The Eastern Ghats

EPTRI - ENVIS Newsletter

Epiphytes & Orchids of Eastern Ghats

Contents

1. Terrestrial and Epiphytic Orchids of Eastern Ghats ..........................2
2. Ethnobotany of Certain Orchids of Eastern Ghats of Andhra Pradesh ..........5
3. Publications, News items ........................................10

Request to Readers

Our next issue of ‘The Eastern Ghats’ [Vol.11, No.4, 2005] will not focus on a specific theme. We solicit articles and write-ups from our readers on any issue related to the physical, biological and socio-economic issues of the Eastern Ghats region. Articles may be of a general nature so as to make our Newsletter informative to a large section of the stakeholders and not to restrict it exclusively to subject specialists.

Foreword

The ecology of the Eastern Ghats being an exhaustive thematic area, there is a wide scope to select a topic as a theme for the Newsletter. While the advantage is the scope of topics one can choose from, the difficulty is in making sure that the topic has not been covered in the previous issues spanning almost a decade and also keeping in mind the relevance and importance of the subject chosen.

The subject chosen for this issue is ‘Epiphytes and Orchids’, which are known for their beautiful flowers, botanical speciality (symbiotic association) and horticultural importance (medicinal) and ornamental value. Their conservation, therefore, becomes immensely important.

A decision has been taken not to restrict the forthcoming issue of the Newsletter, the last issue for the year 2005, to any specific theme. While we shall be publishing the articles received after the respective thematic issues had gone for printing, it is proposed to keep the option open for our valued readers to send us articles and news items, etc pertinent to physical, biological and socio-economic issues of the Eastern Ghats for the issue bearing Vol.11, No.4, 2005.

We are pleased that this issue of the Newsletter is being printed on recycled handmade paper.

ENVIS Coordinator

Note: The views expressed in the article/s are of the Authors.

ENVIRONMENT PROTECTION TRAINING & RESEARCH INSTITUTE (EPTRI), HYDERABAD
India is one of the mega biodiversity hot spots of the world contributing to the world’s biological resources from the long stretches of Eastern Ghats on the East, the greater Himalayan range on the Northern plains and Western Ghats on the west. The Eastern Ghats range is unique in its own way to host many valuable flora from time immemorial. The Eastern Ghats are spread over four states from the northeast to southwest along the east coast, covering an area of about 75,000 km with an average width of 200 km in the north and 100 km in the south (Bhairavamurthy 1982). The average rainfall ranges from 1200 mm to 1500 mm and mean annual temperature between 21° C and 26° C (Dani 1982). The habitat is home to 118 endemic species that support many micro-fauna, containing rich floristic diversity of about 2000 species of plants belonging to Angiosperms and considered as one of the sub-continent’s richest floristic zones for conservation (Chauhan 1998).

The forest types that predominantly persist in the Eastern Ghats range are the tropical semi-evergreen forests, moist deciduous and dry deciduous types inhabited by a number of terrestrial and epiphytic orchids. Orchids are the most beautiful flowers and comprise a unique group of plants. They represent the most highly evolved family growing abundantly in association with established trees. The family Orchidaceae to which orchids belong, is the largest family among monocotyledons, containing 600-800 genera. Orchids include terrestrial, epiphytic and saprophytic forms. Epiphytic orchids are largely tropical and subtropical in distribution. In this article, some terrestrial and epiphytic orchids have been addressed with reference to their occurrence, status, ecology and importance.
co-adapted to certain insects and bats for pollination; however, there have been no studies on epiphytic orchids in the Eastern Ghats for their pollinators or seed dispersers. The information on the status of these epiphytic orchids is lacking and it is feared that these orchids may gradually disappear if their host plants are not available. It is also not known whether they are host specific and if so, to what extent. In view of this lacuna, it is suggested that studies need to be carried out to identify their habitats, host trees, and understand their ecology in terms of their perpetuation.

