

BIODIV News

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A Quarterly e-Newsletter



Tamarind Tree

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Editorial

Esteemed Readers,

In the International Year of Forestry, we have tried to cover trees of special significance in Uttar Pradesh. This issue covers the '*Bawan Imli*' tree in Fatehpur district of Uttar Pradesh which is of special historical significance.

In the International news an interesting study on the living biodiversity on our skin titled "Belly button biodiversity projects" has found that about 662 strains of bacteria. Deep seas are being impacted by human activity mainly waste/litter dumping, resource exploitation and climate change. This also leads to contamination of sea water by coral killing pathogens. The National news concern was expressed over the population of Indian Bustard (about 250). Local issues were man-animal conflict, GHG emissions of U.P.

Sarus is the state bird of U.P. and U.P. supports the largest population Sarus cranes in the country. Sarus count conducted in July 2011 about 12,500 Sarus cranes were counted in U.P.

– Editor

1- Bawan Imli



Photo credit : Shri H. M. Tripathi, SDO Fatehpur and S. N. Maurya Forest Range Officer, Bindki Range, Fatehpur

Fatehpur district is situated between two important cities: Allahabad, which is also known as “Prayag”, and Kanpur of the state Uttar Pradesh. This district is home to the famous tamarind tree also known as **Bawan Imli**. The tree is a monument. This monument is the symbol of sacrifices offered by freedom fighters. Thakur Jodha Singh Ataiya, a freedom fighter and resident of village Rasoolpur of Fatehpur was hanged on this tree along with 51 other people by the British army. The “Imli” tree still exists; people believe that the growth of tree has stopped after the massacre. This place is very near to town Khajuha in Bindki Subdivision of the district.



Smarak at Iml Tree

The following are the names of 48 people who are hanged on this historic tree. The names of the other 4 remain unknown.

Names of Freedom Fighters related to Bawan Imli

| SI | Name | Fathers Name | Village |
|-----|--------------------------------|---------------------------|------------------|
| 1. | Shri Kedar Nath | Shri Devcharan | Rasia |
| 2. | Shri Lachua | Shri Ramdin | Shahwajpur |
| 3. | Shri Nanhu Lal | Shri Kalia Prasad | Khajuha |
| 4. | Shri Manbodhan | Shri Lala | Sultanpur |
| 5. | Shri Mukunva | Shri Gokul | Shahwajpur |
| 6. | Shri Mathur | Shri Devi Dayal urf Manna | Bindki |
| 7. | Shri Madanmohan | Shri Asat | Bindki |
| 8. | Shri Manbodhan | Shri Mahbu | Sampur |
| 9. | Shri Manni | Shri Matru | Swanpur |
| 10. | Shri Gajanand urf Pahli Singh | | Thitora |
| 11. | Shri Parag Narayan | Shri Keval Lal | Bhagonapur |
| 12. | Shri Panna Lal | Shri Munni Lal | Bindki |
| 13. | Shri Prabhu Dayal | Shri Mahadev Prasad | Bakarganj |
| 14. | Smt. Phoolmati | Shri Ma Jayram Singh | Kusara |
| 15. | Shri Ram Datt | Shri Dulare | Kesavapur |
| 16. | Shri Raghunandan | Shri Ramcharan | Mouhari |
| 17. | Shri Raghunandan | Shri Badri Prasad | Khurmabad |
| 18. | Shri Ram Das | Shri Shiv Gopal | Bindki |
| 19. | Shri Rajaram | Shri Subhan | Magolpur |
| 20. | Shri Shiv Nayak Singh | Shri Sarju Singh | Mayaram Khera |
| 21. | Shri Bindra Singh | Shri Gayadin | Sabsi |
| 22. | Shri Bansidhar | Shri Gopal Vasya | Bindki |
| 23. | Shri Vidyasagar | Shri Maniram | Bindki |
| 24. | Shri Pachu Lal | Shri Raghuvard Dayal | Sultangarh |
| 25. | Shri Baldev Prasad | Shri Kashi Prasad | Sabsi |
| 26. | Shri Badri Prasad | Shri Shiv Datt | Bindki |
| 27. | Shri Bhagwan Deen | Shri Mannu Lohar | Khurmabad |
| 28. | Shri Madanmohan | Shri Ramadhar | Bindki |
| 29. | Shri Chotelal | Shri Bhikhari | Bindki |
| 30. | Shri Chaita | Shri Kamta | Sardarpur |
| 31. | Shri Durga | Shri Nand Kishor | Sardarpur |
| 32. | Shri Girdhari Lal | Shri Bindra | Chicha |
| 33. | Shri Gayadin | Shri Ishwari | Sahimapur |
| 34. | Shri Guljari | Shri Vade Singh | Bindki |
| 35. | Shri Gajodhar Prasad urf Gajua | Shri Ramadheen | Shahbajteer |
| 36. | Shri Hari Prasad | Shri Lala Ram | Khajuha |
| 37. | Shri Jaganath urf Jaglal | Shri Vishwanath | Shivri |
| 38. | Shri Jayram Singh | Shri Gayadeen | Kusara |
| 39. | Shri Kallu Singh | Shri Ram Dayal | Mahakhera |
| 40. | Shri Kandhai Lal | Shri Ram Prasad | Nathu Khera |
| 41. | Shri Shiv Narayan | Shri Khare Lal | Bindki |
| 42. | Shri Sohan Lal | Shri Narayan | Narayandas Khera |
| 43. | Shri Shiv Dutt | Shri Tara Datt | Bindki |
| 44. | Shri Shivshankar | Shri Gopi | Bindki |
| 45. | Shri Siddh Gopal | Shri Manna Lal | Bindki |
| 46. | Shri Suraj Deen | Shri Amarnath | Bindki |
| 47. | Shri Jadunandan Prasad | Shri Chote Lal | Sarkandi |
| 48. | Shri Shivnarayan | Shri Kahare Lal | Bindki |

2- TAMARIND TREE AND ITS USES



Leaves and fruits of Tamarind tree

Introduction :

Names : Tamarind, Indian tamarind (English), Imli, amlī, anbli (Hindu, Gujarat), Tentul (Bengal), Puli, Amilam (Tamil), Tetuli (Assam), Imbli (Punjab); Botanical name: *Tamarindus indica*; Family: Leguminosae, the pea and bean family.

Origin and Distribution:

Native to tropical Africa, the tree grows wild throughout the Sudan and was so long ago introduced into and adopted in India that it has often been reported as indigenous . It was apparently from India that it reached the Persians and the Arabs who called it “tamar hindi” (Indian date, from the date-like appearance of the dried pulp), giving rise to both its common and generic names. Unfortunately, the specific name, “indica”, also perpetuates the illusion of Indian origin. The fruit was well known to the ancient Egyptians and to the Greeks in the 4th Century B.C.

Physical features:

Tamarind trees reach a height of 30 m and are topped with a crown of feathery foliage. Their grey bark clad trunks can grow up to 2 m in diameter.

Leaves : long and feathery. Each leaf is equally divided into many smaller, finely-cut leaflets.

Flowers : yellow and streaked with pink. They are shaped like small sweet peas and smell sweet. They dangle in small clusters from the ends of leafy twigs during March to May in India.

Fruits : brown, fleshy pods that are fibrous, thick and sticky. They are sausage shaped and covered in faint fuzz, like a kiwi fruit. Inside they contain a sharp-tasting pulp and several flat shiny brown seeds. They are an important food used to provide a sour flavouring for drinks, sauces, curries, preserves and chutney. In India the pods are ripe for harvesting from April to June.

Yield : A mature tree may annually produce 150-225 kg of fruits, of which the pulp may constitute 30 to 55%, the shells and fiber, 11 to 30 %, and the seeds, 33 to 40%.

Mythology: There are many references to tamarind in Hindu mythology, often referring to its small leaflets or the tart taste of the fruit.

In Sanskrit texts tamarind is referred to as the *tintrini* tree. Legend connects it to *Usha*, the daughter of the goddess *Parvati*. In honour of *Usha*, tamarind may be used instead of salt in the month of *Chet*.

Imli-tala or shade of the *imli* is sacred to *Krishna* in mythology. It is said that *Krishna* sat under a tamarind tree when separated from *Radha* and experienced an intense epiphany with her spirit permeating him. The 15th century saint and reformer *Chaitanya* also meditated upon *Krishna* seated under a tamarind tree.

The evergreen tree with its mass of feathery foliage has strong and supple branches and is highly wind-resistant. Its leaflets fold at night and it is believed to be the haunt of ghosts at this time. Sleeping underneath a tamarind tree is considered to be folly. This belief has possibly gained currency because the acidic nature of the tree makes the soil around it barren of other plants.

In south India, the tree is grown in the precincts of temples to the Mother Goddess who battles evil spirits at night. People avoid walking near tamarind trees in the dark. There are various popular stories which explain why the leaves are composed of many leaflets. These include the tale that the leaves were split by arrows shot by *Lakshmana*, a the epic Ramayana which dates from about the 4th century BC. This proves that the tree has been known in South Asia for over two millennia.

Production & trade:

Tamarind has been described as one of the common and most important trees of India, where it is used widely in cooking. India is the world's top producer, exporting several thousands of tonnes of seed, seed powder and fruit pulp each year. Tamarind trees are often grown in gardens and along roadsides and are cultivated commercially in plantations.

