



## Editorial

Dr. Satish Pande

The hot summers aren't something that avian life relishes. Birds are known to poorly tolerate extreme weather, and the heat is particularly oppressive for them. When afternoon temperatures cross the 40° C mark, it is not uncommon to find birds that are dehydrated, exhausted and gasping for breath on roads, grounds, open terrain and in scrubland. These birds are vulnerable from the heat as well as predators.

Spare a moment of consideration towards these suffering birds — it could breathe invaluable life back into the dying creatures. All they need is shade, a little water and care.

Water is life. In this issue, we have a scholarly article by a leading ethno-ornithologist on the life-giving Aap — water. We understand how our ancestors envisioned this life resource. In ethno-astro-ornithology, a leading astrophysicist gives us a cosmic view and enthral us with facts from Down Under about how the aborigines perceived heavenly bodies. In 'Asia Speaks', our senior ornithologist colleague from Malaysia tells us about the habitat issues in his country. Our senior ecologist from the south briefs us about the habitat problems in the Western Ghats — the global mega biodiversity hotspot. We also have studied insights on treating birds, marsupial amphibians, stick-insects, and endemic trees. This quarter's raptor portrait is of my favourite nocturnal predator — the Indian Eagle Owl. The portrait is drawn so realistically that one is lost in its hypnotic charm. The inputs from our readers are refreshingly spontaneous.



Satish Pande

The inputs from officials of the forest department make this issue all the more interesting. It highlights the fact that if we work hand in hand with the government machinery, many of our conservation goals can be achieved. We intend to start a constructive dialogue with the forest department, because we should understand that having a common vision is necessary for the conservation and protection of Ela — Mother Earth.

On a different note, the eighth 'Certificate Course in Basic Ornithology' from December 2011 to February 2012 concluded successfully. Borrowing from cricketing terminology, I would like to say it was a record with the number of participants for the course crossing a century. Bureaucrats, bankers, army officers, teachers, students, auditors, IT experts, doctors, industrialists, builders, technicians, businessmen, hoteliers, tour operators, housewives, artists, mathematicians, biologists, botanists, pensioners and others constituted the spectrum of our participants. In this course, participants are armoured with quality scientific knowledge about ornithology and conservation in an interactive audiovisual lecture series.

Importantly, we have the participation of 'Team Shapoorji Pallonji - Pune' of 'Shapoorji Pallonji and Co', one of the most reputed corporate houses in the country, in our nature conservation efforts. We collaborated to construct wooden bird homes by conducting a unique workshop for our ornithology course participants. This collaboration not only strengthens our resolve but empowers our course participants to make nest boxes by themselves, teach others and implement this conservation program on a wider platform.

Incidentally, we stumbled upon one more publication with the name, 'Ela Newsletter'. We have, therefore, changed the name of our official quarterly to 'Ela Journal' to give it a unique identity.

The membership of Ela Foundation has been steadily growing thanks to the support of people concerned about the well-being of Mother Earth. I request each member to invite more people to our family, because in conservation it is not family planning but family growth that always delivers the results.



Kumar Pawar

### ★ In This Issue

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- Naturally With Nature and more..

### ★ Days to Remember

- Earth Day -- 22 April .....
- Migratory Bird Day -- 3 May .....





## Ancient Wisdom - India

## The Song of Water - Dr. Suruchi Pande \*

Aapa (water) is termed as Jyoti (light), Rasa (the essence of life) and Amruta (nectar of immortality) in our Vedic literature. The Rigveda praises the treasure of water, considering it a goddess – “Aapo Devi”. The Chhandogya Upanishada elucidates the rains in a peculiar five-fold meditation or Saama worship. Saama is a metrical hymn.

The Upanishada (Chapter II. Part 3) says,

*“Vrushtau panchavidham  
saamopaasitapurovaato himkaaro  
megho jaayate sa prastaavo  
varshati sa udgeetho  
vidyotate stanayati sa pratihaara: || 1 ||*

*Udgruhunaati tannidhanam varshati  
haasmai varshayati ha ya etadevam  
vidvaansrushtau panchavidham  
saamopaaste || 2 ||”*

“The five-fold Saama worship should be observed during rainfall. The wind that blows prior to the rains is called 'hinkaara' (to make a kind of low roar or utter the sound hin); the clouds that bring the rains are 'prastaava' (to make rains); the rain water is called 'udgeetha' (to chant or to say 'om' – the three syllable name of God); the thundering is called 'pratihaara' (to strike back), and the cloud that re-absorbs the water is called 'nidhana' (to end or to conclude). The rain is offered to that person and the rain is begotten by that person who knows the nature of Saama worship incorporated in the rain.”

The Saama worship is followed by another mode of five-fold meditation on water. It is the 'Song of the Water Cycle'. Here, the condensed black clouds are the 'hinkaara'; the water that is released by these clouds have peculiar notes – 'prastaava'; the pure, bubbling and steady flow of water in the rivers going in the eastern direction is 'udgeetha'; the water that flows in the western direction is 'pratihaara'; and, finally, the water that merges into the ocean is the 'nidhana'.

In these verses, the beauty, serenity and integral importance of water are respectfully reflected at a subtle, philosophical and sensitive level. The sages no doubt experienced the inherent musical notes hidden in all natural phenomena, including rainfall. They appreciated the grace of creation and the elegance of cessation. They knew that genesis has an end. But this was not considered a negative process of annihilation but a positive one that made place for a new beginning. The precious water cycle was to be kept unpolluted and in a state of continuation.

\* Suruchi Pande, PhD (Philosophy), PhD (Sanskrit), is a post-doc research scholar presently working on “Owl in Indian Culture”

## Life and Cosmos

### An emu in the sky - D. J. Saikia \*

The emu is a flightless, native Australian bird belonging to the genus *Dromaius*. It reaches up to approximately two metres in height, making it one of the largest birds, second only to the ostrich. The emu has long strong legs allowing it to take large strides of well over 2 metres, and strong claws for defense. It feeds on a variety of plants and insects, and breeds during May and June, with the male doing most of the incubation. The flightless birds, including the emu, are believed to have evolved from their flying ancestors. You must be wondering by now what an emu in the sky is all about?

When one looks up at the night sky one sees hundreds and thousands of stars, depending on the brightness of the night sky and the level of terrestrial light pollution. If we take the typical diameter of a star to be  $\sim 106$  km, and the typical distance between the stars to be about a parsec ( $\sim 3 \times 10^{13}$  km), the fraction of volume occupied by our stars is very tiny, approximately only one part in 1022 km. Although largely invisible to the human eye, the space between the stars is not empty, but consists of gas, dust, magnetic fields and high-energy particles, which are collectively referred to as the interstellar medium. They consist of various components such as dark, cold clouds of gas called molecular clouds with temperatures of only 10-30 K (0 deg C  $\sim$  273 K) and densities  $> 109$  particles/m<sup>3</sup> where simple molecules such as CO as well as more complex ones are found. The molecular clouds are the stellar nurseries where new stars are born. For comparison note that our atmosphere at mean sea level is much denser with a density of  $\sim 1025$  particles/m<sup>3</sup>. At the other extreme is the hot coronal gas in our Galaxy with temperatures of over a million K and densities of only  $\sim 103$  particles/m<sup>3</sup> which is visible at X-ray wavelengths. There are other components of the interstellar medium at intermediate temperatures and densities. The physics of the interstellar medium and its relationship with the formation and evolution of stars continues to be a fascinating field of research.

