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Neelima Khunte
Research Scholar, College of Horticulture & Research Station, MGUVV, Durg, Chhattisgarh, India

Dr. Rajeshwari Sahu
Assistant Professor, Mahatma Gandhi University of Horticulture and Forestry, Durg, Chhattisgarh, India

Dr. Toran Lal Sahu
Head of Department (Floriculture and landscaping) MGUVV, Durg, Chhattisgarh, India

Dr. Neetu Harmukh
Scientist, Chhattisgarh State Biodiversity Board, Aranya Bhawan, Raipur, Chhattisgarh, India

Suvigya Gautam
Research Scholar, College of Horticulture & Research Station, MGUVV, Durg, Chhattisgarh, India

Corresponding Author:
Neelima Khunte
Research Scholar, College of Horticulture & Research Station, MGUVV, Durg, Chhattisgarh, India

Orchid species diversity: A review of the literature and future research directions

Neelima Khunte, Rajeshwari Sahu, Toran Lal Sahu, Neetu Harmukh and Suvigya Gautam

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Abstract
Illustrations, distribution, and a taxonomy description are included for simple and precise identification. In this paper, the current status of orchid diversity resources is discussed. This aim is to accurately identify and evaluate orchid species using taxonomy in order to determine their habitat, phenology, locality, voucher specimen, and currently recognized botanical names.

Keywords: Diversity resources, habitat, identification, orchid species

Introduction
A captivating genus of flowering plants, orchids are remarkably diverse and ecologically significant on a global scale. Among monocotyledons, orchids, which are members of the Orchidaceae family, are deemed to be the most highly evolved in terms of floral specialization and diverse shape. With 600-800 genera and 25,000-35,000 species, they are the most highly evolved family of monocotyledons in terms of taxonomy.
There is a remarkable variety in the size, shape, and color of orchid blossoms. There is evidence that certain orchid species, such as *Vanda roxburghii, Vanda tessellata, Eulophia campestris, Dendrobium nobile, and Orchis latifolia*, have therapeutic uses. Although there are many epiphytic orchids, the commercial orchids are both terrestrial and epiphytic. For commercial production, both monopodial (growing on a single stem) and sympodial (growing on multiple stems) are preferred.

Morphology of orchids
The Perennial herbs with simple leaves make up the majority of orchids. While the specialized floral structure is consistent, there is a lot of variation in the vegetative components, with many being terrestrial or epiphytes and a few saprophytes having no leaves. (Tiwari *et.al*, 2024) [4]
Orchid flowers are all carried in inflorescences, which can be branched panicles, simple racemes, or spikes. Orchid blossoms are zygomorphic.

I) Based on Growth Habit
Epiphytes: Grow on tree trunks and branches. *Vanda spp*
Lithophytes are plants that grow on rocks. *Lipapis spp*.
Terrestrial: Grow on the soil. *Habenaria spp*. (S. Vinodia, A. K. Dixit 2017) [3]
Saphrophytes: Grow on organic and dead substances. *Epipogoium roseum*
Subterranean: Grow in semi-aquatic or watery environments. *Vanda spp*

II) Based on Vegetative Growth
Sympodial orchids: The growth habit of sympodial orchids is determinate. Swollen stems called pseudobulbs are produced by plants and are utilized to store food and water. (Ex-Cattelya, Epidendrum, Cymbidium, Dendrobium).

Monopodial orchids: The terminal growth habit of monopodial orchids is indeterminate. Plants have aerial roots that serve as an anchor when they grow higher. (Ex- Arachnis, Vanda, Phalanenopsis, Calathea)
Three sepals, three petals, and the gynostemium, or column, make up the flower's seven constituent parts. The most appealing feature of the flower is the lip, also known as the labellum, which is actually a highly modified petal.

Climate and soil
Humidity: Orchids desire a humidity of 75-85% in the summer and 50-55% in the winter.

Light: At least six hours a day of bright, indirect light is usually sufficient for orchids to flourish, much like their natural habitat under tree canopies. Steer clear of direct sunlight as it may burn their foliage. Make sure the artificial light you use is bright, filtered, and replicates the spectrum of sunlight.

