

EPIPHYTIC ORCHID SPECIES DIVERSITY OF DARJEELING HIMALAYA OF WEST BENGAL, INDIA

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Abstract

Present paper deals 53 genera with 218 Epiphytic Orchid Species diversity in the Darjeeling Himalayan region of West Bengal, India. The diversity of epiphytic Orchids are maximum than the lithophytic, terrestrial and saprophytic Orchids. The study represents the taxonomy based study of epiphytic Orchid species diversity and distribution throughout the region with botanical names, place of collection (occurrence), altitudinal range and flowering.

Key words: *Epiphytic Orchid Species, Diversity, Darjeeling Himalaya, India.*

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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 form 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 1300 species with 140 genera of Orchid species are

found in India with temperate Himalayas as their natural home (Yonzone and Kamran, 2008)[1].

Darjeeling is the Northernmost district of West Bengal. The district is subdivided into four Sub-Divisions viz., Darjeeling sadar; Kalimpong, Kurseong and Siliguri (Figure 1). The region lies between 26°31' and 27°31' north latitude and between 87°59' and 88°53' east longitude in the eastern Himalayan region of India. It is bordered by Sikkim in the north, Terai and Doars in the south,

Bhutan in the east and Nepal in the west. The district has two topographical features. Darjeeling, Kurseong and Kalimpong form the hill areas whereas Siliguri is stationed at the foothill in a vast stretch of the plains. The shape of the district is triangular. The total area of the triangular shaped district is 3254.7 sq. km. which is 3.68 percent of the total areas of West Bengal state. The hilly region covers 2320 sq. km. and the remaining 934.7 sq. km. of the area falls in the Terai and plains. The altitudinal variations of the district range from 150m at Siliguri to 3636m at Sandakphu-Phalut with a

sharp physiographic contrast between the plain and the mountainous regions. The region is considered to be very rich in Orchid resources which is a part of heaviest rainfall zones of the world. The richness of Orchid resources of this Himalayan region was studied by Sir J.D. Hooker almost 120 years back (Hooker, 1888-1890). Later by other worker studied (Pradhan, 1976; Pradhan, 1979; Lucksom, 2007). In the present investigation, tabulate enumeration of Epiphytic Orchid Species of Darjeeling Himalaya of India is presented.

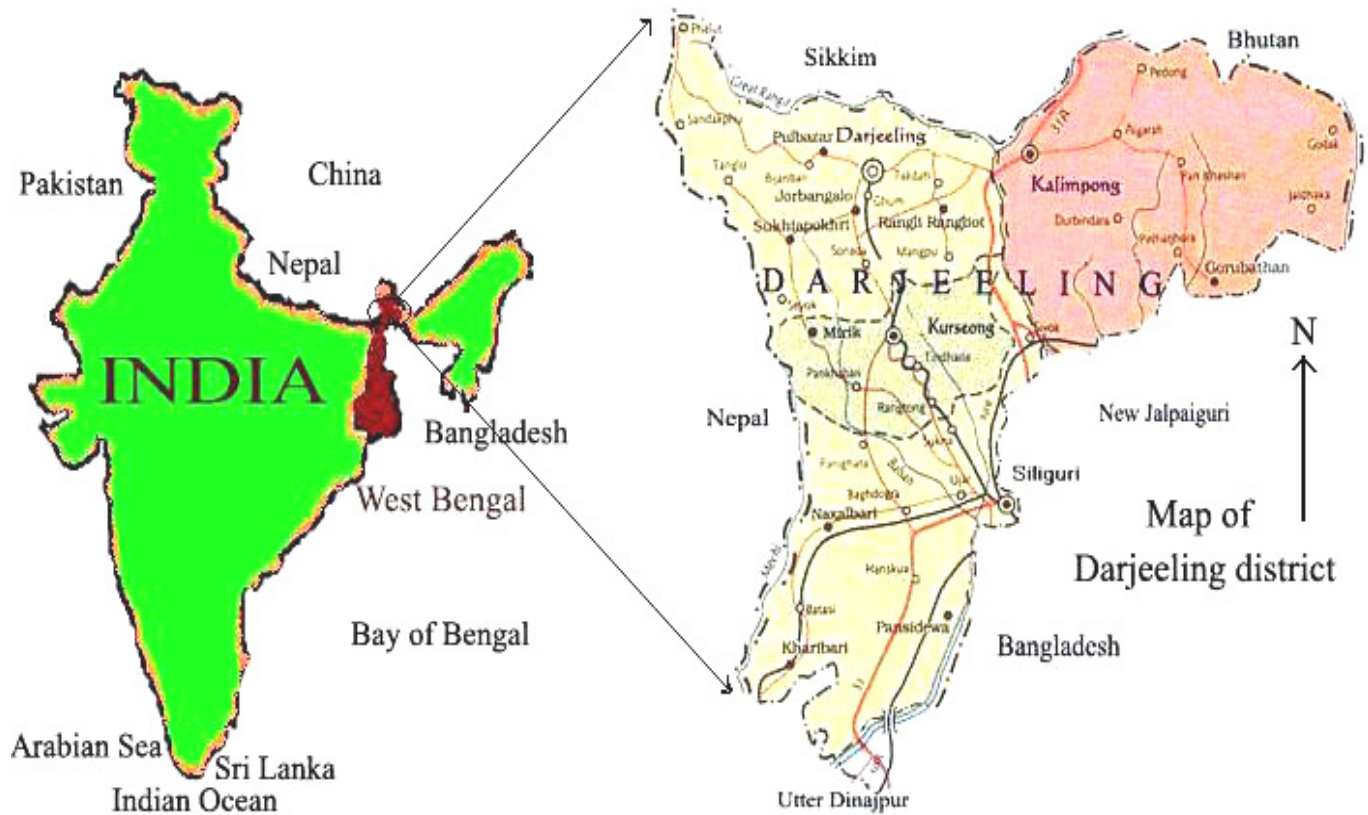


Figure 1: Location of Darjeeling district (study area) of West Bengal, India.