Cultivation:

India is the only producer of tamarind on a commercial scale. A large part of India's production of tamarind is exported to West Asia, Europe and America, where it is used for food specialties like Worcestershire sauce. It is used extensively in Asian cooking and is often used to make juices, soups, chutneys and other savoury dishes.

The many tamarind cultivars are divided into two basic categories: sweet and sour. India mainly grows sour cultivars in orchard-like plantations. These are initially set up by planting seedlings out into fields. The trees grow very slowly and take a long time to mature. After perhaps 13 years, young trees begin to bear seed pods during the summer which may take about 8 months to ripen. The trees are long-lasting and may continue to produce fruits each season for up to 60 years.

Harvest and processing:

Pods are harvested at different stages of ripeness according to how they are going to be used. Immature green fruits are usually harvested earlier for flavouring, and sweet, riper ones are harvested later. They are often gathered by shaking the tree and collecting the fruits that have fallen.

Both green and ripe fruits are sold whole or pulped in local markets, though sweet fruits tend to gain a higher price. Much of the national harvest goes to processing factories. Here the pulp is separated from the fibre and seed and mashed with salt. It is then packed into bags for sale. Sometimes the pulp is made into balls and sun dried for a week. These ready-to-go packages are sold in markets and shops.



Fruit of Tamarind tree



Tamarind fruit as available in market

Tamarind is often further processed into drinks, sweets or packaged into more convenient forms for export. In some parts of India, tamarind is made into a jelly by mixing with water and sieving. It is then compressed into moulds and can be cut like cheese when required.

Tamarind - traditional medicine:

Tamarind fruits and leaves have been used in traditional South Asian medicine. Taken internally or applied externally, a range of conditions are treated including sore throats, sunstroke and stomach upsets.

Tamarind seeds are used traditionally to treat diabetes, fevers and intestinal infections. They are also used in the treatment of both diarrhoea and as a laxative. This activity could be associated with a group of protein compounds known as lectins that are present in tamarind.

The fruits are used to flavour drinks given to patients with fever. When prescribed in this way, the tamarind is often mixed with lime, honey, milk and spices.

Pulp from the seed pods is applied to painful joints and is mixed with salt and used as a gargle to treat sore throats. It is given to people who are suffering from sunstroke and those who have had too much alcohol to drink.

Leaves are boiled and applied to swollen joints, boils and sprains. Infusions of the leaves are used to treat jaundice.

Food:

Tamarind fruit pods and seeds have a characteristically tart flavour. They are used in South India to add a sour taste to dishes such as sauces, curries, rice and to drinks and deserts. It is purchased in its whole, fresh form, or as a paste or concentrate, or compressed into a syrupy block. It is a good source of zinc and was traditionally made into a type of porridge and given to pregnant women in South Asia.

Both ripe and immature fruit pods of tamarind provide a unique sweetish acidic flavour to South Asian dishes including meat, rice and vegetables. Green, immature fruits and flowers are used for souring dishes. Ripe fruit of sweet varieties are usually eaten fresh as a snack food, and ripe sour types are used for juices, syrups and sweets.

The pulp is usually sold dry and needs to be soaked before use. It is added to sauces and used to marinate meat before frying. In some parts of South Asia the juice is used to pickle fish and vegetables. Extracts of tamarind are



Seeds of Tamarind

used in flavouring products such as Worcestershire sauce and in a special Indian seafood pickle called ‘tamarind fish’.

Syrupy tamarind pulp is used to make sweets and drinks. Leaves from the tamarind tree can also be eaten as a vegetable. The pulped fruits are also used to manufacture drinks. These are often flavoured with other spices, such as ginger, pepper and lime and are sold carbonated in cans.

The seeds are also edible and flour made from them can be used to bake cakes and breads. Roasted seeds are reputed to be delicious. Seeds can also be a source of polysaccharides that can be used commercially to produce thickening agents. Extracts from the seeds have been used as a stabiliser in ice cream.

The tender leaves, flowers and young seedlings are also eaten as vegetables. Leaves are fed to livestock as fodder and the flowers are considered to be a good source of honey.

Analyses of the pulp are many and varied. Roughly, they show the pulp to be rich in calcium, phosphorus, iron, thiamine and riboflavin and a good source of niacin. Ascorbic acid content is low except in the peel of young green fruits.

Tamarind - crafts:

Interestingly, tamarind has been employed in various forms of South Asian craftwork. The seeds, leaves and wood have been used in textile dyeing, as a glue, and as a building and carving material. The tamarind tree has also been recorded as a host of the lac insect.

Use in dyeing:

Some traditional cloth dyeing techniques use tamarind. A paste of sticky tamarind seeds might be smeared on the fabric before dipping it in a mordant in preparation for dyeing. In Jorhat in Assam, India, cloth may be prepared for dyeing by boiling in water with tamarind leaves. This deepens and prolongs the colour of the cloth.

Gum:

Tamarind is sometimes used to make patachitras. These are folk paintings from Orissa that are applied to fabrics rather than paper. The “pattas” are made from silk or cotton through an arduous process that takes the women a minimum 5 days to complete. First, a natural glue made of tamarind (*imli*) seeds is prepared. This paste is made by (i) soaking tamarind seeds in water for about three days, (ii) grinding them with a pestle till they are jelly-like in consistency, (iii) mixing the ground pulp with water in an earthen pot, and (iv) heating this into a paste traditionally called *niryas kalpa*. The canvas on which the painting is executed is then made by sticking together two layers of (traditionally) cotton cloth using this natural glue paste.

Then, soft clay stone is powdered and mixed with the glue paste and 2-3 coatings of this mixture are applied on the prepared canvas on both sides. This stone is found in the *Nilgiri* mountains and is chalk-like in consistency and white in colour. The canvas is then left to dry completely, which takes more than half the day, after which the cloth is cut into the required shape and size. Finally, the surfaces of the patta are polished using a rough burnishing stone, and later with a smooth stone or wood. After the above steps, the patta is ready to be painted on. The powdered colors are made by grinding stones that yield particular colors. The artist’s palette comprises a variety of colors - white, red, yellow, black, green and blue, all of which are derived from natural sources. Conch shells are used for white, black comes from lamp soot, yellow from ‘*Hartala*’ stone, red is made from ‘*Hingulal*’ stone, green comes from plants and blue from indigo. These extracts are then cooked with the gum from the ‘*kaintha*’ (elephant apple) (*Dillenia indica*) fruit tree, and the colours thus become easy to work with.



The paintbrushes used by the chitrakars are typically made of the keya root. The finer ones have wooden handles and are made of mouse hair. At the centre of the brush are about a dozen long mouse hairs, which, when dipped in paint, have a needle-point edge.

Ground tamarind seeds contain compounds called polysaccharides which can be used as a sizing agent to coat textile yarns to make them stiffer and stronger. During World War II, tamarind seeds were ground down and roasted to make tamarind kernel powder which was used as a sizing agent for textiles like jute and cotton.

A paste of tamarind seeds is also used to join the limbs of wooden toys made in Andhra Pradesh. The acidic tamarind fruit pulp is useful for polishing metal.

Wood:

Tamarind wood can be made into agricultural tools and furniture. It is also suitable for making printing blocks and tent pegs. In south India is also used in construction.

Fuel:

The wood burns at a high temperature so is frequently used as a fuel in the ovens of brick factories which require high temperatures.

Other Uses:

Fruit pulp: in West Africa, an infusion of the whole pods is added to the dye when coloring goat hides. The fruit pulp may be used as a fixative with turmeric or annatto in dyeing and has served to coagulate rubber latex. The pulp, mixed with sea water, cleans silver, copper and brass.

Tamarind leaves and flowers are useful as mordants in dyeing. A yellow dye derived from the leaves colors wool red and turns indigo-dyed silk to green. Tamarind leaves in boiling water are employed to bleach the leaves of the buri palm (*Corypha elata* Roxb.) to prepare them for hat-making. The foliage is a common mulch for tobacco plantings.

Flowers: The flowers are rated as a good source of nectar for honeybees in South India. The honey is golden-yellow and slightly acid in flavor.

Seeds: The powder made from tamarind kernels has been adopted by the Indian textile industry as 300% more efficient and more economical than cornstarch for sizing and finishing cotton, jute and spun viscose, as well as having other technical advantages. It is commonly used for dressing homemade blankets. Other industrial uses include employment in color printing of textiles, paper sizing, leather treating, the manufacture of a structural plastic, a glue for wood, a stabilizer in bricks, a binder in sawdust briquettes, and a thickener in some explosives. It is exported to Japan, the United States, Canada and the United Kingdom.

Tamarind seeds yield an amber oil useful as an illuminant and as a varnish especially preferred for painting dolls and idols. The oil is said to be palatable and of culinary quality. The tannin-rich seedcoat (testa) is under investigation as having some utility as an adhesive for plywoods and in dyeing and tanning, though it is of inferior quality and gives a red hue to leather.

Wood: The sapwood of the tamarind tree is pale-yellow. The heartwood is rather small, dark purplish-brown, very hard, heavy, strong, durable and insect-resistant. It bends well and takes a good polish and, while hard to work, it is highly prized for furniture, panelling, wheels, axles, gears for mills, ploughs, planking for sides of boats, wells, mallets, knife and tool handles, rice pounders, mortars and pestles. Wide boards are rare, despite the trunk dimensions of old trees, since they tend to become hollow-centered. The wood is valued for fuel, especially for brick kilns, for it gives off an intense heat, and it also yields a charcoal for the manufacture of gun-powder. The wood ashes are employed in tanning and in de-hairing goatskins. Young stems and also slender roots of the tamarind tree are fashioned into walking-sticks.