Temperature: Orchids prefer temperatures that vary from 20 to 32 °C during the day and a little lower at night, though this depends on the species and hybrid. Warmer temperatures are preferred by many orchids, such as Phalaenopsis and Vanda, whilst Cattleya and Oncidium prefer moderate temperatures. It is generally advised to maintain a temperature differential between day and night of 5.5-8 C. (Tiwari and Kumar 2014 Orchid cultivation and management, New India Publishimhg Agency 2014) [4].

Atmosphere: Orchid production need both fresh air and adequate circulation. Light winds that never stop are a good source of carbon dioxide for photosynthesis.

Propagation: Orchids can be cultivated using tissue culture, seeds, and other vegetative techniques. Using top cuttings, monopodial orchids such as Mokara, Aerides, Vanda, and Arachnis can be multiplied. Dendrobium, Cattleya, Oncidium, Miltonia, Paphiopedilum, and Cymbidium are examples of sympodial orchids that can be multiplied through division. It is also possible to use the keikis, or shoots, that develop on the plants. Keikis are found in Ascocenda, Epidendrum, and Dendrobium.

Cultivation
Planting: Orchids are frequently planted in plastic pots, earthern pots, baskets, tree fern blocks, wooden trays, and coconut husks. Lighter media, such as charcoal, coconut husk, and tree fern fiber, are used to grow orchids in hanging pots or baskets. For terrestrial orchids, clay pots work well. Epiphytes are kept in plastic pots.

Potting media: The best potting medium for epiphytic orchids' vegetative growth and flowering is a mixture of equal parts charcoal, brick fragments, and coconut fiber. Sand, soil, and leaf mold in equal amounts. Various amounts of clay soil, bone meal, sawdust, charcoal dust, manure, wood savings, etc. are also utilized to ensure that terrestrial orchids thrive well. (Tiwari and Kumar 2014) [4].

Manuring and fertilization: Since they are light feeders, orchids need nitrogen throughout the first two-thirds of their life cycle. High amounts of potassium and low levels of phosphate and nitrogen are maintained during the flowering period. High-quality flower production is achieved by applying a concentration of 0.2-0.3% of 30:10:10 (N:P:K) during the vegetative stage and 10:20:20 (N:P:K) during the blooming stage.

Enumerations

Serial no.	Orchid species	Description	Habitat	Flowering
1	*Acampe papillosa* (Lindl.)	Yellow, mildly fragrant flowers that are 1 cm across; sepals and petals are yellow with transverse bands of reddish brown; the lip is white with a hint of purple-red.	Epiphyte on the trunk of a tree	November - December
2	*Acampe rigida* (Buch.-Ham. ex Sm.)	Lips are white with longitudinal stripes of purplish brown above; flowers are yellow with transverse stripes of purplish brown.	On huge branches or tree trunks, epiphytes grow.	June - July
3	*Acanthephippium striatum*	Creamy white tubular flowers with parallel red veining measure 3.5 to 4.5 cm in diameter.	Growing in damp, shady areas along stream banks and in thick forests.	June - July
4	*Aerides odorata* Lour.	Fragrant flowers, 2.2-2.5 cm wide, white with purple spots near the tips.	An epiphyte in a lowland rainforest.	May-June
5	*Aerides rosea* Lodd. ex Lindl. & Paxton	The fragrant, purplish-pink flowers open widely, about 2 cm across, and are dotted with white and dark pink.	With mixed deciduous and wet evergreen forests, epiphytes	May
6	*Agrostophyllum planicaule* (Wall. ex Lindl.) Rchb.f.	Flowers are white, 6-8 mm in circumference	Amid mixed deciduous and wet evergreen forests, epiphytes	August - October.
7	*Anoectochilus brevilabris* Lindl.	Delicate pinkish, white-lip flowers are nearly 2.5 cm long.	In a densely humid nature with evergreens	April - June
8	*Anoectochilus roxburghii* (Wall.) Lindl.	White or pink flowers; lips are white	terrestrial with a robust, damp forest of evergreens.	July-August
9	*Biermannia bimaculate* (King & Pantl.)	White, sweet-smelling, 2-3, distichous flowers with petals measuring 1-1.2 cm across.	In a dense, moist evergreen forests, epiphytic.	April - May
10	*Bulbophyllum affine* Lindl.	Flowers are solitary, about 3 cm long, and white with pink accents.	With mixed deciduous and wet evergreen forests, epiphytes	June-August
11	*Bulbophyllum andersonii* (Hook.f.) J.J.Sm.	The flowers are 1.5 cm long, with purple lips and white, purplish-red-spotted sepals and petals.	Epiphyte in humid evergreen and mixed deciduous forests.	October
12	*Bulbophyllum careyanum* (Hook.) Spreng.	Purplish-brown flowers that are 0.5-0.8 cm long.	In a profound, humid, evergreen forest, epiphytes grow on tree trunks.	October-December
13	*Bulbophyllum delitescens*	Brownish-red flowers	In a dense, humid evergreen forest	June-July