MATERIALS AND METHODS

The intensive field survey works was carried out during 2007-2011. The Orchid specimens for the study were collected extensive field studies in all parts of Darjeeling district. Collected specimens were made into standard mounted herbarium sheets following the procedure of (Jain and Rao, 1977)[2]. Authors have done photographs and sketch the some Orchid species from floral nurseries of the region. The relevant data from the field note books 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 and described with the help of Flora of British India (Hooker, 1872-1897)[3]; Orchids of Sikkim Himalaya (King and Pantling, 1898)[4]; Indian Orchids Guide to Identification and Culture, Vol. I and II, (Pradhan 1976[5] and 1979)[6]; Orchid flora of Arunachal Pradesh (Chowdhery, 1998)[7]; Orchids of India (Bose and Bhattacharya, 1999)[8]; Flora of Bhutan (Pearce and Cribb, 2002)[9] and The Orchids of Sikkim and North East Himalaya (Lucksom, 2007)[10] and specimens authentication done in CAL. Finally all the Voucher specimens were deposited in the Herbarium of Department of Botany, St. Joseph's College, North Point, Darjeeling and Taxonomy and Ethnobiology Research Laboratory, Cluny Women's College, Kalimpong. All the species were arranged systematically as per their altitude wise distribution in the area with botanical names, habitat and local distribution. Nomenclature has been checked with Flora of Bhutan, the Orchids of Bhutan.

RESULTS AND DISCUSSION

During recent field studies in the Darjeeling Himalaya, there are 53 Genera with 218 Epiphytic Orchid Species diversity and distribution recorded from the regions. Of them, a maximum of 34 species of *Bulbophyllum*, 33 *Dendrobium*, 17 *Eria*, 16 *Coelogyne*, 12 *Cymbidium*, 9 *Oberonia*, 8 *Liparis*, 6 *Gastrochilus*, 6 *Pholidota*, 4 *Agrostophyllum*, 4 *Cleisostoma*, 4 *Lusia*, 4 *Pleione*, 4 *Vanda*, 3 *Otochilus*, 4 *Phalaenopsis*, 2 *Acampe*, 2 *Aerides*, 2 *Ceratostylis*, 2 *Cryptochilus*, 2 *Epigenium*, 2 *Esmeralda*, 2 *Flickingeria*, 2 *Ione*, 2 *Panisea*, 2 *Podochilus*, 2 *Sunipia*, 2 *Thunia*, 2 *Trichotosia* and the rest genus *Acrochaene punctata*, *Appendicula cornuta*, *Ascocentrum ampullaceum*, *Biermannia bimaculata* *Chiloschista parishii*, *Cirrhopetalum sikkimense*, *Cleisocentron pallens*, *Mastigion appendiculatum*, *Micropera obtusa*, *Monomeria barbata*, *Ornithochilus difformis*, *Pelatanthera insectifer*, *Papilionanthe teres*, *Pomatocalpa armigerum*, *Porpax elwesii*, *Pteroceras teres*, *Rhynchostylis retusa*, *Rhytionanthos cornutum*, *Saccolabiopsis pussila*, *Smitinandia micrantha*, *Steriochilus hirtus*, *Thelasis pygmaea*, *Uncifera obtusifolia* and *Vandopsis undulata* are represented by single species (Table 1). There are 8 *Dendrobium* species like *Dendrobium chrysotoxum*, *D. crepidatum*, *D. cumulatum*, *D. devonianum*, *D. falconeri*, *D. jenkinsii*, *D. lindleyi* and *D. pendulum* are found in the Holumba Nursery of Kalimpong. *Bulbophyllum* and *Dendrobium* found highest number of species diversity and wide distribution and some of the epiphytic species like *Bulbophyllum bisetum*, *B. cauliflorum*, *B. hirtum*, *B. leopardinum*, *Coelogyne corymbosa*, *C. cristata*, *C. raizadae*, *C. fuscescens*, *C. occultata*, *Dendrobium chrysanthum*, *D.*

denudans, *D. moschatum*, *Epigenium amplum*, *Thunia alba* and *Vandopsis undulata* are rarely found in lithophytic habitat throughout the Darjeeling Himalayan regions.

CONCLUSION

Man made multifarious activities are the major threat in the region. Besides this, land slides and top

layer soil erosion also cause the great harm to the species but not greater as that of human activities. The Orchid resources of Darjeeling Himalaya are soon going to be threatened. Thus it is very important to take up conservation measures need to workout the suitable conservation strategies and also to protect their survival in natural habitats.

Table 1: List of Epiphytic Orchid species available in Darjeeling Himalaya with their availability, altitudinal range and month of flowering

Sl. No.	Botanical Name with Voucher specimen	Habitat	Locality of their Availability within Darjeeling Himalaya	Altitudinal range (m)	Month of flowering
1	<i>Acampe papillosa</i> (Lindl.) Lindl. [Rajendra et al 0709]	Epiphytic	Rambi, Sevoke forest, Kalijhora forest	140-900	July-December
2	<i>Acampe rigida</i> Buchanan-Hamilton ex. J.E. Smith) P.F. Hunt. [Rajendra et al 0050]	Epiphytic	Teesta river sides, Najok, Tarkhola forest	160-1200	May-June
3	<i>Acrochaene punctata</i> Lindl. [Rajendra et al 0726]	Epiphytic	Forest areas in Lava, Nokdara, Kaffer-Kalimpong	1200-2200	October-November
4	<i>Aerides multiflorum</i> Roxb. [Rajendra et al 0318]	Epiphytic	Samalbung, Suruk-Samthar, Siliguri	150-1200	March-June
5	<i>Aerides odoratum</i> Loureiro. [Rajendra et al 0844]	Epiphytic	Bagrakot, Sukuna forest	150-700	May-July
6	<i>Agrostophyllum brevipes</i> King & Pantling [Rajendra et al 1181]	Epiphytic	27 th mile NHPC project side, Algarah forest	400-1600	May-June
7	<i>Agrostophyllum callosum</i> Rchb. f. [Rajendra et al 0345]	Epiphytic	Lava, Nokdara, Algarah, Kaffer forest-Kalimpong	600-2200	March-May
8	<i>Agrostophyllum myrianthum</i> King & Pantling [Rajendra et al 1429]	Epiphytic	Kumsi, Rambi, Teesta River Sides	200-1600	July-August
9	<i>Agrostophyllum planicaule</i> (Wall. ex Lindl.) Rchb. f. [Rajendra et al 0652]	Epiphytic	Kalijhora, Soureni	500-2100	July-August
10	<i>Appendicula cornuta</i> Bl. [Rajendra et al 1448]	Epiphytic	Birik forest, Kambal Busty	300-800	August-September
11	<i>Ascocentrum ampullaceum</i> (Roxb.) Schltr. [Rajendra et al 0248]	Epiphytic	Rambi, Kalijhora, Sevoke, Kumsi forest - Kalimpong	200-800	March-May