Terrestrial Orchids

A terrestrial orchid is a plant that grows on land and does not require a host plant for its survival. Further, the terrestrial orchids are not as showy as epiphytic orchids. Majority of these orchids grow in cooler regions of the world. These orchids are dormant during summer months. Some species grow in the tropics and sub-tropics and are mostly evergreen. In the Eastern Ghats, some terrestrial orchids found include *Acampe praemorsa*, *Bulbophyllum polyrhizum*, *Deodorum densiflorum*, *Dendrobium nanum*, *D. macrostachyum*, *Eria meghasaniensis*, *Eulophia ochreata*, *E. epidendraea*, *Habenaria cephalotus*, *H. foliosa*, *H. heyneana*, *H. ballandianna*, *H. lawii*, *H. longicornculata*, *H. longicornum*, *H. rariflorum*, *H. roxburghii*, *H. ovalifolia*, *H. fusifera*, *H. plantagenia*, *H. roxburghii*, *L. zeylanica*, *Malaxis acuminata*, *M. rheedii*, *Nervilia aragoana*, *N. plicata*, *Oberonia arnotiana*, *O. enisiformis*, *Perstylis lawii* and *Pholidota imbricata* (Parvathi and Banumathy 1998; Saxena and Brahman 1998; Sudhakar Reddy et al. 2002; Jadhav and Reddy 2002). Of these, *A. praemorsa*, *D. macrostachyum*, *D. densiflorum*, *E. meghasaniensis*, *H. fusifera*, *H. longicornculata*, *H. plantagenia*, *H. roxburghii*, *L. zeylanica*, *Malaxis acuminata*, *M. rheedii*, *N. aragoana*, *N. plicata*, *Oberonia arnotiana*, *O. enisiformis*, *Perstylis lawii* and *Pholidota imbricata* (Parvathi and Banumathy 1998; Saxena and Brahman 1998; Sudhakar Reddy et al. 2002; Jadhav and Reddy 2002). Of these, *A. praemorsa*, *D. macrostachyum*, *D. densiflorum*, *E. meghasaniensis*, *H. fusifera*, *H. longicornculata*, *H. plantagenia*, *H. roxburghii*, *L. zeylanica*, *Malaxis acuminata*, *M. rheedii*, *N. aragoana*, *N. plicata* and *P. imbricata* have been reported to be rare while *B. polyrhizum* as threatened (Saxena and Brahman 1998; Reddy et al 2002). There is hardly any information on their distribution, ecology and establishment in the Eastern Ghats. In this context, it is suggested that studies are urgently required to have an in-depth knowledge on these terrestrial orchids for their conservation, for both *ex situ* or *in situ*.

**Economic Importance**

Orchids are highly prized ornamental plants but also have importance in medicinal and food industry. *Vanilla* genus is important as the source of natural vanilla flavouring. The fresh dried stem of *Dendrobium nobile* is used in the preparation of a drug that works as aphrodisiac, analgesic and for longevity. Some orchid species have been in use as an antidote for scorpion bite and curing ailments. Tuber paste of *Habenaria fusifera* is used for cuts, wounds and poisonous bites. Tuber extract of *Habenaria plantaginea* and *H. roxburghii* is in use for scorpion and snake bites. Paste obtained from *Acampe praemorsa*, *Luisia zeylanica*, and aerial roots of *Cymbidium aloifolium* are used for fixing human bone fractures. Tuber of *Bulbophyllum neilgherrense* are consumed for good health. Pseudo-bulb extract of *Malaxis acuminata* is used in tonic preparations and of *Pholidota imbricata* for rheumatic swellings. Velamin root extract of *Vanda tessellata* is used for treating dysentery. Some other orchid species such as *Malaxis rheedii*, *Liparis prazeri* and *Vanilla wightiana* have ornamental value in addition to botanical values (Seshagiri Rao 1998; Reddy et al. 2002). Some orchid species are extremely valuable as sources of alkaloids and fungicides. In this context, it is suggested that there is a vast potential to use orchid flora for medicinal and other human purposes and research work needs to be carried out on the chemical composition of different parts of orchid species for their use in medicine.