Now imagine a dense molecular cloud in interstellar space lying in front of a cluster of stars. This cloud will absorb the visible optical light from the background stars, causing a dark patch in the sky. William Herschel (1738-1822), the refugee musician from Hanover who went on to build some of the most powerful optical telescopes of his time, noted the abundance of nebulous matter in the Universe and 'holes in the starry sky'. We now know these holes to be caused by dense dark clouds of interstellar gas. In fact, visible optical light from the centre of our Galaxy is diminished by a factor of  $\sim 108$  due to absorption by interstellar matter.

Our Galaxy, the Milky Way, which is one amongst billions of galaxies in our observable Universe, consists of a thin disk with a radius of  $\sim 25$  kpc (kpc: kiloparsec; 1 parsec  $\sim 3 \times 10^{13}$  km), a small spherical bulge at the centre with a radius of  $\sim 2-3$  kpc, and a halo extending to  $\sim 30$  kpc. The disk, which is visible as a diffuse band of light in the night sky caused by thousands of stars, led to it being described as 'a zone as white as milk' by Ptolemy (90-168) from which it came to be known as the *via Lactea* or the Milky Way. The disk also has many dark patches at visible wavelengths due to absorption by clouds of cold gas. At longer wavelengths, such as at infrared and radio wavelengths, the dark patches are less prominent or disappear because of decreased absorption at longer wavelengths.

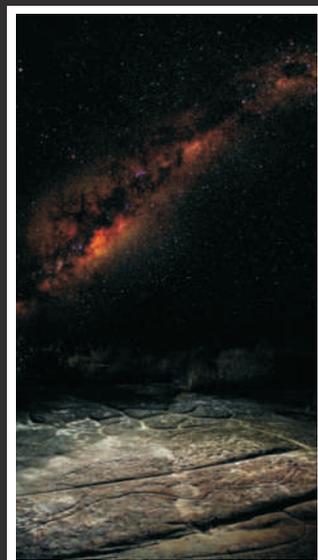
Although we are used to identifying constellations in the night sky from patterns formed by stars, many Aboriginal groups in Australia have woven stories based on the dark patches in the Milky Way. In one of these stories, the Coalsack, a dark cloud near the Southern Cross constellation is identified with the head of an emu, while the neck, body and legs of the emu are formed by dust lanes across the Milky Way, forming 'an emu in the sky'. Aboriginal communities also made thousands of rock engravings, which could date back from a couple of hundred to thousands of years, showing animals, peoples, and symbols inherent to their cultures whose meanings have been lost over the passage of time. I was fortunate to be able to visit one of these sites, the Ku-ring-gai Chase National Park, approximately 20 km north of Sydney. One of the rocks in this park shows a finely engraved emu, which has an uncanny resemblance to the emu in the sky formed by the dark clouds of gas. The engraving by the aboriginal artists lines up with the 'emu in the sky' at a time when the real emus are laying their eggs during their breeding season.

Barnaby Norris and his father Ray Norris, a well-known Australian astronomer with a keen interest in Aboriginal Astronomy, took a photograph of the engraving with the 'emu in the sky' correctly positioned above it. The picture was taken in 2006 June 30. Barnaby spent a couple of months stitching together the mosaic of smaller images to produce the stunning picture shown here which won him the 'New Scientist Eureka' science prize. A picture with the outline of the emu in the sky reproduced from the web is also shown to help the reader.

Many things in Australia are named after the emu. For example, 'Emu - Austral Ornithology' is the journal of the Royal Australasian Ornithologists Union published by Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia. EMU: the Evolution Map of the Universe, is an international effort led by Ray Norris from CSIRO, Australia, to image the southern sky at radio wavelengths with unprecedented sensitivity using the new radio telescope, the Australian Square Kilometer Array Pathfinder, which is presently under construction in Western Australia. The story of the emu, both in the sky and on the ground spans many millenia, and continues to capture our imagination. It also highlights how our human ancestors were keen sky watchers in spite of unavailability of telescopes, and attempted to explore possible relationships between the heavens and the earth.

I thank Ray and Barnaby Norris for permission to show their pictures, and also for educating me on Aboriginal astronomy.

\* D. J. Saikia is a Professor at the National Centre for Radio Astrophysics, TIFR, and was a student of the 8th course on basic ornithology conducted by Ela Foundation and MES Abasaheb Garware College, Pune. He also edits the 'Bulletin of the Astronomical Society of India'.



Source - Google

## Habitat Problems

## Conservation of the Northern Western Ghat - R J Ranjit Daniels \*

J P Pascal, an ecologist associated with the French Institute of Pondicherry, has suggested that the Western Ghats are comprised of three major geo-climatic sub-units. According to him, the 600km northern basaltic outpouring (the Surat-Goa Deccan Trap Landscape; 16°N-20°N) is the most homogeneous with regards to its geo-climate and vegetation. Apparently, this is the region where the term 'ghat' becomes fully relevant as erosion has created a step-like layer of alternating lava and ashes. The hills and ridges are between 700m and 1000m generally, although occasionally they are higher (example Kalsubai is 1646m and Mahabaleshwar 1438m ASL).

Presently, in the Surat-Goa Deccan Trap Landscape, the original tall wet evergreen forests have given way to the short *Memecylon-Syzigium-Actinodaphne* type, vegetation that characterizes wet zones that receive rainfall in excess of 5,000mm and also experience the longest dry season (5-8 months). The tall *Persea macrantha* dominated wet evergreen forests may have occurred in the landscape during recent history as Pascal (in the 1980s) had listed this species as occasional in the medium-elevation *Memecylon umbellatum-Syzigium cumini-Actinodaphne angustifolia* dominated wet evergreen forests of Matheran and Mahabaleshwar.

That the northern Western Ghats is the least resilient and hence ecologically highly sensitive is evident in the transformation of the woody vegetation, which is rather drastic and irreversible. Pascal attributes the drastic and irreversible change in the woody plant species' composition of the wet evergreen forests in the landscape to the long dry season and early human onslaught, especially shifting cultivation.

In view of the taxonomic uncertainties regarding some key species, the 'Convention on Biological Diversity', in its preamble, has clearly addressed the issue of 'uncertainties' as follows: 'Noting also that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such threat.'

The recommendations for the protection of the rich aquatic diversity in the Western Ghats are:

- (I) protection of key habitats such as fast-flowing streams and rivers;
- (ii) where possible, prevention of flow modifications;
- (iii) conservation of specialized ecosystems such as *Myristica* swamps, high-altitude peat bogs, and lateritic plateaus;
- (iv) prevention of the use of pesticides and other agrochemicals in the upper catchments; and,
- (v) regulation of tourism in critical habitats.

However, taxa-specific conservation assessments have all placed a higher conservation value on landscapes in the southern Western Ghats. Conservation assessments that focus primarily on the endemic and threatened taxa are likely to bias conservation planning in the Western Ghats.

