogue of Indian Orchids[21]; Orchids of Nagaland[22]; Contribution to the Orchid flora of Thailand[23]; Orchidaceae of Arunachal Pradesh[24]; Orchid Flora of Arunachal Pradesh[25]; 100 Sikkim Himalayan Orchids[26]; Assam’s Flora[27]; Orchids of India[28] and specimens authentication done in CAL, Botanical Survey of India, Howrah, India. Specimens were identified with the help of literature and matched at the herbarium of department of Botany Guwahati University and BSI Shillong (Assam herbarium). Finally all the Voucher specimens have been deposited in the Botany department herbarium of Guwahati University. All the species were arranged systematically with botanical names, habitat, local distribution and flowering month. For ecological status, plot of 5mx5m quadrates for terrestrial and 10mx10m quadrates for epiphytic species was laid down diagonally in the field.

3. Results and Discussion

During recent field studies in the Dibrugarh district, 50 genera with 113 Orchid species diversity and distribution have been recorded from the regions. Of them, 29 species with 17 genera are terrestrial and the rest 84 species with 33 genera are epiphytic. The numbers of epiphytic are greater than terrestrial species. The total numbers of recorded species of each genus are 2 Acampe spp., 2 Aerides spp., 2 Anoectochilus spp., 9 Bulbophyllum spp., 2 Calanthe spp., 2 Chrysoglossum spp., 7 Cleisostoma spp., 2 Coelogyne spp., 3 Cymbidium spp., 13 Dendrobium spp., 10 Eria spp., 3 Gongrochilus spp., 2 Liparis spp., 2 Lusia spp., 2 Malaxis spp., 2 Micropera spp., 2 Phaius spp., 2 Phalaenopsis spp., 2 Podochilus spp., 2 Podochilus spp., 2 Podochilus spp., 2 Thelasis spp., 3 Thrixspermum spp., 6 Zeuxine spp. and the rest single species distribution in the region (Table 1). Terrestrial Orchid species like Goodyera procera frequently found in marshy habitat. Epiphytic Orchid species like Dendrobium, Eria and Bulbophyllum found highest number of species diversity and wide distribution throughout the Dibrugarh district.
Some attractive Orchid species in the regions are *Aerides odoratum*, *A. roesa*, *Calanthe masuca*, *Cymbidium bicolor*, *C. dayanum*, *Dendrobium aphyllum*, *D. fimbriatum*, *D. lituflorum*, *D. moschatum*, *D. nobile*, *D. sulcatum*, *D. transparens*, *Papilionanthe teres* etc. Following Orchid species are rare and high risk of threat in the regions are *Acanthephippium striatum*, *Anoectochilus brevilabris*, *Bulbophyllum spatulatum*, *Calanthe masuca*, *Cymbidium bicolor*, *C. dayanum*, *Dendrobium nobile*, *Eria paniculatum*, *Gastrochilus calceolarius*, *Phalaenopsis manni* and *P. parishii*.

An epiphytic Orchid species *Thrrixpermum acuminatisinum* is a new report for Assam and recollection for India after 120 years[29]; similarly other species viz., *Bulbophyllum ebulbum*, *Chrysoglossum erraticum*, *C. robinsonii*, *Cleisostoma linearifoliatum*, *C. simondii*, *Diplorора championii*, *Eria connata*, *E. ferruginea*, *E. pudica*, *Tainia waryana*, *Thelasis pygmaea*, *Thrrixpermum pygmaeum*, *T. crepidiforme*, *Zeuxine clandestine* and *Z. glandulosa* are new record from Assam[30] and *Anoectochilus brevilabris*, *Bulbophyllum protractum*, *B. spatulatum*, *Calanthe lyroglossa*, *Ceratostylis sabulata*, *Podochilus khasianus*, *Tainia minor*, *Thelasis longifolia*, *Trichotosia velutina*, and *Tylostephium discolor* are new record from Upper Assam of North East India[31].

The present status of these Orchid species are common 35 spp., vulnerable 23 spp., threatened 2 spp., endangered 32 spp., critically endangered 12 spp. and the data deficient 9 spp. widely distributed throughout the regions. It is observed that maximum number of species falls in vulnerable, endangered and critically endangered status. Therefore, immediate conservative measures are necessary to save these species in natural habitat in the regions is very important at present.

**Enumeration**

**Acampe** Lindley

**Acampe papillosa** (Lindl.) Lindl., Fol. Orchid, 2, 1853; Chowdhery, Orch. Fl. Arunachal Prad. 41. 1998. Flowers 1 cm across, yellow, slightly fragrant; sepals and petals yellow with reddish brown transverse stripes; lip white, slightly spotted with purple-red. Habitat: Epiphyte on tree trunk. Voucher specimen: Gogoi et al, 0226. Flowering: November – December. Local distribution within Dibrugarh district: Jeypore. Present ecological status: Vulnerable.

**Acampe rigida** (Buch.-Ham. ex J.E. Smith) P.F. Hunt in Kew Bull. 24: 98. 1970; Chowdhery, Orch. Fl. Arunachal Prad. 41, 1998; Mishra, Orch. India 280. 2007. Flowers yellow with purplish brown transverse stripes; lip white, with purplish brown longitudinal stripes above. Habitat: Epiphyte on tree trunks or large branches. Voucher specimen: Gogoi et al, 0096. Flowering: June – July. Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh. Present ecological status: Vulnerable.

**Acanthephippium** Blume

**Acanthephippium striatum** Lindl. in Bot. Reg. 45. 1838; Hook. f., Fl. Brit. India 5: 816. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 43. 1998. Flowers creamy white with parallel red venation, tubular, 3.5–4.5 cm across. Habitat: Growing in shaded and humid places in dense forests, banks of streams. Voucher specimen: Gogoi et al. 0233. Flowering: June – July. Local distribution within Dibrugarh district: Jeypore. Present ecological status: Critically Endangered.

**Aerides** Loureiro

**Aerides odorata** Lour., Fl. Cochinch. 2: 525. 1790; Hook. f. Fl. Brit. India, 6:47, 1890; Chowdhery, Orch. Fl. Arunachal Prad. 49. 1998. Flowers white with purple blotches at the extremities, 2.2-2.5 cm across, fragrant. Habitat: Epiphyte in lowland forest. Voucher specimen: Gogoi et al, 0156. Flowering : May-June. Local distribution within Dibrugarh district: Jeypore, Jokai. Present ecological status: Vulnerable.

**Aerides rosea** Lindl. Gen. Sp. Orchid. 499. 1840; Hook. f., Fl. Brit. India 5: 824. 1890. Aerides rosea Lodd. ex. Lindl. & Paxt. Fl. Gard. 2: 109. 1852; Chowdhery, Orch. Fl. Arunachal Prad. 49. 1998; Mishra, Orch. India. 280. 2007. Flowers fragrant, purplish-pink suffused with white, dark pink spotted, opening widely, about 2 cm across. Habitat: Epiphyte in mixed deciduous forest and humid evergreen forest. Voucher specimen: Gogoi et al, 0131. Flowering: May. Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh. Present ecological status: Vulnerable.