12	<i>Biermannia bimaculata</i> (King & Pantling) King & Pantling [Rajendra et al 1136]	Epiphytic	Bagrakote, Teesta Bridge Sides	300-700	April-July
13	<i>Bulbophyllum affine</i> Lindl. [Rajendra et al 0066]	Epiphytic	Samalbong, Samthar, Mungpoo	700-1900	May-June
14	<i>Bulbophyllum apodum</i> Hook. f. [Rajendra et al 1334]	Epiphytic	Teesta River Sides	300-600	May-July
15	<i>Bulbophyllum bisetum</i> Lindl. [Rajendra et al 0958]	Epiphytic	Samalbong, Hill Top-Kalimpong, Kaffer-Kalimpong	1200-2000	September-October
16	<i>Bulbophyllum careyanum</i> (Hook.) Sprengel [Rajendra et al 1507]	Epiphytic	Suruk-Samthar, Latpanjar, Gogok-Todey-Kalimpong	1300-1650	October-January
17	<i>Bulbophyllum careyanum</i> (Hook.) Sprengel. var. <i>sikkimense</i> S.Z. Lucksom [Rajendra et al 0168]	Epiphytic	Soreksa, Samalbong Busty-Kalimpong	800-2100	Oct. November
18	<i>Bulbophyllum cauliflorum</i> Hook. f. [Rajendra et al 1176]	Epiphytic	Forest areas in Algarah, Sukiapokhari, Rimbik-Darjeeling	1600-2200	April-July
19	<i>Bulbophyllum cauliflorum</i> Hook. f. var. <i>sikkimense</i> N. Pearce & P.J. Cribb [Rajendra et al 0354]	Epiphytic	Forest areas in Nokhdara, Lava, Algarah-Kalimpong	900-2200	June-August
20	<i>Bulbophyllum crassipes</i> Hook. f. [Rajendra et al 0102]	Epiphytic	Suruk, Rambi, Mungpoo, Samalbong Busty-Kalimpong	200-1000	September-October
21	<i>Bulbophyllum eublephraum</i> Rehb. f. [Rajendra et al 1226]	Epiphytic	Sonada, Neora Valley-Kalimpong	1450-2500	May-August
22	<i>Bulbophyllum gamblei</i> (Hook. f.) Hook. f. [Rajendra et al 1171]	Epiphytic	Takdah, Rammam forest-Darjeeling	1400-2500	May-August
23	<i>Bulbophyllum gracilipes</i> King & Pantling. [Rajendra et al 1158]	Epiphytic	Rambi, Bagrakot, Nimbong forest-Kalimpong	300-950	October-December
24	<i>Bulbophyllum guttulatum</i> (Hook. f.) N.P. Balakrishanan [Rajendra et al 1457]	Epiphytic	Sittong, Mungpoo	650-1800	July-September
25	<i>Bulbophyllum helene</i> (Kuntze) J.J. Smith. [Rajendra et al 0908]	Epiphytic	Mim forest, Todey-Tangta-Kalimpong	600-2100	May-August
26	<i>Bulbophyllum hirtum</i> (J.E. Smith) Lindl. [Rajendra et al 0156]	Epiphytic	Samalbong, Chuikhim, Algarah-Kalimpong	900-2000	October-December

27	<i>Bulbophyllum hymenanthum</i> Hook. f. [Rajendra et al 0463]	Epiphytic	Rammam, Gorkhey-Darjeeling	1400-2800	May-June
28	<i>Bulbophyllum khasyanum</i> Griff. [Rajendra et al 1004]	Epiphytic	Algarah, Todey, Rachela forest- Kalimpong	1400-2500	October-December
29	<i>Bulbophyllum leopardinum</i> Lindl. [Rajendra et al 1217]	Epiphytic	Kaffer, Rimbik, Rammam, Lava forest- Kalimpong	1300-2400	June-August
30	<i>Bulbophyllum odoratissimum</i> (J.E. Smith) Lindl. [Rajendra et al 0083]	Epiphytic & Lithophytic	Algarah, Nokdara, Tangta-Kalimpong	1100-1900	July-August
31	<i>Bulbophyllum odoratissimum</i> (J.E. Smith) Lindl. var. <i>racemosum</i> N.P. Balakrishnan [Rajendra et al 2633]	Epiphytic	Damsang Gari, Pedung-Kalimpong	1200-1450	June-July
32	<i>Bulbophyllum polyrhizum</i> Lindl. [Rajendra et al 1103]	Epiphytic	Balasan, Majitar	300-800	March-April
33	<i>Bulbophyllum reptans</i> (Lindl.) Lindl. [Rajendra et al 0037]	Epiphytic	Hill Top-Kalimpong, Lava, Kurseong, Todey-Tangta forest	1600-2700	October-December
34	<i>Bulbophyllum rigidum</i> King & Pantling [Rajendra et al 1348]	Epiphytic	Forest areas in Todey, Lava, Takdah-Darjeeling	1600-2200	June-September
35	<i>Bulbophyllum rolfei</i> (Kuntze) Seidenfaden [Rajendra et al 2686]	Epiphytic	Damsang Gari, Neora Valley-Kalimpong	1900-2900	August-September
36	<i>Bulbophyllum sarcophyllum</i> (King & Pantling) J.J. Smith [Rajendra et al 0951]	Epiphytic	Nim forest, Jalpahar	600-1400	June-September
37	<i>Bulbophyllum scabratum</i> Rchb. f. [Rajendra et al 0324]	Epiphytic	Lower Lungshel, Rachela forest-Kalimpong	1200-1800	April-May
38	<i>Bulbophyllum secundum</i> Hook. f. [Rajendra et al 2621]		Lopchu forest, Damsang Gari-Kalimpong	1500-2100	June-July
39	<i>Bulbophyllum stenobulbon</i> Paris & Rchb. f. [Rajendra et al 0870]	Epiphytic	Kalijhora, Guling forest-Kalimpong	250-700	May-June
40	<i>Bulbophyllum striatum</i> (Griff.) Rchb. f. [Rajendra et al 1625]	Epiphytic	Today-Tangta forest - Kalimpong	1800-2750	October-November
41	<i>Bulbophyllum tortuosum</i> (Bl.) Lindl. [Rajendra et al 1553]	Epiphytic	Bagrakote, Kalijhora forest	200-350	March April