**Conservation**

The major threat to orchid flora in the Eastern Ghats region is deforestation through burning and felling of forest trees, and podu cultivation practices employed by tribals. The mining of valuable economic resources such as Bauxite, Graphite, Gemstone, etc. and activities of tribals for the collection of forest produce are additional threats to the orchid flora. In
case of epiphytic orchids, the losses of host tree species are bound to result in the elimination of such orchids. Such a situation also impacts the dependent fauna to a great extent. Certain orchid flowers have global market value and there are cases of smuggling them out into other countries. Further, they have value in floriculture but unfortunately, orchid floriculture has not been promoted in India despite the abundance of orchid flora. The occurrence of diversity of orchid flora is a good indicator of forest health. These species provide food sources such as nectar, pollen, fruit and seed for insects, birds and bats. In view of these multiples ecological and economic uses, the measures for the conservation and protection of orchid flora are necessary by restricting the movements of tribals and non-tribals into rich pockets of flora in the Eastern Ghats. Breeding programs on orchid flora should be started to recover and manage the gene pool that exists in them; these programs are very important for endemic and rare orchid flora. A national policy for the protection of orchids in the wild is also required. For this, an inventory of orchid flora and their habitats in the Eastern Ghats is a pre-requisite. Further, the reproductive biology of both epiphytic and terrestrial orchid species should be investigated to understand their survival and propagation and this information is essential for their in situ and ex-situ conservation and management.

References


Ethnobotany of Certain Orchids of Eastern Ghats of Andhra Pradesh

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Introduction

Orchidaceae is the second largest family in India, consisting of about 990 species. In Peninsular India there are about 200 species are present (Joseph, 1987). Of these 67 are found in the state of Andhra Pradesh (Pullaiah, 1997). Rajendran et al. (1997) reported medicinal uses of nine species of orchids of southern India. Ethnobotanical studies were carried out in ethnically different groups of Anantapur, Chittoor, East Godavari, Khammam, Kurnool and Visakhapatnam districts of Andhra Pradesh. This has resulted in the collection of 23 orchids spread out in the forests and used by local ethnic groups namely: Chenchus, Erukalas, Konda reddis, Koyas, Lambda’s (Sugalis), Nukadoras, Valmikis & Yanadis. These species recommended for conservation and pharmacological studies. The present study reports that the fresh rhizomes and aerial parts of orchids are commonly used to cure human and veterinary diseases.

Methodology

The data presented here are the outcome of intensive exploration trips conducted over a period of ten years. The information on the orchids use, mode of administration and dosage was gathered from knowledgeable inhabitants and documented. Voucher specimens were deposited in the Herbarium of Laila Impex Research Centre, Vijayawada, Kakatiya University, Warangal and Medicinal Plants Conservation Centre, Hyderabad.

Enumeration

Taxa are arranged alphabetically. The vernacular name of taxon is followed with a brief description of the species, habitat and information of ethnic uses.


Robust plant with stout stem, ca 30 cm long, covered by sheathing bases of leaves, with persisting old inflorescence axis and long stout aerial roots from among the leaves. Leaves alternate, coriaceous, unequally deeply cleft at apex. Flowers yellow, mildly sweet scented. Lip fleshy, trilobed, saccate at base. Rare in moist deciduous forests.

Uses: Whole plant crushed with egg albumin and calcium and paste applied and tied with bandage for setting of fractures by Koyas of East Godavari district.


Uses: Tubers are consumed for good health by Valmikis of Visakhapatnam district.


An epiphytic herb; pseudobulb 4-5 cm long, ovoid. Leaves
linear-oblong, 30-60 x 2-4 cm. Scapes and racemes 20-50 cm long, erect below and decurved above. Flowers yellowish red, lateral lobes mottled with purple. Rare in moist deciduous and semi evergreen forests on largest trees.

**Uses:** The aerial roots make into paste and plastered tightly on fractured bones by Koyas of Khammam district.

The aerial roots made into paste and applied to foot cracks by Konda reddis of East Godavari district.


