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Biodiversity News of Andhra Pradesh

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Editorial

In the last issue of the Newsletter we were happy to inform you about the formation of the Mahanandi Biodiversity Committee. This Committee that had pioneered in the preparation of the Peoples Biodiversity Register consisting of flora, fauna and micro flora of the Mahanandi Area after having learnt about the presence of Bacillus thuringiensis *(Bt.) in their soil have issued the first demand notice to the multinational company based on the Biodiversity Act (2002) which empowers the elected bodies a sovereign right over the biological resources. The Biodiversity Act further empowers the Biodiversity Management Committee to collect royalty for accession, collecting and utilization of biological resources for commercial purposes.*

A legal demand note has been sent to Monsanto and Mahyco following Ms. Rekha Rao's, the Senior Associate Director, IPan, Mumbai email response to the article published in Deccan Chronicle, dated 2.1.2008, Chennai edition admitting the fact that the alleged synthetic gene in Bollgard technology (event Mon 531) is 99 percent similar to Cry1Ac gene present in Bacillus thuringiensis, a common soil-borne bacterium. This claim, made by her as representative of the said companies, points to the fact that by gene transfer technology the said natural gene is copied, amplified and is being commercially exploited, flaunting statutory provisions of the Biological Diversity Act, 2002. Thus, the legal demand notice has been served and the Biodiversity Board expects that the parties involved in this would wisely share the benefit gained by commercialization of the Bt gene with the people of Mahanandi.

Rodent Control Machine - Black-shouldered Kite *Elanus caeruleus*, Locally called *Ramadasu*

Pic. C. Srinivasulu

This issue has special feature on Benefit Sharing - 'Kani or Pushpangadan Model', features on insectivorous plant Drosera *and Parachute Spiders of Andhra Pradesh, and articles on Tirupati Hill Coriander, Great Indian Bustard, Dodo, Shri K. Ramakrishna, Amphibian Ark activities,* Urginea indica *and Floral diversity of Andhra Pradesh. We welcome your comments and views.*

R. Hampaiah
Chairman,
Andhra Pradesh State Biodiversity Board , Hyderabad

Briefly

Rare Black Widow Spider Found in Andhra Pradesh

The spider fauna of Andhra Pradesh has a new addition in the form of a rare Black Widow Spider whose scientific identity is yet to be confirmed.

The Black Widow spiders belong to the genus Latrodectus *and are pantropical in distribution. This genus is so far represented by two species, namely* L. hasseltii *and* L. geometricus, *both being reported from the Western Ghats. The present specimen was sighted in the outskirts of the Greater Hyderabad and we are studying the specimen to ascertain its taxonomic status. We have approached Natural History Museums in America and Australia for help in identification.*

The Black Widow spiders are venomous and have been responsible for fatal bites in America and Australia. So far, no such incident has been reported from India.

M. Seetharamaraju &
C. Srinivasulu
Wildlife Biology Section, Department of Zoology, University College of Science, Osmania University, Hyderabad

Special Feature

CBD Target 2010 - Where we stand?

In the year 2002 the policy makers from across the globe met and set to achieve a significant reduction in the loss of Biodiveristy thereby alleviating the poverty levels globally. The target was set to be the year 2010 seemed achievable. But are we anywhere near the target? Why should we be so concerned about biodiversity and its loss? Earth is the only planet that is livable and has the precious oxygen that we breathe on and have taken for granted and are polluting rampantly without any afterthought. This Biodiversity is the bane of our very survival. We have over the centuries plundered this wealth in ways that are mind-boggling. In the last 300 years we have lost almost 40% of our forest cover and are losing 13 million hectares each year, including 6 million hectares of relatively 'primary' forests. As the forests disappear many more areas are becoming prone to floods resulting in irreversible loss of fertile soil and arable land leading to degraded lands and acute food crisis. The wetlands are being polluted or drained for developmental purposes that we have lost 50% of the existing wetlands in mere 100years. Even the oceans are not spared, once heralded to be the sources of vast wealth of diversity are now under threat. This marine wealth is now depleted, every day a species is reported to becoming extinct. The coral reefs that are the backbone of survival of the marine biota are being destroyed due to overexploitation and high levels of pollution both in the air and water, and are expected to disappear by year 2030.