	Hance		adjacent to a waterfall, an epiphyte	
14	*Bulbophyllum ebulbum*	Pale green flowers with petals that are around 0.8 cm long	In a wide, humid, evergreen forest, epiphytes thrive on tree trunks.	May- June.
15	*Bulbophyllum odoratissimum* (Sm.) Lindl. ex Wall.	White, fragrant, 5-7 mm long flower.	Near a waterfall in a robust, humid evergreen forest, an epiphyte	May-September
16	*Bulbophyllum ornatissimum* (Rchb.f.) J.J.Sm.	Yellow flowers with an accent of brown	This epiphyte grows in an evergreen forest.	June-October
17	*Bulbophyllum protractum* Hook.f.	Pale yellow flowers that are 0.6 cm long	Epiphyte proliferation in an evergreen forest	June- July
18	*Bulbophyllum spathulatum* (Rolfe ex E.W.Cooper) Seidenf. (Panda, S.P 2024) [11]	The crimson flowers were 1.6 cm long and heavily speckled.	Epiphytic in secondary evergreen and riverine forests.	April
19	*Calanthe lyroglossa* Rchb.f.	Yellow, tiny flowers that become black when dried.	terrestrial along riverbanks in moist areas	November-February
20	*Calanthe sylvatica* (Thouars) Lindl.	Flowers with a purple lip and a delicate pinkish purple color that can occasionally flush orange	terrestrial along riverbanks in moist areas.	August - September.
21	*Ceratostylis sabulata*	A profound, humid, evergreen forest's tree trunk is habitat to epiphytes.	In a wide, humid, evergreen forest, an epiphyte grows on the stumps of trees.	May - August.
22	*Chrysoglossum ornatum* Blume	Green flowers with reddish-brown lines, 2 cm across; column white, lip white or yellowish dotted with purple.	Shaded and humid locations in evergreen forests.	August - October
23	*Chrysoglossum robinsonii* Ridl.	Flowers are 2 cm across, with green petals and sepals, a white lip, and a yellow column.	Humid and shaded areas in dense woodlands	June - July
24	*Cleisocentron pallens* (Cathcart ex Lindl.)	Pinkish flowers which range from 2.5 to 2.8 cm in dimensions, with pale straw-colored sepals and petals and a pink band in the center	Evergreen woodlands with epiphytic trees on their trunks.	June - July
25	*Cleisostoma appendiculatum* (Lindl.) Benth. & Hook.f. ex B.D.Jacks.	1.5 cm in diameter, with buff sepals and purple longitudinal lines on the petals.	in evergreen forest environments, epiphytic on tree trunks.	August-October
26	*Cleisostoma filiforme* (Lindl.) Garay	Sepals and petals are yellowish green with reddish brown stripes, the lip is white with a purple-red midlobe, and the column is yellow. The flowers are around 1.3 cm across.	Epiphytic on host evergreen tree in dense forests	April-June.
27	*Cleisostoma linearilobatum* (Seidenf. & Smitinand) Garay	Little yellow flowers with a pinkish-white lip that become brown.	Epiphytes on host tree in dense greenery forests	May-July