**Agrostophyllum** Blume

**Agrostophyllum planicaule** (Wall. ex Lindl.) Reichb. f. in W.G. Walpers, Ann. Bot . Syst. 6: 909. 1864. Agrostophyllum khasianum Griffith in Calcutta Jour. Nat. Hist. 4: 378, t. 19. 1844; Hook. f., Fl. Brit. India 5: 824. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 53. 1998. Flowers white, 6-8 mm. across. Habitat: Epiphyte in mixed deciduous forest and humid evergreen forest. Voucher specimen: Gogoi et al, 0132. Flowering: August - October. Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh. Present ecological status: Common.

**Anoectochilus** Blume

**Anoectochilus brevilabris** Lindl. Gen. Sp. Orchid. 499. 1840; Hook. f., Fl. Brit. India 5: 824. 1890. Anoectochilus sikkimensis King & Pantl., J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65: 124 (1896). Flowers pinkish, lip white, about 2.5 cm. long.
Habitat: Terrestrial in dense humid evergreen forest. Voucher specimen: Gogoi et al, 0312. Flowering: April - June. Local distribution within Dibrugarh district: Jeypore. Present ecological status: Critically Endangered. **Bulbophyllum delitescens** Hance in Jour. Bot. 14: 44. 1867; Seidenf. Not. Cirrhophetalum Lindl. 215. 1987; Chowdhery, Orch. Fl. Arunachal Prad. 104. 1998. Flowers reddish-brown. Habitat: Epiphyte in dense humid evergreen forest near a waterfall. Voucher specimen: Gogoi et al, 0301. Flowering: June-July. Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh. Present ecological status: Common. **Bulbophyllum ebulbum** King & Pantl. in Jour. Asiat. Soc. Bengal 64: 334. 1895 et in Ann. Roy. Bot. Gard. Calcutta 8: 83, t. 115. 1898; Chowdhery, Orch. Fl. Arunachal Prad. 123. 1998. Flowers pale-green, about 0.8 cm long. Habitat: Epiphyte on tree trunks in dense humid evergreen forest. Voucher specimen: Gogoi et al, 0492. Flowering: May-June. Local distribution within Dibrugarh district: Jeypore. Present ecological status: Data Deficient. **Bulbophyllum odoratissimum** (J.E. Smith) Lindl. Gen. Sp. Orchid. 55. 1830; Hook. f., Fl. Brit. India 5: 758. 1890; Pradhan, Indian Orchid- II: 428. 1998. Flowers red-dish, about 0.5-0.8cm. long. Present ecological status: Vulnerable. **Bulbophyllum ornatissimum** (Reichb. f.) J.J. Smith in Bull. Jard. Bot. Buitenz. Ser. 2, 8: 22. 1912; Seidenf., Nots. Cirrhophetalum Lindl. 67. 1987; Chowdhery, Orch. Fl. Arunachal Prad. 92. 1998. Cirrhophetalum andersonii Hook. f., Fl. Brit. India 5: 777. 1890. Flowers 1.5 cm long; Sepals and petals whitish, densely spotted with purplish red; lip purple. Habitat: Epiphyte in mixed deciduous forest and humid evergreen forest. Voucher specimen: Gogoi et al, 0098. Flowering: June-August. Local distribution within Dibrugarh district: Jeypore. Present ecological status: Vulnerable. **Bulbophyllum protractum** Hook. f. Fl. Brit. India, 5: 758. 1890; Pradhan, Indian Orchid- II: 409. 1998. Flowers pale yellow, 0.6 cm long. Habitat: Growing epiphyte on evergreen forest. Voucher specimen: Gogoi et al, 0491. Flowering: June-July. Local distribution within Dibrugarh district: Jokai. Present ecological status: Critically Endangered. **Bulbophyllum spathulatum** (Rolfe ex. E. Cooper.) Seidenf. in Bot. Tidsskr. 65: 347. 1970; Chowdhery, Orch. Fl. Arunachal Prad. 146. 1998. Flowers rose red, deeply spotted, 1.6 cm long.
Habitat: Epiphytic in riverine forest and in secondary evergreen forest.
Voucher specimen: Gogoi et al, 0276.
Flowering: April.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Calanthe Robert Brown**

**Calanthe lyroglossa** Rchb. f., Otia Bot. Hamburg. 1: 53. 1878; Seidenfaden, Opera Botanica 114: 99. 1992; Mishra, Orch. India 285. 2007.

Flowers small, yellow, turning black when dried.
Habitat: Terrestrial in damp places on riversides.
Voucher specimen: Gogoi et al, 0486.
Flowering: November-February.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Calanthe sylvatica** (Thou.) Lindl., Gen. Sp. Orchid. Pl.: 250. 1833. Calanthe masuca (D. Don) Lindl., Gen. Sp. Orchid. 249. 1830; Hook. f., Fl. Brit. India 5: 850. 1890;

Flowers pale pinkish purple with purple lip sometimes flushed with orange.
Habitat: Terrestrial in damp places on riversides.
Voucher specimen: Gogoi et al, 0161.
Flowering: August – September.
Local distribution within Dibrugarh district: Jeypore, Jokai.
Present ecological status: Common.

**Ceratostylis Blume**

**Ceratostylis sabulata** Bl., Bijdr. 7: 206. 1825; Chowdhery, Orch. Fl. Arunachal Prad. 197. 1998; Mishra, Orch. India 286. 2007.

Flowers greenish yellow or yellow.
Habitat: Epiphyte on tree trunk in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0154.
Flowering: May – August.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Threatened.

**Chrysoglossum Blume**

**Chrysoglossum ornatum** Bl., Bjdr. 338. 1825. Chrysoglossum erraticum Hook. f. Fl. Brit. India 5: 784, 1890; Chowdhery, Orch. Fl. Arunachal Prad. 167. 1998; Mishra, Orch. India 286. 2007.

Flowers 2 cm across, green with reddish brown spots; lip white or yellowish spotted with purple; column white.
Habitat: Shaded and humid places in forests.
Voucher specimen: Gogoi et al, 0252.
Flowering: August – October.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Chrysoglossum robinsonii** Ridley in Jour. Fed. Mal. St. Mus. 5: 157. 1915; Chowdhery, Orch. Fl. Arunachal Prad. 197. 1998; Mishra, Orch. India 287. 2007.

Flowers 2 cm across; sepals and petals green; lip white; column yellow.
Habitat: Shaded and humid places in dense forests.
Voucher specimen: Gogoi et al, 0237.
Flowering: June – July.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Cleisocentron Bruhl**

**Cleisocentron pallens** (Cathcart ex Lindl.) N. Pearce & P.J. Cribb, Edinburgh J. Bot. 58: 118. 2001. Cleisocentron trichromum (Reichb. f.) Bruhl, Guid. Orch. Sikkim 137. 1926; Chowdhery, Orch. Fl. Arunachal Prad. 199. 1998.

