

Medicinal Orchids of the Himalayan region

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Abstract

Present paper deals with 74 Orchid species with 35 genera extensively used for different medicinal purposes. Of them, 31 are terrestrial, 41 are epiphytic and 2 are saprophytic. Among the medicinally important species, there are 10 *Dendrobium* species, 7 *Habenaria* spp., 6 *Eulophia* spp., 4 *Vanda* spp., 4 *Cymbidium* spp., 2 *Lusia* spp., 3 *Nervilia* spp., 3 *Pholidota* spp., 3 *Eria* spp., 2 *Acampe* spp., 2 *Aerides* spp., 2 *Bulbophyllum* spp., 2 *Calanthe* spp., 2 *Coelogyne* spp., 2 *Malaxis* spp and the rest genus possesses single species in utilization. It is found that epiphytic Orchids are more useful than terrestrial and saprophytic but the number of useful terrestrial species is near about the number of epiphytic species.

Key words: Medicinal Orchids, Himalayan region.

INTRODUCTION

Orchids are generally cultivated only for floriculture interest but there are some medicinally very important or are popular both in floriculture trade as well as for the human health-care. Therefore, it possesses both aesthetic as well as medicinal values. Some Orchid species have been reported to contain significant phytochemicals viz., Orchinol, cypripedin, hircinol, jibantine, loroglossin and nidemin are the phytochemicals reported from Orchids (Singh & Duggal 2009).

Besides floricultural and medicinal values, many Orchids are of ethnobotanical interest. In many countries like China and in some parts of Europe and America, Australia and Africa, Orchids have been used as traditional drugs since long (Sood 2006). It has been reported that phytochemicals extracting from Orchids are important in fevers, increasing the WBC count, serving as anti-impotence, curing AIDS, eye diseases, headache and treating fatigue and most importantly, functioning as anti cancer agents (Bulpitt 2005). The Dongaria Khada tribes of Niyamgiri, Orchids are used as an emetic, a purgative, an aphrodisiac, a vermifuge, a broncho-dialator and an anti-tumor agent. There are several orchid species which are valued as febrifuge in treating malarial fever, and in clearing tapeworms and other intestinal parasites. Several medicinal Orchids are reported to contain alkaloids. *Asthavarga* is essential ingredient of various traditional Ayurvedic formulation like *Chavyanprasa*. Out of eight constituents of *Ashtavarga*, four are reported to be Orchids. These are roots of *Habenaria edgeworthii*, roots of *Habenaria intermedia*, pseudobulbs of *Malaxis acuminata* and tuber of *Malaxis muscifera* (Singh & Duggal 2009).

MATERIALS AND METHODS

All the relevant data have been collected through related literatures, web sites etc. All the species are arranged alphabetically by their generic and specific names. Habitat, distribution and therapeutic uses are also mentioned for detailed information of the taxa.

ENUMERATION:

Acampe papillosa (Lindley) Lindley; *Habitat*: Epiphyte; *Distribution*: Nepal, Sikkim, Bhutan, N.W. & E. Himalaya, Myanmar, Thailand, Vietnam, Sri Lanka, Laos, Vietnam

Uses: Roots are used in rheumatism, neuralgia. The root paste is externally applied on scorpion and snake bites. Admixture of leaf paste and garlic piece is taken in case stomach disorder caused by hyper acidity. [Chowdhery 1998 & Sood 2006; Deb *et al*, 2009]

Acampe praemorsa (Roxburgh) Blatter & McCann; *Habitat*: Epiphyte; *Distribution*: India, Nepal, Myanmar, Thailand, Vietnam, Malaysia

Uses: Leaf paste is used for fracture. Intake of fresh root paste and root paste of *Asparagus racemosus* is useful to cure arthritis rheumatism. [Chowdhery 1998 & Dash *et al* 2008]

Aerides multiflorum Roxburgh; *Habitat*: Epiphyte; *Distribution*: Nepal, Sikkim, Myanmar

Uses: Whole plant juice is to cure cuts and wounds. [Sood 2006; Singh & Duggal 2009]