The general feeling among the public is that with newer technologies being made available and the amount of financial gains in to the betterment of the lives of humans these figures of extent loss of biodiversity is of no direct consequence. However, we need sit up and take notice of this alarming situation as we would be the first ones to feel the crunch. The Millennium Ecosystem Assessment Report – a report compiled by scientists all over the world shows that we have already plundered nearly two-thirds of our marine fish resources beyond recovery and the extent of loss of biodiversity is leading to major food and water crises globally. The Economics of Ecosystems and Biodiversity (TEEB) study reveals that there have been severe economic losses in concurrence with loss of biodiversity.

We have two major ecosystems the aquatic and the terrestrial. Earlier harvesting fish from oceans and seas was done albeit at a small scale and the marine resources had a chance to replenish it self. Now with the advent of advanced technologies the vast source of marine life is being exploited in uncontrolled haphazard manner that the fish stocks have become depleted to levels beyond recovery in all the oceans and seas throughout the world, in addition to the escalating pollution levels both in the atmosphere as well as in the water. Similar is the case with the freshwater ecosystem. The terrestrial ecosystems are faring no better. In this race for development we are losing precious forest cover that is being converted in to agriculture lands, pastures, plantations, for many industries and housing projects for the ever-growing human population. resulting in global warming and associated climate change. The forests that act as carbon sink are being cleared and the oceans that are known to absorb great levels of carbondioxide are becoming increasingly ineffective to do so due to depletion of their biodiversity. The remaining forests and the biodiversity are being affected drastically by the climate change making the wordings of a famous scientist (Issac Newton) sound so true 'For every action there is an equal and opposite reaction'.

We need to admit that the situation is very grim and bleak and that we are nowhere near the target set to 2010, and we need to seriously heed to this wake up call. NGOs, local communities, policy makers, in short every individual needs to work towards aspiring for a better tomorrow not in terms of financial gains or hoarding techno-tools but a better environment, a good life for the present and the future. It's the attitude towards every action that we take that we need to change. We can start by conserving our non-renewable energy sources by utilizing the renewable energy sources that are readily available to us like the solar energy, wind energy as ours is a tropical country. This is possible in both the rural and urban set ups. Changes in agriculture practices by using low amounts of chemical and increase in the use of biological controlling agents can help improve environment health. In urban setups vacant lots can be demarcated for the purpose of developing vital green lungs-pockets dedicated for conserving the native flora and fauna. Use of native varieties of grain over the genetically engineered ones should be encouraged. Also a cooperative fund can be set for creating and maintaining forest communities in villages. The urban populace can contribute immensely in many ways to better the environment. Awareness, appreciation of the grim situation and the will to make a difference can go a long way. .

Dr. C. Srinivasulu
Department of Zoology, University College of Science, Osmania Univeristy, Hyderabad

Briefly.....

The Convention on Biological Diversity (CBD) has set, in 2002, the ambitious target of reducing the rate of biodiversity loss by 2010. It aimed to achieve this target at ecosystem, species & genetic levels.

Over the last 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history.

The five major threats to biodiversity are invasive alien species, climate change, nutrient loading and pollution, habitat change, and overexploitation.

The policy makers should promote greater awareness of the importance of biodiversity and integrate biodiversity concerns into national policies, strategies on agriculture, forestry, fisheries, and development planning. Individually, we can contribute to creating positive impact on reducing the biodiversity loss and in creating a healthier environment by taking conscious and positive decisions. We can influence the policy makers to take positive action in this direction.

Feature - Floral Diversity

Drosera sp.— Threats & Conservation

The 'Sundew' is the largest genera of carinivorous plants belonging to the family Droceraceae. These plants, attract, trap and digest insects with the help of dew-like sticky substance of mucilaginous glands that are present on stalks on its surface to which insects get stuck and are digested to supplement to the protein requirement that they are unable to derive from the nutrient-poor soils that they inhabit.