Flowers pinkish, 2.5-2.8 cm across; sepals and petals pale-straw coloured, with a middle pink band.
Habitat: Epiphytic on tree trunks evergreen forests.
Voucher specimen: Gogoi et al, 0230.
Flowering: June – July.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Common.

**Cleisostoma Blume**

**Cleisostoma appendiculatum** (Lindl.) Benth. & Hook. f. ex Jackson in Index Kew. 1: 555. 1895; Chowdhery, Orch. Fl. Arunachal Prad. 204. 1998; Barua, Orch. Fl. Kamrup dist. 104. 2001.

Flowers 1.5 cm across, sepals and petals buff with purple longitudinal lines.
Habitat: Epiphytic on tree trunks in evergreen forests.
Voucher specimen: Gogoi et al, 0230.
Flowering: August-October.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Cleisostoma filiforme** (Lindl.) Garay in Bot. Mus. Leafl. Harvard Univ. 23(4): 171. 1972; Chowdhery, Orch. Fl. Arunachal Prad. 204. 1998; Pradhan, Indian Orchid-11: 509. 1979.

Flowers about 1.3 cm across; sepals and petals yellowish green, with purplish brown stripes; lip white with purple-red midlobe, column yellow.
Habitat: Epiphytic on tree trunks in evergreen forests.
Voucher specimen: Gogoi et al, 0494.
Flowering: April- June.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Cleisostoma paniculatum** (Ker-Gawl.) Garay in Bot. Mus. Leafl. Harvard Univ. 23(4): 173. 1972; Chowdhery, Orch. Fl. Arunachal Prad. 204. 1998; Mishra, Orch. India 288. 2007.

Flowers opening widely; sepals and petals yellowish green with purple blotches within; lip yellow.
Habitat: Epiphytic on tree trunks in evergreen forests.
Voucher specimen: Gogoi et al, 0237.
Flowering: June – July.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.
Voucher specimen: Gogoi et al, 0707.
Flowering: September-February.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Cleisostoma racemiferum** (Lindl.) Garay in Bot. Mus. Leafl. Harvard Univ. 23(4): 173. 1972; Chowdhery, Orch. Fl. Arunachal Prad. 204. 1998; Pradhan, Indian Orchid-II: 515. 1979.
Flowers 1 cm across; sepals and petals yellow with brownish red spots, lip white.
Habitat: Epiphytic on tree trunks in evergreen forests.
Voucher specimen: Gogoi et al, 0710.
Flowering: July-September.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Cleisostoma simondii** (Gagnep.) Scidenf. In Dansk Bot. Arkiv 29(3): 66. 1975; Chowdhery, Orch. Fl. Arunachal Prad. 208. 1998; Pradhan, Indian Orchid-II: 510. 1979.
Flowers yellowish green with purple markings.
Habitat: Epiphyte on thick-barked tree trunks in evergreen and deciduous forest.
Voucher specimen: Gogoi et al, 0221.
Flowering: August-October.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Cleisostoma subulatum** BL., Bijdr. 363. 1825; Chowdhery, Orch. Fl. Arunachal Prad. 208. 1998; Pradhan, Indian Orchid-II: 514. 1979.
Flowers about 1 cm across, sepals and petals yellow with intra marginal brown bands, lip white at the base.
Habitat: Epiphyte on tree trunk in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0097.
Flowering: May – June.
Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.
Present ecological status: Common.

**Coelogyne** Lindley

**Coelogyne fimbriata** Lindl., Edwards's Bot. Reg. 11: t. 868. 1825; Hook. f., Fl. Brit. India 5: 836. 1890.
Flowers 3-4 cm across, pale-yellow; sepals and petals yellowish; lip yellowish, fimbriate at margins, keels 3 brownish; lip and column base brownish.
Habitat: Epiphyte on tree trunk in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0709.
Flowering: October-December.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Coelogyne ovalis** Lindl., Bot. Reg. 24: 91. Misc. 191. 1838; Hook. f. Fl. Brit. India 5: 836. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 234. 1998.
Flowers greenish yellow, with purplish stripes on lip.
Habitat: Epiphyte on tree trunk in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0485.
Flowering: August-December.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Coryborkis Thouars**

**Coryborkis veratriformis** (Reinw.) Bl., Coll. Orchid. Arch. Ind. 125, tt. 42 & 43. 1859; Pradhan, Indian Orchid-I: 100. 1979; Chowdhery, Orch. Fl. Arunachal Prad. 246. 1998.
Flowers white, fragrant, not widely spreading, 3.2–3.8 cm long.
Habitat: Terrestrial at shade and in dense humid evergreen forest with undergrowth of tall herbs.
Voucher specimen: Gogoi et al, 0076.
Flowering: March–May.
Local distribution within Dibrugarh district: Jeypore, Jokai.
Present ecological status: Endangered.

**Cymbidium** Swartz

**Cymbidium aloifolium** (Lindl.) Sw. in Nova Acta Upsal. 2, 6: 73. 1799; Hook. f., Fl. Brit. India 6: 10. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 253. 1998.
Flowers 4-5 cm across, slightly fragrant; sepals and petals pale yellow to cream-yellow, with a broad central maroon-brown stripe; lip cream-colored.
Habitat: Epiphyte on tree trunk in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0079.
Flowering: April–May.
Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.
Present ecological status: Common.

**Cymbidium bicolor** Lindl., Gen. Sp. Orchid. 164. 1833; Hook. f., Fl. Brit. India 6: 10. 1890.
Flowers 3–4 cm across; sepals and petals yellow with a central purplish red longitudinal stripe; lip cream-yellow.
Habitat: Epiphyte on tree trunk in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0135.
Flowering: May–June.
Local distribution within Dibrugarh district: Jeypore, Jokai.
Present ecological status: Endangered.

**Cymbidium dayanum** Reichb. f. in Gard. Chron. 710. 1869; Chowdhery, Orch. Fl. Arunachal Prad., 256, 1998; Mishra, Orch. India, 290, 2007.
Flowers 4–5 cm across; sepals and petals white, with a central maroon stripe; lip maroon, tinged white at its base.
Habitat: Epiphyte on tree trunk in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0116.
Flowering: June–July.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Dendrobium** Swartz

**Dendrobium acinaciforme** Roxb., Fl. Ind. 3: 487. 1832; Barua, Orch. Fl. Kamrup dist. 151. 2001; Chowdhery, Orch. Fl. Arunachal Prad. 283. 1998.
Flowers yellowish-white, about 1 cm long.
Habitat: Epiphyte on tree trunk in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0117.
Flowering: June - August.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Common.

**Dendrobium aduncum** Wall. in Bot. Reg. 1842, misc. 62, t. 15. 1846; Hook. f., Fl. Brit. India 5: 730. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 283. 1998.
Flowers 1.2 - 2 cm across, pale purple; sepals and petals pale pink; lip white; column white.
Habitat: Epiphyte on a small tree trunk in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0078.
Flowering: May.
Local distribution within Dibrugarh district: Jeypore, Jokai.
Present ecological status: Endangered.