Aerides odoratum Loureiro; *Habitat*: Epiphyte; *Distribution*: N.W. & E. Himalayas of India, Myanmar, S. China, Malaysia, Thailand, Vietnam

Uses: Roots and leaves paste mixed with leaf paste of *Azadirachta indica* and taken orally to reduce joint pain and swellings. The fresh leaf juice is taken orally to cure tuberculosis. [Sood 2006 & Dash *et al* 2008]

Anoectochilus brevibrans Lindley; *Habitat*: Saprophyte; *Distribution*: Khasia hills, Sikkim Himalaya

Uses: Leaves paste used in case of snake bite. [Sood 2006]

Arundina graminifolia (D. Don) Hochreutiner; *Habitat*: Terrestrial; *Distribution*: S.E. Asia, Nepal, Sri Lanka, Thailand, Vietnam, S. China, Japan, Taiwan, Malayasia, Java

Uses: Rhizome paste is used to cure bacterial infected wounds. [Sood 2006; Singh & Duggal 2009]

Bulbophyllum cariniflorum Reichenbach f.; *Habitat*: Epiphyte; *Distribution*: N.W. & E. Himalayas of India, Nepal, Myanmar, Sri Lanka.

Uses: Dried root powder and powder of black pepper mixed with milk is helpful to induce abortion within 2 to 3 months of pregnancy. [Dash *et al* 2008]

Bulbophyllum sterile (Lamarck) Suresh; *Habitat*: Epiphyte; *Distribution*: Nepal, India

Uses: Pseudobulbs are used for restoration of adolescence and as tonic. Paste of pseudobulb and leaves given with milk for curing leucoderma. [Sood 2006]

Calanthe masuca Lindley; *Habitat*: Terrestrial; *Distribution*: Tropical Himalayan, Deccan Peninsula

Uses: Whole plant parts extensively used for epistaxis. [Sood 2006]

Calanthe triplicata (Willemet) Ames; *Habitat*: Terrestrial; *Distribution*: India, Sri Lanka, S.E. Asia, Indonesia, Japan, S. Australia, Fiji.

Uses: Root extract is effective in diarrhea and teeth cavities. Whole plant parts used for ailments of stomach and intestine. Flower poultice is used to reduce ulcer pain; roots decoction used to cure diarrhoea. [Chowdhery 1998 & Sood 2006; Deb *et al* 2009]

Cirrhopetalum maculosum Lindley; *Habitat*: Epiphyte; *Distribution*: W. Himalaya, Nepal, Garhwal, Kumaon

Uses: Roots decoction used as revitalizer [Sood 2006].

Cleisostoma williamsonii (Reichenbach f.) Garay; *Habitat*: Epiphyte; *Distribution*: N.E. India, Myanmar, China, Thailand, Vietnam, Malaysia, Sumatra, Java, Borneo.

Uses: Used for treating bone fractures. [Chowdhery 1998; Medhi & Chakrabarty 2009]

Coelogyne punctulata Lindley; *Habitat*: Epiphyte; *Distribution*: N.E. Himalaya of India, Myanmar, Nepal, S. China.

Uses: Dried pseudobulbs are pounded into powder which is applied to spots of burn injuries. It relieves pain immediately and helps in healing of the wound. [Chowdhery 1998; Sood 2006; Deb *et al* 2009]

Coelogyne stricta (David Don) Schlechter; *Habitat:* Epiphyte; *Distribution:* Tropical Himalayas, Garhwal to Bhutan

Uses: Fresh pseudobulbs used to cure headache and fever. [Sood 2006]

Corallorhiza maculata Lindley; *Habitat:* Saprophyte; *Distribution:* Kashmir, N. Asia, Europe, N. America

Uses: Fresh roots decoction is used as sedative, anthelmintic, diaphoretic and febrifuge. [Sood 2006]

Cremastra wallichiana Lindley; *Habitat:* Terrestrial; *Distribution:* Temperate Himalaya

Uses: Fresh tubers used to cure acute toothache. [Sood 2006]