Drosera sp. with insect prey

Pic. David Webb

Distribution, habitat characteristics and threats to *Drosera indica* and *Drosera burmanii* in Andhra Pradesh

Place & Dist.	Species	Substratum	Microhabitat	Threats
Gachibowli, Rangareddy	*D. indica* *D. burmanii*	Sandy, moss & peat	Wet slopes, poorly drained depressions & rocky outcrops	drought Urbanization, invasive species &
Narsapur, Medak	*D. indica* *D. burmanii*	Sandy, clay & pond edges	Rocky outcrops, wet slopes	Agro pollutants
Arakuvalley, Visakhapatnam	*D. indica*	Clay, peat	Wet slopes at water streams	Habitat conversion and agropollutants
Anjodigadda, Visakhapatnam	*D. indica* *D. burmanii*	Clay, moss	Wet slopes at water streams	Soil erosion and habitat conversion
Talakona, Chittoor	*D. indica* *D. burmanii*	Sand	Wet slopes with superficial water flow	Habitat conversion, fragmentation by roads & human activities
Tada, Nellore	*D. indica* *D. burmanii*	Sand	Wet slopes at Pulicat lakebed	Plantations and agricultural activities
Pakhal lake, Warangal	*D. indica*	Sand, clay	Wet slopes with superficial water flow	Drought
Mulakanuru, Karimnagar	*D. indica* *D. burmanii*	Sand	Rocky outcrops & wet slopes	Drought
Chelvaye, Warangal	*D. indica*	Sand& clay	Rocky outcrops, wet slopes & poorly drained depressions	Soil erosion & invasive species
Kondaparthi, Warangal	*D. indica* *D. burmanii*	Clay, sand & moss	Poorly drained depressions & wet slopes	Invasive species
Panchamatalu, Kurnool	*D. indica*	Sand & clay	Wet slopes & rocky outcrops	Soil erosion
Srisailam, Kurnool	*D. indica*	Sand	Wet plateau	Drought
Motugudem, Khammam	*D. burmanii*	Sand	Wet slopes & agricultural fields	Agricultural activities

Drosera rotundifolia - inflorescence with prey

***Courtesy* www.juzaphoto.com**

The genus *Drosera* is known for its valuable medicinal properties one of the reasons for the decline in populations of the species belonging to this genus. Among the many species of *Drosera* that have been recorded from Andhra Pradesh two species *Drosera burmanica* and *Drosera indica* have been included under threatened category due to decline in their populations due to habitat alterations and over extraction for medicinal purposes. These species possess naphthoquinones like plumbagin, 7-methyljuglone and flavonoids. Plumbagin is used for curing bronchial infections, whooping cough, hyperglyceamia, hypolipidaemia, tuberculosis, spasms, microbial infections, leprosy, leishmaniasis, malaria, cancer, fertility problems, arteriosclerosis, phthisis, asthma, is an immunomodulator, and is an aphrodisiac. It is also a chitin synthetase inhibitor, insecticide, antifeedant, abortifacient, enhances *in vitro* phagocytosis of human granulocytes and inhibits the development of insect and parasitic nematodes. 7-methyljuglone is shown to be inhibitory to several insects and highly toxic to fungal pathogens. Quercetin, one of the flavonoids acts against cancer.

These species are found in nutrient-poor, slightly sandy, acidic soils in marshy areas. They are threatened due to influx of heavy nutrients from the agricultural areas, climate change, dispersal of seeds to unfavourable habitats, as these species are restricted to certain habitat conditions they are vulnerable to changes in the habitat and habitat loss.