\* R J Ranjit Daniels is a scientist, author and director of the Care Earth Trust. For more information visit: [www.careearthtrust.org](http://www.careearthtrust.org); E-mail: [ranjit.daniels@gmail.com](mailto:ranjit.daniels@gmail.com)



## Asia Speaks

## Biodiversity Conservation in Malaysia

- Lim Kim Chye \*



Malaysia consists of two separate regions -- West Malaysia on the southern tip of mainland Asia and East Malaysia on Borneo Island. Located in the humid tropics with territories in two distinctive regions of the Sunda Shelf, Malaysia has a diverse range of ecosystems, habitats and species, with high species endemism in the states of Sarawak and Sabah on Borneo.

Most of Malaysia's rich and varied terrestrial biodiversity is found in its natural forests, including swamp forests, both freshwater and peat and mangroves. However, much of the country's natural forest has been lost to cash crop agriculture, which converted large tracts of pristine lowland forest, the richest in terms of biodiversity, into rubber and oil palm plantations (Fig. 1). From 1970 to 1992, the natural forest cover in Malaysia was reduced by 19.3% (National Policy on Biodiversity 1998, unpublished report). Highest forest loss occurred from 1990 to 2005, when oil palm cultivation was at a

peak. By 2007, only about 60% of the land area of Malaysia remained forested. This massive loss of forest cover destroyed habitats and resulted in the disappearance of their associated communities of fauna and flora.

Although there is now less indiscriminate destruction of forests for oil palm cultivation, other threats continue to pressure the rich natural heritage of Malaysia. Logging of old growth forests is a major concern (Fig. 2) as this activity not only destroys habitats but also provides access to poachers. Habitat degradation and pollution of ecosystems due to population increase and economic development also threaten the well-being of the wildlife of the country.

Malaysia has put in place various strategies to protect its natural heritage. There are several regional legislations to provide legal protection for wildlife and a network of protected areas has been established for wildlife throughout the country.

As of 2007, about 6% of the country (some

two million hectares) is protected as national parks, wildlife sanctuaries and wildlife reserves (4th National Report to the Convention on Biological Diversity 2009, unpublished report). Malaysia is also a signatory to several international agreements on wildlife and environmental protection such as RAMSAR, CITES and Convention on Biological Diversity. Conservation organizations and citizen groups have also played an important role in raising public awareness for the need to protect the country's rich natural heritage. Malaysian Nature Society (MNS) successfully fought for the establishment of Royal Belum Park, an extensive tract of forest well known for its large mammals and hornbills. The Society also stopped the development of resorts on Tanjung Tuan (Fig. 3), a vital landfall for thousands of migratory raptors crossing the Straits of Malacca separating Sumatra and West Malaysia.

\* He is the Malaysian representative of ARRCN and works for biodiversity conservation and promotion of ornithology in Malaysia.

## Range Extension & Reports

- Niranjan Sant, Belgaum; Alka Nirantar, Beed; Pravin Kavale & Rajesh Mhatre, Alibag.

Niranjan Sant



One bird was seen on 25 and 26th of February, 2012 near a small drying reservoir behind a check dam. It was in the company of two Woolly-necked Storks, Pond Herons and Median Egrets. All were busy feeding on small fish and other aquatic animals trapped in the small pond. The place is south-west of Belgaum, Karnataka, about 5kms from the town.

Pravin Kavale



Another adult Black Stork was seen on the south-west of Belgaum, near a village pond, three km from the town. This pond is used by villagers for washing cattle, vehicles and domestic items. No actual threat was evident except for pollution.

Rajesh Mhatre



A flock of 20 Greater Flamingos was seen at -- Sindphana Dam, taluka Shirur, district Beed.

A mixed flock of 3 Demoiselle Cranes and 10 Common Cranes was seen at Tagadgaon Dam near Raimo village, taluka Shirur, district Beed. Sighting on 12/Feb/2012, 0800 to 10 AM. No apparent immediate threat. Range extension: Pravin Kavale, Alibag.

Blue and White Flycatcher *Cyanoptila cyanomelaena* was recorded and photographed for the first time for the region at Alibag, District Raigad, Maharashtra on 9th March, 2012 by Pravin Kavale.

European Bee-eater was first recorded in Phansad WLS in March 2011 by Rajesh Mhatre.

## Popular Science

### Marsupial Frogs

- Dr. Anand Padhye \*

Kangaroos are popular for the brood pouch in which they carry their young ones. Such animals with external brood pouches are called marsupials. Apart from kangaroos, the other common marsupials are koalas, possums, bilbies, numbats, wallabies, opossums and wombats.

But did you know that marsupial frogs also exist? These frogs come from the family Hemiphractidae in the order Anura. These frogs are native to Neotropical America (central and south America). Marsupial frogs have a dorsal brood pouch — a pouch on the back. In some species of marsupial frogs, the eggs are fertilized on the female's lower back, and the male inserts them in her pouch with the aid of his toes. The eggs remain in contact with the female's vascular tissue, which provides them with oxygen.



In some arboreal species of the genus *Flectonotus* and *Fritziana*, the eggs develop into non-feeding tadpoles. These tadpoles are then released outside the pouch in water that accumulates in the axils of leaves, while in some high montane species of *Gastrotheca*, the eggs hatch into tadpoles and the female goes to a pond to release them.

In some arboreal species of the genus *Gastrotheca* and *Amphignathodon* as well as in the terrestrial species of the genera *Hemiphractus*, *Cryptobranchus*, *Stefania* and *Gastrotheca*, the eggs directly develop into juveniles that are released out of the pouch. *Gastrotheca* is a genus of frogs found in central and south America. Most species are seen in the American Cordillera from southern Costa Rica to north-western Argentina. This genus makes up the bulk of marsupial frog diversity.

*Gastrotheca excubitor* is a frog species endemic to Peru. Its natural habitats are subtropical or tropical moist montanes, rural gardens and heavily degraded former forests. It is threatened by habitat loss.

The reproductive process in marsupial frogs is a unique form of parental care seen in amphibians. The frogs ensure safe development of all the eggs. Since the number of young ones maturing is larger, this method allows marsupial frogs to lay a limited number of eggs, hence conserving their energy.

\* Dr. Anand Padhye is Assoc.Prof. in Zoology, MES Abasaheb Garware College, Pune, and member IUCN group for Amphibians.



*Flectonotus pygmaeus* is a species of frog found in Colombia and Venezuela. Its natural habitats are subtropical or tropical moist montanes and heavily degraded former forests. It is threatened by habitat loss.

Source: <http://en.wikipedia.org/wiki/Axolotl>

## The Sleepy Flycatcher

- Anak Bhagwat \*

I was at the Sinhagad valley in late February indulging in a bit of bird watching and photography. At 0830 AM I noticed an Ultramarine Flycatcher approaching the small pool where I had stationed myself. I was still and silent. Unaware of my presence, the flycatcher landed about 2 m in front of me. It ate an insect from the muddy pool and then waded in the pool for 4 min or so and then briefly perched on an overhanging branch. It alighted again and had a bath in the mud pool. To my utter surprise, in the early hour of the morning, it decided to do the most unexpected thing. Guess what? It took a nap on a nearby rock!! And that too for almost

five to six minutes. After taking this nap it flew away and perched on an adjacent bush, and to my great bewilderment, the flycatcher decided to take another short nap for a few minutes. Subsequently it flew away and perched on another tree and again took a long nap for about 15 min. It finally decided that enough was enough and disappeared in the foliage!!