28	*Cleisostoma paniculatum* (Ker Gawl.) Garay	Enormous flower opening; yellowish green sepals and petals with purple spots inside; yellow lip	Epiphytes	September-February
29	*Cleisostoma racemiferum* (Lindl.) Garay	Sepals, petals, and lips are yellow with brownish red dots, and the flowers are 1 cm across.	Epiphytic	July-September
30	*Cleisostoma simondii* (Gagnep.) Seidenf.	Purple-marked yellowish-green flowers	In both deciduous and evergreen forests, epiphytes grow on the trunks of trees with thick bark.	August-October
31	*Cleisostoma subulatum* Blume	Sepals and petals are yellow with intramarginal brown stripes, and the base of the flowers is white. The flowers are about 1 cm across.	Epiphytes on host tree in dense humid greenery forest	May - June.
32	*Coelogyne fimbriata* Lindl.	Flowers are pale yellow, 3-4 cm across, with yellowish sepals and petals, a yellowish lip with fimbriate edges, three brownish keels, and a brownish lip and column base.	Epiphytes on dense humid forest host trees.	October-December
33	*Coelogyne ovalis* Lindl. (Kumar,S 1997)	Flowers with purplish lip stripes and a greenish yellow color	Host specific epiphytes	August-December.
34	*Corymborkis veratrifolia* (Reinw.)	White, fragrant, 3.2-3.8 cm long flowers that do not spread extensively	Terrestrial in a lush, damp, evergreen forest with tall herbs growing beneath it, in shade	March - May
35	*Cymbidium aloifolium (L.)* (KOTIA, A., *et.al*, 2013) [7]	Lip cream-colored, 4-5 cm across, mildly fragrant, with pale yellow to cream-yellow sepals and petals with a wide maroon-brown stripe in the center.	Epiphytic host specific	April - May;
36	*Cymbidium bicolor* Lindl.	Flowers are 3-4 cm in diameter, with yellow sepals and petals and a longitudinal stripe of purplish red in the center. The lip color is cream- yellow.	In a deep, humid, evergreen forest, an epiphyte grows on tree trunks.	May - June.
37	*Cymbidium dayanum* Rchb.f.	Sepals and petals are white with a central maroon stripe, and the lip is maroon with a hint of white at the base. The flowers are 4 to 5 cm across.	In a dense, humid, evergreen forest, an epiphytic grows on host tree.	June - July.
38	*Dendrobium acinaciforme* Roxb.	About 1 cm long, yellowish-white flowers.	Epiphytic on greenery forest.	June - August.
39	*Dendrobium aduncum* Lindl.	Pale purple flowers, 1-2 cm in diameter, with pale pink sepals and petals, a white lip, and a white column	On a tiny tree stem in a thick, damp evergreen forest, an epiphyte	May
40	*Dendrobium aphyllum* (Roxb.) C.E.C.Fisch.	Pale rose flowers that are 4.5-5 cm wide with a lip yellow coloured.	In an open woodland or mixed deciduous forest, epiphytes	April - May.
41	*Dendrobium cathcartii* Hook.f.	Greenish-yellow, aromatic flowers that are 2 cm across with a yellow-purple lip	On humid evergreen forest, Epiphyte on host tree	April - May.