Twigs and barks: Tamarind twigs are sometimes used as "chewsticks" and the bark of the tree as a masticatory, alone or in place of lime with betelnut. The bark contains up to 7% tannin and is often employed in tanning hides

and in dyeing, and is burned to make an ink. Bark from young trees yields a low-quality fiber used for twine and string. Galls on the young branches are used in tanning.

Lac: The tamarind tree is a host for the lac insect, *Kerria lacca*, that deposits a resin on the twigs. The lac may be harvested and sold as stick-lac for the production of lacquers and varnish. If it is not seen as a useful byproduct, tamarind growers trim off the resinous twigs and discard them.

The bark of the tree is regarded as an effective astringent, tonic and febrifuge. Fried with salt and pulverized to an ash, it is given as a remedy for indigestion and colic. A decoction is used in cases of gingivitis and asthma and eye inflammations; and lotions and poultices made from the bark are applied on open sores and caterpillar rashes.

The powdered seeds are made into a paste for drawing boils and, with or without cumin seeds and palm sugar, are prescribed for chronic diarrhea and dysentery. The seedcoat, too, is astringent, and it, also, is specified for the latter disorders.

An infusion of the roots is believed to have curative value in chest complaints and is an ingredient in prescriptions for leprosy.

The leaves and roots contain the glycosides: vitexin, isovitexin, orientin and isoorientin. The bark yields the alkaloid, hordenine.

3- Visits/ Trainings and Conferences:

1. **Gorakhpur, Village Bhauvapar :** Dates 05-06 September, 2011. Shri R.K. Dubey, ACF visited this village to facilitate making of the Biodiversity register.
2. **Education for Sustainable Development Projects-Learning for Change Workshop, Ahmedabad from 13–15 September 2011 :** Dr. Ram Jee Srivastava, Senior Scientist, U.P. State Biodiversity Board, Lucknow attended a three days workshop held at Ahmedabad from 13–15 September 2011 as part of collaborative initiative between three partners: The Swedish International Centre of Education for Sustainable Development (SWEDES) and Global Action Plan (GAP) International, both based in Sweden and the Centre for Environmental Education (CEE), based in India. A case study related to various education and awareness programme on biodiversity conservation aspect was also presented by him during the technical session of the workshop.

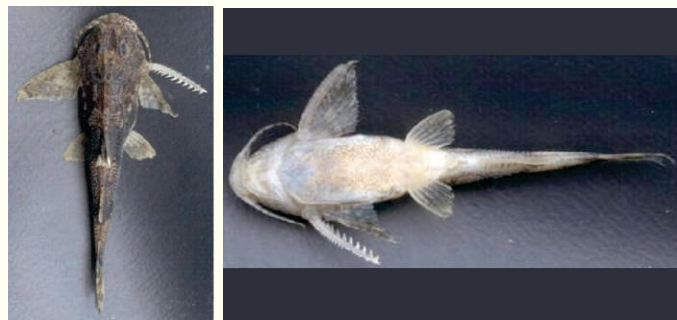


4- New Species Discovered by GBPIHED Scientists

Scientists at the Govind Ballabh Pant Institute of Himalayan Environment and Development have discovered two new species of fish and a rare plant species. A brief description is as follows:

1. *Erethistoides senkhiensis*

Family: Erethistidae; Locality: Arunachal Pradesh: Senkhi stream, 173 m a.s.l., 27°04'29"N Latitude, 93°30'52"E Longitude; Date of collection: 06.06.2006; Name of the collector: L. Tamang; Published in: *Ichthyological Exploration of Freshwaters* 19(2):185-191; Authors: L.Tamang, S. Chaudhry & D. Choudhury



2. *Glyptothorax dikrongensis*

Family: Sisoridae; Locality: Arunachal Pradesh, Midpu (Doimukh), 121m a.s.l., 27°09'42.2"N Latitude - 93°45' 21.4" E Longitude; Date of collection: 28.06.2009; Name of the collector: L. Tamang; Published in: *Zootaxa*; Authors: L. Tamang & S. Chaudhry

3. *Arnebia nandadeviensis*

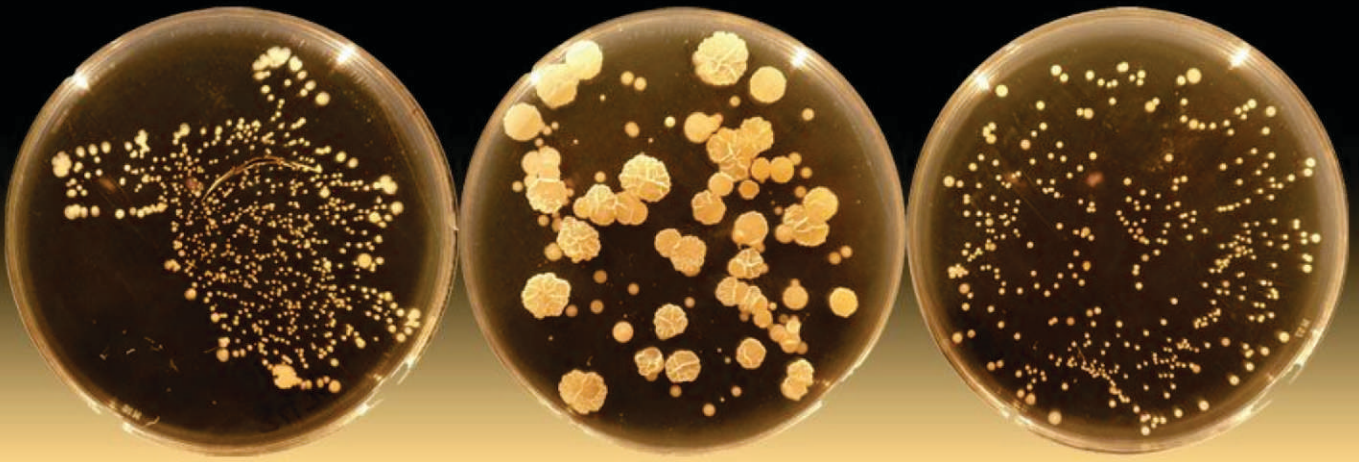
Family: Boraginaceae; Vernacular Name: Baljad, Rathanjoth; Locality: Uttarakhand, Nanda Devi Biosphere Reserve, Pindari, 3820 m a.s.l., 30° 16' 0.2" N Latitude, 80° 00' 23.6" E Longitude; Date of collection: 29.08.2008; Name of the collectors: R.S. Rawal, K. Chandra Sekar, Sanjay Gairola &, Balwant Rawat; Published in: *Journal of American Science* 2009:5(2) 105-106. Authors: K. Chandra Sek. & R.S. Rawal



5- News

(i) International News

THE LANDSCAPE OF YOUR BODY...THE NEXT FRONTIER OF DISCOVERY



We all know the species that live in our gardens, in national parks etc. but how many of us know about the living organisms living on one square centimeter of our skin? A group of biologists at the Dunn lab and North Carolina State University and North Carolina Museum of Natural Sciences are on the "Belly Button Biodiversity project" that studies the biological diversity in our belly buttons. Jiri Hulcr is the project leader and his team found 1,400 strands that were identified in 95 percent of the study's subjects. There were 662 strains of bacteria that were not documented, which leads Hulcr to conclude they are new.

1 Aug, 2011 Science Daily

A First Global Synthesis of Biodiversity, Biogeography, and Ecosystem Function in the Deep Sea has found human activities to be increasingly affecting deep-sea habitats, resulting in the potential for biodiversity loss and, with this, the loss of many goods and services provided by deep-sea ecosystems. Over 20 deep-sea experts, conducted a semi-quantitative analysis of the most important anthropogenic impacts that affect deep-sea habitats at the global scale in the past, present and future scenarios. The impacts were grouped in three major categories: waste and litter dumping, resource exploitation, and climate change. The authors identified which deep-sea habitats are at highest risk in the short and mid-term, as well as what will be the main anthropogenic impacts affecting these areas, in a paper published in PLoS ONE on Aug. 1, 2011.



*This is a trawl entangled on cold water corals in the NE Atlantic.
(Credit: Jason Hall-Spencer / Copyright Ifremer/AWI)*

In the past, the main human impact affecting deep-sea ecosystems was the dumping or disposal of litter into the oceans. These activities were banned in 1972, but their consequences are still present today, together with the continuing illegal disposal of litter from ships and the arrival of litter and contaminants from coastal areas and river discharges. In particular, the accumulation of plastics on the deep seafloor, which degrade into microplastics, called mermaid tears, that can be ingested by the fauna, has consequences still unknown but predicted to be important.

The deep seafloor covers 73% of the oceans with an estimated area of 326 million square kilometers. Of this great expanse, only the area equivalent to a few football fields has been sampled biologically. We continue, therefore, to discover new habitats and species, but the negative impacts of human activity appear to be much faster in reaching the great depths of our oceans



18 Aug, 2011 Science Daily

A research team from Rollins College in Florida and the University of Georgia has identified human sewage as the source of the coral-killing pathogen that causes white pox disease of Caribbean elkhorn coral. Once the most common coral in the Caribbean, elkhorn coral was listed for protection under the United States Endangered Species Act in 2006, largely due to white pox disease.

In order to determine a source for the pathogen, the research team collected and analyzed human samples from the wastewater treatment facility in Key West and samples from several other animals, such as Key deer and seagulls. While *Serratia marcescens* was found in these other animals, genetic analyses showed that only the strain from human sewage matched the strain found in white pox diseased corals on the reef.

