



Epiphytic orchid species diversity of Chaiturgarh (Lafagarh) hills area of Pali block, Korba District, Chhattisgarh, India

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Abstract

Chaiturgarh (Lafagarh) is situated around 70 km away from Korba town. It is 25 km north of Pali and situated at a height of 3060 feet on the hilltop. Chaiturgarh (Lafagarh), also known as the "Mini Kashmir of Chhattisgarh." It is a historical fort located in the Korba district of Chhattisgarh, India. It is one of the 36 forts of Chhattisgarh and is considered one of the strongest natural forts in the region. The area lies between 22.515132' N latitude to 82.281302' E longitude. Extensive field surveys of orchids were conducted from November 2025 in various parts of the Chaiturgarh Hill. In this study, a total of 11 species belonging to 8 genera of epiphytic orchid species were identified in the Chaiturgarh hilly region of the Pali block of the Korba District, Chhattisgarh, India. The study represents the epiphytic orchid species diversity and distribution throughout the region with botanical names, place of collection (occurrence), altitudinal range, associated host range, and flowering.

Keywords: Epiphytic orchid species, diversity, Chaiturgarh hill, Pali Block, Korba district, Chhattisgarh, India

Introduction

Among the most sophisticated and fascinating families of blooming plants are orchids, which belong to the Orchidaceae family. The family, which is thought to be the second largest in the world, has a great deal of diversity in terms of form, size, color, texture, and quantity that sets it apart from other ornamental plants. They are significant for their medicinal qualities in addition to their horticultural and commercial appeal. Indian orchids can be found anywhere from sea level to snow-covered alpine regions; however, their abundance varies depending on the local climate. Jalal (2012)^[7].

With 750–800 genera and 30,000–35,000 species currently found worldwide, Orchidaceae is fairly universally spread. Of the 800 species known to exist in India, around 1350 are located in northeastern India (almost 69%). Northeastern India is home to about 150 indigenous species. Singh and associates, 2019. Arunachal Pradesh has the most orchids (577 species of 147 genera), followed by Sikkim (561 species of 144 genera), Meghalaya (380 species of 113 genera), Nagaland (387 species of 107 genera), Manipur (314 species of 93 genera), Mizoram (253 species of 86 genera), Assam (231 species of 82 genera), and Tripura (39 species of 29 genera). Madhya Pradesh has 89 species of orchids under 39 genera (including Chhattisgarh state) (Singh *et al.*, 2001)^[17]; Chhattisgarh has 69 species of orchids under 27 genera (Khanna *et al.*, 2005)^[10]; Chhattisgarh has 52 species under 34 genera on the BSI checklist (Singh *et al.*, 2019)^[18]; a recent Pandey *et al.*, distributed 50 species under 22 genera.

Material and Methods

Study area

Chaiturgarh (Lafagarh), also known as the "Mini Kashmir of Chhattisgarh," is a historical fort located in the Korba district of Chhattisgarh, India. It is one of the 36 forts of Chhattisgarh and is considered one of the strongest natural forts in the region. The area lies between 22°51'51.32" N latitude and 82°28'13.02" E longitude. Chaiturgarh (Lafagarh) is situated around 70 km away from Korba town.

It is 25 km north of the Pali block. It is situated at an elevation of over 3060 feet (930 m) on the hilltop. The Chaiturgarh hills area is part of the Satpura Range and forms part of the Achanakmar-Amarkantak Biosphere Reserve. Known for its natural defenses and panoramic views, Chaiturgarh combines historical significance with ecological importance. (Source: Chaiturgarh - Wikipedia /).