I could later hear the flycatcher chirping joyously. While the lazy fellow was dozing, a female Verditer Flycatcher came to the same pool, took a bath and flew away!! Well, we are not the only ones that like to doze in the

morning. I am sure that the incidence of the sleepy flycatcher is a unique experience for any birdwatcher. Such are the splendid observations that one can experience if one chooses to remain silent without disturbing the birds for taking 'good snaps' at any cost.

\* Anak Bhagwat is a participant of Certificate Course in Basic Ornithology.



## Travel

### The Rhino Experience - Akshay Mulgund \*

Let me take you to Assam, the beautiful land of the rhino and the wild buffalo. The first endearing impression of the state was the sight of the immense, elegant and almost the sea-like Brahmaputra near Tezpur. This sight shall always linger in mind. We ate the famed bhut jholakia as we admired the mighty river.

We went to Nameri next and were put up in nice tents. On the first day of our stay, we visited a breeding centre for pygmy hogs. On day two, we sighted the Pin-tailed Green Pigeon and the Grey-headed Canary Flycatcher on the edge of the jungle.

Crossing a river, we entered the Tarai region – the foothills of the Himalayas. In the jungle, we spotted birds like the Palas' Fish-Eagle, Red-whiskered Bulbul, Golden Oriole, Jungle Owlet, Common Iora, Long-tailed Shrike, Sultan Tit, Scarlet Minivet, Black-naped Monarch and Blossom-headed Parakeet. We also sighted a Malayan Giant Squirrel and a semi-feral Indian Gaur. The next day, we did a spot of soft-water rafting. We also saw a merganser, river terns and pied kingfishers in the rapids.

Our next destination was the famed Kaziranga National Park, where we saw the Hog, Swamp Deer, One-horned Rhino (22 individuals), Wild Buffalo, Asian Elephant, Wild Boar, otters and some birds like Grey-headed Fish-Eagle, Changeable Hawk-Eagle, Greater Spotted Eagle, Crested Serpent-Eagle, Bar-headed Geese and Lesser Adjutant Stork. We later visited the tea estate, where we sipped on aromatic fresh tea and had lots of fun.

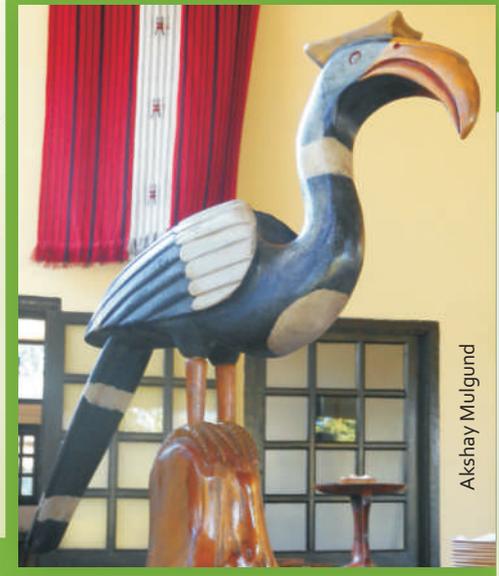
The pristine jungles of north-east India are indeed a beauty to behold. These jungles of India need our protection because they are an important part of our wild natural heritage.

**Place:** Kaziranga National Park

**State:** Arunachal Pradesh

**Travel:** By train or flight to Kolkata or Guwahati, then by road.

\* Akshay is a student from Std. IX, Sevasadan English Medium School and member of Ela Foundation.



Akshay Mulgund

### Baneshwar : An All Season Birding - Raghvendra Manavi \*



If you are looking for a summer birding destination near Pune, then you can visit Baneshwar, which is just 35 Kms to the south of Pune. You should take the Pune-Satara highway, NH4, till Nasarapur town. Regular buses are plying from Swargate Bus Stand to Nasarapur. This place is covered with trees maintained by the Forest Department and has an elegant, ancient temple of Lord Shiva. Though it is a famous picnic spot, it is not popular as a birding destination. None the less, you may witness diverse passerines and some water birds too.

Alongside the temple, there is a small waterfall (which is dry in summer) on the river and this is where you can spot many

birds in action. Tickell's Blue Fly-catcher, Bee-eater, Warblers, Spotted Dove, Little Brown Dove, Ashy Prinia, Iora, Bulbuls, Minivets, Paradise Fly-catcher, White-throated Fantail, Common Kingfisher, White-throated Kingfisher, Pied Kingfisher, Common Moorhen, Wagtails, Pond Heron, Egrets, Yellow Tit, Crested Larks, Crested Serpent Eagle, Shikra, Black-shouldered Kite are some of the birds you can see easily. You can also see Damsel and Dragon flies, butterflies, amphibians and reptiles. There is a nice information centre maintained by the Forest Department

Surprisingly, you will see birds in any season and at any time. Visit this place once and you shall not be disappointed. Food and refreshments are available at different food stalls near the temple. Again, a word of caution, do not litter or disturb birds and be cautious while walking by the waterfall and the river bed. Happy Birding!

\* Raghvendra Manavi is an IT Professional working for Nature Conservation.

### Blurring Images - Great One-horned Rhinoceros *Rhinoceros unicornis*



Akshay Mulgund



# kids section

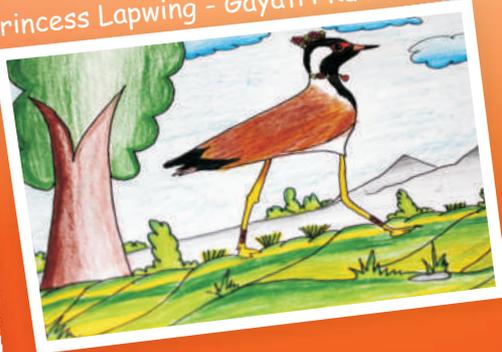


## my drawings

The Owl Prince - Nikhil Kumar



Princess Lapwing - Gayatri Kumar



Advika Velhankar

## my photos

Nitin Bhide-Pied Kingfisher



Janhavi Bhide-Starfish



Amit Pawashe



Harshal Mehta



Unusual Beaks!

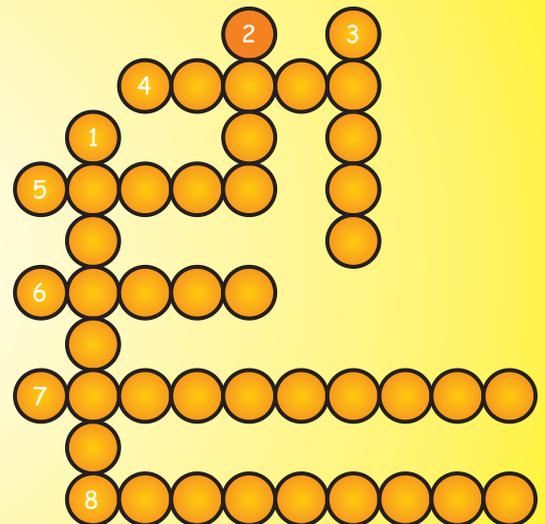
## Crossword puzzle

### Vertical:

1. A sour fruit.
2. This plant is used to make the 'Fast Food' - Shabudana Khichadi !
3. A flavored fruit used to prepare a 'Sharbat'.