Serratia marcescens is also a pathogen of humans, causing respiratory, wound and urinary tract infections, meningitis, and pneumonia. Human diseases caused by this bacterium are most often associated with hospital-acquired infections of newborn infants and immune-compromised adults. This research reveals a new disease pathway, from humans to wildlife, which is the opposite of the traditional wildlife-to-human disease transmission model. The movement of pathogens from wildlife to humans is well documented ~ for example, bird flu or HIV ~ but the movement of disease-causing microbes from humans to marine invertebrates has never been shown before. This is the first time that a human disease has been shown to cause population declines of a marine invertebrate.

Newspaper Clippings

(ii) National News

दैनिक जागरण

लखनऊ, 9 सितंबर 2011

रेड
अलर्ट

सोहन चिड़िया

सिर पर काली टोपी और शतुरमुर्ग जैसी लंबी टांगों वाली सोहन चिड़िया की संख्या अब भारत में चिंताजनक रूप से लगभग 250 ही रह गई है...

पीले सिर और गर्दन पर काली टोपी जैसी संरचना। लंबी टांगें। शरीर की संरचना शतुरमुर्ग से मिलती-जुलती। दिखने में काफी आकर्षक होती है सोहन चिड़िया। कुछ वर्ष पहले तक ये भारत और पाकिस्तान में बहुतायत में मिलती थीं, लेकिन अब ये विलुप्त होने की कगार पर हैं। अब इनकी संख्या करीब 250 रह गई है।

सोहन चिड़िया भारत में राजस्थान, कर्नाटक, महाराष्ट्र, मध्य प्रदेश और गुजरात में पाई जाती है। इनके भूरे रंग वाले शरीर

पर काले धब्बे होते हैं। अन्य पक्षियों की तुलना में इनका वजन अधिक (8-14 किलोग्राम) होता है। इसलिए इनकी गिनती भारी शरीर वाले फ्लाइंग बर्ड्स में की जाती है। ये सब कुछ खाती हैं। घास के बीज, फल, कीड़े-मकोड़ों के अलावा, चूहा, गिलहरी, छिपकली आदि इनका प्रिय भोजन है। ये खेतों में लगी फसल, जैसे-मूंगफली, ज्वार-बाजरा और दाल भी बड़े चाव से खाती हैं। अधिक पानी उपलब्ध न होने पर ये इसे सोखकर अपना



सिर एक निश्चित ऊंचाई तक उठाती हैं। नर सोहन चिड़िया एक विशेष प्रकार की आवाज निकालती है। इसलिए उत्तर भारत में इसे हुकना भी कहा जाता है। पक्षी विशेषज्ञ सलीम अली ने इसे राष्ट्रीय पक्षी घोषित करने का भी प्रस्ताव रखा था। मांस और एक विशेष प्रकार के खेल के लिए इनका शिकार किया जाता है।

9 Sept, 2011 The great Indian bustard (*Ardeotis nigriceps*), locally known as 'Son Chiriya', is found in mostly in Rajasthan in India. It is a large bird with a horizontal body and long bare legs giving it an ostrich like appearance. This bird is among the heaviest of the flying birds. The bird is on the verge of extinction and its current population is estimated at less than 250 in India. It is critically endangered by hunting and loss of its habitat, which consists of large expanses of dry grassland and scrub.

DELHI
THE HINDU • THURSDAY, AUGUST 4, 2011

A rare winged visitor spotted off Kerala coast

K.S. Sudhi

KOCHI: Swinhoe's storm-petrel, a bird species reportedly new to the Indian coast, was spotted in an oceanic bird expedition conducted off Chavakkad on Sunday.

A photograph of the "fully migrant" bird, along with that of a Wilson's storm-petrel, could be obtained during the survey 30 km off Chavakkad, ornithologists said.

The birds earlier reported to be found in the country had been those caught in strong oceanic winds and blown ashore, said P.O. Nameer, State-level coordinator of the Indian Bird Conservation Network. Such wind-blown birds were reported from the Lakshadweep and Andaman Islands and Sri Lanka. This time, however, the sighting was over the interior sea along with other birds.

According to information available with the Birdlife International, occurrence status of the species in India is unknown. The species breeds on Verkhovskiy Island, south of Vladivostok, Russia, and Japan. There are little-known populations in China, North Korea, and South Korea, and records suggest breeding may possibly occur in the North Atlantic. In winter, it mi-

- Survey also recorded more than 1,000 flesh-footed shearwaters
- Sighting of bird was over the interior sea along with other birds

grates south and west to the northern Indian Ocean, according to documents.

Considering its very large range, the conservation status of the bird is evaluated as of least concern. Its population is believed to be stable in the absence of evidence of any decline or substantial threats.

The bird is slightly bigger than a mynah. This seabird can be found over pelagic and inshore waters. The birds are known to be breeding on oceanic islands. It feeds mainly on the wing by dipping and do not patter. Breeding starts in April, forming loose colonies on offshore islands in burrows, according to the Birdlife International.

"The bird stands out from the Wilson's storm-petrel with its notched tail and absence of white colour on its rump. The body of the bird is pale brown in colour. It was spotted along with two Wilson's storm petrels," J. Praveen, a member of the survey team, said.

The survey also recorded more than 1,000 flesh-footed shearwaters. These birds follow fishing boats to feed on the by-catch thrown into the sea by fishermen. Hence, most of the birds congregate near fishing boats for feeding on mackerels and sardines. They breed on the islets of southern oceans and migrate towards India to spend the summer in the warm tropical waters, experts said.

The common oceanic birds of the west coast namely sooty terns and bridled terns were photographed during the survey. Nearly 20 bird enthusiasts joined the sea expedition for the survey, held during the peak monsoon season. Earlier, oceanic surveys were held off the coasts of Kannur and Vadakara. Such exercises will be held in Kochi and Vizhinjam shortly. The survey was co-organised by the Indian Bird Conservation Network, the Cochin Natural History Society, and the Nature Education Society of Thrissur.



4 Aug, 2011 Swinhoe's storm petrel (*Oceanodroma monorhis*), has been spotted in an oceanic bird expedition organized by Bird Conservation Network, the Cochin Natural history Society and Nature Education Society of Thrissur. The bird is slightly bigger than a Mynah and pale brown in colour. It has a notched tail and absence of white colour on its rump. It breeds on oceanic islands.

DELHI
THE HINDU • TUESDAY, AUGUST 9, 2011

Snails conquer new territories in Kerala

People urged not to consume meat of the mollusc

K.S. Sudhi

KOCHI: Giant African Snails (*Achatina fulica Bowtich*) are conquering new territories in the State, with satellite populations being reported from new areas.

Satellite populations of the mollusc species were found radiating to fresh areas from the infested areas. Earlier studies held in Kannur had located a population in the town. However, on inspection, new and minor populations of the snails were found radiating to new places recently, said T.V. Sajeev, an invasive species expert of the Kerala Forest Research Institute, Peechi, Thrissur.

Experts from the institute had predicted that the snails were likely to infest at least 41 locations in four districts. The presence of the snails was earlier reported from 10 districts.

Director of the Institute K.V. Sankaran has alerted chairpersons of 18 village panchayats for eradication of pest snails. Studies have identified 29 snail populations in these local bodies. While suggesting the scientific measures for eradicating the snails, experts have urged the civic heads to advise people not to consume the meat of the snails as they are carriers of *eosinophilic meningitis*, a lethal disease.

Considering the presence of the satellite populations, the Institute will also alert all the panchayats that are vulnerable to the snail infestation. Letters cautioning the civic authorities of areas which have 40 to 100 per cent possibility of infestation will be despatched this week. Posters and publicity materials aimed at creating awareness on the issues will also be despatched, Institute authorities said.

The snails have caused a widespread impact on agri-



A PUBLIC HAZARD: A student of the Cochin College displaying the Giant African Snails collected from West Kochi area. - PHOTO: VIPIAN CHANDRAN

- Snails likely to infest at least 41 locations in four districts
- Climatic conditions in Kerala found to be conducive for mollusc

culture and health of the people in countries where they have reached. Among the 33 member countries in the Asia-Pacific Forest Invasive Species Network, it was in India that the infestation was reported, Dr. Sankaran said.

The Institute will present the Kerala case at a conference on 'Phytosanitary measures in forestry,' to be held in China in November. The climatic conditions in Kerala were found to be conducive for the mollusc, said Dr. Sankaran who is also the coordinator of the network. (The experts of the Institute can be contacted at 0487-2690222.)

Experts have suggested the complete eradication of the snails on Wellington Island, Kochi, which is the major pathway of spread of the snail through imported timber. The timber depot on the Island functions as a hub for the spread of the snails through the timber mills of Kerala, experts said.

In snail-infested areas, baiting has to be done by placing cabbage leaves or papaya (best if rotten) during the evening hours. Aggregation of snails will be seen feeding on the bait within two hours. Once the aggregation is seen, Tobacco decoction-Copper Sulphate (TDS) mixture has to be sprayed on it. This will cause immediate death of the snail without any adverse impact on the environment. The dead snails can be buried, according to a protocol prepared by the Institute.

To make two litres of TDS mixture, 25 gm tobacco has to be boiled in 1.5 litre water until it gets reduced to one litre. Once the tobacco decoction cools down to room temperature, 60 gm of Copper sulphate dissolved in one litre water should be added. This mixture can be filtered and transferred to a sprayer, according to the protocol. Experts have also advised not to use salt as it alters the soil pH.