Erect, epiphytic, bunchy herb. Stems caespitose, yellowish, shining. Leafless during flowering. Inflorescence a condensed raceme. Flowers creamy-white-yellow. Lip attached to the foot of the column, refluxed at the base, 5- nerved. Rare in moist deciduous and semi evergreen forests on hill tops.

**Uses:** The tender tip juice is used for earache by Nukadoras and Valmikis of Visakhapatnam district.


Epiphytic, drooping herbs; leafless during flowering. Leaves alternate, membranous, acute, entire, shortly sheathing at base, mouth of the sheath infundibular. Inflorescence solitary or in cymes. Flowers whitish-yellow, Lip panduriform. Rare in Semi ever green and moist deciduous forests of Lankapakalu and Akumamidi kota.

**Uses:** Tender tip juice used as an ear drops for earache by Valmikis of Visakhapatnam district.


A terrestrial herb; pseudobulb green. Leaves linear, 30-60 cm long. Flowers yellowish green in spikes. Lip white with pink veins, nerves and crests red. It is found in scrub and dry deciduous forests among rocks.

**Uses:** The tubers along with those of *Withania somnifera* (Penneru gaddalu), *Curculigo orchioides* (Nela taadi) are taken (Ratio: 2:1:1) and crushed with sufficient quantity of pepper and garlic and the extract is given orally daily once to one week for anorexia by folk in Anantapur district.

100g of tubers are mixed with the fruits of *Terminalia bellirica*, *Terminalia chebula*, *Emblica officinalis* (each 50g) and sufficient quantity of pepper are crushed and the mixture is given orally daily once to 15 days for anthrax by folk by Anantapur district.


**Uses:** 200g of tubers along with 10-15 g of pepper and garlic and the extract is given orally for intermittent fever in cattle by Koyas of Khammam district.

Root paste is applied externally for insect bite and wounds by Kondareddis of Khammam district and Chenchus of Kurnool district.


A terrestrial herb up to 50 cm tall. Leaves oblong-oblanceolate to broadly elliptic, sheathing at base. Raceme lax, many flowered. Flowers small, green. Lip trifid from the base. Spur slightly longer than the ovary. Rare in deciduous and moist deciduous forests.

**Uses:** The tuber paste is used as an ointment for cuts, wounds
and poisonous bites by Chenchus of Kurnool district.


An erect herb, 70-90 cm long. Leaves clustered near the middle of the stem, elliptic-lanceolate to oblanceolate, 5-18 x 1.6-5.5 cm, apex acute to acuminate. Spike cylindric, up to 50 cm long. Flowers white; bracts linear-lanceolate, setaceously acuminate, as along as or longer than the ovary; sepals sub-equal, ovate-oblong, obtuse, petals as long, lip much longer. Spur slender, incurved, usually shorter than the ovary. Capsules 2-3 cm long, beaked. Occasional in shady and moist localities of Rampa chodavaram Range of East Godavari district.

**Uses:** Fresh plant paste is externally applied for scorpion sting and also used for maggot infested sores by Konda reddis and Valmikis of East Godavari district.


Herbs, 50-90 cm. Leaves about 6, alternate, elliptic, narrowed into sheathing base, acute at tip. Flowers white, usually 2 (rarely 1 or 3) Lip reflexed, much longer than sepals, Spur green, much longer than the ovary. Fruiting axis little longer than flowering axis. Rare in hilly areas.

**Uses:** Tuber paste with turmeric used as an external application for leucoderma by Yanadis of Chittoor district.


A slender, terrestrial herb. Leaves radical. Stem up to 30 cm long. Flowers pure white. Lip much longer than the sepals; spur green, 15-25 mm, longer than ovary. Rare in deciduous forests.

**Uses:** 10-15 g of tubers is crushed with 2-3 g pepper and garlic and the extract is taken orally for snakebite by Konda reddis of Khammam district.


A terrestrial herb, to 40 cm high. Leaves 3-6, appressed to the ground, sessile, broadly elliptic or orbicular. Flowers white, ovate; petals 2-partite; spur about 1.5 cm long, longer than the ovary. Occasional in deciduous forests. Endemic to Peninsular India.