**Dendrobium aphyllum** (Roxb.) Fischer in Gamble, Fl. Pres. Madras 1416. 1928; Hook. f., Fl. Brit. India 5: 738. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 287. 1998.
Flowers pale rose, 4.5 - 5 cm across; lip yellow.
Habitat: Epiphyte in mixed deciduous forest or open forest.
Voucher specimen: Gogoi et al, 0077.
Flowering: April - May.
Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.
Present ecological status: Common.

**Dendrobium cathcartii** Hook. f., Fl. Brit. India 5: 727. 1890, Chowdhery Orch. Fl. Arunachal Prad. 290. 1998.
Flowers greenish-yellow, 2 cm across, fragrant; lip yellow with purple.
Habitat: Epiphyte on tree trunk in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0148.
Flowering: April - May.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Dendrobium cumulatum** Lindl. in Gard. Chron. 756. 1855; Hook. f., Fl. Brit. India 5: 731. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 295. 1998.
Flowers white with purple; lip white suffused with yellow.
Habitat: Epiphyte on tree trunk in forest along a small stream.
Voucher specimen: Gogoi et al, 0265.
Flowering: March - May.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Dendrobium fimbriatum** Hook., Exot. Fl. t. 71. 1823; Hook. f., Fl. Brit. India 5: 745. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 301. 1998.
Flowers 4.5 cm across, sepals and petals golden yellow; lip golden yellow, with or without maroon blotch.
Habitat: Epiphyte in mixed deciduous forest, also in humid evergreen forest.
Voucher specimen: Gogoi et al, 0101.
Flowering: March - May.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Vulnerable.

**Dendrobium lituiflorum** Lindl. in Gard. Chron. 372. 1856; Hook. f. Fl. Brit. India 5: 740. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 308. 1998.
Flowers 4.5 cm across, pale purple inner surface of lip with a deep purple spot surrounded by a white circle.
Habitat: Epiphytic on tree trunks in open forests.
Voucher specimen: Gogoi et al, 0057.
Flowering: April – May.
Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.
Present ecological status: Common.

**Dendrobium moschatum** (Buch.-Ham.) Swartz in Schrad., Neu. Jour. Bot. 1: 94. 1805; Barua, Orch. Fl. Kamrup Dist. 159. 2001; Chowdhery, Orch. Fl. Arunachal Prad. 311. 1998.
Flower orange yellow, 5 - 7 cm across, deep yellow disk with a pale purplish brown blotch on either side.
Habitat: Epiphytic on tree trunks in open forests.
Voucher specimen: Gogoi et al, 0058.
Flowering: April - June.
Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.
Present ecological status: Common.

**Dendrobium nobile** Lindl., Gen. Sp. Orchid. 79. 1830; Hook. f. Fl. Brit. India 5: 740. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 314. 1998.
Flowers 5.7 cm across, white merging with purple at apex; lip purple at tip, at middle followed by deep purple central blotch.
Habitat: Epiphytic in humid evergreen forest, also in the lowlands.
Voucher specimen: Gogoi et al, 0346.
Flowering: April - May.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Critically Endangered.

**Dendrobium sulcatum** Lindl. in Bot. Reg. n. 5. 24: t. 65. 1838; Hook. f. Fl. Brit. India 5: 749. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 322. 1998.
Flowers golden yellow, 2.5 - 3.5 cm across; lip with red-purple markings at base.
Habitat: Epiphytic on tree trunks in dense forests.
Voucher specimen: Gogoi et al, 0153.
Flowering: April-May.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Critically Endangered.

**Dendrobium terminale** Par. & Reichb. f. in Trans. Linn. Soc. 30: 149. 1859; Hook. f., Fl. Brit. India 5: 725. 1890; Chowdhry, Orch. Fl. Arunachal Prad. 193. 1998. Flowers 1-1.2 cm long, white flushed pink. Habitat: Epiphytic on tree trunks at forest. Voucher specimen: Gogoi et al, 0203. Flowering: April – June. Local distribution within Dibrugarh district: Jeypore. Present ecological status: Endangered.

**Dendrobium transparens** Wall. ex Lindl., Gen. Sp. Orchid. 79. 1830; Hook. f., Fl. Brit. India 5: 738. 1890; Chowdhry, Orch. Fl. Arunachal Prad. 327. 1998. Flowers 4-5 cm across; sepals and petals white lined with purple at tips, lip white with large purple patch on the disc. Habitat: Epiphytic on tree trunks at forest. Voucher specimen: Gogoi et al, 0061. Flowering: April – May. Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh. Present ecological status: Vulnerable.

**Didymoplexis** Griffith

**Didymoplexis pallens** Griffith in Calcutta Jour. Nat. Hist. 4: 383, t. 17. 1843; Hook. f., Fl. Brit. India 6: 122. 1890; Chowdhry, Orch. Fl. Arunachal Prad. 329. 1998. Flowers white, 0.8 cm across. Habitat: Terrestrial, growing in Bamboo forest. Voucher specimen: Gogoi et al, 0198. Flowering: May – June. Local distribution within Dibrugarh district: Jeypore, Jokai. Present ecological status: Vulnerable.

**Diploprora** Hook. f.

**Diploprora championii** (Lindl. ex Benth.) Hook. f., Fl. Brit. India 6: 26. 1890; Chowdhry, Orch. Fl. Arunachal Prad. 702. 1998. Flower pale yellow, with white-rosy lip, 1 cm across. Habitat: Growing epiphytic on branches of small trees in forests. Voucher specimen: Gogoi et al, 00711. Flowering: March – June. Local distribution within Dibrugarh district: Jokai. Present ecological status: Critically Endangered.

**Epipogium** Gimelin ex Borkhausen

**Epipogium roseum** (D. Don) Lindl. in Jour. Linn. Soc. 1: 177. 1857; Chowdhry, Orch. Fl. Arunachal Prad. 343. 1998; Mishra, Orch. India 296. 2007. Flowers white with faint purple spots on lip. Habitat: Terrestrial in evergreen forest. Voucher specimen: Gogoi et al, 0712. Flowering: October- December. Local distribution within Dibrugarh district: Jokai. Present ecological status: Data Deficient.

**Eria** Lindley

**Eria acervata** Lindl. in Jour. Hort. Soc. 6: 57. 1851; Hook. f., Fl. Brit. India 5: 57. 1851; Chowdhry, Orch. Fl. Arunachal Prad. 350. 1998. Flowers white, about 1.5 cm across. Habitat: Epiphyte in dense humid evergreen forest. Voucher specimen: Gogoi et al, 0501. Flowering: May - July. Local distribution within Dibrugarh district: Jeypore. Present ecological status: Vulnerable.

**Eria connata** Joseph, Hegde & Abbareddy in Bull. Bot. Surv. India 24: 114, f. 1-7. 1982; Chowdhry, Orch. Fl. Arunachal Prad. 361. 1998; Mishra, Orch. India 297. 2007. Flowers creamy white, with yellow lip, about 0.5 cm across. Habitat: Epiphyte in dense humid evergreen forest. Voucher specimen: Gogoi et al, 0480. Flowering: July- September. Local distribution within Dibrugarh district: Jeypore. Present ecological status: Data Deficient.