9 Aug, 2011 Kerala Forest Research Institute, Peechi, Thrissur has alerted chairpersons of 18 village panchayats for eradication of pest snails (Giant African Snails- *Achatina fulica* Bowtich). They have advised against eating the meat of these snails as they are carriers of eosinophilic meningitis, a lethal disease currently tobacco decoction- Copper Sulphate (TDS) mixture is being used by spray to eradicate these snails. (25 gm. Tobacco in 1.5 l H₂O boiled to 1 l and 60 gm CuSO₄.)

Newspaper Clippings

DELHI
THE HINDU • TUESDAY, AUGUST 9, 2011

Oil spill minor; tar balls spotted on more beaches in Maharashtra

Environmentalists say spill will affect mangroves

Staff Reporter

MUMBAI: Authorities said on Monday that the oil spill from the bulk carrier *mv Rak* that sank recently is a minor incident, but environmentalists nonetheless said that its timing was a cause for concern, especially in the context of mangroves' ecology.

At a press conference here on Monday, Inspector General SPS Basra, Commander, Coast Guard Region (West), said that the flow had reduced to 1 tonne an hour on Monday as compared to 1.5 to 2 tonnes an hour on Sunday. But, he said, one could not be certain how long the spill will continue.

Approximately 80-100 tonnes of oil must have spilled from *mv Rak* into the sea. "But we cannot estimate correctly, as we have not been able to measure it," Mr. Basra said.

The timing

The IG said that the oil traces found on the beaches of Mumbai, Alibag and Gorai were from *mv Rak*, because no other ship had sunk in the area. "But please understand, whatever is reaching the coast are moose which have been generated after the oil was dispersed by spraying OSD [oil spill dispersant]," he said. "We are trying to ensure that the oil doesn't reach the coast."

While explaining the parameters for categorising oil spill, Mr. Basra said that up to 700 tonnes of oil spill could be described as minor, 700-2000 tonnes as medium and above 2000 tonnes as major.

But field ecologist Deepak Apte said that the oil spill had to be seen in perspective. "The impact of the oil spill is not measured based on just the volume. The timing is important too. The mangrove



Students of the National Institute of Oceanography collect samples from the Juhu beach in Mumbai on Monday after oil leak, believed to be from the sunk bulk carrier *mv Rak*, spread panic in the area. - PHOTO: VIVEK BENDRE

ecology is under continuous stress since last year's oil spill after the collision of [mcs] *Chitra* and [mv] *Khajuria*. This is the seeding season for mangroves. Even a thin film is enough to kill the seeds and can have a major impact on the mangrove ecology."

Mr. Basra said that one-third of the oil spill generally reached the coastline. "One-third of the oil spill can be controlled through available mechanisms and another one-third is taken care of by natural dispersion. But the remaining one-third does reach the coast."

As for mitigating further risks, Mr. Basra said that the Directorate General of Shipping would look into whether the oil from *mv Rak* could be pumped out.

On the methods to mitigate the damage, Mr. Basra said that the choice was restricted. "Various methods like booming and skimming can be used. But due to the rough seas, the only options available with us right now are spraying OSD and churning the oil with propeller options."

A press release issued by the Directorate General of Shipping said "the contin-

uous trail of the oil leak from the vessel is observed up to 12 nautical miles, very thick oil up to 1 nautical mile, thick layer of oil up to 2 nautical miles and thereafter only oil sheen is visible till 12 nautical miles."

The ship sank nearly 20 nautical miles off the Mumbai coastline. "The Coast Guard vessel *Sankalp*, oil pollution response vessel *Samudra Erahari* and one more response vessel *Amri Kaur* are present to abate the oil pollution using oil spill dispersant. These vessels are continuously

monitoring the situation. The Coast Guard also conducted air sorties this morning," the release said.

Clean up operations
State Environment Secretary Valsa Nair Singh too said the oil spill was minor and that the needs of suspicion pointed to *mv Rak*.

Tar balls were spotted on the beaches of Alibag in Raigad district and at Gorai in Mumbai on Monday morning, 4 days after they were spotted at the city's Jubilee Verova beach. The government had given Rs 10 lakh each to the Raigad administration and the Brihanmumbai municipal corporation for clean up operations.

The Brihanmumbai Municipal Corporation started cleaning operations last night [Sunday], Maharashtra's Environment Minister Sanyu Devtale told reporters here.

The extent of pollution is not much. "The highest concentration is 135 milligram per litre," he said.

Authorities have ruled out the possibility that the oil found at the beaches could have been from *mv Pavri*, which ran aground at the Juhu beach recently.

Fish samples have been taken for examination. The Maharashtra Pollution Control Board would test the samples. The State government had already resumed the ban on fishing. Fishing is in any case banned till August 15.

Apart from the National Institute of Oceanography, the Bombay Natural History Society (BNHS) too has started collecting water samples from the affected beaches.

"We collected samples from five places at Juhu and Verova beach today,"

DELHI
THE HINDU • SUNDAY, JULY 17, 2011

2% farm growth necessary to ensure food security: PM

"Country needs a second green revolution"

K. Balchand

NEW DELHI: Prime Minister Manmohan Singh said on Saturday the priority of the 12th Five Year Plan would be to accelerate agricultural growth rate by at least 2 per cent to ensure food and nutritional security and eliminate hunger.

Addressing the 83rd Foundation Day of the Indian Council of Agricultural Research, the Prime Minister underlined the necessity to have a consistent growth rate of 2 per cent per annum in food production through the current decade to meet the projected need of 280 million tonnes by 2020-21 and ensure food security.

Dr. Singh regarded the task as enormous, looking back at the fact that farm production grew by just 1 per cent each year over the 10-year period from 1997 to 2007. Though it regained momentum in the 11th Plan period, registering a 3 per cent growth, it was below the targeted 4 per cent.

The failure to meet the target in recent years resulted in the "unacceptable levels of food price inflation," he said, congratulating the scientists for ensuring self-sufficiency in food grains through a record production of 241 million tonnes in 2010-11.

The Prime Minister thanked the States for the record output of food grains and major crops like wheat, maize, pulses and oilseeds.

He gave away seven Kirti Karm awards to the 10 best performing States in various categories.

Chief Ministers Prakash



Prime Minister Manmohan Singh with Union Agriculture Minister Sharad Pawar at an award function organised to celebrate the 83rd Foundation Day of the Indian Council of Agricultural Research in New Delhi on Saturday. - PHOTO: PTI

Singh Badal (Punjab), Tarun Gogoi (Assam), Ashok Gehlot (Rajasthan), Raman Singh (Chhattisgarh) and Bhupinder Singh Hooda (Haryana) received the awards from the Prime Minister.

Expressing concern that productivity in agriculture had plateaued over the years as also over the country's dependence on imports for pulses and edible oils and prevalence of under-nutrition among women and children, Dr. Singh said the country needed a second green revolution that was more broad-based, more inclusive and more sustainable.

The need is to produce more without depleting our

second green revolution would be the outcome of management of water and climate changes. Underlining the critical role of rainfed agriculture, he said it was important to explicitly embrace dryland farming and integrate watershed development projects with new technologies.

"Our scientists must therefore work intensively to accurately assess the needs of our country, and develop new methods, new technologies and new knowledge for better soil and water management practices, improved cropping systems and better crop management."

Dr. Singh laid stress on increasing irrigation efficiency from 30 to 50 per cent, resource conservation technologies and exploring more systematically organic alternatives such as algae.

The Prime Minister focused on two more areas — protection of crops, animal and farm produce from new and emerging diseases and pathogens and, secondly, careful application of biotechnology to improve productivity, enable better resilience to stress and enhance the incomes of farmers.

Union Agriculture Minister Sharad Pawar, who presided over the function, declared that the target of additional production of 20 million tonnes of foodgrains has been achieved a year in advance through collective efforts of the state governments and the Centre. He said the total foodgrains production during 2010-11 was a record 241 million tonnes.

9 Aug, 2011 A bulk carrier sank recently 20 nautical miles off the coast of Mumbai causing a major oil spill. About 80-100 tonnes of oil have spilled. Ecologists say that the timing of spill is crucial to ecology as this is the seeding season of mangroves and a thin layer of film can kill seeds. Spraying of OSD (Oil Spill Dispersant) is being done to control damage.

17 July, 2011 On the 83rd Foundation Day of the ICAR the Prime Minister said that the priority of the 12th Five Year Plan is to accelerate agricultural growth rate by 2% to ensure food and nutritional security.

Newspaper Clippings

DELHI

THE HINDU • MONDAY, JULY 18, 2011

Horticulturist G. Parthasarathy passes away

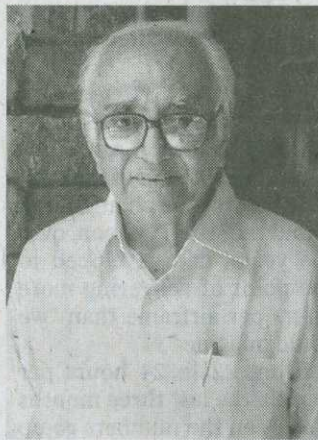
He devoted himself to growing ornamental plants for nearly four decades

S. Rajendran

BANGALORE: G. Parthasarathy (85), a former agent of *The Hindu* here, and in later years an eminent horticulturist, passed away on Saturday after a brief illness.