**Uses:** Whole plant crushed with egg albumin, turmeric and calcium and paste applied and tied with bandage twice in a week to 2-3 weeks for setting fractures by Valmikis of Visakhapatnam district.

*Tendr plush shoots paste used as an external application for pus forming wounds by Konda reddis of East Godavari district.*


Herbs with terete stems, sheathed. Leaves alternate, sheathing at base. Inflorescence condensed racemes, extra axillary. Flowers 2-4, greenish pink. Lip concave towards the base, trilobed with dark maroon horizontal bands; Fruits oblong, winged. Rare in moist deciduous forests.

**Uses:** Tuber ground with black pepper and garlic and the paste made into pills administered for chest pain and stomach pain by Koyas, 1-2 pills (each 5-10 gm) twice a day till cure by Koyas of Khammam district.

The tuber paste is externally applied for scorpion sting and also used for cuts and wounds by Konda reddis of Khammam district.


A terrestrial herb, to 40 cm high. Leaves 3-6, appressed to the ground, sessile, broadly elliptic or orbicular. Flowers white, ovate; petals 2-partite; spur about 1.5 cm long, longer than the ovary. Occasional in deciduous forests. Endemic to Peninsular India.

**Uses:** Whole plant crushed with egg albumin, turmeric and calcium and paste applied and tied with bandage twice in a week to 2-3 weeks for setting fractures by Valmikis of Visakhapatnam district.

*Tendr plush shoots paste used as an external application for pus forming wounds by Konda reddis of East Godavari district.*

Terrestrial herbs, pseudobulbous at the base. Shoot with inflorescence 20-35 cm. Leaves elliptic-lanceolate, acute to acuminate, sheathing at the base. Inflorescence terminal, scape ridged. Flowers dark purple. Lip erect, sagittate, entire, forked at the apex, lobes acute-obtuse. Rare in moist deciduous forests.

Uses: Pseudobulbs are used in ayurvedic system of medicine as one of the ingredient of ‘ashtawarga’ used in tonic preparations.


Terrestrial, tuberous herb to 30 cm high. Stem erect, stoloniferous; leaves ovate-oblong to elliptic. Flowers yellow. Lip reniform, reflexed. Rare in moist deciduous forests.

Uses: The tuber paste is applied externally for insect bite by Konda reddis of Khammam district. The tubers crushed with jaggory (2:1), mixed in castor oil and applied externally for rheumati-sm in cattle’s by Koyas of Khammam district.


Terrestrial, tuberous herb. Leaf appearing after the flowers, orbicular, subsessile, cordate, entire to broadly dentate at margin; Flowers creamy white with lip having violet streaks. Sepals and petals sparsely gland-dotted. Lip entire, not reflexed. Occasional in shady localities of moist deciduous forests.

Uses: The leaf paste/ tuber paste is used as an ointment for wounds by Konda reddis of East Godavari district.


Terrestrial, tuberous herb. Leaf appearing after the flowers, orbicular, subsessile, cordate, entire to broadly dentate at margin; Flowers creamy white with lip having violet streaks. Sepals and petals sparsely gland-dotted. Lip entire, not reflexed. Occasional in shady localities of moist deciduous forests.

Uses: Tuber paste used as an external application for insect bite by Konda reddis of East Godavari district.


Small herbs, pendulous. Leaves linear-ensiform, acute. Flowers yellow, bracts sub-equal, ovate, acute, dorsal sepal obtuse; lateral ones acute, concave. Lateral petals linear, sub-equal with sepals, acute. Lip longer than sepals,

Uses: Leaves crushed with calcium, salt and turmeric and paste applied and tied with bandage for external tumors on body by Koyas of East Godavari district.


Small herbs, 10-25 cm tall (with inflorescence); stem slender with 2-4 sheaths at the base. Leaves 3-4, clustered at the apex of the stem, unequal, oblong-narrowly elliptic sheathing at base, acute at tip. Flowers small, dull white, sessile. Lip as long as or slightly shorter than sepals.

Uses: Tuber paste used as an external application for insect bite by Konda reddis of East Godavari district.