Survey and Plant Identification

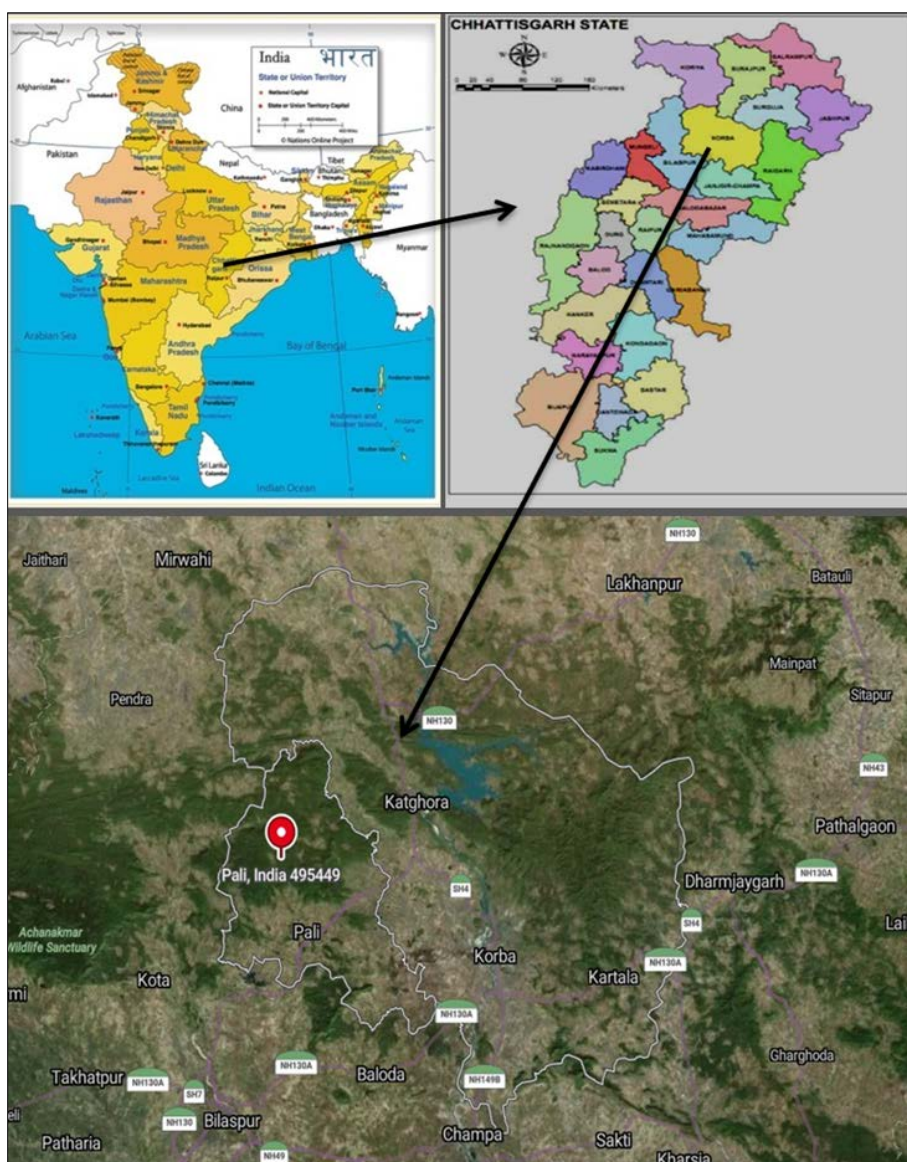
Extensive field survey of the orchid flora of Chaiturgarh (Lafagarh) hills, Pali block, Korba District of Chhattisgarh has been carried out from the November-2025 January-2026 to gather detailed information on the orchid species available in the area. The sample were identification using the following references/ consultation orchid literatures; Hooker, (1872–1897)^[4]; Santapau, & Kapadia, (1966)^[16]; Singh, *et al.*, (2001)^[17]; Bose and Bhattacharya, (1999)^[1]; Chowdhery, (1984); Khanna, *et al.*, (2005)^[10]; Singh, *et al.*, (2019)^[18]; Jalal., (2018); Jalal., (2019); Rawat *et al.*, (2023)^[15]; Chowlu, (2019)^[3] and the online resources; <http://www.theplantlist.org/>; www.worldfloraonline.org; <https://powo.science.kew.org/>; <https://www.tropicos.org/>.