As an agent of *The Hindu* Group of Publications, he catered to the needs of the readers of the city. Thereafter, he shaped himself up as a horticulturist and devoted himself to growing ornamental plants for nearly four decades. He was a specialist in plant propagation, and his prime areas of work were growing of new and better varieties of African violet, Aglaonema, Anthurium, Caladium, crotons and hibiscus as well as miniature roses.

In what could be described as a great effort, Mr. Parthasarathy and one of his sons, P. Mukundan (a former Ranji



G. Parthasarathy

Trophy player), entered the United States' market for ornamental indoor foliage plants in the 1990s. They were awarded U.S. patents in 1998 for two hybrid varieties of Aglaonema they developed. Incidentally, they are also the first Indian horticulturists to

be awarded U.S. patents (stars of India) for ornamental plant species.

Mr. Parthasarathy made a name for himself, bringing out exotic foliage plants, especially the ornamental varieties with a robust and vigorous growth.

His paternal grandfather was the late Rajasabha Bhushana Diwan Bahadur K.R. Srinivas Iyengar, who was the first member of the Council of Ministers of the erstwhile State of Mysore (under the rule of the Wodeyar dynasty). His maternal great grandfather was Kasturi Ranga Iyengar, founder of *The Hindu*.

His father, K.S. Gopalaswamy Iyengar, was also an horticulturist of international repute. His book, *Complete gardening in India*, has been acknowledged as an outstanding publication on gar-

dening. It was updated and revised by Mr. Parthasarathy along with Mr. Mukundan (his other son is P. Muralidharan). The fourth edition, brought out in June 1981, is very popular among gardening enthusiasts, both amateurs and professionals.

He was also a keen photographer; his much appreciated photographs of sports events appeared in magazines and newspapers. He also served as president of the Karnataka State Lawn Tennis Association and of the Bangalore City Institute.

Mr. Parthasarathy leaves behind his wife, Indira, the two sons and three daughters, many grandchildren and great grandchildren, besides two sisters, three brothers and a large circle of friends and relatives. The last rites will be performed on Monday, family sources said.

18 July, 2011 G. Parthasarathy an eminent horticulturist passed away. He and his son P. Mukundan were the first people to be awarded a U.S. patent for ornamental plant species *Aglaonema*.

Punjab rallies to save its State bird

CHANDIGARH: Concerned over the declining numbers of the *baaz* or Eastern Gosh Hawk, Punjab is all set to build a breeding centre for its State bird.

Forest and Wildlife Minister Arunesh Shakir on Sunday said the Shiromani Akali Dal - Bharatiya Janata Party Government has pushed forward a proposal to replenish the population of the endangered Eastern Gosh Hawk by setting up a breeding centre at Chhatbir Zoo.

The Government is concerned

about the declining numbers of the bird, which also has great religious significance in Sikh history, he said. According to the proposal, a few birds would be imported first and a proper environment would be provided at the centre for their breeding.

The Eastern Gosh Hawk is normally found in hilly areas with low temperatures. The birds cared for at the centre would be released in such areas so that they may survive and flourish. - PTI

18 July, 2011 Efforts are on to replenish the population of the endangered Eastern Gosh Hawk by setting a breeding centre at Chhatbir zoo.

Newspaper Clippings

DELHI

THE HINDU • MONDAY, JULY 25, 2011

Himachal apples break cost barrier

Expected production of 2.5 crore apple boxes against last year's 4.5 crore boxes

Staff Correspondent

SHIMLA: With an expected production of just about 2.5 crore apple boxes this time as compared to 4.5 crore boxes last year, the apple-growing farmers are getting extraordinary prices for their produce this time.

A top-grade apple box of about 20 kg is fetching an unheard price of Rs. 2,400 in the market.

The retailer is selling the Himachal apple in the open market for almost the same price as that of the imported Chinese and American apples.

The overall production, which cannot be called very bad as compared to previous years, has been affected badly by hailstorms.

The anti-hail gun initiative taken by State Horticulture Minister Narendra Bragta, which could prove to be a boon for the apple farmers, is still in the experimentation stage.

Specialists have claimed

- Top-grade apple box of about 20 kg fetching an unheard price of Rs. 2,400

- Overall apple production in State has been affected badly by hailstorms, frost

the pilot project, based on installation of just three canons with one radar system, has shown significant and substantial results so far.

But it is not enough, and many more such canons are needed to be mounted on hills to protect the main commercial crops of apples, pears and peaches in the State.

Horticulture Director Gurudev Singh has said the State had 2.18 lakh hectares of land under apple cultivation and about 99,000 hectares in Shimla district alone.

One anti-hail canon can only protect 100 hectares, and the project would become viable only if more such canons are installed. The individual apple grow-

ers have to come together with the Government in installing more guns since a single canon costs roughly around Rs. 1 crore.

The United States-based Newton System International officials, who were here a few days ago, said the anti-hail canon system was working with almost 100 per cent precision in their country and that it was possible to have it successfully installed in Himachal Pradesh also.

The highest-ever productivity in Himachal Pradesh is just 11 metric tonne per hectare as compared to about 40 metric tonne to 45 metric tonne in China and other western countries

. Along with hail and the frost problem in the State,

lack of awareness in growing pollinators along with the main apple varieties are reasons for lesser production and regular crop failures here, said officials.

The apples, being grown in almost 10 out of 12 districts of the State, generate a revenue of almost Rs. 3,000 crore.

Meanwhile, a State Government spokesperson said here on Sunday that Himachal Pradesh had started apple procurement under the Market Intervention Scheme by its subsidiaries, like the HPMC and Himfed, from July 20.

The spokesperson added that 'C' grade apples would be procured for Rs. 5.25 per kg under the scheme.

Rakesh Singha of the *Seb Utpadak Sangh* (Apple Growers Association) has demanded a procurement price of Rs. 10 for the farmers. The small and marginal peasants have perished due to minimum crop this year, he said.

25 July, 2011 A drop in production of apples has led to increase in price of apples. A 20 kg box is costing Rs. 2400 currently productivity in H.P. is just 11 mt/ha as compared to 40-45m. tons in China and western countries.

Newspaper Clippings

DELHI

THE HINDU • WEDNESDAY, JULY 27, 2011

Area under Bt cotton expands; NGOs decry government propaganda

Gargi Parsai

NEW DELHI: While the Centre on Monday said the area under Bt cotton is estimated to have expanded to 90 per cent of the total area sown under cotton in 2010-11, several non-government organisations alleged that the government had deliberately promoted the genetically-modified seed as part of a strategy.

According to the latest figures released by the Union Agriculture Ministry, of the 111.42 lakh hectare under cotton cultivation, 98.54 lakh hectare is under Bt cotton, with Maharashtra, Gujarat and Andhra Pradesh being the top cotton producers.

Even as the Government maintains that cotton production is up, several NGOs assert

• Cultivation area under Bt cotton estimated to have expanded to 90% of sown area in 2010-11

• Insecticide usage up from Rs.597 crore in 2002 to Rs.880 crore in 2010

that yields are declining and pesticide usage has shot up with the emergence of pest resistance, and newer pests and diseases. "This is not to be welcomed because the wider the spread of *Bacillus thuringiensis* (Bt) gene, the faster will be the build-up of resistance in the pest (bollworm). The approach should have been to use a mix of strategy to control the pest," said scientist and convener of Gene Campaign Suman Sahai.

Dr. Sahai said the Government had enabled a virtual

monopoly for Monsanto's Bt gene. "This [monopoly] does not bode well for India to be independent in its cotton cultivation. Pushing out traditional varieties is not a good idea because they contain many more genes than only the insect-resistant one. As climate change hits us, we will be looking for many types of genes that are likely to be found in the traditional varieties."

"It is well-known that the Government made available only Bt cotton seeds under the

Prime Minister's package for farmers in the suicide-prone Vidarbha region," said a Wardha-based NGO's chairperson Vibha Gupta, bemoaning that government depots in the region hold no cotton seeds other than Monsanto's Bt variety. "The gene pool of indigenous cotton with laboratories has drastically shrunk. Rain-fed/dry farmers are the worst hit."

Alliance for Sustainable and Holistic Agriculture's Kavitha Kuruganti said the Central Institute for Cotton Research, Nagpur, figures showed that value of insecticide usage in cotton was Rs.597 crore in 2002, the year Bt cotton was officially approved. In 2010, it had reached Rs.880 crore, even though Bt cotton was brought in on the claim that

insecticide usage would come down with the technology.

Government data shows that of the 39.32 lakh hectare under cotton in Maharashtra, 36.21 lakh hectare is under the production of genetically-modified cotton. In Andhra Pradesh, out of 17.84 lakh hectare, 17.50 hectare is under Bt cotton, while out of 26.33 lakh hectare in Gujarat, 21.33 lakh hectare is under Bt cotton. Punjab sowed 5.30 lakh hectare of cotton in 2010-11, of which 5.10 lakh hectare are under Bt cotton, while Haryana cultivated 4.92 lakh hectare, of which 4.70 lakh hectare are under Bt cotton. Though their contribution to cotton production is very low, Orissa and Uttar Pradesh do not grow Bt cotton.

27 July, 2011 As per data of Agricultural Ministry out of 111.42 lakh ha. under cotton cultivation, 98.54 lakh ha. is under Bt cotton. Value of insecticide usage in cotton was Rs. 597 cr. in 2002, in 2010 this has reached Rs. 880 cr. showing that the claim that insecticide usage came down by Bt cotton are untrue.