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Article Editor's Note: *This is abridged version of original research communication that appeared in Current Science in 2006 in vol. 91(10), pages 943-946.*

Feature - Faunal Diversity

Fruit Bats of Andhra Pradesh

Megachiropterans, the fruit bats, as they are commonly known, are the large bodied bats that sustain themselves exclusively on a frugivorous diet. They are characterized by their acute sense of smell and large, well developed eyes, simple muzzle resembling that of a dog. The fruit bats belong to a single family *Pteropodidae*. They are distributed throughout the tropical regions of Asia, Africa and Indo-Australia.

They are found in forested areas as well as in the proximity of human habitations. They are distributed through most parts of India, Sri Lanka, Bangladesh, Bhutan, Nepal and Pakistan in South Asia. Some species of fruit bats roost on large trees, while others roost in large, dark, humid caves, old forts, dungeons and tunnels.

The fruit bats are vital to the ecosystem. They feed on fruits scattering the seeds as they fly helping in regeneration of lost forest communities. They also feed on pollen and nectar of flowers & help in pollination of night-flowering plants that are dependant on the fruit bats for their survival.

Bats in India are delicately balanced on the survival scale. Attitudes towards bats, myths about them, reckless hunting, disturbance of their natural habitat and lack of legal protection are all prodding bats away from a true chance at survival. This dangerous tip of the scale towards extinction can be managed by acting before it is too late by means of taking up awareness campaigns to dispel the myths and fear of bats among the general public, planning bat conservation and monitoring projects, and involving the government bodies to provide protection status to the bats. The Wildlife Protection Act of India needs to be revised to include protection to all species of fruit bats, and other select insectivorous bat species.

Five species of fruit bats are known from Andhra Pradesh. They are the Fulvous fruit bat, Indian Flying Fox, Greater short-nosed fruit bat, Lesser short-nosed fruit bat and the Dawn bat.

Fulvous Fruit bat (*Rousettus leschenaultii*) This species roosts in large caves, old buildings, dungeons and dark areas of old forts. It is a medium sized bat, fulvousbrown dorsally and grayish ventrally. The muzzle is short and slender with large well developed eyes. It has acute sense of smell. It feeds on fruits and flowers of Jamun, guava, silk cotton & mango. Can be seen in the Golconda fort, Hyderabad and the Borra caves, Visakhapatnam.

Indian Flying Fox (*Pteropus giganteus*) This species is the largest of the fruit bats, and roosts on large fig, eucalyptus and tamarind trees. It is dark brown dorsally with the neck and shoulders being paler and orangish to pale yellow to brown ventrally. The snout is long, hairy & black. The first digit has a large claw used for moving around among the branches of the trees. It feeds on flowers and fruits of wide variety of trees.

Greater Short-nosed Fruit Bat (*Cynopterus sphinx*): This species roosts among palm fronds. It is a small sized fruit bat, being dark brown to grayish-brown dorsally to orange-brown ventrally. It has pale margins on the finger bones and ears. It feeds on a wide variety of fruits.

Lesser Short-nosed Fruit Bat (*Cynopterus brachyotis*) This species is rarer and is found in forests of hilly regions and is recorded from Balapalli in Cuddapah district of Andhra Pradesh. It is similar to the Greater short-nosed Fruit Bat. However, it lacks the pale fingers and borders on the ears, is slightly smaller and has smaller ears. This bat roots among palm fronds, seed clusters of the palm trees and caves. It is known to feed on wild varieties of guava.

Dawn Bat (*Eonycteris spelaea*)

Recently described Araku Parachute Spider *P. tigrinawesseli*

Pic. A. Smith

This species roosts in large dark caves in forests along with the Fulvous Fruit Bat and is seen in Borra caves. It is a medium sized bat slightly smaller than the Fulvous Fruit Bat which it resembles closely, except that its muzzle is much slender and longer, and that it has no claw on the first finger. It is dark brown in colour dorsally and grayish-brown ventrally. It feeds exclusively on pollen and nectar of flowers of many varieties of the night-flowering plants in the forest. It rarely feeds on fruits.