42	*Dendrobium cumulatum* Lindl	White with purple flowers; yellow-suffused white lips.	Epiphyte on tree trunk in forest along a small stream	March - May
43	*Dendrobium fimbriatum* Hook.	Sepals and petals are golden yellow, and the lip is golden yellow, either with or without a maroon blotch. The flowers are 4-5 cm across.	In humid evergreen trees as well as mixed deciduous forests, epiphytes	March - May
44	*Dendrobium lituiflorum* Lindl.	Flowers are 4-5 cm across, with a deep purple spot encircled by a white circle on the pale purple inner surface of the lip.	On tree trunks in open woodlands, epiphytic	April - May
45	*Dendrobium moschatum* Griff.	A deep yellow disk with a pale purplish brown patch on either side, the flower is orange-yellow and 5-7 cm wide.	Epiphytes on host tree in open greenery forest.	April - June
46	*Dendrobium nobile* Lindl.	Flowers are 5 to 7 cm across, with a deep purple blotch in the center and a purple lip at the tip and a white merging with purple at the apex.	Epiphyte is found in lowland, damp evergreen forests.	April - May
47	*Dendrobium stuposum* Lindl.	Little white flowers with a drab yellow patch on the edge.	Epiphytic on the branches of trees in mountain and open forests	June-August
48	*Dendrobium sulcatum* Lindl.	2.5-3.5 cm across, golden yellow flowers with a reddish-purple lip at the base	Epiphyte on host specific tree in greenery forest.	April-May.
49	*Dendrobium terminale C.S.P.Parish &* Rchb.f.	White-flushed pink, 1-1.2 cm long flowers.	Epiphytes on host tree at dense forest	April - June.
50	*Dendrobium transparens* Wall. ex Lindl. (Hartati, S 2022) [10]	Flowers are 4-5 cm across, with a huge purple patch on the disc and a white lip with purple shades on the sepals and petals.	Epiphyte on branches of trees at woodland forest	April - May.
51	*Didymoplexis pallens* Griff.	Flowers are white coloured, 0.8 cm across.	Growing in a bamboo forest on land i.e, terrestrial.	May - June
52	*Diploprora championii* (Lindl.) Hook.f.	The flower is 1 cm wide and pale yellow with a white-rosy lip.	Growing epiphytically in woodlands on the branches of tiny trees.	March - June
53	*Epipogium roseum* (D.Don) Lindl.	Leafless mycotrophic, cream, yellow or pinkish flowers with bulge ovary	Terrestrial in evergreen dense forest.	October-December
54	*Eria acervata* Lindl.	White flowers that are nearly 1.5 cm expansive.	Epiphytic in robust humid evergreenery forests	May- July
55	*Eria amica* Rchb.f.	Pale yellow flowers, about 1.2 cm across, with reddish-brown nerves.	In an evergreen forest that is deep and wet, epiphytes.	March-May.
56	*Eria connata* J.Joseph, S.N.Hegde & Abbar.	Creamy white flowers with a golden lip that are around 0.5 cm across	Epiphyte amid a thick, humid forest of evergreens	July-September
57	*Eria ferruginea* Lindl.	Flower are pinkish coloured, about 2 cm across.	Epiphytic in robust humid evergreenery forests.	June- July
58	*Eria lasiopetala* (Willd.) Ormerod	Yellow tomentose flowers that are nearly 1.5 cm expansive.	In humid evergreen and mixed deciduous forests, epiphytes are found.	March-April.
59	*Eria paniculata* Lindl.	Flowers are yellow greenish.	Epiphytic in humid evergreenery forests.	December-March.
60	*Eria pannea* Lindl.	Pale yellow-green flowers with a dark purple lip.	Epiphytic in woodland forest.	May - July
61	*Eria pudica* Ridl.	Pinkish-white, pubescent, buff flowers with darker stripes.	In forests of deciduous and forests with evergreens, epiphytes are found.	April-August
62	*Eria pumila* Lindl.	Pink-flushed white flowers.	In humid evergreen and mixed deciduous forests, epiphytes are found.	January-March.
63	*Eria tomentosa* (J.Koenig) Hook.f. (Choden, K 2021) [8]	Flowers are orange-yellow and about 1.5 cm wide.	In forests of deciduous and forests with evergreens, host specific epiphytes are found.	September-November.
64	*Eulophia hormusjii* Duthie	Brownish colour flowers, 3-4 cm in diameter.	Terrestrial, growing on loose, bare soil.	August-December.
65	*Flickingeria fugax* (Rchb.f.) Seidenf.	White flowers that are fugacious and 3-3.5 cm across.	Epiphytes in mixed deciduous and wet evergreen forests.	March - October
66	*Gastrochilus calceolaris* (Buch- Ham. ex Sm.) D.Don	The sepals and petals are yellow with reddish brown markings, the lip is white with purple-red markings, and the flowers open widely.	Epiphyte in mixed deciduous and wet evergreen forests.	October - November.
67	*Gastrochilus dasypogon* (Sm.) Kuntze	Yellow flowers that are 1.5-2 cm wide and with brownish-purple lines	Epiphyte in mixed deciduous and moist evergreen forests	October - November
68	*Gastrochilus inconspicuous* (Hook.f.) Kuntze	Flowers are 0.5 cm across and could vary between white or yellowish-green.	Epiphyte in mixed deciduous along with humid evergreen forests	June - July.
69	*Geodorum densiflorum* (Lam.) Schltr.	White to pinkish flowers with crimson-purple venation and streaks on the lip and a yellow callus in the center.	In grassland and evergreen forests, terrestrial	June - July.
70	*Goodyera procera* (Ker Gawl.) Hook.	Fragrant, weakly opening flowers with a pale green tint and a white tint	terrestrial, both on rock in a stream and on the bank of a small stream, as well as in an evergreen forests.	April - June.
72	*Hetaeria affinis* (Griff.) Seidenf. & Ormerod	The green, pink-tipped, gently expanding flowers are 5-6 mm wide, with a white lip.	Flower expanding a little green, pink-tipped, 5-6 mm wide, lip white	April- May
73	*Kingidium deliciosum* (Rchb.f.)	Greenish yellow flowers with spots of purple on the lip	In a shaded area in a humid evergreen forest, epiphyte grows in gallery forest	May - July.