### Horizontal

4. Wine is made from these juicy fruits.
5. Summer delight from Kokan, India.
6. Oval shaped violet fruit from India has a hard seed.
7. The floss from this tree is used to make mattresses.
8. William Wordsworth wrote a poem on these flowers.



### Answer to the Primate Puzzle

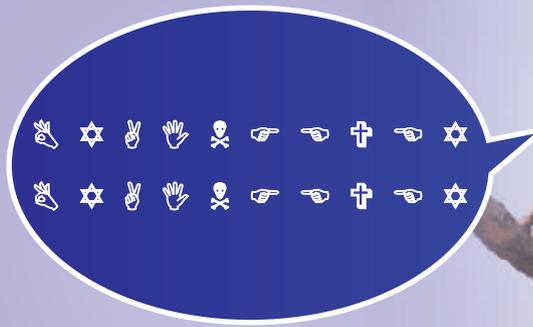
1. Monkey, 2. Gibbon, 3. Tarsier, 4. Gorillas, 5. Chimp, 6. Ape, 7. Orangutan, 8. Man



A	✌️	J	😊	S	💧
B	✋	K	😐	T	❄️
C	✊	L	😞	U	✚
D	✌️	M	💣	V	✚
E	✋	N	💀	W	⚡
F	✋	O	🏠	X	✖️
G	✊	P	🏠	Y	☆
H	✋	Q	✈️	Z	🌙
I	✋	R	⚙️		

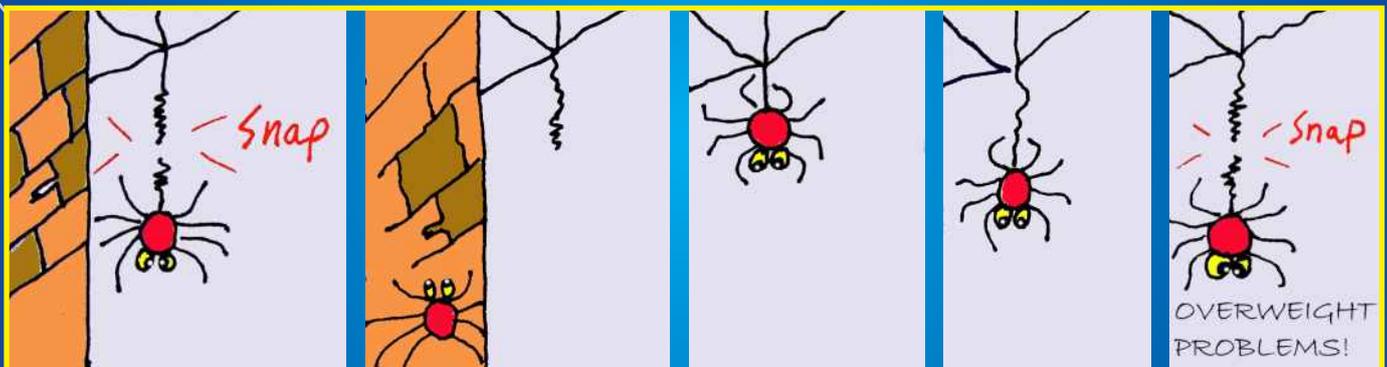
The Hawk-Cuckoo is telling you something.  
Can you decipher the Cuckoo's call?

- Vishakha Patil



Rajgopal Patil

www.website.fun - satish pande



## Palash - *Butea monosperma*

## Let us save our Endangered Trees

- Vivek Vishwasrao \*

State flower of Jharkhand  
Family Fabaceae

**Distribution:** *Butea monosperma* is a species native to the tropical and sub-tropical parts of the Indian sub-continent and south-east Asia, ranging across India, Bangladesh, Nepal, Pakistan, Sri Lanka, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia and western Indonesia.

**Common names** are Palash, Dhak, Palah, Flame of the Forest, Bastard Teak, Parrot Tree, Keshu (Punjabi) and Kesudo (Gujarati).

**Description:** *Butea monosperma* is a medium-sized, dry season, deciduous tree which grows to a height of 15 m. The tree grows slowly, at a rate of only a few feet a year. The flowers of the tree are a bright orange-red, 2.5 cm long and are produced in racemes up to 15 cm long. The fruit is a pod 15-20 cm long and 4-5 cm broad.

**Uses:** The tree has several uses as timber and fodder, and for the production of resin, medicine and dye. The gum from the tree, called kamarkas in Hindi, is used in certain food preparations. The gum, also known as Bengal Kino, is considered valuable by druggists because of its astringent qualities and by leather workers because of its tannin. The wood is dirty white in colour and soft. Since it is durable under water, the wood is used to make well curbs and water scoops. Good charcoal can be produced from the wood. The leaves are usually very leathery and are not eaten by cattle.

The flowers are used to prepare traditional colour for the Holi festival.

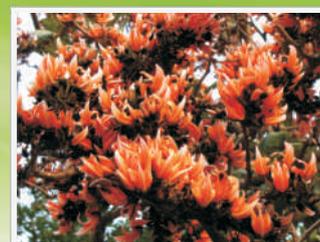
In the poorer regions of many states like Maharashtra, the leaves of the tree are pieced together to make a leaf plate *patravala* to serve meals. In the earlier days (till a century back), a young man seeking a girl's hand in marriage would be first tested for his dexterity at making the plate and a bowl (to serve the liquids in the meal such as dal) before being declared acceptable by his would-be father-in-law. It is believed that the tree is a form of the god of fire, Agnidev. The story goes that it was a punishment given to him by goddess Parvati for disturbing her and Lord Shiva's privacy. The flowers of the tree are especially used in the worship of Lord Shiva on the day of Shivratri.

**Mosquito killer:** Mosquitoes are attracted to the smell and colour of the flowers. They lay eggs in the liquid inside the flowers but these eggs never hatch.

**Propagation:** The tree produces pods in the months of April and May. The dried seeds are collected and sown in earthen pots. The seeds should not be sown in polythene bags. The seeds germinate within 3 to 4 weeks and the saplings are allowed to grow for about 45 to 60 days in a nursery. The saplings are then removed from the pot along with the earthen ball attached to the roots and transplanted into the soil of a pit sized 1ft X 1ft X 1ft.

The root system of this plant is deep. During forest fires, even if the plant above the soil gets burned, it manages to produce fresh sprouts in the monsoon. This plant is very useful during forest restoration programs.

\* Vivek Vishwasrao is the chief horticulturist with Tata Power, Valvan, Lonavala. He is involved in conservation education.



Prashant Deshpande

## Book Review

- Dr. Anil Mahabal \*

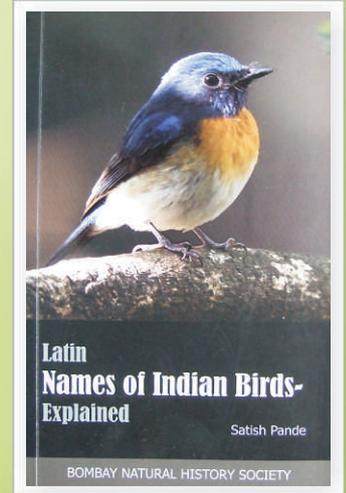
### 'Latin Names of All Indian Birds Explained': A must have book in your shelf. – Dr. Anil Mahabal

In the geological time-scale, birds evolved on the earth about 150 million years ago, in the Jurassic period of the Mesozoic Era, while human beings appeared about 2 million years ago. As we progressed, our educational needs also evolved. Naturalists understood the importance of biology and the need for classification of living organisms. Several non-literate traditional societies have classified animals and plants that they encountered.