C. Srinivasulu , Bhargavi Srinivasulu
Wildlife Biology Section,

Ecological Importance of Fruit Bats

Fulvous Fruit bat (*Rousettus leschenaultii)*

Indian Flying Fox *Pteropus giganteus*

Greater Short-nosed Fruit Bat *Cynopterus sphinx*

Lesser Short-nosed Fruit Bat *Cynopterus brachyotis*

Dawn Bat
Eonycteris spelaea

Regal Parachute Spider *P. regalis*

Pic. Ondrej Rehak

Endangered Plants of Andhra Pradesh

Swallow Root *Decalepis hamiltonii*

Decalepis hamiltonii — a milkweed species, is commonly known as Swallowroot. It is known by several alternate names in the local dialect as the *Maredugeddalu*, *Nannari*, *Sariba*, *Svetasariva*, *Neemam Theega*. It belongs to the family Asclepiadaceae and is the sole representative of the genus *Decalepis*. It is a liana as its vernacular name suggests.

The Swallow Root is endemic to Peninsular India and has been recorded in the dry to moist deciduous forests of Hassan, Mysore, Bellary, Tumkur, Kolar districts of Karnataka; Kurnool, Chittoor, Nellore, Anantapur, Cuddapah districts of Andhra Pradesh and Chengalpattu, Coimbatore, Dharmapuri, Nilgiri districts of Tamil Nadu.

The Swallow roost is generally found on open rocky slopes and rocky cervices in the dry to moist deciduous forests. It is a medicinally important species of plant.

Decalepis hamiltonii

The roots of this plant are used in ayurvedic medicines and for preparing pickles. Studies conducted on this plant have demonstrated its insecticidal activity and potential use in control of stored grain pests.

Tuberous roots of this plant are traditionally used as a cooling agent and blood-purifier and also in preparation of refreshing drinks. The roots are also used to cure indigestion, deficient digestive power; dysentery, cough, bronchitis, leucorrhoea, uterine haemorrhage, skin diseases, fever, thirst, vomiting, poisoning, chronic rheumatism, anemia, debility, dysuria and certain blood diseases.

This species threatened due to unregulated harvesting, smuggling and habitats loss.

Vernacular name:
Maredugeddalu, Nannari, Sariba, Svetasariva, Neemam Theega.
Decalepis hamiltonii *was accorded Endangered status by the 2001 CAMP Workshop on Threatened Plants of Andhra Pradesh.*

Endangered Animals of Andhra Pradesh

The Gaur *Bos gaurus*

The Indian Bison or Gaur (*Bos gaurus*), or *Adavi Dunna* in the local dialect, is a powerful, massive herbivore and the largest of all bovids.

It is an Endangered animal and is listed in the Schedule I of the Indian Wildlife Protection Act (1972), in Appendix I of the CITES and as Vulnerable in the IUCN Redlist.

The males are muscular, dark brown to black in color, stand almost 2 m tall and weigh between 1000 to 1500 kg. Mature bulls possess large dewlaps, huge dorsal ridge along the spine and a shoulder hump giving a very formidable appearance. Females average smaller, weigh between 700-1000 kg and are pale brown in colour. In both the sexes the lower part of the legs are white. The horns are yellow at the base turning black at the tips. The ears are very large, tail is short and fat and the muzzle is pale in colour. They have acute sense of smell and good hearing.

Gaur *Bos gaurus*

Gaur lives in small herds of up to 40 individuals and graze on grasses, shoots and fruits. They are diurnal and in undisturbed areas they feed through much of the morning in to the afternoon resting during hottest periods of the day. However, in disturbed areas they have become nocturnal. Gaur lives in family groups of 2-40 individuals led by the matriarch. Adult males are solitary. They are very timid and shy, and often shun humans.

The Gaur population in India is estimated to be approximately 23,500 individuals.

In the past, populations of Gaur have succumbed to diseases like foot and mouth disease, rinderpest and anthrax. Habitat loss, disease, illegal hunting and mounting anthropogenic pressures are resulting in the decline of Gaur population in India. Over a period of time this situation could lead to genetic bottlenecks making them susceptible to an epidemic and the likelihood of wiping out fragmented populations of Gaur in future.