			by a large river.	
74	*Liparis mannii* Rchb.f.	Yellowish flowers that measure 5 mm in diameter	In a damp evergreen woodland, epiphytic	November - January
75	*Liparis viridiflora* (Blume) Lindl.	Pale greenish yellow or greenish white flowers .	Epiphyte in mixed deciduous and submerged evergreen forests	April-May.
76	*Luisia trichorhiza* (Hook.) Blume	Flowers are around 1.5 cm across and have a bluish green color with faint purple streaks.	Growing on exposed trees in a humid evergreen forest, epiphytes	March - May
77	*Luisia zeylanica* Lindl.	Greenish yellow flowers with a purple underside	Growing on exposed trees in a humid evergreen forest, epiphytes	April-May.
78	*Malaxis acuminata* D.Don	Flowers are 1.5 cm wide and purple red.	Terrestrial in the lowlands, on rocky soil, amid a green, damp evergreen forest.	June - July
79	*Malaxis latifolia* Blume	Flowers are 0.5 cm wide and pale purple.	Terrestrial in a damp, open grove of evergreens	May - June
80	*Micropera mannii* (Hook.f.) Tang & F.T.Wang	Flowers are 0.6-0.7 cm wide and pale-pink.	Evergreen tropical tree trunk epiphyte forest	June - July
81	*Micropera rostrata* (Roxb.) N.P.Balakr.	Pale-purple flowers, 1.5-2 cm in circumference.	Epiphytic on specific host tree in tropical forest.	April - May
82	*Nervilia juliana* (Roxb.) Schltr.	Purple-green, solitary flowers with a white lip speckled with pink	Growing on loose, open soil, terrestrial	May-July.
83	*Oberonia mucronata* (D.Don) Ormerod & Seidenf.	Flowers are yellow.	Epiphytic on branches of host tree in greenery tropical forests.	September - October.
84	*Papilionanthe teres* (Roxb.) Schltr.	Sepals and petals are white with a hint of pink or purplish, and the lip is deep purple-red. The flowers are 5-10 cm across.	In mixed deciduous forests, epiphytes can be found on scattered wayside trees.	April - May
85	*Phaius mishmensis* (Lindl. & Paxton) Rchb.f.	White, greenish yellow, or pinkish purple flowers, 4-5 cm across	Terrestrial, in the middle of a thick, humid evergreen forest, along a tiny flow.	November-January.
86	*Phaius tankervilleae* (Banks) Blume	Sepals and petals are white on the outside and reddish brown or brown on the inside, while the lip is white at the base and pink or red-pink at the entrance, with white stripes on the inside. Flowers are 7 to 12 cm across.	Terrestrial, moist, and shady forest areas	November-January
87	*Phalaenopsis mannii* Rchb.f.	Blooms are 3-4 cm in diameter; the sepals and petals are yellow with dark brown lines and patches; the midlobe of the lip is white; the column is yellow.	Epiphytic on evergreen woodland tree trunks	March - May
88	*Phalaenopsis parishii* Rchb.f.	White flowers that are 2 cm across and have two chestnut stripes on the lip	Epiphytic on open forest tree trunks	March - April.
89	*Pholidota articulata*	Flowers are 5 mm in size, greenish white or white with an accent of red.	Epiphyte near a waterfall in a dense, humid evergreen forest	July - October.
90	*Pholidota imbricata* Hook.	White flowers that are 5 mm wide.	On trees, epiphytes grow in humid evergreen forests.	June - August.
91	*Podochilus cultratus* Lindl.	White in colour, 5 mm long flowers	In a moist, evergreen tropical forest, epiphytes grow on tree trunks.	April-May.
92	*Podochilus khasianus* Hook.f.	White coloured, tiny flowers.	In a humid, evergreen tropical forest, epiphytes grow on the branches of trees.	June - August.
93	*Pomatocalpa undulatum* (Lindl.) J.J.Sm.	Purple-blotched yellow flowers, 8 mm across, with a purple-blotched lip.	In the humid, tropical evergreen forest, epiphytes	March-May.
94	*Pteroceras suaveolens* (Roxb.) Holttum	About 1.5 cm across, the flower is yellow with brownish lines and has a dark purple lip tip.	The damp evergreen tropical forest's epiphyte.	June - July
95	*Rhynchostylis retusa* (L.) Blume (Kumar,S 1997)	Sepals and petals are white with pink or pastel purple spots, the apex is white, and the flowers are 1.7-2.3 cm across.	In the moist, tropical evergreen forest, epiphytes	May - June
96	*Robiquetia spathulate* (Blume) J.J.Sm.	Yellow flowers with stripes and patches of purple brown	Humid evergreen epiphyte forest	May - July.
97	*Taeniophyllum crepidiforme* (*King & Pantl.*)	Tiny, purple-tinged, greenish-white flowers	Epiphyte in a humid evergreen forest areas.	August-September
98	*Tainia latifolia (Lindl.) Rchb.f.*	Flowers are dark brown, 2 cm wide, and have a yellow lip.	In a densely humid nature with evergreen trees	March - May
99	*Tainia minor Hook.f*	Purplish brown flowers with deep purple dotted lines, 1.5 cm across, with a purplish brown tinge on the lip.	Terrestrial in heavy humidity Forest of Evergreens	June-August.
100	*Tainia waryana*	Flowers are 3 cm across, greenish with a red flush, and have a white lip.	Terrestrial in heavy humidity Forest of Evergreens	June - July.
101	*Thelasis longifolia Hook.f.*	Green flowers that do not bloom widely and are tiny	epiphytic in forests with evergreens.	June - August
102	*Thelasis pygmaea (Griff.) Lindl.*	Small, yellowish-green flowers that don't open widely.	In forests with a mix of deciduous and evergreen trees, epiphytic.	July-September.
103	*Thrixspermum acuminatissimum (Blume) Rchb.f.*	Yellow flowers; white lip streaked with yellow and reddish-brown.	growing in a cool, shaded area on the lateral branches of the host tree's lower canopy.	July-December.
104	*Thrixspermum centipeda*	White or creamy yellow flowers that gradually turn	In humid evergreen and mixed	May -