Results and Discussions

In present work of orchid flora were identified and listing a total 11 species belong to 8 genera during survey showing a table 1, and Epiphytic orchid species are Associated in the total 15 Host tree species belonging to 9 family viz., 4 Anacardiaceae (*Buchanania lanzan* Spreng., *Lannea coromandelica* (Houtt.) Merr. *Mangifera indica* L., *Semecarpus anacardium* L.f.), 3 Combretaceae (*Terminalia bellirica* (Gaertn.) Roxb. *Terminalia chebula* Retz. *Terminalia elliptica* Willd.), 1 Dipterocarpaceae (*Shorea robusta* C.F. Gaertn.), 1 Ebenaceae (*Diospyros melanoxylon* Roxb.) 2 Fabaceae (*Albizia lebbek* (L.) Benth. *Butea monosperma* (Lam.) Kuntze), 1 Moraceae (*Ficus benghalensis* L.), 1 Myrtaceae (*Syzygium cumini* (L.) Skeels), 1 Phyllanthaceae (*Bridelia retusa* (L.) A. Juss), 1 Sapotaceae (*Madhuca longifolia* var. *latifolia* (Roxb.) A.Chev.). the study area which indicates that immediate

effort is needs of the conservation of the species present in Chaituragarh forest area. As the many anthropogenic activities viz. fire wood collection, roadways, railways

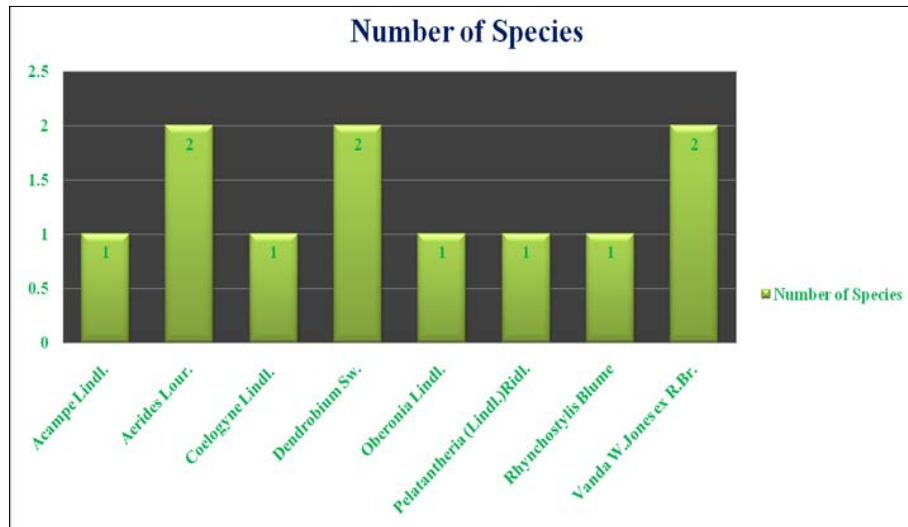
construction, illegal timber collection, forest fire, of the Korba district so need more study and conservation effort of orchid.