Pholidota imbricta (Roxb.) Lindl. in Hook., Excl. Fl. Sub. t.
Pseudobulbs in clusters, large, swollen green, oblong-conical, covered by large scaly bracts. Leaves elliptic-oblancoate, acute, narrowed into short petiole. Inflorescence racemes, pendulous, Flowers white, arranged in two rows. Lip deeply saccate, sac with 3 longitudinal ridged within, 3-lobed. Rare in moist deciduous forests.

**Uses:** Pseudobulb paste used as an external application for rheumatic swellings by Nuka doras of Visakhapatnam district.


An epiphyte, stout stemmed herb. Leaves coriaceaous, linear, 14-35 x 1.5-2cm, strap-shaped, recurved, margin entire, apex unequally lobed; Flowers showy, dark pinkish-violet drooping raceme, about 20 cm long, flowers about 1.2 cm across, sepals broad, petals smaller, lip adnate to the column, spur saccate. Capsules obovate, 6-ridged, to 3 x 1.5 cm. Rare in Akumadupu kota area of East Godavari districts.

**Uses:** Fresh plant extract used as an external application for inflammation of wounds and centipede bite by Valmikis of East Godavari district.


An epiphytic, long, stout-stemmed herb on huge trunks. Leaves fleshy, distichous, linear, keeled, at tip. Inflorescence racemes, 2 or more per plant, axillary, erect, fruiting axis elongates scape thick, terete with few sterile sheathing bracts. Flowers yellow, long pedicellate. Lip trilobed, reflexed. Occasional in moist deciduous forests.

**Uses:** Leaves crushed with the some other ingredients, paste applied and tied with bandage for bone fracture in cattle's by Konda reddis of East Godavari district.

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References


Orchids of Orissa


[Source:https://www.vedamsbooks.com/no40900.htm]

“Orchids are known for their beautiful flowers. They are also the most advanced family in the flowering plants. The botanical specialty and horticultural importance of orchids are narrated in the introduction of the book. The preface gives a picture of the earlier botanical account of Orissa.

A brief account of the geography of the state, the distribution of orchid, account of the orchid rich habitats of the state have been provided. Important aspects like the life form, growth habits and morphology of the Orissa orchids have been dealt in detail. The flowering period and periodicity, as observed in the field during seasonal visits, has been recorded. The present status of orchids in Orissa and measures for conservation has been suggested.

In the systematics, the taxonomy and classification of the Orissa orchids with brief keys to the subfamilies and exhaustive keys to the genera, based on both floral and field characters are provided. The floristic analysis of the species has been dealt thereafter. The enumeration of the species provides detailed morphological description of each of the 130 species, followed by their flowering and fruiting period, taxonomical notes, field notes dealing with flowering, occurrence of the species in Orissa and their distribution within and outside India. Analytical drawings of the habit and the floral organs for each species, drawn by the author from live specimens, have also been provided for every species.

The analytical drawings, the colour photographs for a large number of species and the taxonomical notes will be helpful for identification of this rather difficult group of plants.” (jacket)
The dense evergreen forests of Similipal, Orissa, are a treasure trove for orchids. The moist, humid climate helps both epiphytes (growing on trees) and terrestrial plant varieties to flourish. Of the 130 species found in Orissa, 93 species are concentrated in Similipal.

Eria meghasaniensis and Bulbophyllum panigrahium are exclusive while Luisia atrichorrhiza, Cymbidium aloifolium and Vanda tessellata are the most common, and attractive, flowers in purple, white and yellow. Also, the white flowers of Dendrobium nobile can be seen only in Similipal. Pecterlis gigantean, with its large white flowers, a fan-shaped fringed lip and a very long spur, is the most spectacular orchid found in mossy fields.

The sal, asan, simul and mango trees host the exotic flowers.

The forests are intersected by rivers and numerous streams and add to the ambience. It is a joy to look for these orchids in the Gudugudia, Meghasanai, Barenipani, Debasthali and Jenabil regions. For orchid lovers, the best time is during the blooming season between November and June.