Newspaper Clippings

(iii) State News

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- नतमस्तक हुए सरकारी महकमे
- उत्पात पर अंकुश नहीं लगा पा रहे वन विभाग-जिला प्रशासन

लखनऊ, 7 अगस्त (जास): • एक नवंबर 2008: चौक में छत पर खेल रहे दो बच्चों पर बंदर ने हमला किया। दोनों बच्चे छत से कूदे, एक की मौत

• 22 अक्टूबर 2009 को जानकीपुरम में बंदर के काटने से एक बच्चे की मौत

• 15 जुलाई 2011: चिकित्सा विश्वविद्यालय में बंदर के डर से मजदूर कूदा, मौत

जंगलों से अशियाना उड़ाने के बाद शहर के भीतर पांव पसार रहे वानर राज में मानव जीवन पर खतरा बढ़ता जा रहा है। नगर निगम और वन विभाग की आपसी लड़ाई और ठोस योजना न होने का नुकसान उठना पड़ रहा है। बंदरों के

बंदर काटने की मुख्य घटनाएं

- छह अगस्त 2011: चिकित्सा विश्वविद्यालय में बंदर ने एक व्यक्ति को काटा
- 22 जुलाई 2011: चारणा स्टेशन पर साबरमती एक्सप्रेस के यात्री दीपक को काटकर बंदर सामान ले भागा
- 15 और नौ दिसंबर 2010: निगोहा में पांच ग्रामीण बंदर काटने से घायल
- एक दिसंबर: अमौरी में छह ग्रामीण बंदर काटने से जख्मी



लोगों को। आबादी घाले इलाकों में वानरों के बढ़ते देखल के चलते पिछले दिनों लोगों की मौत की कई घटनाएं सामने आई हैं। बंदरों को पकड़ने के लिए वन विभाग संसाधन का रेंगा रहे रहा है। दूसरी ओर नगर निगम अपनी जिम्मेदारी से परतड़ा झाड़ते हुए, वन विभाग पर लापरवाही का आरोप मढ़ रहा है। बंदरों को पकड़ने के लिए खुद वन विभाग के

अधिकारी बजट का रेंगा रहे रहे हैं। हालात ये हैं कि कुछ वीआरपी लोगों की शिकायतें दूर करने के लिए वन विभाग ने दो निजी संस्थाओं को ठेका दिया है। इसमें एक संस्था प्रति बंदर पकड़ने का शुल्क पांच सौ रुपये लेती है। वहीं दूसरी संस्था जो लंगूर को मदद से बंदरों को भगाती है वह प्रतिदिन पांच सौ रुपये लेती है। खुद प्रभागीय वन अधिकारी अशोक

आमने सामने

वन विभाग के पास संसाधन का अभाव है। हालांकि जिन क्षेत्रों से शिकायतें आती हैं, वहां बंदर पकड़ने या उनको भगाने की कार्रवाई होती है। एक बंदर को पकड़ने के लिए कई बार सारा दिन लग जाता है। फिर भी बंदरों पर अंकुश लगाने के लिए विभाग हर संभव प्रयास कर रहा है

अशोक मिश्र
प्रभागीय वन अधिकारी लखनऊ रेंग

बंदर पकड़ने का काम वन विभाग का है। बंदर पकड़ने की जिम्मेदारी नगर निगम की नहीं है।

ब्रजेश कुमार गौतम
एचू चिकित्सा अधिकारी नगर निगम

मिश्र भी मानते हैं कि शहर के हर हिस्से से बंदरों के उत्पात और उनके काटने की लगातार शिकायतें आ रही हैं। इन बंदरों को पकड़ने के लिए विभाग के पास संसाधन का अभाव है।

8 Aug, 2011 Man-animal conflict: In urban areas of Lucknow monkeys continue to be a menace. The FD is short of manpower and resources. The Nagar Nigam says catching monkeys is not its job.

6 | दैनिक जागरण लखनऊ, 11 अगस्त 2011

लखनऊ जागरण

कभी मुरझाते नहीं हैं सूखे फूल

- शाश्वत जिज्ञासा संगठन एवं एनबीआरआइ की ओर से आयोजित कार्यशाला

लखनऊ, 11 अगस्त (संवाद सूत्र) : ताजे फूल और कलियां तो सभी का मनमोह लेती हैं लेकिन इसका यह मतलब नहीं कि सूखे फूलों का कोई महत्व नहीं है। सूखे फूल मुरझाते नहीं हैं इसलिए यदि थोड़ी जागरूकता, कलात्मकता और कल्पनाशीलता का सहारा लिया जाए तो उनको भी सुंदर कलाकृतियों में बदला जा सकता है। कुछ ऐसी ही अनूठी कल्पना शौलता और कलात्मकता बुधवार को राष्ट्रीय वनस्पति अनुसंधान संस्थान (एनबीआरआइ) में देखने को मिली।

यहां एनबीआरआइ और शाश्वत जिज्ञासा संगठन की ओर से आयोजित 'ड्राई फ्लावर टेक्नालॉजी' कार्यशाला में संस्थान की वरिष्ठ वैज्ञानिक कमला कुलश्रेष्ठ ने बच्चों को सूखे फूलों से कलाकृतियां बनाने के गुर



एनबीआरआइ में आयोजित कार्यशाला में बच्चों को जानकारी देते विशेषज्ञ

सिखाए। वहीं बच्चों ने भी अपने हुनर का प्रदर्शन करते हुए सूखे फूलों का प्रयोग करके सुंदर प्रीटिंग कार्ड और अन्य सजावटी वस्तुएं बनाईं। एनबीआरआइ के फ्लोरोक्लचर सेक्शन के डिप्टी डायरेक्टर डॉ. बीके बनर्जी ने बताया कि फूलों को डिहाइड्रेट करने के लिए दबाव और अंतः

स्थापित विधि का प्रयोग किया जाता है। इनसे प्राप्त डिहाइड्रेट फूलों के रंग में कोई बदलाव नहीं आता। साथ ही ये लंबे समय तक जास के तस बने रहते हैं। कार्यशाला में आशा आवा स्कूल, पायसम डे केयर सेंटर, आशा ज्योति स्कूल और स्टडी हॉल के मानसिक एवं शारीरिक

ऐसे बनाएं कलाकृतियां

- + दबाव विधि से कलाकृतियां बनाने के लिए खिले फूल को ब्लॉटिंग पेंपर (सोखता कागज) में दबाकर रखें।
- + 24 घंटे के अंतराल में तीन-चार बार पेंपर को बदलें। तीन चार दिन के अंदर ही फूल में मौजूद पुरा पानी सूख जाएगा।
- + प्राप्त सूखे फूलों में थोड़ी कांट-छांट करके मनवाही कलाकृतियां बना सकते हैं।
- + अंतः स्थापित विधि में खिले फूलों की मिट्टी के गमलों में सिलिका पाउडर के बीच फूलों को रखते हैं।
- + गमले को दो-तीन दिन के लिए धूप में रखें दें। नियमित अंतराल के बाद फूलों को निकाल लें।

समस्याओं से जूझते 20 बच्चे, एनबीआरआइ निदेशक डॉ. सीएस नीटियाल और शाश्वत जिज्ञासा संगठन के संयोजक सितारेश कुमार समेत कई अन्य लोग मौजूद रहे।

लखनऊ, 11 अगस्त 2011 दैनिक जागरण 3

लखनऊ जाग

धरती को गर्म करने में उत्तर प्रदेश टॉप पर

रुमा सिन्हा

लखनऊ, 10 अगस्त : पर्यावरण संरक्षण की मुहिम में विश्वभूी संघित हुए उत्तर प्रदेश ने एक कदम आगे बढ़कर उत्तम और बिनाडू है। राज्य ने धरती को गर्म करने वाली ग्रीन हाऊस गैसों के उत्सर्जन में बाकी राज्यों को पीछे छोड़ दिया है।

पर्यावरण मंत्रालय की ग्रीन हाऊस गैस उत्सर्जन पर जारी रिपोर्ट 2010 के अनुसार देश में जलवायु परिवर्तन से जुड़े खतरों के लिए मुख्य रूप से जिम्मेदार ग्रीन हाऊस गैसों का सर्वाधिक उत्सर्जन उत्तर प्रदेश से हो रहा है, जो कुल राष्ट्रीय उत्सर्जन का 14 फीसदी आंका गया है। सोनभद्र, गुरुबरेली व गौतमबुद्ध नगर से उत्सर्जन सबसे अधिक है। ग्लोबल वार्मिंग के लिए जिम्मेदार ग्रीन हाऊस गैसों का स्तर बढ़ाने में मुख्य भूमिका कार्बन डाइऑक्साइड की है। राज्य में उत्सर्जित होने वाली कुल ग्रीन हाऊस गैसों में कार्बन डाइऑक्साइड का अंश दो तिहाई (यानी 66 फीसदी) है जबकि मध्यम की भागीदारी 26 व नाइट्रस आक्साइड 8 फीसदी है। अकेले कार्बन डाइऑक्साइड का उत्सर्जन ही प्रदेश के वायुमंडल में 289 मिलियन टन से अधिक मिलता है। विलत 15 वर्षों में कार्बन डाइऑक्साइड का उत्सर्जन तीन गुना से अधिक बढ़ चुका है। जलवायु परिवर्तन पर सूखे के लिए तैयार ब्रुफर रिपोर्ट में कार्बन डाइऑक्साइड गैस के उत्सर्जन के लिए कोयला आधारित तापीय बिजली घरों में पेट्रोलियम उत्पादों की खपत में दो गुना वृद्धि ने भी