Cymbidium aloifolium (Linnaeus) Swartz; *Habitat:* Epiphyte; *Distribution:* N.W. & E. Himalaya of India, Nepal, S. China, Myanmar, Thailand, S.E. Asia, Malaysia, Java

Uses: Fresh leaves are heated and the juice is dropped in the ear for the cure of otitis and other inflammatory conditions. Seeds are used for healing wounds and used as haemostatic. Root powder is helpful to reduce paralysis. Entire plant is used as purgative, emetic, tonic and in treating earache. Mature seeds are used for healing wounds. [Chowdhery 1998.; Sood 2006.; Dash *et al* 2008; Medhi & Chakrabarty 2009]

Cymbidium ensifolium (Linnaeus) Swartz; *Habitat:* Epiphyte; *Distribution:* Sikkim Himalaya, Khasia hills, Kanya Kumari, Sri Lanka, China, Japan

Uses: Fresh flowers decoction is used in eye sores and rhizome decoction used to cure gonorrhoea. [Chowdhery 1998 & Sood 2006]

Cymbidium iridioides D. Don; *Habitat:* Epiphytic/ Lithophyte; *Distribution:* Nepal, N.E. India, Myanmar, S.W. China

Uses: Fresh leaf juice is used for clotting of blood in wound. [Medhi & Chakrabarty 2009]

Cymbidium longifolium D. Don; *Habitat:* Epiphyte; *Distribution:* Central Nepal, E. Tibet

Uses: Fresh roots decoction effectively used for nervous disorders, madness, epilepsy, hysteria, rheumatism, spasms. [Sood 2006]

Dactylorhiza hatagirea (D. Don) Soo; *Habitat:* Terrestrial; *Distribution:* W. Himalaya, Afghanistan, Iran

Uses: Tuberos roots are used as to cure diabetes, dysentery, diarrhoea, anthelmintic, wounds, urinary trouble, fever, paralysis, convalescence and malnutrition. It is aphrodisiac, astringent, expectorant and nervine tonic. Salep prepared from the tuber is very nutritive and demulcent. [Srivastava & Mainera 1994.; Rai & Sharma 1994.; Chowdhery 1998.; Sood 2006.; Singh & Duggal 2009; Rai 2002; Rai 2010]

Dendrobium aggregatum Roxburgh; *Habitat:* Epiphyte; *Distribution:* Bhutan, N.E. India, S. China

Uses: Whole plant parts used to treat nerves, cholera, pimples and boils. [Sood 2006]

Dendrobium alpestre (Royle) Kuntze; *Habitat:* Epiphyte; *Distribution:* Temperate Himalaya

Uses: Whole plant parts used as poultice in curing pimples, boils and skin diseases. Whole plant decoction used as tonic. [Sood 2006]

Dendrobium amoenum Wallich *ex* Lindley; *Habitat:* Epiphyte; *Distribution:* E. Himalaya, Assam, Myanmar

Uses: Fresh shoots extraction serves as antibiotic and inhibits the growth of bacteria in wounds and ulcers. [Sood 2006]

Dendrobium chrysanthum Wallich *ex* Lindley; *Habitat:* Epiphyte; *Distribution:* India (Himalayas), Nepal, Myanmar, China, Thailand, Laos, Vietnam

Uses: Powdery seeds dried and used as haemostatic [Deb *et al* 2009].

Dendrobium chrysotoxum Lindley *Habitat:* Epiphyte; *Distribution:* India (Nagaland, Manipur and Mizoram), Cambodia, Java, Laos, Myanmar and Vietnam.

Uses: Whole plant extract serves as antitumorous and anticancerous. [Sood 2006]; powdery seeds dried and used as haemostatic [Deb *et al* 2009].

Dendrobium densiflorum Lindley; *Habitat:* Epiphyte; *Distribution:* Nepal, India, Myanmar, China, Thailand

Uses: Fresh leaf poultice recommended for bone fracture and stem bark used as ear-ring. [Sood 2006]; powdery seeds dried and used as haemostatic [Deb *et al* 2009].