**Eria ferruginea** Lindl. in Bot. Reg. n.s. 25: t. 35. 1839; Hook. f., Fl. Brit. India 5: 804. 1890; Chowdhry, Orch. Fl. Arunachal Prad. 363. 1998. Flowers pink, 2 cm across. Habitat: Epiphyte in dense humid evergreen forest. Voucher specimen: Gogoi et al, 0507. Flowering: June-July. Local distribution within Dibrugarh district: Jeypore. Present ecological status: Data Deficient.

**Eria lasiopetala** (Willd.) Ormerod, Opera Bot. 124: 22. 1995. Eria pubescens (Hook. f.) Lindl. in Jour. Linn. Soc. 3: 54. 1858; Chowdhry, Orch. Fl. Arunachal Prad. 373. 1998; Barua, Orch. Fl. Kamrup Dist. 138. 2001. Flowers yellow, tomentose, about 1.5 cm across. Habitat: Epiphyte in humid evergreen forest, mixed deciduous forest. Voucher specimen: Gogoi et al, 0065. Flowering: March-April. Local distribution within Dibrugarh district: Jokai. Namdang, Telpani and Dihingmukh. Present ecological status: Common.

**Eria paniculata** Lindl. in Wall., Pl. Asiatic. Rar. 1: 32, t. 36. 1830; Hook. f., Fl. Brit. India 5: 789. 1890; Chowdhry, Orch. Fl. Arunachal Prad. 373. 1998. Flowers yellowish green. Habitat: Epiphyte in dense humid evergreen forest. Voucher specimen: Gogoi et al, 0225. Flowering: December-March. Local distribution within Dibrugarh district: Jeypore. Present ecological status: Vulnerable.
**Eria pannea** Lindl. in Bot. Reg. 64. misc. 79. 1842; Hook. f. Fl. Brit. India 5: 804. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 373. 1998.

Flowers pale yellow-green, lip dark purplish.
Habitat: Epiphyte in dense evergreen forest.
Voucher specimen: Gogoi et al, 0147.
Flowering: May - July.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Eria pudica** Ridl. in Jour. Linn. Soc. 32: 294. 1896; Chowdhery, Orch. Fl. Arunachal Prad. 377. 1998; Mishra, Orch. India 298. 2007.

Flowers pinkish white, pubescent, buff with darker Strips.
Habitat: Epiphyte in deciduous forest and evergreen forest.
Voucher specimen: Gogoi et al, 0495.
Flowering: April- August.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Data Deficient.

**Eria pumila** Lindl. Gen. sp. Orchid 68. 1830; Hook. f. Fl. Brit. India 5: 791. 1890.

Flowers white, flushed with pink.
Habitat: Epiphyte in humid evergreen forest, mixed deciduous forest.
Flowering: January- March.
Voucher specimen: Gogoi et al, 0502.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Vulnerable.

**Eria tomentosa** (Koen.) Hook. f., Fl. Brit. India 5: 803. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 385. 1998.

Flowers about 1.5 cm across, orange- yellow.
Habitat: Epiphyte in humid evergreen forest, mixed deciduous forest.
Flowering: October – November.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Data Deficient.

**Eulaophia** Robert Brown ex Lindley

**Eulaophia hormusjii** Dutthie in Ann. Roy. Bot. Gard. Calcutta 9: 125, t. 109. 1906; Chowdhery, Orch. Fl. Arunachal Prad. 393. 1998; Pradhan, Indian Orchid-II: 456. 1979.

Flowers brownish, 3-4 cm across.
Habitat: Terrestrial, growing on open and loose soil.
Voucher specimen: Gogoi et al, 0022.
Flowering: August-December.
Local distribution within Dibrugarh district: Jeypore, Dihingmukh.
Present ecological status: Common.

**Flickingeria** Hawkes

**Flickingeria fugax** (Reichb. f.) Seidenf. in Dansk Bot. Arkiv 34: 46. 1980; Kumar et. Monilal, Cat. Ind. Orch. 74. 1994; Chowdhery, Orch. Fl. Arunachal Prad. 399. 1998.

Flowers white, 3-3.5cm across, fugacious.
Habitat: Epiphyte in humid evergreen forest, mixed deciduous forest.
Voucher specimen: Gogoi et al, 0067.
Flowering: March – October.
Local distribution within Dibrugarh district: Jeypore, Jokai.
Present ecological status: Common.

**Gastrochilus** D. Don

**Gastrochilus calceolaris** (Buch.-Ham. ex. J.E. Smith) D. Don, Prodr. Fl. Nepal. 32. 1852; Kumar et. Monilal, Cat. Ind. Orch. 75. 1994; Chowdhery, Orch. Fl. Arunachal Prad. 413. 1998.

Flowers widely opening; sepals and petals yellow, with purplish brown markings; lip white with purple-red marks.
Habitat: Epiphyte in humid evergreen forest, mixed deciduous forest.
Voucher specimen: Gogoi et al, 0320.
Flowering: October – November.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Gastrochilus dasypogon** (J.E. Smith) O. Ktze., Rev. Gen. Pl. 2: 661. 1891; Kumar et. Monilal, Cat. Ind. Orch. 75. 1994; Chowdhery, Orch. Fl. Arunachal Prad. 413 1998.

Flowers yellow with brownish-purple spots, 1.5-2 cm across.
Habitat: Epiphyte in humid evergreen forest, mixed deciduous forest.
Voucher specimen: Gogoi et al, 0130.
Flowering: October – November.
Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.
Present ecological status: Common.

**Gastrochilus inconspicuus** (Hook. f.) O. Ktze., Rev. Gen. Pl. 2: 661. 1891; Kumar et. Monilal, Cat. Ind. Orch. 75. 1994; Chowdhery, Orch. Fl. Arunachal Prad. 413. 1998.

Flowers white or yellowish-green, 0.5cm across.
Habitat: Epiphyte in humid evergreen forest, mixed deciduous forest.
Voucher specimen: Gogoi et al, 0070.
Flowering: June - July.
Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.
Present ecological status: Common.

**Geodorum** G. Jackson

**Geodorum densiflorum** (Lamk.) Schltr. in Fedde Report. Behi. 4: 259. 1919; Kumar et. Monilal, Cat. Ind. Orch. 75. 1994; Chowdhery, Orch. Fl. Arunachal Prad. 418. 1998.

Flowers white to pinkish, lip with a central yellow callus and crimson-purple venation and streaks.
Habitat: Terrestrial in evergreen forest, also in grass land.
Voucher specimen: Gogoi et al, 0238.
Flowering: June – July.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Common.

**Goodyera** Robert Brown

**Goodyera procera** (Wall. ex Ker- Gawl.) Hook., Exot. Fl. 1, 3: t. 39. 1823; Hook.f., Fl. Brit. India 6: 111. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 431. 1998.
Flowers fragrant, opening weakly, white tinged pale green.