42	<i>Bulbophyllum triste</i> Rchb. f. [Rajendra et al 0770]	Epiphytic	Samalbong-Sinjee, Godok forest-Kalimpong	1000-1700	February-March
43	<i>Bulbophyllum thomsonii</i> Hook.f. [Rajendra et al 1023]	Epiphytic	Neora Valley, Sukiapokhari -Darjeeling	800-2100	October- December
44	<i>Bulbophyllum umbellatum</i> Lindl. [Rajendra et al 1086]	Epiphytic	Kurseong, Maneybhanjang	1300-2200	March-May
45	<i>Bulbophyllum wallichii</i> (Lindl.) Rchb. f. [Rajendra et al 2760]	Epiphytic	Takdah, Neora Valley- Kalimpong	1500-2900	November- December
46	<i>Bulbophyllum yoksumense</i> J.J. Smith [Rajendra et al 1477]	Epiphytic	Tangta, Rachela- Kalimpong	1800-2800	September- October
47	<i>Ceratostylis himalaica</i> Hook. f. [Rajendra et al 1164]	Epiphytic	Mirik, Todey forest- Kalimpong	1200-2100	April-June
48	<i>Ceratostylis subulata</i> Bl. [Rajendra et al 1328]	Epiphytic	Panbu forest, Majitar	400-800	May-July
49	<i>Chiloschista parishii</i> Seidenfaden [Rajendra et al 0203]	Epiphytic	Sukuna, Sepkhola, Najok-Kalimpong	800-1900	March-April
50	<i>Cirrhopetalum sikkimense</i> King & Pantling [Rajendra et al 1193]	Epiphytic	Pareng, Makum- Kalimpong	400-700	April-June
51	<i>Cleisocentron pallens</i> (Cathcart ex Lindl.) N. Pearce & P.J. Cribb [Rajendra et al 0676]	Epiphytic	Kalijhora Forest, Najok- Kalimpong	300-800	July-September
52	<i>Cleisostoma aspersum</i> (Rchb. f.) Garay [Rajendra et al 1329]	Epiphytic	Panighatta, Samsing, Suruk-Yangmakum	300-1600	June-August
53	<i>Cleisostoma filiforme</i> (Lindl.) Garay [Rajendra et al 0570]	Epiphytic	Relli, Kalijhora, Najok- Kalimpong	200-1600	July-August
54	<i>Cleisostoma racemiferum</i> (Lindl.) Garay [Rajendra et al 0671]	Epiphytic	Nock Dara, Lungsel- Kalimpong	800-2100	July-September
55	<i>Cleisostoma subulatum</i> Bl. [Rajendra et al 0658]	Epiphytic	Kalijhora, Najok- Kalimpong	250-900	July-August
56	<i>Coelogyne barbata</i> Lindl. ex Griff. [Rajendra et al 0715]	Epiphytic	Rachela, Todey - Kalimpong	1600-2400	September- December
57	<i>Coelogyne corymbosa</i> Lindl. [Rajendra et al 0308]	Epiphytic	Rimbik, Tiger Hill, Samanden-Darjeeling	1400-3300	April-May
58	<i>Coelogyne cristata</i> Lindl. [Rajendra et al 0217]	Epiphytic	Lava forest, Kurseong, Mamring, Todey-Tangta	1200-2700	February-April
59	<i>Coelogyne fimbriata</i> Lindl. [Rajendra et al 1501]	Epiphytic	Relli-Pala,Kumsi forest- Kalimpong	800-2300	September- November

60	<i>Coelogyne flaccida</i> Lindl. [Rajendra et al 0253]	Epiphytic	Relli, Neol forest- Kalimpong	300-1900	March-April
61	<i>Coelogyne fuscescens</i> Lindl. [Rajendra et al 0186]	Epiphytic	Sangsay Bhalukhop, Samalbong-Sinjee- Kalimpong	700-2000	October- December
62	<i>Coelogyne raizadae</i> S.K. Jain & S. Das [Rajendra et al 0821]	Epiphytic	Bagora, Rimbik, St. Marry's Hill Kurseong	1800-2400	April-June
63	<i>Coelogyne nitida</i> (Wall. ex D. Don) Lindl. [Rajendra et al 0195]	Epiphytic	Nock Dara, Lungshel, Todey-Tangta, Lopchu- Darjeeling	1400-2800	February-May
64	<i>Coelogyne occultata</i> Hook. f. [Rajendra et al 1201]	Epiphytic	Bagora, Rachela forest- Kalimpong	1800-2900	Apr.-June
65	<i>Coelogyne ovalis</i> Lindl. [Rajendra et al 0145]	Epiphytic	Suruk, Samalbong, Lopchu-Darjeeling	800-1900	October- November
66	<i>Coelogyne pantlingii</i> S.Z. Lucksom [Rajendra et al 0892]	Epiphytic	Sukiapokhari, Rammam- Darjeeling	2000-2600	June-July
67	<i>Coelogyne pempahesiana</i> H.J. Chowdhery [Rajendra et al 1146]	Epiphytic	Todey-Tangta forest and Holumba Nursery (Endemic to Kalimpong)	1000-2900	March-May
68	<i>Coelogyne prolifera</i> Lindl. [Rajendra et al 0269]	Epiphytic	Nokdara, Todey, Kumsi- Kalimpong	600-1900	February-April
69	<i>Coelogyne punctulata</i> Lindl. [Rajendra et al 1496]	Epiphytic	Damsang Gari, Rimbik- Darjeeling	1300-2200	October- December
70	<i>Coelogyne stricta</i> (D. Don) Schltr. [Rajendra et al 1059]	Epiphytic	Sittong, Nimbong, Mungpoo	600-1300	February-April
71	<i>Coelogyne viscosa</i> Reichb. f. [Rajendra et al 0767]	Epiphytic	Godok, Todey-Tangta- Kalimpong	500-1400	February-April
72	<i>Cryptochilus lutea</i> Lindl. [Rajendra et al 0411]	Epiphytic	Samalbong, Tangta, Rachela, Megma- Darjeeling	1100-2900	March-June
73	<i>Cryptochilus sanguinea</i> Wall. [Rajendra et al 0872]	Epiphytic	Birch hill, Dhotray- Darjeeling	1600-2600	June-July
74	<i>Cymbidium aloifolium</i> (L.) Sw. [Rajendra et al 0362]	Epiphytic	Relli, Surul-Kalimpong 7 th Mile, Chitrey- Darjeeling	300-1600	April-July
75	<i>Cymbidium cochleare</i> Lindl. [Rajendra et al 1011]	Epiphytic	Charkhol, Lava, Takdah- Darjeeling	1500-2200	October- December
76	<i>Cymbidium dayanum</i> Reichb. f. [Rajendra et al 1471]	Epiphytic	Jaldhaka, Lathpanjar, Mungpoo	500-1000	August- November
77	<i>Cymbidium devonianum</i> Lindl. ex Paxton [Rajendra et al 0349]	Epiphytic & Lithophytic	Lungshel, Turuk, Lava forest-Kalimpong	1300-2300	April-July