The Gaur* Bos gaurus *is restricted to South and South-east Asia. Gaur populations have declined drastically in India due to habitat loss, mismanagement of conservation areas, conversion of grasslands for agricultural use, poaching, disease and mounting anthropogenic pressure.

In Andhra Pradesh Gaur occur in forests of Godavari River basin and could be seen at Kawal, Eturnagaram and Papikonda Sanctuaries.

Environment Education

Frogs Matter... Jump In

The amphibians extinctions brought over by the climate change and associated phenomena need to be taken seriously. These are indicating towards a greater catastrophe that would lead to extinction of many life forms .

Amphibians are like 'Canary in the Coalmine'

Their extinctions means our doom too.

Climate change is affecting the biodiversity adversely. To create awareness on this, a talk on Amphibian Declines and Climate Change titled 'Frogs Matter....Jump In' was delivered by Dr. C. Srinivasulu on 29th October, in Department of Zoology, Osmania University, Hyderabad. This was the first activity that was undertaken by the Amphibian Ark Programmes jointly run by the AP Biodiversity Board, Osmania University and BRaConS, Hyderabad in support from Zoo Outreach Organization (ZOO), Coimbatore.

The talk was attended by the students of the University pursuing their masters course in Zoology and Environmental Sciences. The talk in general dealt about what amphibians are, their kinds, their importance in the ecosystem, their distribution, their numbers globally and in India. The adverse effects of climate change on biota in general and amphibians in particular was discussed. Factors other than climate change and brought over due to climate change and their synergistic negative actions were also highlighted. The effects of pollution and the intensity of biomagnification of chemicals and other harmful materials in to the habitat which are preferred by amphibians indicated that these are causing many abnormalities and hitherto unknown diseases that are wiping away populations of amphibians throughout the world. Dr. Srinivasulu stressed on the fact that the amphibians are the indicator species of the environment health and the health of the ecosystem. The students were urged to collect information about such abnormalities and provide feedback to understand the extent of damage.

Tying the friendship band to join the 'Amphibian Activists' Club .

Pic. Dr. C. Srinivasulu

Some participants of the Amphibian Ark Programme - Andhra Pradesh.

Pic. Dr. C. Srinivasulu

The talk followed by an activity in which the education material prepared by ZOO was given to participants who were asked to take oath to understand, love and study amphibians, and impart the message to society that amphibian extinctions are to be treated seriously and measures to mitigate biodiversity loss be initiated.

Bhargavi Srinivasulu and Harpreet Kaur
Wildlife Biology Section, Department of Zoology, Osmania University, Hyderabad

Pioneers in Conservation

Shri K. Ramakrishna

Shri K. Ramakrishna digging out the regenerating rare plant of the '*Eka Biluwam*' for replanting in his nursery.

***Courtesy* The Hindu**

Among the few are people who sacrifice their personal growth for the sake of the society, doing what they like and contributing their bit in nature conservation. One among them is, Shri K. Ramakrishna from Srikalahasthi, an IIT dropout dedicated, who left a lucrative future to pursue his first love *Ayurveda*. He is determined to make available nature's bounty to the society and is helping in his own way to form a healthy society.

Native of Srikalahasthi, Chittoor, where he has setup his valuable nursery, Shri. K. Ramakrishna personally, painstakingly collects seeds and roots of different varieties of *Aegle marmelos* (*Maredu* or *Sriphalam*) from different forest areas both in Andhra Pradesh and neighbouring states.

He emphasizes the tremendous medicinal value of *Aegle marmelos*, the juice of the fruit cures diarrhoea and dysentery and helps strengthen the digestive system. The tree has been rendered sacred in our holy texts its shadow being equated being as holy as *Kashi*. Shri K. Ramakrishna with a mission to spread the best varieties of the *Maredu* or *Bilwam* in order for the people to utilize its medicinal properties has collected seeds of some rare varieties like the *Eka Bilwam*, *Pancha Bilwam* and the *Sapta Bilwam* from Adilabad district. He has also collected many varieties from various parts of the country like Haridwar, Dehradun, Narmada, Delhi and so on.