The existence of orchids automatically establishes the presence of a rich forest zone because orchids are climate sensitive plants and do not survive in isolation. Apart from their beauty, orchids are useful for medicines, perfumes, and have immense commercial value. The flowers are exotic and stay fresh for a day.

Similipal’s forests and hills provide a unique habitat to the orchids, which were classified and discovered only a few years ago. According to Dr. Sarat Mishra, the only authority on orchids in Orissa, the species found in the Himalayas are found here. Goodyera hispida, a very rare orchid, previously found in the Sikkim Himalayas, is also found in Similipal. Similarly, Goodyera thailandica, a small terrestrial orchid found in Thailand, grows here in the shade of the moist valleys. Orchids, previously pertaining to Sri Lanka and Kerala, have also been found.

Sadly, the evergreen forests are fast disappearing. Century-old trees are being felled everyday. Only a few years ago, all the trees bordering a river or a stream hosted an orchid like a crown. Now water bodies are disappearing and the rest is clear.

Apart from smuggling, the forests are exposed to extensive damage from local tribal practices like the tradition of “Akhand Shikar”. Tribals burn a patch of forest to kill the animals trapped inside it; and later feast on them. Not only do the large trees get affected but also the grass cover is destroyed.

Over-enthusiastic tourists are notorious in causing damage to the exotic flowers too. They pull away the delicate roots and a plant once uprooted and kept in an alien atmosphere dies.

The only hope lies in the establishment of an orchid sanctuary.

[Photographs by A.A. Shahed]
**ENVIS – SDNP Partnership**

EPTRI - ENVIS Centre on Eastern Ghats has been selected as one amongst the 20 Sustainable Development Network Partners (SDNP) of ENVIS Indo-Canada Environmental Facility (ICEF) Project, India. The Ministry of Environment and Forest (EF) Division is executing the two-year project expected to finish by March 2007.

The Institute for Ocean Management, Anna University, Chennai coordinated the Preparatory Workshop for SDNP – ENVIS Partners on October 21, 2005 at Chennai. Prof. S. Ramachandran, Director and ENVIS Coordinator for ENVIS Centre on Coastal Zone Management and Coastal Shelterbelts (COZMACOSH) shall be coordinating with the other partners. The India-Canada Environment Facility (ICEF), sponsoring the ENVIS – SDNP Partnership Project was represented by Dr. Mihir Mitra. Prof. D. Viswanathan, Vice-Chancellor, Anna University, Chennai inaugurated the Workshop. The ENVIS – SDNP Project is being carried out in collaboration with the Ministry of Environment and Forests, Government of India. Dr. D. Bandopadhyay, Director (EF) highlighted the objectives and the proposed activities of the Project.

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**Epiphytic algal diversity associated with different aquatic macrophytes of freshwater ponds in and around Berhampur University campus, Orissa.**

Ratha SK, Naik K, Padhi SB

(Algal Research Lab, Department of Botany, Berhampur University, Berhampur 760007).

[Nature Env Polln Techno, 2(2)(2003), 205-208 [8 Ref].]

The study to search for epiphytic algal diversity associated with aquatic plants from 10 different sites in and around the Berhampur University campus revealed the strong potential epiphytic association in spite of the unfavourable ecological conditions. However, significantly greater number of blue green algae (BGA) with a very marked degree of adaptation to the condition of an aquatic environment have been reported.

Source: http://envfor.nic.in/paryaabs/v20n34/em-34-eco.htm

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**Request to Experts**

The ENVIS Centre on Eastern Ghats has been maintaining a database of Experts working on physical, biological, socio-economic and any other aspects of ecological studies relating to Eastern Ghats region. The said database has been uploaded on the website maintained by the Centre. The Experts are requested to fill in the details as per the format given here under and send it to us duly signed by post.

**Format for Expert Database**

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12) Major current research:
13) Objectives:
14) Future research plans:
15) Cooperative programs with other Institutes/Scientists:
16) Any other relevant information:
17) Eastern Ghats related publications:
18) Articles:
19) Reports:
20) Books:

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For further information:
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