78	<i>Cymbidium erythraeum</i> Lindl. [Rajendra et al 1432]	Epiphytic	Lava, Neora Valley, Algarah-Kalimpong	1800-2700	August-October
79	<i>Cymbidium hookerianum</i> Rchb. f. [Rajendra et al 0291]	Epiphytic	Jarebuttee (Neora Valley), Todey- Kalimpong	2200-2800	March-May
80	<i>Cymbidium iridioides</i> D. Don [Rajendra et al 2745]	Epiphytic	Neora Valley, Todey forest-Kalimpong	1100-2400	October- November
81	<i>Cymbidium longifolium</i> D. Don. [Rajendra et al 0724]	Epiphytic	Lava, Gumbadara, Algarah-Kalimpong	1700-2300	October- December
82	<i>Cymbidium lowianum</i> (Rchb. f.) Rchb. f. [Rajendra et al 1094]	Epiphytic	Todey, Neora Valley- Kalimpong	1400-2700	March-May
83	<i>Cymbidium mastersii</i> Griff. ex Lindl. [Rajendra et al 2773]	Epiphytic	Forest areas of Kaffer, Neora Valley - Kalimpong	1000-2300	October- December
84	<i>Cymbidium bicolor</i> Lindl. [Rajendra et al 0816]	Epiphytic	Samalbong-Sinjee, Suruk Busty-Kalimpong	300-1500	April-June
85	<i>Dendrobium aduncum</i> Lindl. ex. Lindl. [Rajendra et al 1286]	Epiphytic	Panighatta, Kumsi forest- Kalimpong	300-900	May-July
86	<i>Dendrobium amoenum</i> Wall. ex Lindl. [Rajendra et al 0376]	Epiphytic	Suruk, Samalbong, Jaldhaka, Lesh khola	300-800	May-June
87	<i>Dendrobium anceps</i> Sw. [Rajendra et al 0243]	Epiphytic	Sevok, Kalijhora, Rambi Mongpong	150-600	March-May
88	<i>Dendrobium aphyllum</i> (Roxb.) C.E.C. Fischer [Rajendra et al 0276]	Epiphytic	Suruk, Samalbong, Birik, Kambal, Jholung, Kumsi- Kalimpong	300-1800	March-June
89	<i>Dendrobium bicameratum</i> Lindl. [Rajendra et al 0551]	Epiphytic	Lungshel, Todey forest- Kalimpong	500-2100	July-August
90	<i>Dendrobium candidum</i> Wall. ex Lindl. [Rajendra et al 0457]	Epiphytic	Rammam, Gorkhey, Rachela, Megma- Darjeeling	1000-2600	May-June
91	<i>Dendrobium cathcartii</i> Hook. f. [Rajendra et al 0237]	Epiphytic	Rambi, Sevok-Siliguri	150-800	March- September
92	<i>Dendrobium chrysanthum</i> Wall. ex Lindl. [Rajendra et al 0687]	Epiphytic	Algarah, Lava, Nokdara, Lungsel, Todey- Kalimpong	800-2200	July-October
93	<i>Dendrobium chrysotoxum</i> Lindl. [Rajendra et al 2613]	Epiphytic	Holumba Nursery- Kalimpong	1300-1800	May-June
94	<i>Dendrobium crepidatum</i> Lindl. & Paxton [Rajendra et al 0801]	Epiphytic	Holumba Nursery- Kalimpong	800-1200	April-May
95	<i>Dendrobium cumulatum</i> Lindl. [Rajendra et al 1281]	Epiphytic	Holumba Nursery- Kalimpong	350-600	June-July

96	<i>Dendrobium densiflorum</i> Lindl. [Rajendra et al 0331]	Epiphytic	Suruk, Najok, Relli, Seokbir Khani, Lopchu- Darjeeling	300-2100	April-July
97	<i>Dendrobium denudans</i> D. Don [Rajendra et al 0109]	Epiphytic	Mangzing, Nimbong, Samalbong Busty - Kalimpong	600-1800	September- October
98	<i>Dendrobium devonianum</i> Paxton. [Rajendra et al 0861]	Epiphytic	Holumba Nursery- Kalimpong	800-2100	April-May
99	<i>Dendrobium eriiflorum</i> Griff. [Rajendra et al 0718]	Epiphytic	Mangzing, Nimbong- Kalimpong	800-2000	September- November
100	<i>Dendrobium falconeri</i> Hook. [Rajendra et al 1151]	Epiphytic	Holumba Nursery- Kalimpong	1500-2200	April-June
101	<i>Dendrobium farmeri</i> Paxton [Rajendra et al 1140]	Epiphytic	Kalijhora forest	200-1000	March-May
102	<i>Dendrobium fimbriatum</i> Hook. [Rajendra et al 2579]	Epiphytic	Kumsi forest, Algarah- Kalimpong	600-1660	April-may
103	<i>Dendrobium fimbriatum</i> Hook. var. <i>occulatum</i> Hook. [Rajendra et al 0283]	Epiphytic	Suruk, Relli-Kalimpong	300-1100	March-May
104	<i>Dendrobium heterocarpum</i> Lindl. [Rajendra et al 1081]	Epiphytic	Todey, Neora Valley- Kalimpong	1300-2300	February-April
105	<i>Dendrobium jenkinsii</i> Wall. ex Lindl. [Rajendra et al 2574]	Epiphytic	Holumba Nursery- Kalimpong	1100-1400	April-May
106	<i>Dendrobium lindleyi</i> Steudel. [Rajendra et al 1120]	Epiphytic	Holumba Nursery- Kalimpong	800-1600	February-April
107	<i>Dendrobium longicornu</i> Lindl. [Rajendra et al 0151]	Epiphytic	Lava, Lungshel, Gumbadara, Algarah- Kalimpong	1400-3000	August- December
108	<i>Dendrobium moschatum</i> (Buchanan-Hamilton) Sw. [Rajendra et al 0061]	Epiphytic	Relli, Samalbong forest- Kalimpong	500-1300	May-July
109	<i>Dendrobium nobile</i> Lindl. [Rajendra et al 0421]	Epiphytic	Relli, 8 th mile Kalimpong, Rimbik forest-Darjeeling	300-2200	April-June
110	<i>Dendrobium nobile</i> Lindl. var. <i>virginialis</i> Hort. [Rajendra et al 1551]	Epiphytic	Lava, Damsangari, Kaffer, Takdah	340-1600	April-June
111	<i>Dendrobium pendulum</i> Roxb. [Rajendra et al 1559]	Epiphytic	Holumba Nursery- Kalimpong	1200-1600	March-April
112	<i>Dendrobium porphyrochilum</i> Lindl. [Rajendra et al 0475]	Epiphytic	Manaybhanjang, Rammam forest- Darjeeling	2000-2700	May-July

