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Some medicinal Orchid species of Jharkhand, India

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ABSTRACT

*Orchids are herbaceous perennial plants with wide range of growth habit and habitat. They can grow as terrestrials, epiphytes, lithophytes etc. They are extremely popular as ornamental plant and lesser is the known about their ethno-medicinal uses. Tribal people of different parts of India use orchid as an important source of medicine. The Present study produces a list of medicinal orchid species available in Jharkhand state, India. A total of 31 Orchid species have been enlisted with their medicinal uses. Most of them are used in rheumatism, bone fracture and dislocation and as a tonic. It was noted that 17 are epiphytic, 10 are terrestrial, 3 species are lithophytic and 1 species belongs to semi-aquatic habitat (*Zeuxine strateumatica*). A systematic survey was conducted found that there is an urgent need to conserve these valuable biological resources in natural habitats supplemented with preservation using modern methods of conservation.*

INTRODUCTION

Orchids display a diversified range in terms of shape, size and colour of flowers. They have a unique floral morphology compared to other angiosperms. They have minute seeds that are dispersed through air, and that may be why they are distributed throughout the world, except for the hot

deserts and Antarctica. Though the family Orchidaceae represents a highly advanced group of plant in the plant kingdom, they are highly susceptible to even slight changes in environmental conditions. In India the history of orchid study starts from Lindley (1857, 1858). Then, Hooker (1888

-1890) came out with a legendary work on the Flora of British India, which included information on the Orchidaceae of India, and later he published a book exclusively on Indian orchids (Hooker 1895). This was followed by King and Pantling (1898) on orchids of Sikkim Himalayas and by Duthie (1906) on orchids of NW Himalayas. In the recent years, comprehensive accounts have been published for various states and regions of India (e.g. Meghalaya, Katak 1986; NW Himalayas, Deva and Naithani 1986; Nilgiris, Joseph 1987; Kerala, Kumar and Sashidharan 1987; Manipur, Ghatak and Devi 1986; Mizoram, Singh et al. 1990; Sikkim, Bruhl 1993; Arunachal Pradesh, Chowdhery 1998; Nagaland, Hynniewta et al. 2000; and Orissa, Mishra 2003). In India, orchids are represented by about 1,141 species belonging to 186 genera. General collections on plants and orchids are mentioned by Prain (1903), Duthie (1920), Haines (1921–1924), Raizada (1975), Mooney (1950), Ghosh (1971), Das (1996), and Sharma and Sarkar (2002), flora of Bihar (which includes plants of the new state of Jharkhand), based on earlier surveys and collections, done by Singh et al. (2001). Soon after a systematic survey was done throughout the state and checklist of 63 species of orchids recorded which includes 26 new records by Kumar et al. (2002). Recent years in 2012 Government of Jharkhand estimated the orchid diversity and their distribution. The common orchids of the state include *Acampe praemorsa* (Roxb.) Blatt. & McCann, *Aerides multiflora* Roxb., *Aerides odorata* Lour., *Bulbophyllum crassipes* Hook. f., *Dendrobium crepidatum* Lindl. & Paxton, *Dendrobium formosum* Roxb. ex Lindl., *Eulophia explanata* Lindl., *Eulophia graminea* Lindl., *Geodorum densiflorum* (Lam.) Schltr., *Luisia trichorrhiza* (Hook.) Blume, *Oberonia falconeri* Hook. f.

, *Pecteilis triflora* (D. Don) T. Tang & F. T. Wang, *Pelatantheria insectifera* (Rchb. f.) Ridl., *Rhynchostylis retusa* (L.) Blume, *Vanda tessellata* (Roxb.) Hook. ex G. Don etc (Figure 3). As per work of Integrated Wildlife Management Plan for West Singhbhum, Jharkhand in 2012 the Thalkobad area of the Saranda forest represents a very special habitat for orchids. It is the home of *Bulbophyllum*, an epiphytic orchid represented by a single species, *Bulbophyllum crassipes*. This species is present only in the Saranda Forest area in Jarkhand state and Saranda forest is the last home of its wild population (Sahani and Rawat 2008). During the present investigation, this species was recorded only from Thalkobad area of Kiriburu cluster. This species has a limited distribution and not much frequently seen in this area. Another interesting orchid of this region is *Pecteilis triflora*, which is found only at two places in India, one being Saranda forests and the other is in the Western Himalaya in Tons Valley, Uttarkhand (Sahani and Rawat 2008). Keeping the importance of orchid wealth in Jharkhand, the present paper was designed.