Eventually several naturalists and biologists proposed various systems of biological classification. The foremost of them was Carlous Linnaeus (1707-1778), the Father of Modern Taxonomy. He adopted the unique system of binomial nomenclature, by assigning two Latin or Greek names to all living beings to classify them and to give them a unique identity. Ultimately, for the sake of uniformity in naming the animals, an International Commission for Zoological Nomenclature was established in 1901, but the methods of giving two Latin names, genus and species, followed by the name of the author who described the animal and the date of first description, continues till date.

This system was also applicable to avian classification. The two Latin names for each species of bird were chosen on the basis of morphological characters, color of body parts, food habits, vocalization, behavior, habitat, cultural significance, belief woven around it, etc. Often for the modern day reader the Latin and Greek names of the birds remain a mystery and therefore impart a sense of discomfort.

Ornithologist, Dr. Satish Pande, addressed this issue and has authored the unique book 'Latin Names of All Indian Birds Explained'. A total of 1397 bird species occurring in the Indian Subcontinent are included in the book. The English meaning of the scientific or biological name of each bird species is explained species-wise and the etymology is explained. The distribution, status and miscellaneous notes are also added. Several black and white bird drawings by Mr. Amit Pawashe are supplemented. A brief account of all naturalists who have named the concerned species is appended with sketches of several of them drawn by artist Mr. Sachin Joshi. The book ends with a separate index for common English names, and Latin names of genus and species, and literature for further reading is cited.



Importantly, the book is highly subsidized due to support from donations by several philanthropists. The funds were used by Ela Foundation to meet the cost of production. The author has not taken royalty and the proceedings are utilized for nature conservation programs of Ela Foundation. The book is very useful to students, layman and researchers in ornithology and shall certainly satisfy their curiosity about bird nomenclature, a taxing subject that is made not only easy but very interesting. This is evident by the excellent response by readers.

**Name of the book:** Latin Names of All Indian Birds Explained.

**Author:** Dr. Satish Pande

**Publishers:** Bombay Natural History Society, Oxford University Press and Ela Foundation.

**Date of publication:** 2009. **Price:** Rs. 325.

\* Dr. Anil Mahabal retired as Additional Director, Zoological Survey of India, W.R.C. Pune.

- Rajgopal Patil \*

## Website Review

Sea turtles have an amazing capacity to stay under water for long periods of time. Although they are air breathing reptiles, they have the most intriguing respiratory system that supports an almost entirely aquatic life. They can fill their lungs very quickly when they surface and these lungs have an extraordinary capacity to store large amount of air. But the secret to their long dips during which they can even sleep underwater, is the anaerobic respiration which needs no oxygen.

These curious long living creatures are found in all of world's oceans and out of total of seven species worldwide, five are found in the waters around India. Yet we know very little about them. All the sea turtles are endangered and in need of serious conservation support.

The 'Dakshin Foundation' has dedicated a new website for increasing awareness about sea turtles in India and provides resources for their conservation. The website - [www.seaturtlesofindia.org](http://www.seaturtlesofindia.org) - is full of information about all the turtle species, their identification, photographs, distribution, biology and details about various past and ongoing projects related to sea turtles of India.

The most important part of this website is its fantastic conservation section that has numerous resources to help both professionals and general public towards conservation of the sea turtles. These include detailed manuals for sea turtle research and management techniques. The website provides a detailed contact list of various organizations that work for conservation of sea turtles.

\* Rajgopal Patil is an IT Professional presently focused on Bio-Acoustics.

The website is not only a great mine of information on sea turtle conservation but also a real support for anyone keen on taking some positive action.

Overall this well designed website is a great effort by Karthik Shanker and his team worth a visit by every nature lover. When you visit the website be sure to check out and share the beautiful book, 'Sand in my hands!', with your kids.



Science

The Walking Coffin - Bagworm!  
- Neha Mujumdar \*



Neha Mujumdar



You must have seen a bundle of small sticks hanging from tree branches in the garden. At times you must have also noticed something peeping out of this tube. Closer observation may reveal that this bundle of sticks is actually a tube and it is being carried by a small larva! Yes, this is a fact, strange though it may sound to you! The larvae of moths of the family Psychidae construct this tube by joining together appropriately cut and tailor made twigs using silk threads that they produce themselves!! It is a self-constructed house.

Moths (Order Lepidoptera) are one of the largest groups of insects after beetles (Order Coleoptera). These are present in great numbers and inhabit almost all parts of the world. Many of them have complicated yet interesting life cycle which includes four stages- egg, larva, pupa and adult. They adapt various methods of protection like mimicry, leaf rolling, etc. Larvae of some moths exhibit the unique habit of case-building! Larvae of the moths from family Psychidae construct a bag or case-like structure, hence they are popularly known as "Bagworms or Case Moths". (*Molikida* in Marathi: *Moli*-pile of sticks; *kida*-insect).

Larvae of bagworms feed on lichens, grasses, shrubs and trees. Soon after hatching from eggs, they disperse in search of tender shoots of their host plants. Case-building is

observed right from the stage of first instar (all moth larvae go through about 5 developmental stages called instars). At first the larvae form a cylindrical or conical shaped bag of silk to which they glue from outside small pieces of longitudinally cut twigs or plant tissues. Sometimes short spines, plant debris and sand particles are also used as building material. This bag is like a shelter for the larva which it carries everywhere with the help of its strong thoracic legs. While feeding, only the head and thorax of the larva comes out of the bag which is retracted quickly if disturbed.

Larva builds new cases as it grows. Pupation also takes place inside the case. Each species has its own characteristic case. In India, few studies have been done on the case-building behaviour and life cycle of the bagworm species *Eumeta crameri*. My observations show that this species has at least four instars and the larvae renovate their case between two consecutive instars. It is also observed that later instars use longer sticks or spines than those used by earlier instars (Agrawal and Pati 2003). My observations were taken on one of its host plants, *Acacia nilotica*, commonly known as "Babhul". Heavy infestation of the same species is record in winter from November to January in Chhattisgarh region (Agrawal et al. 1997). Another diagnostic feature of bagworms is the 'sexual dimorphism' found within the genera of the family. In several genera females are often larviform. They are just like an egg-sac which lack functional appendages like eyes, mouth parts, wings and legs. Males are winged but do not possess proboscis, hence they can't feed. When females are winged, their abdomens are generally longer than the wings. Males of the respective species bear filiform i.e.

threadlike antennae with colorful patterns on their wings. On the other side, when females are wingless, males have strong bipectinate antennae and lack color patterns on wings (Resh and Cardé 2003). Females spend their entire life imprisoned inside the case hence are rarely seen. In some genera, females come out of the case for mating. While still in their cases, female produce pheromones which males can locate. Male mates with her by inserting the extensible abdomen inside the case, and dies soon after mating. Females also lay the eggs inside the case and dies. Passing the genes to the next generation appears to be the ultimate goal of their life.