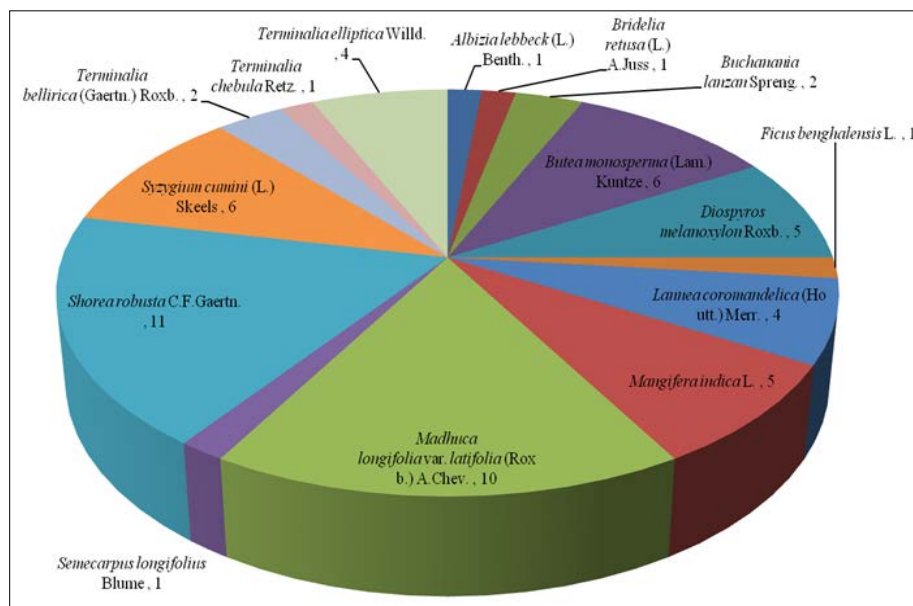
Map 1: Showing the study area Chaituragarh hills of Pali Block, Korba District, Chhattisgarh, India

Table 1: Epiphytic Orchid Species, their number, locality and their flowering month of Chaituragarh Hills Area of Pali Block, Korba District Chhattisgarh, India

S. No.	Name of Genera	Name of Species	Locality in C.G.	No. of species	Flowering month
1	<i>Acampe</i> Lindl.	<i>A.praemorsa</i> (Roxb.) Blatter & McCann.	Raigarh, Surguja	1	October- November
2	<i>Aerides</i> Lour.	<i>A. multiflora</i> Roxb.	Ambikapur, Bilaspur, Korea, Raigarh and Surguja	2	May- July
		<i>A. odorata</i> Lour.	Raigarh, Surguja		June-July
3	<i>Coelogyne</i> Lindl.	<i>C. imbricata</i> (Hook.) Rchb. F	Surguja	1	August-September
4	<i>Dendrobium</i> Sw.	<i>D. herbeceum</i> Lindl.	Ambikapur, Bastar, Mungel, Raigarh & Surguja	2	June-July
		<i>D. macrostachyum</i> Lindl.	Ambikapur & Surguja		February- March
5	<i>Oberonia</i> Lindl.	<i>O. falconeri</i> Hook.f.	Ambikapur, Bastar, Bilaspur, Dantewada, Mungeli, Raigarh & Surguja.	1	June-July
6	<i>Pelatantheria</i> (Lindl.)Ridl.	<i>P. insectifera</i> (Rchb. F.) Ridl.	Bastar, Bilaspur, Raigarh And Surguja	1	September- October
7	<i>Rhynchostylis</i> Blume	<i>R. retusa</i> (L.) Blume	Bastar, Bilaspur, and Raigarh	1	June-August
8	<i>Vanda</i> W.Jones ex R.Br.	<i>V. tessellata</i> (Roxb.) Hook. ex G.Don	Bastar, Bilaspur, Dantewada, Dhamtari, Durg, Raigarh, Raipur, Rajnandgaon & Surguja	2	May-July
		<i>V. testacea</i> (Lindl.) Rchb.f.	Ambikapur, Bastar, Bilaspur, Dantewada, Durg, Jashpur, Korea, Raipur, Rajnandgaon and Surguja		May-July
Total				11	



Graph 1: Epiphytic Orchid Species of Chaiturgarh Hills Area of Pali Block, Korba District Chhattisgarh, India



Graph 2: Host plants and their family and Associate Epiphytic Orchids species and their Numbers

Table 2: Host plants and their family and Associate Epiphytic Orchids species and their Numbers