- पर्यावरण मंत्रालय की रिपोर्ट के निष्कर्ष
- सोनभद्र, गुरुबरेली व गौतमबुद्ध नगर सबसे आगे



तथा है ग्रीन हाऊस गैस

वातावरण में मौजूद ग्रीन हाऊस गैस सूखे के विकिरण को रोकती। कार्बन डाइऑक्साइड, मीथेन व नाइट्रस अक्साइड धरती का तापमान बढ़ाने के लिए प्रमुख रूप से जिम्मेदार हैं। वायुमंडल में इन गैसों का स्तर बढ़ने से जलवायु परिवर्तन से जुड़े खतरों का अंश है।

कार्बन डाइऑक्साइड का उत्सर्जन बढ़ाने में महती भूमिका अदा की है। विद्युत सेक्टर से उत्सर्जित कार्बन डाइऑक्साइड का हिस्सा 45 फीसदी आंका गया है जबकि उद्योगों से 27 फीसदी कार्बन डाइऑक्साइड का उत्सर्जन होता है। उधर, सूखे में धान की खेती व नाइट्रोजन व फ़ॉस्फ़र उर्वरकों की बढ़ती खपत ने दूसरी ग्रीन हाऊस गैसों मीथेन व नाइट्रस अक्साइड का स्तर बढ़ाने में खास योगदान दिया है। अकेले धान की खेती से मीथेन का 15 फीसदी हिस्सा वायुमंडल में पहुंचता है।

- लखीमपुर खीरी, मुरादाबाद व मुजफ्फरनगर में नाइट्रस आक्साइड उत्सर्जन कुत्रिम उर्वरकों के प्रयोग के कारण सबसे अधिक रिकॉर्ड किया गया।
- तापीय विद्युत ग्राहों व एल्यूमिनियम उत्पादन के कारण कार्बन डाइऑक्साइड उत्सर्जन का 27 फीसदी हिस्सा केवल सोनभद्र से निकलता है।
- गुरुबरेली 5 फीसदी व गौतमबुद्ध नगर 4 फीसदी कार्बन डाइऑक्साइड उत्सर्जित करता है।



11 Aug, 2011 As per 2010 report of Green house gas emissions of MoEF, U.P. is responsible for 14% of total emissions. Sonbhadra, Raebareli and Gautam Budh Nagar lead in emissions. In the last 15 years GHG emissions have increased by 3 times. About 45% emissions are by electricity generators, 27% from industries. Paddy cultivation accounts for 15% of total methane emission.

11 Aug, 2011 NBRI organized a workshop on preserving flowers.

Newspaper Clippings

THE TIMES OF INDIA, LUCKNOW
WEDNESDAY, JULY 13, 2011

'Uttar Pradesh is home to nearly 12,500 sarus cranes'

7 Forest Divs Shelter Over 500 Sarus, Says Census

TIMES NEWS NETWORK

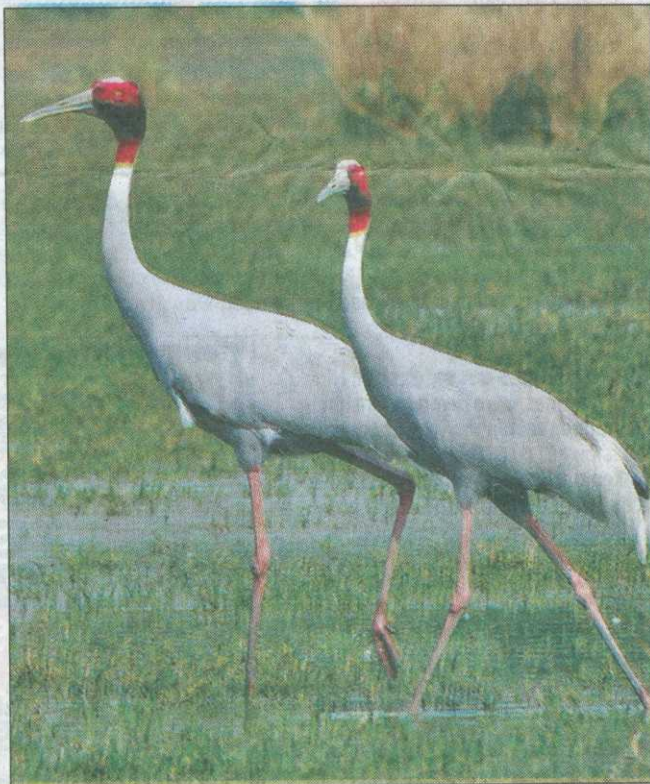
Lucknow: The sarus census shows that barely five percent of sarus crane population is living in protected areas of the state, while the remaining 95% of the state bird is living outside these areas. Experts believe that it is this population, which needs protection and conservation. The major threat to cranes is poaching and destruction of their eggs and juveniles.

"There is a need to create awareness among locals regarding these zones, so that they can understand the importance of these zones," said Fateh Bahadur Singh, forest minister, UP. District-level committees have been set up under DMs and commissioners to identify such zones around protected areas.

As per the rules, an eco-sensitive zone should be set up within 10 kms from protected areas. However, this can be changed according to the wildlife in the area, number of residents around it, rural and urban location.

"The decisions regarding activities in such zones will be taken by the committee," said Chanchal Kumar Tiwari, principal secretary, forest.

The figures of the first ever 'total count' of sarus crane in UP compiled by the state forest department last year were



SOARING NUMBERS

promising. UP was found having some 12,246 sarus cranes. Seven divisions of Uttar Pradesh forests have been found sheltering more than 500 sarus cranes.

Among the districts, Mainpuri reported maximum sightings (2,120) followed by Etawah (1,217) and Auraiya (895). They were followed by Kanshiram Nagar (807), Etah (599), Ramabai Nagar (580) and Sohagibarwa wildlife sanctuary (503). The census also showed that 21 forest divisions had no sarus. In 1999, as many as 1,019 cranes were counted in 20 districts with abundant population. Similarly, in 2000, nearly 1,400 sarus were counted in same set

of districts. While, in 2008 the number of sarus cranes stood at 7,155.

Sarus is categorised as vulnerable on the IUCN red list. There are no exact estimates available for its population in the country.

However, Uttar Pradesh is known to be home to maximum number of cranes.

After UP, Gujarat and Rajasthan are having a noticeable population. The eco-sensitive zones have been thought about to not only conserve wildlife, but to also reduce man-animal conflict and to improve socio-economic conditions of people living around eco-sensitive zones.

13 July, 2011 Sarus count has revealed about 12,246 Sarus cranes, 7 divisions of U.P. shelter over 500 Sarus cranes. Maximum numbers are reported from Mainpuri (2120) Etawah (1217), Auraiya (895). About 21 divisions had no Sarus cranes.

Highest vulture numbers in Suhelwa, Kaimur forests

TIMES NEWS NETWORK

Lucknow: Even as the winged scavengers have been listed as endangered species and are fighting a high-pitched survival battle, there is good news for ornithologists from Uttar Pradesh, as the latest count of the state forest department revealed that there are more than 2,000 vultures in the state.

The decline of vultures has been the fastest among any other species. Vulture conservation became a national issue after 40 scavengers were reported dead in Rajasthan in 1997. Both the Centre and the state are emphasising on saving vultures.

The state had thought about setting up a breeding farm for vultures like the one in Pinjore, Haryana. Though it never happened, the department did not deter to give vulture conservation another attempt. In May this year, de-



ENCOURAGING FIGURES

partment got a scientific assessment of vulture population done and found that more than 2,000 vultures are present in UP.

Maximum vultures were found in Suhelwa wildlife sanctuary and Mahavir Swami wildlife sanctuary in Kaimur. "The figures can not be compared to previous census, due to difference in techniques," said BK Patnaik, chief wildlife warden, UP.

Vultures do not have a very wide presence in the state, as only 17 forest divisions out of the 74 have vulture population. In UP, all six species of vultures are present. These include oriental white-backed, long-billed, slender-billed, griffon, king vulture and white scavenger. Some of them are resident varieties, while others are migratory.

Of these species three of the most common; white-backed, slender-billed

and long-billed have suffered catastrophic declines in less than 10 years' time. Most abundant in the past, these three are now the rarest ones protected under schedule (1) of the Wildlife Protection Act.

Currently, these natural scavengers have an existence confined till the wild in the state. During the assessment, vultures present in their nests and habitat were counted. The summer assessment also found that these are resident vultures and not a migratory population. Experts say that the breeding rate of vultures is very slow. They are said to lay a single egg in a breeding season. The vultures are dying due to veterinary drug diclofenac. The drug is administered to cattle for treating limps, mastitis and other diseases.

If a bird feeds on the carcass of the cattle within 36 hours of the animal's death, the drug enters the bird's body

Currently, these natural scavengers have an existence confined till the wild in the state. During the assessment, vultures present in their nests and habitat were counted. The summer assessment also found that these are resident vultures and not a migratory population.

system. The bird affected with diclofenac shows signs of visceral gout, dehydration and kidney failure and dies within few days. Government has banned the use of drug. In reality, however, its use might be continuing at the grass-root level.

17 July, 2011 The natural scavenger Vulture count of the U.P. Forest Department reveals that there are more than 2000 vultures in the state. The maximum vultures were found in Suhelwa Wildlife Sanctuary and Kaimur forests.

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*शर्तें लागू

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