Dendrobium fimbriatum Hooker f.; *Habitat:* Epiphyte; *Distribution:* India, Andaman, Myanmar, Sri Lanka, China, Thailand, Laos, Vietnam

Uses: Decoction of flowers and leaves used for liver upsets and nervous debility. Poultice of fresh leaves used to cure boils and pimples. Fresh leaves and flowers used to cure cholera. [Medhi & Chakrabarty 2009]

Dendrobium macraei Lindley; *Habitat:* Epiphyte; *Distribution:* N.E. India, Myanmar, Thailand

Uses: Tuber is used as tonic and helpful to cure asthma, bronchitis and throat trouble. Roots paste is externally applied in skin allergy and affected part to cure eczema. [Singh & Duggal 2009]

Dendrobium moschatum (Buchanan-Hamilton) Swartz; *Habitat:* Epiphyte; *Distribution:* N.W. & E. Himalayas in India, Myanmar, Malaysia, Thailand, Vietnam, S. China.

Uses: Fresh leaf juice is used in Meghalaya for earache. Powdery seeds dried and used as haemostatic. [Sood 2006.; Medhi & Chakrabarty 2009; Deb *et al* 2009].

Dendrobium nobile Lindley; *Habitat:* Epiphyte; *Distribution:* N.W. & E. Himalayas of India, Myanmar, Thailand, S. China

Uses: Whole plant parts is used in the treatment of pulmonary tuberculosis, flatulence, general debility, cut and wounds healing, dyspepsia, night sweats, fever and anorexia. It is antiphlogistic, pectoral, stomachic and tonic [Chowdhery 1998; Sood 2006; Medhi & Chakrabarty 2009; Singh & Duggal 2009]; powdery seeds and root-powder used to heal wounds; also in used nervous disorder [Deb *et al* 2009].

Epipactis latifolia Wallich; *Habitat:* Terrestrial; *Distribution:* Temperate Himalaya Kashmir to Sikkim.

Uses: Rhizome decoction used to treat insanity [Sood 2006].

Eria bambusifolia Lindley; *Habitat:* Epiphyte; *Distribution:* E. Himalaya of India, Myanmar, S. China, Thailand

Uses: Mixture prepared from whole plant parts and ripe fruits of *Aegle marmelos* is used to cure hyper acidity and stomach disorder. [Dash *et al* 2008]

Eria muscicola (Lindley) Lindley; *Habitat:* Epiphyte; *Distribution:* N.W. & E. Himalaya of India, Sri Lanka, Myanmar, S. China

Uses: Whole plant parts are used to cure diseases of heart, lungs, eyes, ears and nervous system. [Sood 2006; Medhi & Chakrabarty 2009]

Eria pannea Lindley; *Habitat:* Epiphyte; *Distribution:* N.E. India, Myanmar, S. China, Malaysia, Sumatra, Borneo

Uses: Decoction prepared from fresh roots and leaves is useful in boneache. Whole plant is used in bath for ague. [Chowdhery 1998; Medhi & Chakrabarty 2009]

Eulophia campestris Lindley *Habitat:* Terrestrial; *Distribution:* Afghanistan, Pakistan, N. India, Myanmar, China

Uses: Tubers are used to treat worm infestation and scrofula. Tuber decoction is serves as tonic and helpful to treat stomach problems, cough, paralysis, heart ailments and also used as aphrodisiac. It is demulcent and anthelmintic. [Sood 2006; Medhi & Chakrabarty 2009; Singh & Duggal 2009]

Eulophia dabia (David Don) Hochreutiner; *Habitat*: Terrestrial; *Distribution*: Himachal Pradesh, Central Nepal

Uses: Powdered prepared from rhizomatous tuber is used to treat spermatorrhoea, blood purifier, heart problems and stomachache. [Sood 2006]

Eulophia explanata Lindley; *Habitat*: Terrestrial; *Distribution*: N.W. India, Nepal

Uses: Poultice prepared from the pseudobulbs and whole plant parts are used to heal wounds and spermatorrhoea. [Sood 2006]

Eulophia herbacea Lindley; *Habitat*: Terrestrial; *Distribution*: N.W. Himalaya, Nepal

Uses: Tuber pieces fried with ghee and used to cure leucorrhoea and used as tonic [Sood 2006].