Habitat: Terrestrial at the bank of a small stream and in evergreen forest, also on rock in a stream.

Voucher specimen: Gogoi et al, 0205.
Flowering: April – June.
Local distribution within Dibrugarh district: Jeypore and Dihingmukh.

Present ecological status: Common.

Hetaeria Blume

*Hetaeria affinis* (Griff.) Seidenf. & Ormerod, Oasis, Suppl. 2: 9, 2001; Mishra, Orch. India, 304, 2007.

Flowers opening slightly, 5-6 mm across, green, tipped with pink; lip white.

Habitat: Terrestrial in secondary evergreen forest close to a small stream.

Voucher specimen: Gogoi et al, 0505.
Flowering: April- May.
Local distribution within Dibrugarh district: Jeypore.

Present ecological status: Endangered.

Kingidium P. F. Hunt

*Kingidium deliciosum* (Reichb. f.) Sweet in Amer. Orchid Soc. Bull. 39: 1095. 1970; Mishra, Orch. India 304. 2007; Chowdhery, Orch. Fl. Arunachal Prad. 463. 1998.

Flowers greenish yellow; lip purple spotted.

Habitat: Epiphyte in gallery forest along a large river, in a shady spot in humid evergreen forest.

Voucher specimen: Gogoi et al, 0210.
Flowering: May – July.
Local distribution within Dibrugarh district: Jeypore, Jokai and Dihingmukh.

Present ecological status: Vulnerable.

Liparis L.C. Richard

*Liparis mannii* Reichb. f. in Flora 55: 275. 1872; Hook. f., Fl. Brit. India 5: 701. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 479. 1998.

Flowers yellowish, 5 mm across.

Habitat: Epiphyte in gallery forest along a large river, in a shady spot in humid evergreen forest.

Voucher specimen: Gogoi et al, 0124.
Flowering: November – January.
Local distribution within Dibrugarh district: Jeypore.

Present ecological status: Endangered.

*Liparis viridiflora* (Bl.) Lindl., Gen. Sp. Orchid. 31. 1830; Hook. f., Fl. Brit. India 5: 704. 1890.

Flowers greenish white or pale greenish yellow.

Habitat: Epiphyte in humid evergreen forest and mixed deciduous forest.

Voucher specimen: Gogoi et al, 0073.
Flowering: April– May.
Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.

Present ecological status: Common.

Luisia Gaudichaud

*Luisia trichorhiza* (Hook. f.) Bl. Mus. Bot. 1: 63. 1849; Hook. f., Fl. Brit. India 6: 23. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 495. 1998.

Flowers purplish green with faint purple lines, about 1.5cm across.

Habitat: Epiphyte in humid evergreen forest, growing on exposed trees.

Voucher specimen: Gogoi et al, 0060.
Flowering: March – May.
Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.

Present ecological status: Common.

Malaxis Soland ex Swartz

*Malaxis acuminata* D. Don, Prodr. Fl. Nepal 29. 1852; Chowdhery, Orch. Fl. Arunachal Prad. 502. 1998.

Flowers purplish red, 1.5 cm across.

Habitat: Terrestrial in dense humid evergreen forest on rocky terrain, also in the lowlands.

Voucher specimen: Gogoi et al, 0499.
Flowering: June – July.
Local distribution within Dibrugarh district: Jeypore.

Present ecological status: Common.

Micropera Lindley

*Micropera mannii* (Hook. f.) T. Tang & F.T. Wang in Acta Phytotax. Sin. 1(1): 94. 1951; Pradhan, Indian Orchid-II: 497. 1979; Chowdhery, Orch. Fl. Arunachal Prad. 512. 1998.

Flowers pale-pink, 0.6-0.7 cm across.

Habitat: Epiphyte on tree trunk in evergreen tropical forest.

Voucher specimen: Gogoi et al, 0324.
Flowering: June – July.
Local distribution within Dibrugarh district: Jeypore.

Present ecological status: Vulnerable.

*Micropera rostrata* (Roxb.) Balakr. in Jour. Bombay Nat. Hist. Soc. 67: 66. 1970; Mishra, Orch. India 307. 2007; Chowdhery, Orch. Fl. Arunachal Prad. 512. 1998.

Flowers pale-pink, 1.5-2 cm across.

Habitat: Epiphyte on tree trunk in evergreen tropical forest.

Voucher specimen: Gogoi et al, 0312
Flowering: April – May.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Vulnerable.

_Nervilia_ Commers. ex Gaud.

_Nervilia juliana_ (Roxb.) Schltr. in Engl. Bot. Jahrb. 45: 402. 1911; Mishra, Orch. India 308. 2007; Chowdhery, Orch. Fl. Arunachal Prad. 529. 1998.

Flowers purple-green, solitary; lip white, mottled with pink.

Habitat: Terrestrial, growing on open and loose soil.

Voucher specimen: Gogoi et al, 0047.

Flowering: May–July.

Local distribution within Dibrugarh district: Dihingmukh.

Present ecological status: Common.

_Oberonia_ Lindley

_Oberonia mucronata_ (D. Don) Ormerod & Seidenfaden in Seidenfaden, Contr. Orchid Fl. Thailand 13: 20. 1997; Mishra, Orch. India 309. 2007.

Flowers yellowish.

Habitat: Epiphyte on tree trunk in evergreen tropical forest.

Voucher specimen: Gogoi et al, 0055.

Flowering: September – October.

Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.

Present ecological status: Common.

_Papilionanthe_ Schlechter

_Papilionanthe teres_ (Roxb.) Schltr. in Orchis 9: 78: 1915; Mishra, Orch. India 311. 2007; Chowdhery, Orch. Fl. Arunachal Prad. 570. 1998.

Flowers 5–10 cm across; sepals and petals white, tinged with pink or purplish; lip deep purple-red.

Habitat: Epiphyte in mixed deciduous forest, also on solitary roadside trees.

Voucher specimen: Gogoi et al, 0059.

Flowering: April – May.

Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.

Present ecological status: Common.

_Phaius_ Loureiro

_Phaius mishmensis_ (Lindl. & Paxt.) Reichb. f. in Bonplandia 5: 43. 1857; Hook. f., Fl. Brit. India 5: 817. 1890; Mishra, Orch. India 313. 2007; Chowdhery, Orch. Fl. Arunachal Prad. 583. 1998.

Flowers 4–5 cm across, white, greenish yellow or pinkish purple.

Habitat: Terrestrial, on the bank of a small stream in dense humid evergreen forest.

Voucher specimen: Gogoi et al, 0484.

Flowering: November-January.

Local distribution within Dibrugarh district: Jeypore.

Present ecological status: Critically Endangered.

_Phaius tankervillae_ (Banks ex l’Herit.) Bl., Mus. Bot. Lugd.- Bat. 2: 177. 1856; Mishra, Orch. India 313. 2007; Chowdhery, Orch. Fl. Arunachal Prad. 583. 1998.