Shri K. Ramakrishna's dedication to conserve and spread awareness of the medicinally important *Maredu* or *Bilwam* tree is echoed in his feeling 'Good health is key to a person's independence'

Nature for Kids

Dragonflies - Indicators of Environment Health

Dragonflies are large colourful insects usually found near water bodies, and are world-wide in distribution with more than 5,000 described species. They are colourful with large compound eyes, two pairs of strong, long transparent wings that are held outstretched when at rest and an elongated body. They feed on mosquitoes, flies, bees, and butterflies and help control populations of harmful insects. Dragonflies are among the most ancient of living creatures and have been flying around for more than 300 my. This is mainly due to their dual lifestyle and highly specialized aerial predatory nature.

Dragonfly

Dragonflies are of immense importance as they are excellent indicators of environmental excesses like pollution. Changes in their populations indicate to the overall health of the water bodies and the surrounding ecosystems. These top-of the-range predatory insects need warm weather to survive and exhibit greatest diversity in tropical regions. They provide valuable evidence about climate change impacting both aquatic and terrestrial environments. In the present trend, water bodies are being polluted, clogged with garbage or drained for various developmental activities, forests are fast disappearing so also the streams that are home to some of the world's most interesting and primitive species.

Conservation efforts are to be stepped up to protect the dragonflies and their habitats. Their survival is vital for the ecosystem as well as our well-being.

The continuing existence of these lovely insects lies in the hands of our generation. We must not let any more of them become extinct.

News

Global Forest Resources Assessment 2010

Forest resources assessments have been conducted globally by FAO since 1946. Recently, at a meeting held from 3-7 March, 2008 in Rome the Global Forest Resource Assessment 2010 (FRA) was launched. A total of 265 forest assessment specialists representing 154 countries and 14 key organizations attended this meeting. This will be the most comprehensive of forest resource assessments undertaken. This survey will provide insight in to the land use patterns; improve understanding of the global contribution of forests to greenhouse gas emissions and reductions and establish a common framework and methodology to enable developing countries to improve the monitoring of current and future deforestation rates. In addition the 2010 assessment will expand our knowledge of the biological diversity of forests and will include a special study on trees other than the forests, a survey of the areas of forest under sustainable forest management and data on forest laws, policies and institutions.

Events

Fourth Quarter Meet of Biodiversity Board

The fourth quarter Biodiversity Board meeting was held at Aranya Bhavan and the Chairman, Biodiversity Board has welcomed the participants. The meeting was attended by the esteemed members of the Board. The Member Secretary of the Board presented the action taken report for the last quarter and conveyed to the members that the National Bureau of Plant Genetic Resources is preparing a project targeting 15 villages in Adilabad district for documentation and conservation of natural floral (both wild and cultivated) and faunal (domesticated) resources in conjunction with line departments. Deccan Development Society's Forgotten Crops Festival and its importance has been discussed and the need for such activities in other regions of the state was mooted. The Fourth Quarter Meet also witnessed discussions on project proposals submitted by members and invited guests. A total of 6 projects were discussed and the Board has resolved to initiate all projects and allocate funds on prorata basis. The Board also discussed the request of recognition of Natural History Museum of Osmania University as National Repository and also decided to organize International Workshop to mark International Biodiversity Day.

Climate Change

Earth's climate is in the state of flux. Many man-made actions have added o this situation and world over there are lots of activities directed to mitigate the current trend. One of the major reasons for the climatic change is the loss of green cover - the carbon sink.

Each one of us could do our bit to change the scenario. We need to feel responsible and act responsible. Planting more trees, and ensuring their survival is a sure way of insuring our own existence. In this millennium, with each child born, at least one sapling should be planted.

Environment Conservation is our responsibility - we ought to do it, its for own existence.