Eulophia nuda Lindley; *Habitat*: Terrestrial; *Distribution*: Himalayan regions, Nepal, Sikkim, Sri Lanka, Tropical Himalaya

Uses: Fresh tubers are used to treat worm infestation, bronchitis, tumours and scrofula. [Chowdhery 1998; Sood 2006; Singh & Duggal 2009].

Eulophia spectabilis (Dennstedt) Suresh; *Habitat*: Terrestrial; *Distribution*: E. Himalaya of India

Uses: Tubers are used against aphrodisiac and leaf decoction is used against vermifuge [Dash *et al* 2008]

Geodorum densiflorum (Lamarck) Schlechter; *Habitat*: Terrestrial; *Distribution*: N.W. & E. Himalayas of India, Malaysia, S. China.

Uses: Fresh root paste mixed with honey and taken orally to regularize menstrual cycle in women [Dash *et al* 2008]

Goodyera repens R. Brown; *Habitat*: Terrestrial; *Distribution*: Temperate Himalaya, Europe, N. Asia, N. America

Uses: Whole plant decoction is used to treat common cold, snake bites, gastro-intestinal, toothache, kidney disorders, obesity, eye urinary and female diseases [Sood 2006]

Habenaria commelinifolia (Roxburgh) Wallich *ex* Lindley; *Habitat*: Terrestrial; *Distribution*: Tropical W. Himalaya, Bihar, Orissa

Uses: Dried roots used to cure spermatorrhea, urinary trouble. Roots and tubers as “Salep”. Infusion of the whole plant powdered is used for curing nasal bleeding and snake bite. [Chowdhery 1998; Sood 2006 & Dash *et al* 2008]

Habenaria dentata (Swartz) Schlechter; *Habitat*: Terrestrial; *Distribution*: Nepal, N.E. India, Myanmar, China, Thailand, Laos, Vietnam, Taiwan

Uses: Whole plant is useful as an analgesic, disinfectant, aphrodisiac, antirheumatic, urinary trouble and orthopedic ailments [Sood 2006]

Habenaria edgeworthii Hooker f. *ex* Collett; *Habitat*: Terrestrial; *Distribution*: Himalayan regions of E. Asia

Uses: Fresh leaves and roots are used to treat diseases of the blood. It is cooling and spermopiotic. Tubers used for cough, asthma, insanity, fever and rejuvenation. [Sood 2006; Singh & Duggal 2009]

Habenaria intermedia D. Don; *Habitat*: Terrestrial; *Distribution*: Himalayas, Asia, Kashmir to Sikkim

Uses: Fresh rhizome used as an aphrodisiac and heart tonic. [Sood 2006; Chauhan *et al* 2007; Singh & Duggal 2009]

Habenaria longicorniculata Graham; *Habitat*: Terrestrial; *Distribution*: N.E. India, China, Vietnam

Uses: Fresh tuber paste is mixed with turmeric powder and applied externally to cure leucoderma [Dash *et al* 2008]

Habenaria marginata Colebrook; *Habitat*: Terrestrial; *Distribution*: India, Nepal, Myanmar, China, Thailand

Uses: Fresh tuber decoction mixed with honey and taken daily on an empty stomach for treatment of malignant ulcer [Dash *et al* 2008]

Habenaria pectinata (J.E. Smith) D. Don; *Habitat*: Terrestrial; *Distribution*: N.W. Himalaya, Nepal, N.E. India, China

Uses: Fresh leaves are crushed and applied in snake bites. Tubers mixed with condiments are used in arthritis rheumatism. Roots used as blood purifier, also used to increase sexual power in males [Singh & Duggal 2009]

Liparis odorata (Willdenow) Lindley; *Habitat*: Terrestrial; *Distribution*: E. Himalaya, S. China, Myanmar