113	<i>Dendrobium praecinctum</i> Rchb. f. [Rajendra et al 1284]	Epiphytic	Todey-Tangta forest-Kalimpong	1100-1900	June-July
114	<i>Dendrobium stuposum</i> Lindl. [Rajendra et al 1314]	Epiphytic	Takdah, Dabaipani	1400-2300	May-July
115	<i>Dendrobium sulcatum</i> Lindl. [Rajendra et al 0998]	Epiphytic	Kumsi, Najok forest-Kalimpong	550-1000	April-May
116	<i>Dendrobium terminale</i> Parish & Rchb. f. [Rajendra et al 1325]	Epiphytic	Lesh khola	300-800	June-September
117	<i>Dendrobium transparens</i> Wall. ex Lindl. [Rajendra et al 0417]	Epiphytic	Kalijhora, Bagrakote, Mem Tea Estate-Darjeeling	200-1700	May-June
118	<i>Epigenium amplum</i> (Lindl.) Summerhayes [Rajendra et al 0721]	Epiphytic	Nim, Lungshel, Algarah, Sukiapokhari-Darjeeling	1400-2200	September-November
119	<i>Epigenium rotundatum</i> (Lindl.) Summerhayes [Rajendra et al 0705]	Epiphytic	Lava, Nokdara, Algarah, Todey-Kalimpong	1500-2600	September-November
120	<i>Eria acervata</i> Lindl. [Rajendra et al 0608]	Epiphytic	Kalijhora, Relli, Nokdara-Kalimpong	200-900	June-August
121	<i>Eria amica</i> Rchb. f. [Rajendra et al 0786]	Epiphytic	Kumsi, Panbu, Algarah-Kalimpong	500-1600	March-June
122	<i>Eria biflora</i> Griff. [Rajendra et al 1517]	Epiphytic	Najok-Sepkhola-Kalimpong	400-900	September-October
123	<i>Eria bractescens</i> Lindl. [Rajendra et al 0897]	Epiphytic	Algarah, Tinchulay, Kurseong	400-1700	May-July
124	<i>Eria clausa</i> King & Pantling [Rajendra et al 0779]	Epiphytic	Rammam, Neora Valley-Kalimpong	1100-2600	February-May
125	<i>Eria coronaria</i> (Lindl.) Reichb. f. [Rajendra et al 0175]	Epiphytic	Nimbong, Lungsel, Nokdara-Kalimpong	1000-2300	October-December
126	<i>Eria discolor</i> Lindl. [Rajendra et al 0513]	Epiphytic	Relli, Sevok, Kalijhora	500-1300	January-June
127	<i>Eria excavata</i> Lindl. [Rajendra et al 0233]	Epiphytic	Relli, Teesta River Sides	1000-2200	March-June
128	<i>Eria bambusifolia</i> Lindl. [Rajendra et al 0405]	Epiphytic	Sukiapokhari, Godok-Todey-Kalimpong	1900-2800	October-December
129	<i>Eria graminifolia</i> Lindl. [Rajendra et al 1206]	Epiphytic	Toroyok, Serikhola-Darjeeling	1800-3450	May-August
130	<i>Eria lasiopetala</i> (Willdenow) Ormerod [Rajendra et al 0227]	Epiphytic	Rambi, Relli, Sevok, Kalijhora	200-700	March-July
131	<i>Eria paniculata</i> Lindl. [Rajendra et al 0342]	Epiphytic	Lungshel, Algarah-Kalimpong	700-1600	February-May

132	<i>Eria pannea</i> Lindl. [Rajendra et al 1564]	Epiphytic	Kumsi forest, Kamble	600-1000	May-July
133	<i>Eria pumila</i> Lindl. [Rajendra et al 1307]	Epiphytic	Kalijhora, Sevok-Sliguri	200-600	May-August
134	<i>Eria spicata</i> (D. Don) Handel-Mazzetti [Rajendra et al 0601]	Epiphytic	Lungshel, Kumsi, Nokdara forest - Kalimpong	400-2300	February-August
135	<i>Eria stricta</i> Lindl. [Rajendra et al 0043]	Epiphytic	Suruk, Samalbong, Chuikhim-Kalimpong	400-1400	January-April
136	<i>Eria vittata</i> Lindl. [Rajendra et al 1053]	Epiphytic	Todey-Tangta, Neora Valley-Kalimpong	1500-2600	February-April
137	<i>Esmeralda cathcartii</i> (Lindl.) Rchb. f. [Rajendra et al 1067]	Epiphytic	Neora Valley, Sukiapokhari- Darjeeling	700-2300	March-June
138	<i>Esmeralda clarkei</i> Rchb. f. [Rajendra et al 0753]	Epiphytic	Lava, Todey forest-Kalimpong	1300-2000	September-December
139	<i>Flickengeria fugas</i> Rchb. f. [Rajendra et al 0508]	Epiphytic	Relli, Kalijhora, Jholung	200-900	June-July
140	<i>Flickengeria macraei</i> (Lindl.) Seidenfaden [Rajendra et al 1293]	Epiphytic	Todey, Rachela, Sukiapokhari forest-Darjeeling	1600-2800	June-July
141	<i>Gastrochilus acutifolius</i> (Lindl.) Kuntze [Rajendra et al 1017]	Epiphytic	Kaffer, Bagora forest	1400-2400	October-December
142	<i>Gastrochilus desypogon</i> (J.E. Smith) Kuntze [Rajendra et al 1511]	Epiphytic	Sittong, Panbu forest-Kalimpong	600-1400	October-November
143	<i>Gastrochilus calceolaris</i> (Buchanan-Hamilton ex J.E. Smith) D. Don [Rajendra et al 0451]	Epiphytic	Rammam, Toroyok-Kurseong	1700-2300	April-June
144	<i>Gastrochilus distichus</i> (Lindl.) Kuntz [Rajendra et al 0303]	Epiphytic	Neora Valley, Todey, Rimbik-Darjeeling	1700-2600	March-May
145	<i>Gastrochilus inconspicuus</i> (Hook. f.) Kuntze [Rajendra et al 0901]	Epiphytic	Seokbir Khani, Relli forest-Kalimpong	200-700	June-July
146	<i>Gastrochilus sonamii</i> S.Z. Lucksom [Rajendra et al 0740]	Epiphytic	Rammam forest, Neora Valley-Kalimpong	1800-2600	November-December
147	<i>Ione bicolor</i> (Lindl.) Lindl. [Rajendra et al 0131]	Epiphytic	Rimbik, Lava, Algarah-Kalimpong	1500-2000	October-December
148	<i>Ione cirrhata</i> Lindl. [Rajendra et al 0738]	Epiphytic	Damsanggari, Algarah-Kalimpong	1600-1900	October-November
149	<i>Liparis bootanensis</i> Griff. [Rajendra et al 1337]	Epiphytic	Todey, Lava, Rimbik-Darjeeling	1300-2300	June-August