Flowers 7–12 cm across; sepals and petals whitish outside, reddish brown or brown inside; lip white toward base, pink or red-pink toward entrance with white stripes on inside.

Habitat: Terrestrial, shaded and damp places in forests.

Voucher specimen: Gogoi et al, 0512.

Flowering: November-January.

Local distribution within Dibrugarh district: Jeypore.

Present ecological status: Critically Endangered.

_Phalanopsis_ Blume

_Phalanopsis mannii_ Reichb. f. in Gard. Chron. 902. 1871; Hook. f., Fl. Brit. India, 6: 30, 1890; Chowdhery, Orch. Fl. Arunachal Prad., 587. 1998.

Flowers 3-4 cm across; sepals and petals yellow with dark brown spots and bars; lip mid-lobe white; column yellow.

Habitat: Epiphytic on tree trunks in evergreen forests.

Voucher specimen: Gogoi et al, 0344.

Flowering: March – May.

Local distribution within Dibrugarh district: Jeypore.

Present ecological status: Critically Endangered.

_Phalanopsis parishii_ Reichb. f. in Gard. Chron. 410. 1865; Hook.f. Fl. Brit. India 6: 31. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 587. 1998.

Flowers white with two chestnut bands on lip, 2 cm across.

Habitat: Epiphytic on tree trunks in open forests.

Voucher specimen: Gogoi et al, 0258.

Flowering: March – April.

Local distribution within Dibrugarh district: Jeypore.

Present ecological status: Critically Endangered.

_Pheidota_ Lindley ex. Hook. f.

_Pheidota articulata_ Lindl. Gen. Sp. Orchid. 38,1833; Hook. f., Fl. Brit. India, 5: 844, 1890.

Flowers white, 5 mm across.

Habitat: Epiphyte.

Habitat: Epiphyte on tree humid evergreen forest.

Voucher specimen: Gogoi et al, 0106.

Flowering: June – August.

Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.

Present ecological status: Common.

_Podochilus_ Blume

_Podochilus cultratus_ Lindl., Gen Sp. Orchid. 38,1833; Hook. f., Fl. Brit. India, 5: 844, 1890.

Flowers white, 5 mm across.

Habitat: Epiphyte.

Habitat: Epiphyte on tree humid evergreen forest.

Voucher specimen: Gogoi et al, 0106.

Flowering: June – August.

Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.

Present ecological status: Common.

_Podochilus_ Lindl.

_Podochilus imbricata_ (Roxb.) Lindl. in Hook., Fl. Exot. 2: t. 138. 1825; Hook. f., Fl. Brit. India 5: 845. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 589. 1998.

Flowers white, 5 mm across.

Habitat: Epiphyte.

Habitat: Epiphyte on tree humid evergreen forest.

Voucher specimen: Gogoi et al, 0435.

Flowering: July – October.

Local distribution within Dibrugarh district: Jeypore, Jokai.

Present ecological status: Common.

_Podochilus_ Lindl.

_Podochilus cultratus_ Lindl., Gen Sp. Orchid. 234. 1833; Hook. f., Fl. Brit. India 6: 80. 1890.

Flowers white, 5 mm long.

Habitat: Epiphyte on tree trunk in wet evergreen tropical forest.

Voucher specimen: Gogoi et al, 0497.

Flowering: April- May.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Common.

**Podocilus khasianus** Hook. f., Fl. Brit. India 6: 81. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 616. 1998.

Flowers white, very small.
Habitat: Epiphyte on tree trunk in wet evergreen tropical forest.
Voucher specimen: Gogoi et al, 0400.
Flowering: June - August.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Common.

**Pomatocalpa Breda**

**Pomatocalpa undulatum** (Reichb. f.) J.J. Smith in Nat. Tijdschr. Ned. Ind. 72: 107. 1912; Chowdhery, Orch. Fl. Arunachal Prad. 622. 1998; Mishra, Orch. India 315. 2007.

Flowers 8 mm across, yellow with purple blotched; lip with purple blotched.
Habitat: Epiphyte in the wet evergreen tropical forest.
Voucher specimen: Gogoi et al, 0498.
Flowering: March- May.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Endangered.

**Pteroceras Hasselt ex Hassk.**

**Pteroceras suaveolens** (Roxb.) Holt. in Kew Bull. 14: 271. 1960; Chowdhery, Orch. Fl. Arunachal Prad. 624. 1998.

Flower yellow with brownish spots, about 1.5 cm across; lip tip dark purple.
Habitat: Epiphyte in the wet evergreen tropical forest.
Voucher specimen: Gogoi et al, 0489.
Flowering: June – July.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Vulnerable.

**Rhynchostylis Blume**

**Rhynchostylis retusa** (Lindl.) Bl., Bijdr. 286, t. 49. 1825; Hook. f., Fl. Brit. India 6: 32. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 626. 1998.

Flowers 1.7–2.3 cm across; sepals and petals white and spotted with pink or pale purple; lip purplish pink, apex white.
Habitat: Epiphyte in the wet evergreen tropical forest.
Voucher specimen: Gogoi et al, 0049.
Flowering: May – June.
Local distribution within Dibrugarh district: Jeypore, Jokai, Namdang, Telpani and Dihingmukh.
Present ecological status: Common.

**Robiquetta Gaudichaud**

**Robiquetta spathulata** (Bl.) J.J. Smith in Nat. Tijdschr. Ned. Ind. 72: 115. 1912; Chowdhery, Orch. Fl. Arunachal Prad. 630. 1998; Mishra, Orch. India 315. 2007.

Flowers yellow with purplish brown spots and stripes.
Habitat: Epiphyte humid evergreen forest.
Voucher specimen: Gogoi et al, 0450.
Flowering: May – July.
Local distribution within Dibrugarh district: Jeypore, Jokai.
Present ecological status: Vulnerable.

**Taeniophyllum Blume**

**Taeniophyllum crepidiforme** (King & Pantl.) King & Pantl. in Ann. Roy. Bot. Gard. Calcutta 8: 245, t. 325. 1898; Chowdhery, Orch. Fl. Arunachal Prad. 656. 1998; Mishra, Orch. India 317. 2007.

Flowers minute, greenish white with purple tinge.
Habitat: Epiphyte in humid evergreen forest.
Voucher specimen: Gogoi et al, 0506.
Flowering: August- September.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Data Deficient.

**Tainia Blume**

**Tainia latifolia** (Lindl.) Benth. ex. Hook. f., Fl. Brit. India 5: 820. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 657. 1998.

Flowers 2 cm across, dark brown, lip yellow.
Habitat: Terrestrial in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0350.
Flowering: March – May.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Endangered.

**Tainia minor** Hook. f. Fl. Brit. India 5: 821. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 661. 1998.

Flowers 1.5 cm across, purplish brown with deep purple spots; lip white, tinged with purplish brown.
Habitat: Terrestrial in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0488.
Flowering: June- August.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Endangered.