Bagworms are distributed worldwide and their larvae are considered as pests of many plants like tea, coffee, citrus plants, fruit trees, vegetables and conifers (Scoble 1992). In India, it infests plants like *Peltophorum pterocarpum* (Copperpod), *Tectona grandis* (Teak), *Terminalia* sp., *Ziziphus* sp. (Ber) etc. In Kerala, it is known as a serious pest of *Acacia* sp. Study of natural history of these widely distributed moths is important for their pest management but it is still incomplete due to their hiding behaviour and difficulty in rearing in laboratories. A systematic study of this least studied groups in India will be helpful to reveal their interesting behavior.

**References :**

Agrawal A., Pati A. K., and Karkun D., 1997, Seasonal variation in infestation characteristics of bagworm (Lepidoptera: Psychidae) in avenue plantation of *Acacia* and *Peltophorum* in the Chhattisgarh region, *Current Science*, Vol. 72, No. 3  
Agrawal A. and Pati A. K., 2003, Larval case renovation- a unique behaviour in bagworm moth, *Eumeta crameri* Westwood, *Current Science*, Vol. 85, No. 12  
Resh V. H., and Cardé R. T., 2003, *Encyclopedia of Insects*, American Press.  
Scoble M. J., 1992, *The Lepidoptera- Form, Function and Diversity*, Oxford University Press.

\* The author works with Prof. H.V. Ghate, Head, Department of Zoology, Modern College, Pune, 411 005.

Global News

- Amnon Hahn, Dr. Yossi Leshem and Dan Alon \*

**"THE CEREMONY TO WELCOME THE SWIFTS ON THEIR RETURN TO NEST IN THE WESTERN WALL".**

The function was held in the presence of the Mayor of Jerusalem, Mr. Nir Barkat on Monday, 12 March 2012. They have said, "We are pleased to invite you to welcome with us the swifts on their return to nest in the Western Wall.

The Common Swift is a unique bird that spends most of its life on the wing and ever since humans have started building cities, it has found our buildings perfect for nesting sites including ancient holy sites and has become dependent on us. The Western Wall in Jerusalem serves as one of the oldest Common Swift nesting sites in the world".

Several nature lovers joined us on this unique and special day, which also symbolizes the arrival of spring.

\* Dr. Yossi Leshem is George S. Wise Faculty of Life Sciences, Department of Zoology, Tel Aviv University.

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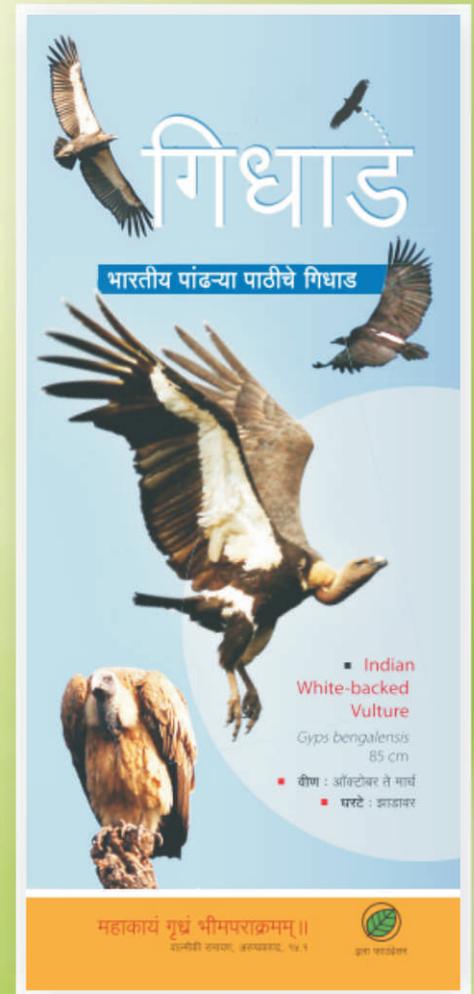
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## Ela in Conservation

Two workshops were conducted jointly by the Forest Department, Pune Division, Maharashtra and Ela Foundation at the forest offices at Peth Awasari and Bhore, early this year. More than 300 foresters including Van-Pals or Forest Guards, Range Forest Officers and District Forest Officers attended the interactive audio-visual power point lectures by Dr. Satish Pande on vulture identification and need for their conservation. Causes for their decline and strategies for their monitoring were explained.

Deputy Conservator and Chief Conservator of Forests (Territorial) Mr. Nitin Kakodkar and CCF (WL) Mr. M. K. Rao also addressed the forest staff. A pictorial brochure illustrating the six species of vultures in Maharashtra state was published jointly by Ela Foundation and Forest Department, Maharashtra State and this was distributed to all the foresters. Subsequently the brochure was well appreciated and a revised version was published for wider distribution in the entire state.



## A Brush with Raptor

Indian Eagle Owl *Bubo bengalensis*  
- Dilip Navalkar \*



Drawing is based on a photograph by Nirranjan Sant

## Naturally with Nature

- Pralhad Jadhav, Daund \*

Daund is located on the Deccan Plateau in the eastern Pune district and has an arid landscape dotted with babul and neem trees with agricultural cropland around the Bhima River. Though an important railway junction passengers barely take note of this dusty town. Although it is not a popular destination of nature enthusiasts from the neighboring metropolis of Pune, this town has its quota of rich biodiversity. A dedicated and interesting young man, Mr. Pralhad Jadhav, has crusaded for wildlife around Daund for many years.

Few years ago he noticed that old ficus and tamarind trees in the vicinity of the Daund railway station harboring nesting colony of Little Cormorants and Night Herons were being chopped down. Pralhad and another nature enthusiast working with the Indian Railways, the late Mr. Avadhani, protested and intervened. The well connected contractor told him to back off and advised that he was better off with his chalk. Pralhad approached local people but was frustrated

with their apathy, but got some support from the local



Pralhad Jadhav

medical association and lawyers association. He tried to contact the state minister for forests but couldn't get an appointment. He eventually submitted a petition to the minister and procured preventive orders. Tree cutting was halted and the abode of hundreds of traditionally nesting birds was saved for ever. Pralhad's efforts were widely appreciated and he received encouragement from many quarters including the media.

Pralhad conducts private tuition classes. He was attracted to nature since childhood when he combed the landscape around Daund on bicycle, soaking himself in the beauty of the semi-arid country. In the early 1990's cable TV reached Daund and wildlife documentaries inspired him. He started identifying plants, birds and looked at ecology. According to Pralhad, poaching, road kills and polluted water from the local MIDC (industrial zone) are the key conservation threats to the region. He interacts with people from diverse backgrounds and conducts nature education campaigns for school children and common people. He has succeeded in dissuaded some poachers by making them aware of the law and its consequences. He has treated injured wild birds, mammals and snakes with the help of forest officials. His zeal has inspired several people to care for environment and a few contractors seek his advice before undertaking projects.

He received recognition during the 'Vasundhara Festival'. Pralhad is now trying to address the issue of river pollution. He was alarmed about the polluted river during the immersion of his mother's ashes. With local participation he undertakes regular cleanliness drives at the historical Pedgaon fort, removes trash from the areas around the city and plants local trees in the region. He says, 'if we clean for a day, we enjoy the clean place for a month'. He has seen that at least some people join the efforts. This tireless optimist environmental warrior is fighting in the little corner of our vast country to keep the environment clean and the floral and faunal life safe.