S. No.	Botanical Name	Common Name	Family	Associates orchid Spp.	No. of species associate
1	<i>Albizia lebbbeck (L.) Benth.</i>	Sirash.	Fabaceae	V1	1
2	<i>Bridelia retusa (L.) A. Juss.</i>	Kasai	Phyllanthaceae	V1	1
3	<i>Buchanania lanzan Spreng.</i>	Char	Anacardiaceae	V1	2
4	<i>Butea monosperma (Lam.) Kuntze</i>	Plash	Fabaceae	Ac, A1, A2, O, D1, R1	6
5	<i>Diospyros melanoxylon Roxb.</i>	Tendu	Ebenaceae	V1, V2, R1, A1, O	5
6	<i>Ficus benghalensis L.</i>	Bargad	Moraceae	V1	1
7	<i>Lannea coromandelica (Houtt.) Merr.</i>	Jhingan	Anacardiaceae	V1, A1, O, R1	4
8	<i>Mangifera indica L.</i>	Aam	Anacardiaceae	Ac, A1, A2, V1, V2, D2, O	7
9	<i>Madhuca longifolia var. latifolia (Roxb.) A. Chev.</i>	Mahua	Sapotaceae	V1, O, R1, A1, D1, D2, Ac, Pi, V2, A2	10
10	<i>Semecarpus longifolius Blume</i>	Bhelwa	Anacardiaceae	V1 2	1
11	<i>Shorea robusta C.F. Gaertn.</i>	Sal	Dipterocarpaceae	V1, O, R1, A1, D1, Ci, D2, Ac, Pi, V2, A2	11
12	<i>Syzygium cumini (L.) Skeels</i>	Jamun	Myrtaceae	V1, O, D2, A1, R1, Ac	6
13	<i>Terminalia bellirica (Gaertn.) Roxb.</i>	Bahera	Combretaceae	R1, V1	2
14	<i>Terminalia chebula Retz.</i>	Harra	Combretaceae	V1	1
15	<i>Terminalia elliptica Willd.</i>	Saj	Combretaceae	V1, Ac, A1, R1	4

(Abbreviation: "Ac"- *Acampe praemorsa* (Roxb.) Blatter & McCann., "A1"- *Aerides multiflora* Roxb. "A2"- *Aerides odorata* Lour. "Ci"- *Coelogyne imbricata* (Hook.) Rchb.f., "D1"- *Dendrobium herbaceum* Lindl. "D2"- *Dendrobium macrostachyum* Lindl. "O"- *Oberonia falconeri* Hook. f., "Pi"- *Pelatantheria insectifera* (Rchb.f.) Ridl. "R1"-*Rhynchostylis retusa* (L.) Blume. "V1"-*Vanda tessellata* (Roxb.) Hook. Ex G. Don, "V2"- *Vanda testacea* (Lindl.) Rchb.f. Gard.)



Plate 1:- "A"- *Acampe praenorsa* (Roxb.) Blatter & McCann., "B"- *Aerides multiflora* Roxb., "C"- *Aerides odorata* Lour., "D"- *Coelogyne imbricata* (Hook.) Rchb.f., "E"- *Dendrobium herbaceum* Lindl., "F"- *Dendrobium macrostachyum* Lindl., "G"- *Oberonia falconeri* Hook. f., "H"- *Pelatantheria insectifera* (Rchb.f.) Ridl., "I"- *Rhynchostylis retusa* (L.) Blume., "J"- *Vanda tessellata* (Roxb.) Hook. ex G.Don., "K"- *Vanda testacea* (Lindl.) Rchb.f. (Gard)

Conclusions

Anthropogenic factors, including habitat loss from deforestation, uncontrolled human activity, and frequent forest fires, are the main threats to the orchid assemblage in the Chaiturgarh Hills. Due to these factors, a number of orchid species in the Pali Block in the Korba District are in immediate threat of becoming extinct. Therefore, immediate conservation action is necessary, including community-based awareness and stewardship programs, fire management and restoration strategies, protection of important habitat patches, and focused population monitoring. To ensure the long-term survival of Chaiturgarh's distinctive orchid flora, complementary measures will be necessary, including ex-situ conservation of vulnerable taxa, inclusion of the site in regional conservation planning, and ongoing systematic surveys.

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