**Tainia waryana** (Hook. f.) J.J. Smith in Bull. Jard. Bot. Buitenz. 2, 8: 6. 1912; Pradhan, Indian Orchid-II: 242. 1979; Chowdhery, Orch. Fl. Arunachal Prad. 661. 1998.

Flowers greenish flushed with red, 3 cm across; lip white.
Habitat: Terrestrial in dense humid evergreen forest.
Voucher specimen: Gogoi et al, 0481.
Flowering: June - July.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Endangered.

**Thelasia Blume**

**Thelasia longifolia** Hook. f., Fl. Brit. India 6: 87. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 662. 1998.

Flowers green, not opening widely, small.
Habitat: Epiphytic in evergreen forest.
Voucher specimen: Gogoi et al, 0355.
Flowering: June – August.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Vulnerable.

**Thelasia pygmaea** (Griff.) Lindl. in Jour. Proc. Linn. Soc. 3: 63. 1859; Hook. f., Fl. Brit. India 6: 86. 1890; Chowdhery, Orch. Fl. Arunachal Prad. 662. 1998.

Flowers yellowish green, not opening widely, small.
Habitat: Epiphytic in mixed deciduous and evergreen forest.
Voucher specimen: Gogoi et al, 0487.
Flowering: July- September.
Local distribution within Dibrugarh district: Jeypore. Present ecological status: Data Deficient.
**Thrixspermum** Loureiro

**Thrixspermum acuminatissimum** (Bl.) Reich. f. Xen. Orchid. 2: 121. 1867; Scidenfaden et al, Orchid. Thailand iv-I: 518. 1962.
Flowers yellow; lip white with yellow and reddish-brown spots.
Habitat: Growing on lateral branches of lower canopy of host tree, cool and shady place.
Voucher specimen: Gogoi et al, 0510.
Flowering: July- December.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Critically Endangered.

**Thrixspermum centipeda** Lour., Fl. Cochinch. 520. 1790; Chowdhery, Orch. Fl. Arunachal Prad. 665. 1998; Chowdhery & Pal, Orch. Arunachal Prad. 140. 1997.
Flowers white or creamy yellow, turning yellow later.
Habitat: Epiphyte in mixed deciduous forest, in humid evergreen forest.
Voucher specimen: Gogoi et al, 0430.
Flowering: May – August.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Thrixspermum pygmaeum** (King & Pantling ) Holtt. in Kew Bull. 14: 275. 1960;  Chowdhery, Orch. Fl. Arunachal Prad. 666. 1998; Mishra, Orch. India 318. 2007.
Flowers about 1 cm across, white.
Habitat: Epiphyte in mixed deciduous forest, in humid evergreen forest.
Voucher specimen: Gogoi et al, 0714.
Flowering: May – August.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Data Deficient.

**Trichotosia** Blume

**Trichotosia velutina** (Lodd. ex Lindl.) Kranzlin in Engler & Prantl, Pflanzenr. 50: 140. 1911; Chowdhery, Orch. Fl. Arunachal Prad. 672. 1998; Mishra, Orch. India 318. 2007.
Flowers pale-white, 1 cm across.
Habitat: Epiphyte on tree trunks in humid forest.
Voucher specimen: Gogoi et al, 0391.
Flowering: August – September.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Common.

**Tropidia** Lindley

**Tropidia curculigoides** Lindl., Gen. Sp. Orchid. 497. 1840; Chowdhery, Orch. Fl. Arunachal Prad. 676. 1998.
Flowers greenish white, 1.5 cm long.
Habitat: Terrestrial in dense humid evergreen forest and evergreen montane forest.
Voucher specimen: Gogoi et al, 0479.
Flowering: September- November.
Local distribution within Dibrugarh district: Jeypore, Jokai.
Present ecological status: Common.

**Tylostylis** Blume

**Tylostylis discolor** (Lindl.) Hook. f. in Ann. Roy. Bot. Gard. Calcutta 5: 22. 1895; Pradhan, Indian Orchid-II: 344. 1979; Chowdhery, Orch. Fl. Arunachal Prad. 677. 1998.
Flowers greenish yellow, 1.2–1.5 cm across.
Habitat: Epiphytic on trees in mixed forests.
Voucher specimen: Gogoi et al, 0201.
Flowering: January - March.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Common.

**Zeuxine** Lindley

**Zeuxine clandestina** Bl., Coll. Orchid. 70. 1858; Barua, Orch. fl. Kamrup Dist. 56. 2001; Mishra, Orch. India 320. 2007.
Flowers greenish-white.
Habitat: Growing in dense forest, cool and shady place.
Voucher specimen: Gogoi et al, 0508.
Flowering: January- March.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Zeuxine glandulosa** King & Pantling in Ann. Roy. Bot. Gard. (Calcutta) 8: 288. t. 384. 1898; Pradhan, Indian Orchid-I: 118. 1969; Mishra, Orch. India 320. 2007.
Flowers 0.5 cm long olivaceous green, column and central contracted part of lip white.
Habitat: Growing in dense forest, cool and shady place.–
Voucher specimen: Gogoi et al, 0511.
Flowering: March- April.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Endangered.

**Zeuxine goodyeroides** Lindl. Gen. Sp. Orchid. 486. 1840; Hook. f., Fl. Brit. India 6: 107. 1890.
Flowers resupinate, white, small.
Habitat: Growing in dense forest, cool and shady place.–
Voucher specimen: Gogoi et al, 0483.
Flowering: Juneary- February.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Common.

**Zeuxine longilabris** (Lindl.) Trim. in Joour. Ceylon Branch Roy Asiat. Soc. 9: 90 (1885).
Flowers greenish-white, small.
Habitat: Damp places in forests.
Voucher specimen: Gogoi et al, 0713.
Flowering: January-March.
Local distribution within Dibrugarh district: Jeypore.
Present ecological status: Vulnerable.
Flowers small, resupinate, white, lip pale yellow to yellow.
Habitat: Terrestrial, growing in grassland.
Voucher specimen: Gogoi et al, 0024.
Flowering: January-March.
Local distribution within Dibrugarh district: Namdang, Telpani and Dihingmukh.

4. Conclusions
The agroclimatic condition of Dibrugarh district of Assam of North East India is most congenial to the lavish growth and development of wide varieties of Orchid species in...
natural habitat. Nevertheless, whole Orchidaceous family facing high risk of threat because of regular and rapid destruction of natural habitat by deforestation, upper layer soil erosion, overgrazing, effects of herbicides which is harmful for many saprophytic and terrestrial species and increase of agricultural lands by clearing forest, developmental schemes, rapid urbanization, ignorance and finally indiscriminate collection for floral business cause greater harm in the natural population of the species in the regions. Many species are in rare, vulnerable, threatened, endangered and critically endangered in the region. It is observed that high risk of extinction is possible in the near future if habitat of these species are not conserved in proper ways. Therefore, conservation of natural habitat is urgently necessary by means of conduction village level awareness programs by government departments and NGOs with constant affiliation with department of forest and wildlife in the regions is the only solution to save our praiseworthy Orchid diversity resources of Dibrugarh district is vanish for ever from nature.

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