Pralhad Jadhav



## Collaboration in Conservation : Training

**Shapoorji Pallonji & Co Ltd. partners with Ela Foundation for Bird Homes.**

Ela Foundation conducted hands-on training workshop on 'Make My Nest Box' as a part of the 8th 'Certificate Course in Basic Ornithology'. To quote Vibhav Chitrav, ornithology course participant and DGM (Commercial), Pune, of 'Shapoorji Pallonji & Co Ltd', "I was inspired after listening to the talk by Dr. Satish Pande on 'Birds as Architects' and thought that 'Team Shapoorji Pallonji - Pune' should do something to address the problem of the skillful birds who are sadly at our mercy".

The initiative quickly materialized into reality when Ela Foundation supported the idea and provided the nest box designs and ecological inputs while logistic support was extended by 'Shapoorji Pallonji & Co Ltd.' in the form of planks made from termite and water resistant scrap wood. Support of expert carpenters was available during the workshop. This has caused knowledge and technical empowerment of over 100 participants. Vibhav mentioned that "this is an important and promising collaboration

that will continue in the future and can have wider conservation applications".

Ela Foundation believes that tree felling is presently rampant in the face of rapid developmental activities. Hole-nesting birds in particular, face increasing difficulties in finding suitable nest sites, and their very existence is threatened. It is seen that birds such as Common and Jungle Mynas, Brahminy Starlings, Rose-ringed Parakeets, House Sparrows, Indian Robins, Magpie Robins, Grey Tits, Spotted Owlets and Grey Hornbills along with honey bees, squirrels and field mice occupy nest boxes even in urban areas.

Satish Pande, Director, Ela Foundation thinks that "It is time that we become sensitive to the problems of our co-inhabitants on Mother Earth. Nest boxes help conservation of Nature and safeguard the existence of our rich avian diversity. If sensitive and top notch companies like 'Shapoorji Pallonji & Co Ltd.' support this noble initiative, and make homes not only for humans but also for birds, I am sure that others will follow suit, which may alter the mindset of people and improve the grim

scenario". Pande added, "Nest boxes are not the final solution but are a stop gap arrangement till the fallen and logged trees are replaced through large scale simultaneous tree plantation drives on private lands kept aside for conservation. I believe that bird songs are an integral and enriching aspect of our lives that we need to preserve for our future generations, if not for their own sake".



Satish Pande

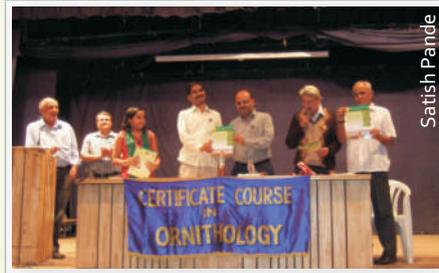


## Ela Events

### Events

Ela Foundation released the first issue of the official quarterly newsletter on 17<sup>th</sup> February 2012 at the auditorium of MES Garware College Pune. The occasion was the valedictory function of the 9<sup>th</sup> Certificate Course in Basic Ornithology. The function was well attended and several course participants shared their views on conservation with the audience.

From left to right Dr. Satish Pande, Dr. Anand Padhye, Ms. Rudra Manavi (the first newsletter was given to our young member), Dr. P. B. Buchade, chief guest Mr. Nitin Kakodkar, CCF (T), Pune division, Prof. Hemant Ghate, and Dr. D. B. Bastawade.



### Talks

Dr. Satish Pande, Director, Ela Foundation was invited to conduct an interactive session at the University of Pune on 'Ornithological Observation' on 22<sup>nd</sup> February, 2012, for the students that have cleared the 'National Talent Search Examination'. The session was chaired by Prof. Rajurkar, Head, Department of Environmental Sciences, UOP. The students asked several questions and the session was successful in sensitizing the young talents towards nature conservation issues.

The ongoing session in University of Pune for students that have cleared the NTSE.

## Communication

### Forest Department - Maharashtra

Following the repeated sightings of Griffon Vultures soaring in the skies over Gadchiroli, five vulture restaurants were started at Nimgaon, Muakhbodi and Madetukum in Gadchiroli division and at Gollagudem and Patagudem of Sironcha division. Smt. Sri Laxmi, DCF Sironcha and Mr. Rundan Katkar, Round Officer did remarkable work in establishing these facilities. Mr. Mallikarjun, DCF Gadchiroli and his staff particularly Mr. Chowdhury, Forest Guard, rescued a vulture in Nimgaon and released it after cure. Mr Rundan Katkar, Round Officer Pathagudam, also rescued two vultures in Sironcha division and released them after cure. This work was done under the guidance of Mr. T.S.K. Reddy, CCF(T), Gadchiroli, Maharashtra. (Source: Mr. M. K. Rao, CCF(WL), Pune Division).

All Photos Forest Department, Gadchiroli



## Rescue Report

### Black - Shouldered Kite

- Amit Pawashe \*

On 12th February 2012 at 01: 00 pm two people saw a Black Shouldered Kite *Elanus caeruleus* along the road side in Saswad, district Pune, Maharashtra. It was fluttering helplessly on the ground and trying to save itself from the annoying crows. They brought this kite to me. My observations revealed that it wasn't capable of perching, had ruffled feathers, the beak was kept open, mouth was dry, and it was breathing rapidly. On palpation there was no fat on the keel and its weight was less than expected. The kite did not resist handling. Fortunately there was no evidence of a fracture and no flight feathers were missing. The droppings were scanty, white and liquid. It was dehydrated and starved. I administered the following treatment. Day One: To reduce the stress, the kite was kept in isolation for three hours, by keeping the cage covered by cloth. Oral rehydration solution (one table spoon of electral powder dissolved in 100 ml of water) – 2 ml – was given three times at interval of 15 minutes. When piece of meat was offered it was not accepted readily.

Therefore about 50 grams of raw chopped chicken meat was force fed in two sessions, before retiring for night. The food was not regurgitated. Day Two: The kite appeared fresh, white droppings were splashed in the cage, indicating that food was digested. Food was accepted willingly. 150 gm of food was taken by the kite in the entire day in multiple feeding sessions. Day Three: Same feeding pattern was continued. In the evening the kite was released in a closed room with fan switched off. It hopped for short distances and was aggressive. Day Four: Kite became restless, attempted to escape from the cage. When allowed to fly it couldn't fly over a longer distance. It was kept in a hall for six hours. It flew 20 feet in one flight. It perched on higher levels on curtains, ceiling fan, etc. Same feeding was repeated. Day five: The kite was quite restless and was attempting to escape from the cage. Keeping in cage could have damaged its flight feathers. Kite avoided food.

We decided to take a trial for flight in the open scrubland near agricultural cropland. At about 9 am we released the kite. It took a long confident flight, perched atop an *Acacia* tree about 500 meters from us, rested for a few minutes and again took the flight to freedom to disappear in the scrubland.



\* Amit Pawashe is MSc in Environmental Sciences and is working for nature conservation in Saswad, Pune.