150	<i>Liparis cespitosa</i> (Lamarck) Lindl. [Rajendra et al 0538]	Epiphytic	Lava, Rimbik, Todey-Kalimpong	1800-2200	June-September
151	<i>Liparis duthiei</i> Hook. f. [Rajendra et al 1321]	Epiphytic	Rambi, Relli river side	400-1500	June-August
152	<i>Liparis gamblei</i> Hook. f. [Rajendra et al 1259]	Epiphytic	Kumsi forest-Kalimpong	1600-2400	June-July
153	<i>Liparis platyrachis</i> Hook. f. [Rajendra et al 2705]	Epiphytic	Todey, Algarah forest-Kalimpong	1000-1300	October-November
154	<i>Liparis resupinata</i> Ridley. [Rajendra et al 0737]	Epiphytic	Lava forest, Algarah, Todey forest -Kalimpong	1600-2100	October-February
155	<i>Liparis resupinata</i> Ridley var. <i>ridleyi</i> King & Pantling [Rajendra et al 2751]	Epiphytic	Todey-Tangta forest-Kalimpong	1200-1600	December-January
156	<i>Liparis somai</i> Hayata [Rajendra et al 0969]	Epiphytic	Samalbong, Sangsay Bhalukhop	800-1800	August-October
157	<i>Liparis viridiflora</i> (Bl.) Lindl. [Rajendra et al 0944]	Epiphytic	Todey, neora valley, Rammam forest	1300-2100	September-December
158	<i>Lusia brachystachys</i> (Lindl.) Bl. [Rajendra et al 1131]	Epiphytic	Mungpoo, Mamring-Kurseong	1000-2000	April-May
159	<i>Lusia filiformis</i> Hook. f. [Rajendra et al 0369]	Epiphytic	Relli, Kalijhora	300-1100	April-June
160	<i>Lusia trichorrhiza</i> (Hook.) Bl. [Rajendra et al 0791]	Epiphytic	Kumsi, Mungpoo, Samalbong, Nimbong	800-1300	March-May
161	<i>Lusia zeylanica</i> Lindl. [Rajendra et al 0398]	Epiphytic	Kalijhora, Kumsi, Tindharey-Kurseong	300-800	February-May
162	<i>Mastigion appendiculatum</i> (Rolfe) Garay, Hamer & Siegreist [Rajendra et al 1508]	Epiphytic	Najok, Latpanjar-Kurseong	700-1200	October-December
163	<i>Micropera obtusa</i> (Lindl.) T. Tang & F.T. Wang [Rajendra et al 0675]	Epiphytic	Kalijhora, Sevok, Relli-Pala-Kalimpong	200-800	July-September
164	<i>Monomeria barbata</i> Lindl. [Rajendra et al 1031]	Epiphytic	Lava, Neora Valley-Kalimpong	900-2500	November-February
165	<i>Oberonia acaulis</i> Griff. [Rajendra et al 1489]	Epiphytic	Todey, Tangta, Godok-Todey	900-1900	September-November
166	<i>Oberonia angustifolia</i> Lindl. [Rajendra et al 0531]	Epiphytic	Lungshel-Suntalay, Dello hill	800-1800	June-July
167	<i>Oberonia caulescens</i> Lindl. [Rajendra et al 1583]	Epiphytic	Damsang Gari, Lava	1500-2700	June-August
168	<i>Oberonia emarginata</i> King & Pantling [Rajendra et al 0921]	Epiphytic	Dello hill, Todey-Kalimpong	1100-2000	June-September

169	<i>Oberonia ensiformis</i> (J.E. Smith) Lindl. [Rajendra et al 2699]	Epiphytic	NHPC project side, Najok forest -Kalimpong	450-700	October-November
170	<i>Oberonia falcata</i> King & Pantling [Rajendra et al 2693]	Epiphytic	Kaffer forest, Lava - Kalimpong	1300-1800	July-October
171	<i>Oberobia mucronata</i> (D. Don) Ormerod & Seidenfaden [Rajendra et al 0162]	Epiphytic	Charkhol, Relli, Kalijhora	300-900	October-November
172	<i>Oberonia recurva</i> Lindl. [Rajendra et al 0221]	Epiphytic	Kalijhora, Relli, Sevok, Gorubathan	200-900	October-March
173	<i>Oberonia pachyrachis</i> Rchb. f. ex Hook. f. [Rajendra et al 0733]	Epiphytic	Kalijhora, Rambi, Relli, Ratay-Makum forest-Kalimpong	300-800	October-December
174	<i>Ornithochilus difformis</i> (Wall. ex Lindl.) Schltr. [Rajendra et al 0557]	Epiphytic	Nokhdara, Lava, Kumsi, Lopchu forest-Darjeeling	900-2300	June-September
175	<i>Otochilus albus</i> Lindl. [Rajendra et al 0261]	Epiphytic	Lava, Algarah, Pedung	900-2100	March-June
176	<i>Otochilus fuscus</i> Lindl. [Rajendra et al 0692]	Epiphytic	Dello hill, Suruk-Samthar-Kalimpong	700-2200	December-March
177	<i>Otochilus lancilabius</i> Seidenfaden [Rajendra et al 0748]	Epiphytic	Algarah, Nokdara, Tangta forest-Kalimpong	900-2600	November-January
178	<i>Panisea demissa</i> (D. Don) Pfitzer. [Rajendra et al 0730]	Epiphytic	Lopchu, Lava, Rachela forest -Kalimpong	1900-3200	October-December
179	<i>Panisea uniflora</i> (Lindl.) Lindl. [Rajendra et al 0718]	Epiphytic	Khalijhora, Pankhabari	300-1000	March-June
180	<i>Pelatanthera insectifer</i> (Rchb. f.) Rolf. [Rajendra et al 1484]	Epiphytic	Sevoke forest-Siliguri	150-900	October-November
181	<i>Papilionanthe teres</i> (Roxb.) Schltr. [Rajendra et al 0491]	Epiphytic	Sevok, NBU Campus-Siliguri	150-700	May-July
182	<i>Phalaenopsis lobbii</i> (Rchb. f.) H.R. Sweet [Rajendra et al 1088]	Epiphytic	Tarkhola, Sukuna forest	250-700	March-May
183	<i>Phalaenopsis deliciosa</i> Rchb. f. [Rajendra et al 1237]	Epiphytic	Guling, Jaldhaka, Lesh khola	300-800	May-September
184	<i>Phalaenopsis mannii</i> Rchb. f. [Rajendra et al 0806]	Epiphytic	Sukuna forest	150-900	April-June
185	<i>Phalaenopsis taenialis</i> (Lindl.) E.A. Christenson & Pradhan [Rajendra et al 0446]	Epiphytic	Kumsi, Rammam forest-Darjeeling	1000-2800	April-May