	Lour.	yellow.	deciduous forests, epiphytes are found	August.
105	*Thrixspermum pygmaeum (King & Pantl.) Holttum*	White flowers, about 1 cm across.	In wet evergreen and mixed deciduous forests, epiphytes	May - August
106	*Trichotosia velutina (Lodd. ex Lindl.) Kraenzl.* (Ray, H 2022) [12]	Flowers are 1 cm wide and delicate white.	In a humid forest, epiphytes grow on tree trunks.	August - September.
107	*Tropidia curculigoides Lindl.*	Greenish white, 1.5 cm long flowers	Both terrestrial and evergreen montane forests are densely moist.	September-November.
108	*Tylostylis discolour*	Both terrestrial and evergreen montane forests are densely moist.	Mixed woods with tree epiphytes	January - March
109	*Zeuxine clandestine* Blume	Greenish-white flowers	Growing in a cool, shaded area in a dense forest	Junuary-March.
110	*Zeuxine glandulosa* King & Pantl.	Flowers are 0.5 cm long, olivaceous green, with a white lip in the center that is confined.	Growing under shade and in a cold, dense woodland	March-April
111	*Zeuxine goodyeroides* Lindl.	Small, white, resupinate flowers.	Growing under shade and in a cold, dense woodland	January-February.
112	*Zeuxine longilabris* (Lindl.)	Greenish-white, tiny flowers	Growing on grassland, terrestrial	March - May.
113	*Zeuxine strateumatica* (L.) Schltr. (Kumar, S., 2025)	Small, resupinate, white flowers with a pale yellow to yellow lip	grows on grassland and is terrestrial.	January-March

Conclusion

The orchid family is at high risk of extinction due to a number of factors, including the frequent and quick destruction of natural habitat through deforestation, upper layer soil erosion, overgrazing, herbicide effects that harm many saprophytic and terrestrial species, the expansion of agricultural lands through forest clearing, development plans, rapid urbanization, ignorance, and, lastly, indiscriminate collection for the floral industry, which aggravates the populations of the species in the domains.

Plant distributions must be recorded for conservation purposes. A good dwelling for orchids is provided by the ecological conditions, which include tropical and subtropical regions, well-drained soil, and shaded, forested areas. It is advised to conduct additional research on the population dynamics and habitat preferences of orchids in order to better understand their occurrence and create specific conservation plans.

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