Uses: Fresh leaf juice is used in burns, cancerous ulcers and gangrene [Sood 2006; Singh & Duggal 2009]

Luisia teretifolia Gaudichaud; *Habitat*: Epiphyte; *Distribution*: Khasia hills, W. Ghats, Sri Lanka, Malay Island, New Caledonia

Uses: Whole plant decoction is used to cure tumours and inflorescence used for healing of wounds [Sood 2006]

Luisia trichorhiza (Hooker f.) Blume; *Habitat*: Epiphyte; *Distribution*: N.W. & E. Himalayas of India, Myanmar, Thailand.

Uses: Root paste mixed with turmeric and ginger and intake orally to cure jaundice. The root extract is used as anti-diarrhoea and to reduce muscular pains in humans [Sood 2006 & Dash *et al* 2008]

Malaxis acuminata D. Don; *Habitat*: Terrestrial; *Distribution*: Himalayas of E. Asia, Peninsular India, Meghalaya, Andaman

Uses: Decoction of pseudobulb is used to cure fever, tuberculosis, burning sensation, bleeding diathesis and phthisis. It is cooling, febrifuge and spermopiotic [Chowdhery 1998; Sood 2006; Singh & Duggal 2009; Deb *et al* 2009]

Malaxis muscifera (Lindley) Kuntze; *Habitat*: Terrestrial; *Distribution*: Himalayas of E. Asia, Kashmir, Sikkim

Uses: Decoction prepared from the fresh pseudobulbs used to treat fever, burning sensation, bleeding diathesis phthisis and as aphrodisiac. It is cooling, febrifuge and spermopiotic [Sood 2006; Singh & Duggal 2009]

Nervilia aragoana Gaudichaud; *Habitat*: Terrestrial; *Distribution*: India, Malaysia, Indonesia, China, S & S.E. Asia, new guinea, Philippines, Timor, Palau, Australia

Uses: Entire plant parts are used in the preparation of Ayurvedic drugs. The decoction prepared from the fresh leaves is used as a protective medicine after childbirth in Malaysia [Sood 2006]

Nervilia plicata (Andrews) Schlechter; *Habitat*: Terrestrial; *Distribution*: India, Myanmar, S. China, Laos, Vietnam, Archipelago to New Guinea

Uses: Whole plant decoction is effective against cough, urinary trouble, diarrhoea, asthma [Sood 2006]

Nervilia prainiana (King & Pantling) Seidenfaden; *Habitat*: Terrestrial; *Distribution*: Africa, India, Thailand, Indonesia

Uses: Whole plant is useful for cure of epilepsy, asthma, colic and urinary ailments [Sood 2006]

Oberonia caulescens Lindley; *Habitat*: Epiphyte; *Distribution*: Khasia hills, Nepal, India, China

Uses: Tubers are useful to treat liver diseases [Sood 2006]

Papilionanthe teres (Roxburgh) Schlechter; *Habitat*: Epiphyte; *Distribution*: India, Nepal, Bangladesh, Vietnam, Myanmar, S. China, Thailand,

Uses: Leaf paste is applied during high fever. Roots decoction used as an antifertility medicine and leaves decoction used to cure typhoid fever [Sood 2006; Medhi & Chakrabarty 2009]

Pecteilis susannae (Linnaeus) Rafinesque; *Habitat:* Epiphyte; *Distribution:* E. Himalaya of India.
Uses: Fresh tubers are used for curing boils [Sood 2006]

Phaius tankervilleae (Banks *ex* L' Heritier) Blume; *Habitat:* Terrestrial; *Distribution:* N.W. & E. Himalayas of India, Myanmar, Sri Lanka, China, Japan, Malaysia

Uses: Fresh pseudobulbs are used for bone fracture and dysentery. Pounded pseudobulbs, roots and leaves are used as poultices for boils, infested wounds and abscesses [Chowdhery 1998; Medhi & Chakrabarty 2009]

Pholidota articulata Lindley; *Habitat:* Epiphyte; *Distribution:* India, Nepal, Myanmar, Thailand, Cambodia, Java, Borneo, Sulawesi

Uses: Entire plant is considered as a tonic [Sood 2006]

Pholidota imbricata Lindley; *Habitat:* Epiphyte; *Distribution:* Nepal, India (Deccan Peninsula, Khasia hills, Andamans), Myanmar, Sri Lanka, Bangladesh, Laos, Australia.