METHODOLOGY

Jharkhand has very diverse forest having numbers of hills, valleys, and plateaus of Chotnagpur range (Kumar 2007). The forest area is about 40% of the total area of Jharkhand and about 32 tribal communities found in this state (Lal & Singh 2012). The state is situated between 21°58'10" to 25°18' N Latitude and 83°22' to 87°57' E Longitude. Jharkhand forms part of the Chotanagpur plateau province of the Deccan Peninsula Biogeographic Zone. As the name of the state suggests, it is having a good covering of forests. The forest of the state includes tropical dry deciduous, moist deciduous, dry peninsular and dry mixed

deciduous forest (Chatterjee & Raha 2013). With respect to orchids, the study area of Jharkhand lies in the centre of 3 major orchid hotspots of India, namely the eastern Ghats, western Himalayas, and eastern Himalayas

(Kumar 2007). The observations were made in different parts of Jharkhand and data collected by actual observation as well as by gathering information from the local tribes and villagers (Figure 1).

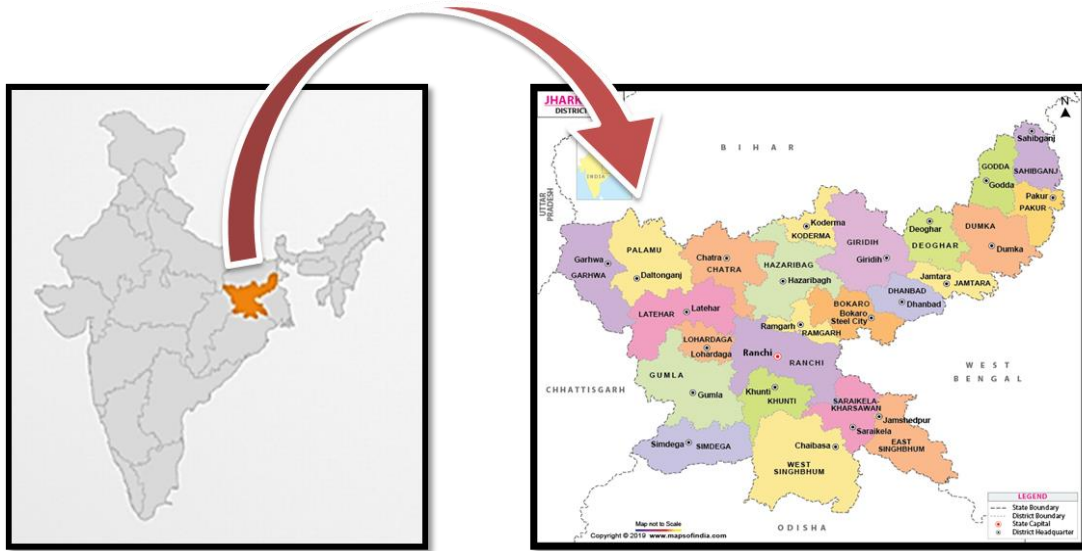


Figure 1: Geographical map of study area

RESULTS & DISCUSSION

The explorer works revealed that numbers of orchid species are available in Jharkhand having significant medicinal values. It was noted that *Acampe papillosa*, *Acampe praemorsa*, *Dendrobium crepidatum*, *Luisia trichorrhiza*, *Pholidota imbricata*, *Pholidota pallida* and *Vanda tessellate* used against rheumatic pain (Table 1), whereas *Zeuxine*

strateumatica and *Habenaria digitata* used as tonic. Details are listed in table 1. It was also observed that from enumerated medicinal orchids, 55% belongs to epiphytic, 32% belongs to terrestrial, 10% belongs to lithophytic and 3% belongs to semi-aquatic (Figure 2). It was also noted that less or no reports are available in medicinal orchids of Jharkhand.

Table 1: Some medicinal Orchids of Jharkhand

Plant Name	Habit	Uses
<i>Acampe papillosa</i> (Lindl.) Lindl.	Epiphytic	Rheumatism
<i>Acampe praemorsa</i> (Roxb.) Blatt. & McCann	Epiphytic	Rheumatism and Arthritis
<i>Acampe rigida</i> (Buch.-Ham ex Sm.) P. F. Hunt	Epiphytic	Muscle and Joint pain
<i>Aerides multiflora</i> Roxb.	Epiphytic	Cuts and Wounds
<i>Aerides odorata</i> Lour.	Epiphytic	Tuberculosis, Joint pain and swellings.
<i>Cymbidium aloifolium</i> (L.) Sw.	Epiphytic	Bone fracture