186	<i>Pholidota articulata</i> Lindl. [Rajendra et al 0393]	Epiphytic	Samalbong, Kalijhora forest	300-1600	April-July
187	<i>Pholidota articulata</i> var. <i>griffithii</i> (Hook. f.) King and Pantling [Rajendra et al 0887]	Epiphytic	Samalbong, Yangmakum Busty -Kalimpong	400-1200	April-August
188	<i>Pholidota imbricata</i> Hook. [Rajendra et al 0487]	Epiphytic	Samalbong-Relli, Kalijhora forest	300-1200	April-August
189	<i>Pholidota pallida</i> Lindl. [Rajendra et al 1301]	Epiphytic	Samalbong, Relli, Kalijhora, Lathpanjar-Kurseong	800-1100	June-October
190	<i>Pholidota recurva</i> Lindl. [Rajendra et al 1453]	Epiphytic	Todey-Tangta forest-Kalimpong	600-2000	August-September
191	<i>Pholidota rubra</i> Lindl. [Rajendra et al 1629]	Epiphytic	Algarah, Lava, Bagorah forest-Kurseong	900-2200	October-December
192	<i>Pleione hookeriana</i> (Lindl.) B.S. Williams [Rajendra et al 0469]	Epiphytic	Ghorkhey, Sandakphu, Kalpokhari-Boarder area (India-Nepal)	2100-3600	May-July
193	<i>Pleione humilis</i> (J.E. Smith) D. Don [Rajendra et al 0296]	Epiphytic	Chetray, Neora Valley, Kalpokhari forest Boarder area (India-Nepal)	1800-3300	February-April
194	<i>Pleione maculata</i> (Lindl.) Lindl. [Rajendra et al 1504]	Epiphytic	Pankhasari forest	500-1800	October-November
195	<i>Pleione praecox</i> (J.E. Smith) D. Don [Rajendra et al 0181]	Epiphytic	Charkhol, Lava, Todey, Sukiapokhari-Darjeeling	1800-2400	September-December
196	<i>Podochilus cultratus</i> Lindl. [Rajendra et al 1442]	Epiphytic	Dudhay, Panbu Busty	300-1700	August-September
197	<i>Podochilus khasianus</i> Hook. f. [Rajendra et al 1355]	Epiphytic	Kaffer, Godok-Todey-Kalimpong	1000-2000	July-September
198	<i>Pomatocalpa armigerum</i> (King & Pantling) T. Tang & F.T. Wang [Rajendra et al 1402]	Epiphytic	Sukuna, Kalijhora forest	200-700	August-September
199	<i>Porpax elwesii</i> (Rchb. f.) Rolfe [Rajendra et al 1519]	Epiphytic	Suruk Busty, Latpanjar-Kurseong	500-1800	October-December
200	<i>Pteroceras teres</i> (Bl.) Holttum [Rajendra et al 0915]	Epiphytic	Guling, Panbu forest	300-1100	June-August
201	<i>Rhynchostylis retusa</i> (L.) Bl. [Rajendra et al 0519]	Epiphytic	Samalbong, Sevok, Bagrakote	150-900	June-July
202	<i>Rhytionanthos cornutum</i> (Lindl.) Garay, Hamer & Siegerist [Rajendra et al 1341]	Epiphytic	Teesta river valley, Pedong-Kalimpong	400-1900	June-August

203	<i>Saccolabiopsis pussila</i> (Lindl.) Seidenfaden & Garay [Rajendra et al 1090]	Epiphytic	Sevok, Gorubathan	200-500	February-March
204	<i>Smitinandia micrantha</i> (Lindl.) Holttum [Rajendra et al 0387]	Epiphytic	Sukuna, Sevok, Panighatta -Kurseong	150-1100	April-June
205	<i>Steriochilus hirtus</i> Lindl. [Rajendra et al 0439]	Epiphytic	Serikhola, Dhotray- Darjeeling	1800-2500	May-June
206	<i>Sunipia intermedia</i> (King & Pantling) P.F. Hunt [Rajendra et al 0341]	Epiphytic	Lungshel, Daw Hill- Kurseong	1300-2100	April-June
207	<i>Sunipia scariosa</i> Lindl. [Rajendra et al 0855]	Epiphytic	Lakpatar, Todey- Kalimpong	1000-1900	May-June
208	<i>Thelasis pygmaea</i> (Griff.) Bl. [Rajendra et al 0681]	Epiphytic	Neol, Kumsi, Yangmakum-Kalimpong	250-900	August- September
209	<i>Thunia alba</i> (Lindl.) Rchb. f. [Rajendra et al 0074]	Epiphytic	Suruk, Pudung	600-1800	June-August
210	<i>Thunia bracteata</i> (Roxb.) Schltr. [Rajendra et al 0933]	Epiphytic	Hill top, Dello hill, Pudung, Kumsi- Kalimpong	900-1400	August- September
211	<i>Trichotosia dasyphylla</i> (Parish & Rchb. f.) Kranzlin [Rajendra et al 0883]	Epiphytic	Samalbong, Nimbong Busty -Kalimpong	800-1200	April-June
212	<i>Trichotosia pulvinata</i> (Lindl.) Kranzlin [Rajendra et al 1361]	Epiphytic	Chibo Busty-Kalimpong, Majitar	400-800	July-September
213	<i>Uncifera obtusifolia</i> Lindl. [Rajendra et al 0927]	Epiphytic	Sonadah, Lava, Sukiapokhari	1000-2200	August- September
214	<i>Vanda alpina</i> Lindl. [Rajendra et al 1211]	Epiphytic	Kumsi forest-Kalimpong	800-1800	June-July
215	<i>Vanda cristata</i> Lindl. [Rajendra et al 0434]	Epiphytic	Lungshel, Samalbong- Sinjee Busty-Kalimpong	700-1900	April-June
216	<i>Vanda cristata</i> var. <i>multiflora</i> Hort. [Rajendra et al 0381]	Epiphytic	Samalbong, Samthar, Teesta valley	700-1300	April-June
217	<i>Vanda pumila</i> Hook. f. [Rajendra et al 1127]	Epiphytic	Kalijhora forest	360-750	April-May
218	<i>Vandopsis undulata</i> (Lindl.) J.J. Smith [Rajendra et al 0337]	Epiphytic	Nokdara, Rimbik, Lava forest-Kalimpong	1800-2400	April-May

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