Uses: Pseudobulbs paste used as poultice for finger abscess and rheumatism [Sood 2006; plant decoction used to cure skin rash [Deb *et al* 2009]

Pholidota pallida Lindley; *Habitat:* Epiphyte / Lithophyte; *Distribution:* N.W. & E. Himalayas of India, Myanmar, China, Thailand, Laos, Vietnam

Uses: Pseudobulbs crushed and mixed with mustard oil are used in curing rheumatic pains. [Chowdhery 1998]

Pleione maculata (Lindley) Lindley; *Habitat:* Epiphyte; *Distribution:* E. Himalaya, Meghalaya, Bhutan, China, Thailand

Uses: Fresh rhizome is useful for cure of liver complaints [Sood 2006]

Rhynchostylis retusa (Linnaeus) Blume; *Habitat:* Epiphyte; *Distribution:* N.W. & E. Himalayas of India, Myanmar, S. China, Malaysia, Thailand

Uses: Root paste is used to cure blood dysentery and wounds. Plant is emollient. Poultice of leaves used to treat rheumatic ailment [Chowdhery 1998; Sood 2006 & Dash *et al* 2008]

Satyrium nepalense D. Don; *Habitat:* Terrestrial; *Distribution:* N.W. & E. Himalaya of India, Myanmar, Sri Lanka

Uses: Tubers are used as tonic and to cure dysentery and malaria fever [Chowdhery 1998; Medhi & Chakrabarty 2009]

Spiranthes autumnalis Richard; *Habitat:* Terrestrial; *Distribution:* W. Himalaya, Afghanistan, Europe

Uses: Roots consumed for their aphrodisiac properties [Sood 2006]

Vanda coerulea Griffith *ex* Lindley; *Habitat:* Epiphyte; *Distribution:* E. Himalaya of India, Myanmar

Uses: The juice of fresh leaves is used in diarrhea, dysentery, eye diseases and external skin diseases [Sood 2006; Medhi & Chakrabarty 2009]; decoction of fresh flowers taken as appetizer as well as tonic [Deb *et al* 2009].

Vanda cristata Lindley; *Habitat:* Epiphyte; *Distribution:* E. Himalaya of India, Bhutan

Uses: Fresh leaves are used as tonic and expectorant [Sood 2006; Medhi & Chakrabarty 2009]

Vanda tessellata (Roxburgh) Hooker *ex* Loddiges; *Habitat:* Epiphyte; *Distribution:* Sikkim, Kalimpong (Paschimbanga)

Uses: Root and leaf paste applied on sprains, rheumatism and used as antidote for snake and spider bites, fever; root decoction used in cholera; plant ash with mustered oil used in bone fracture [Deb *et al* 2009].