Biodiversity News of Andhra Pradesh

A Newsletter of Andhra Pradesh State Biodiversity Board

You too can contribute to this Newsletter

If you have any views, findings or opinion on Biodiversity of Andhra Pradesh and its Conservation, to share, or any article for the 'Features' and 'Environment Education' sections, please send in your contribution in MS Word format to Article Editor (braconsindia@gmail.com). Articles will be modified to suit the format of the Newsletter.

You can get in touch with the Article Editor with your name, address, email and telephone details for inclusion in our mailing list.

READERS ARE INVITED TO SEND IN PROPSALS FOR *IN-SITU* AND *EX-SITU* CONSERVATION PROJECTS TO THE BIODIVERSITY BOARD

ANDHRA PRADESH STATE BIODIVERSITY BOARD

Regd. Off.:
 # 302, Aranya Bhavan, Saifabad,
Hyderabad – 500 003
Phone: 040 – 23231754, ext. 220

Visit us at
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Your life depends on Biodiversity....

Conserve Biodiversity

Views

'Mungari Molaka' is a unique plant that blooms only once a year on the day of Ugadi the Telugu New Year Day. The first edition of our newsletter carried a feature on this unique plant. Botanists from Andhra University and the Hyderabad Central University collected, studied and described this plant in detail for us.

Habitus of *Mungari molaka Urginea indica*

The' Mungari Molaka' is a monocotyledon and is assumed to be *Urginea indica* of the family Liliaceae. It is a weed and is reported from Maddikera near Pathikonda in Kurnool District of Andhra Pradesh. According to the locals, this plant blooms only on the day of Ugadi – the Telugu New Year Day, the shoot and flowers of which are viable for only two days, however, this plant is not visible during any other season of the year.

The plant has branched adventitious roots, the stem is an underground flesh bulb with concentrically arranged fleshy leaf bases, the leaves however, could not be observed during the present study. The inflorescence is racemore type of inflorescence on a simple naked scape and measures about 12". The scape is erect, stout, brittle and light green in colour. The flowers are distant and are borne on 1" long pedicels. Flowers may appear before the leaves. The bracteate flowers are dull brown and are 1cm long. The perianth is 6-partite, tubular with a slightly broader base. Androecium and Gynoecium could not be observed. The fruit is an ellipsoidal, triquetrous, loculicidal, trivalved capsule. The seeds in the fruit are white, flat and membranous.

Editors

Signing Off

Floral Diversity of Andhra Pradesh

The land mass of Andhra Pradesh lies within three phytogeographical regions of India, the Deccan plateau, Eastern Ghats and Coastal plains. Vegetation of the State is mostly the resultant effect of climatic, edaphic, physiographic and biotic factors. It is classified under climatic types, seral types and subsidiary edaphic types.

At present, Flora of Andhra Pradesh accounts for about 2751 species belonging to 718 genera and 185 families, which represents 16% of angiospermous species of India. The most diverse families are Leguminosae (345 spp.), Poaceae (298 spp.), Cyperaceae (151), Euphorbiaceae (143 spp.), Asteraceae (126 spp.), Acanthaceae (116), Rubiaceae (97 spp.), Lamiaceae (75), Orchidaceae (73) and Convolvulaceae (63). It is clear that 54% species diversity is restricted to the above ten dominant families.

The gymnospermous flora of Andhra Pradesh is found with least diversity. There are five species growing in the wild are *Cycas circinalis, Cycas beddomei, Cycas sphaerica* (Cycadaceae), *Gnetum montanum* and *Gnetum ula* (Gnetaceae). The Pteridophytes are represented by 89 species in 49 genera and 40 families.

Pavonia odorata - Flower

Pic. C. Srinivasulu

There are 70 endemic taxa has, so far been reported from the State. Altogether, 37 threatened species were included in Red Data books of Indian plants. Conservation assessment and management plan workshop (2001) conducted for medicinal plants of Andhra Pradesh identified 39 threatened species and categorized under IUCN red list categories. The floral diversity represents 91 species of wild relatives of cultivated plants.

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