<i>Cymbidium macrorhizon</i> Lindl.	Terrestrial	Boils
<i>Dendrobium crepidatum</i> Lindl. & Paxton	Epiphytic	Rheumatism and Arthritis
<i>Dendrobium fimbriatum</i> Hook.	Epiphytic	Nervous debility
<i>Dendrobium moschatum</i> (Buch.-Ham.) Sw.	Lithophytic	Discolated bones
<i>Dendrobium regium</i> Prain	Epiphytic	Bone fracture
<i>Dendrobium transparens</i> Lindl.	Epiphytic	Fractured and Dislocated bones
<i>Eulophia spectabilis</i> (Dennst.) C. R. Suresh	Terrestrial	Tuberculosis and Skin diseases
<i>Geodorum densiflorum</i> (Lam.) Schltr.	Terrestrial	Dysentery and Diabetes
<i>Habenaria commelinifolia</i> (Roxb.) Wall. ex Lindl.	Terrestrial	Digestion problems
<i>Habenaria digitata</i> Lindl.	Terrestrial	Tonic
<i>Habenaria furcifera</i> Lindl.	Terrestrial	Cuts and Wounds
<i>Habenaria marginata</i> Colebr.	Terrestrial	Boils and Wounds
<i>Luisia trichorrhiza</i> (Hook.) Blume	Epiphytic	Muscular pain
<i>Luisia zeylanica</i> Lindl.	Epiphytic	Wounds, Boils and burns
<i>Nervilia infundibulifolia</i> Blatt. & McCann.	Terrestrial	Cough, Asthma, Vomiting and Diarrhea
<i>Nervilia macroglossa</i> (Hook. f.) Schltr.	Terrestrial	Increase male impotency
<i>Oberonia falconeri</i> Hook. f.	Epiphytic	Bone fracture
<i>Peristylus constrictus</i> (Lindl.) Lindl.	Terrestrial	Boils
<i>Pholidota imbricata</i> Lindl.	Lithophytic	Rheumatic pain and Fever
<i>Pholidota pallida</i> Lindl.	Lithophytic	Rheumatic pain
<i>Rhynchostylis retusa</i> (L.) Blume	Epiphytic	Rheumatism, Cuts and Wounds
<i>Smitinandia micrantha</i> (Lindl.) Holttum	Epiphytic	Anti-bacterial
<i>Vanda tessellata</i> (Roxb.) Hook. ex G. Don	Epiphytic	Rheumatism, nervous problems, Bronchitis and fever,
<i>Vanda testacea</i> (Lindl.) Rchb. f.	Epiphytic	Anti-viral and Earache
<i>Zeuxine strateumatica</i> (L.) Schltr.	Semi-aquatic	Tonic

■ Epiphytic ■ Terrestrial ■ Lithophytic ■ Semi-aquatic

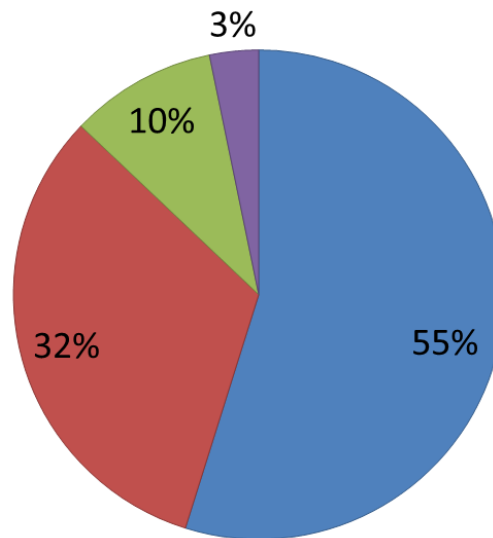


Figure 2: Medicinal orchid diversity as per habitat

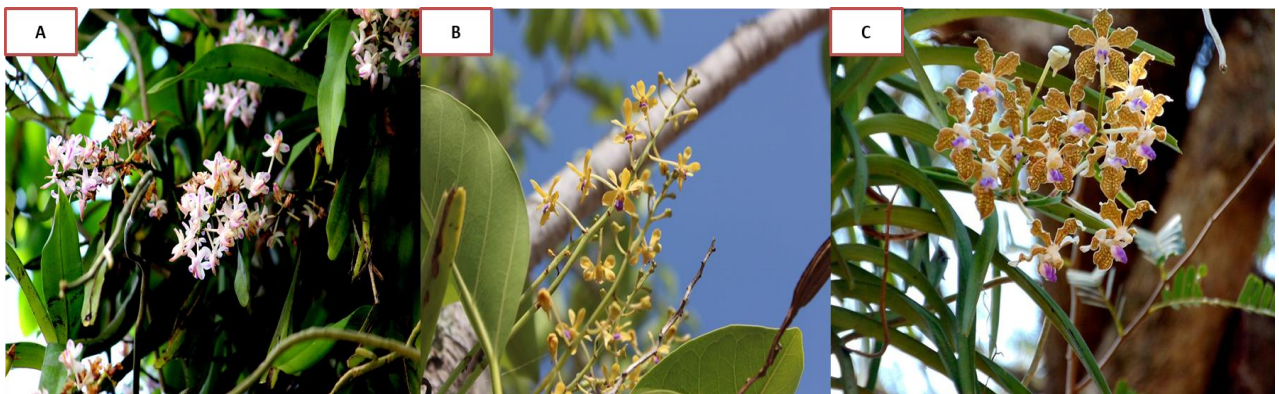


Figure 3: Some orchids of Jharkhand A) *Aerides odorata*; B) *Vanda testacea* ; C) *Vanda tessellata*

CONCLUSION

Although Jharkhand region is not so rich in orchid populations but it gives platform to grow diverse floral and faunal wealth. Orchids are the unexplored floral wealth of Jharkhand. Therefore, the present study highlights the importance of orchids as medicinal agent and need more exploration works towards their documentation and conservation.

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