DISCUSSION

Present paper deals with 74 orchid species with 35 genera extensively used for different medicinal purposes. Of these, 41 are epiphytes, 31 are terrestrial and 2 are saprophytes. Among epiphyte, 10 species of *Dendrobium*., 4 *Cymbidium* spp., 4 *Vanda* spp., 3 *Pholidota* spp., 3 *Eria* spp., 2 *Acampe* spp., 2 *Aerides* spp., 2 *Bulbophyllum*., 2 *Coelogyne* spp., 2 *Lusia* spp. and in terrestrial, 7 *Habenaria* spp., 6 *Eulophia* spp., 3 *Nervilia* spp., 2 *Calanthe* spp. and 2 *Malaxis* spp, and in saprophyte one species of *Anoectochilus* and *Corallorhiza* are medicinally important. It is found that number of epiphytic species are more useful than terrestrial and saprophytic but the number of terrestrial are near about epiphytic species. Many diseases and disorders are cured by these Orchids viz., diarrhea and dysentery, purgative, hyper acidity, arthritis rheumatism, gouts and sciatica, paralysis, cut and wounds, headache and fever, skin diseases, allergy, eczema, stomach disorder, vermifuge, urinary trouble, tuberculosis, bone fracture and joint dislocation, bronchitis, dyspepsia, cough and cold, expectorant, asthma, gastrointestinal problems, expectorant, boils and pimples, gangrene, ulcer, tumors, cancer, epistaxis, eye diseases, scorpion and snake bites, liver diseases, toothache, earache, nerves diseases, spermatorrhea, gonorrhoea, leucorrhoea, insanity, epilepsy, ulcer, scrofula, menstrual disorder, heart and lungs diseases, kidney trouble, cholera, diabetes and piles are generally treated and cured. Some species are used as tonic and revitalizer and some are used as aphrodisiacs. It is found that many species are utilized more than one disease ailments and some are found their only one utility.

Orchids contribute good herbal medicine in pharmaceutical industries as well as in tribal communities. But whole Orchidaceae family facing high risk of endangered because of over collection for ornamental interest, wild species trade, medicinal purposes, food stuffs, frequent landslides, over grazing, frequent forest fire, urbanization, developmental projects, clearing of forest lands for agriculture and unplanned exploitation had resulted in drastic loss of such medicinally important Orchid species from nature. Therefore, immediate conservation of all these valuable Orchids is necessary in their natural habitat as Orchids are very sensitive to ecological disturbances. Effective conservation measures have to taken up by arranging awareness programme, research and development programmes, multiplication by means of plant tissue culture and cultivation are the alternative ways to save our valuable jewels (wild Orchid species diversity) from the high risk of biodiversity loss in the world. Therefore, it is necessary to conserve our precious Orchid species resources diversity both for floriculture trade and herbal medicine.

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LITERATURE CITED

- Bulpitt, C.J. 2005. The uses and misuses of Orchids in medicine, *Qtr. J. Med.* 98: 625 – 631.
- Chauhan, N.S. 1990. Medicinal Orchids of Himachal Pradesh. *J. Orch. Soc. India* 4: 399 – 105.
- Chauhan R.S.; Nautiyal M.C.; & Prasad, P. 2007. *Habenaria intermedia* D. Don - An Endangered Medicinal Orchid. *J. McAllen Intn. Orch. Soc.* 8(10): 15 - 20.
- Chowdhery, H.J. 1998. *Orchid Flora of Arunachal Pradesh*, Botanical Survey of India, Calcutta.
- Dash, P.K.; Sahoo, S. & Bal, S. 2008. Ethnobotanical studies on Orchids of Niyamgiri hill ranges, Orissa, India. *Ethnobotanical Leaflets* 12: 70 – 78.

- Deb, C.R.; Deb, M.S.; Jamir, N.S. & I. Temjensansangba. 2009. Orchids in indigenous system of medicine in Nagaland, India. *Pleione* 3(2): 209 – 211.
- Medhi, R.P. & Chakrabarti, S. 2009. Traditional Knowledge of NE people on Conservation of Wild Orchids. *Indian J. Trad. Knowl.* 8(1): 11 – 16.
- Rai, L.K. & Sharma, E. 1994. *Medicinal plants of the Sikkim Himalaya: status, usage and potential*. Bisen Singh Mahendrapal Singh, Dehra Dun.
- Rai, S.K. 2002. *Studies on the Ethnobotany of Darjeeling Himalaya*. Ph. D. Thesis, University of North Bengal.
- Rai, U. 2010. Population study of eight threatened medicinal plants of the Darjiling and Sikkim Himalayas. *Pleione* 4(2): 256 – 262.
- Singh, A. & Duggal, Sanjiv. 2009. Medicinal Orchids – An Overview, *Ethnobotanical Leaflets*.13: 399 – 412.
- Sood, S.K. 2006. *Orchidaceae and Mankind*. Deep Publications, New Delhi.