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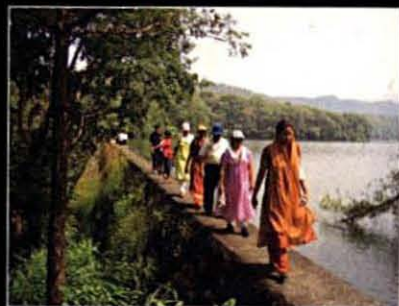
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# HORNBILL

October-December, 2005



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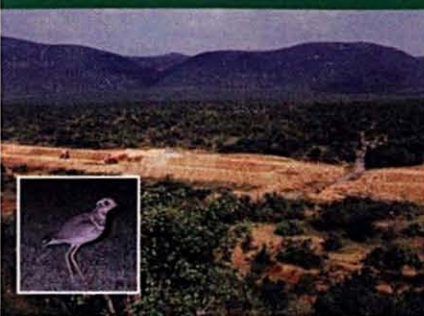
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## Change and Survive

**I think change is the only 'constant' in nature.** Nature is dynamic and this dynamism comes from its ability to change to survive in the changing environment. Species evolve all the time. Species, that are not able to change become extinct and are replaced by new and more robust taxa. We also see a lot of change during our lifetime – we leave our childhood innocence to become brash and boorish during the growing pangs of adolescence, experience the temporary euphoria of marriage, settle down for a long sedate period of parenthood and family responsibilities, and slowly reach the wisdom of age and experience, before finally becoming a part of the natural cycle. During all these periods, our behaviour, perceptions and roles change. People who do not change with age are considered childish, juvenile, mentally infantile, and misfits.

Civilisations, cultures, societies, nations and organisations change. Since its establishment in 1883, your Society has also changed many times. Starting as a hunters' and collectors' club, by its 50<sup>th</sup> birthday the Society slowly turned into a conservationist organisation. After India's Independence in 1947, the Society became an instrument for bringing conservation agenda to the forefront of a multitude of problems created by the unfortunate partition and displacement of people. In the 1950s and 1960s, BNHS was the main vocal organisation that highlighted the plight of wildlife and wild places. Many sanctuaries were established on the recommendations of the BNHS. In the early 1950s, Mr. Humayun Abdulali was instrumental in drafting the first comprehensive wildlife protection law of the country. By the mid 1970s, under the leadership of Mrs. Indira Gandhi, wildlife conservation came into the forefront and a large number of sanctuaries were created under

the Wildlife (Protection) Act of 1972. At the same time, many new wildlife conservation organisations sprouted, but the real growth of the Indian conservation movement occurred in the 1980s and 1990s. As wildlife conservation became more and more complicated, with numerous stakeholders and multi-sectoral interests (mostly inintical to wildlife) coming into the picture, new and more robust organisations took over the role historically played by BNHS. This is fine because in this increasingly complicated world, one organisation, no matter how old and big, would not be able to do everything.

The first five years of this century have shown that nature conservation would be very complicated in the 21<sup>st</sup> Century with globalisation, climate change, and increasing struggles for equitable distribution and utilisation of decreasing natural resources. According to some demographers, India's population would stabilise only by 2040 when it has reached between 1.4 and 1.5 billion. Can we imagine the collective impact of 1.5 billion people on the natural resources, which even at present are under tremendous pressure? Conservation has to expand beyond the scientific realm to include political, social, economic, cultural and global factors and obligations. Keeping conservation isolated from these factors is condemning it to irrelevance.

Nature does not like a vacuum: there are always species to fill any vacant ecological niche. Similarly, in the increasingly complicated conservation movement of India, new organisations have filled niches. The BNHS has always supported other conservation organisations and people. At the same time, we also feel that it is time for us to change to remain relevant. One of the most visible changes is in our logo – the brand name, the identity, the symbol by which one is known.



Recently, the Executive Committee (EC) of the BNHS decided to change the logo from the simple *BNHS* to *BNHS-India*, with the byline 'Conserving nature since 1883'. This is not only a factual statement: it gives perspective to our role. However, organisations do not change by changing only their logo. They have to find and define their changed role. There are numerous examples of organisations re-writing their roles and activities and becoming modern and relevant. For example, the International Council of Bird Protection (ICBP) metamorphosed in 1994 to BirdLife International. From a small UK-based organisation, BirdLife has now become a global player, with partners in 106 countries (including BNHS-India). Similarly, the World Wildlife Fund became World Wide Fund for Nature, but it kept the popular acronym WWF (do not confuse it with World Wrestling Federation!). Another example is the New York Zoological Society. From a New York based organisation, mainly looking after the Bronx Zoo and venturing occasionally outside USA, it changed itself in 1993 into Wildlife Conservation Society (WCS) with a mandate to work all over the world. The WCS is

now one of the strongest conservation organisations in the world, working in more than 50 countries. Similarly, the East African Natural History Society, established almost at the same time as BNHS, is now known as Nature Kenya. From a club of expatriates and amateur wildlife buffs, Nature Kenya is now a robust, grass-root, country-wide organisation managed by Kenyans. Even Indian Airlines now goes by the name 'Indian' (I hope this is not only a token name change, but would also result in improvements in their service and timely flights).

From 2006 onwards, we will be using the new logo on all our publications, letterheads, visiting cards and so on. Please note that the EC has agreed to change the logo only, your Society's name remains the same, i.e. Bombay Natural History Society. Perhaps some day this would also change. As I said in the beginning, change is the only 'constant' in nature. BNHS is a nature conservation organisation so it has to follow the natural laws of evolution to remain relevant.

Asad R. Rahmani

### Old Logo



### New Logo



BOMBAY NATURAL HISTORY SOCIETY, HEAD QUARTERS, MUMBAI





# The Canal and the Courser

Text & photographs: P. Jeganathan

An endangered bird, a much-needed canal, and a few suggestions.

After witnessing the gradual destruction of a Wildlife Sanctuary that is home to the endangered Jerdon's Courser, a BNHS Senior Research Fellow explains why and how, plans for the Telugu-Ganga Canal need to be redrawn.

A walk in the forest at night, at strange hours, is not unusual for me, but for those who fear the dark, it may be. People ask me why I do not fear the dark forest and the animals in it. I tell them that there is nothing to fear. But the forest is no longer safe, even its denizens are threatened. Big, heavy, strong and enormously powerful machines that even I fear, roam in the forest these days. Not only do I hate them, they scare me. Do you know what I am talking about? Bulldozers and excavators. Whenever I see these machines inside the scrub jungle, it is depressing, because they desecrate and destroy the home of the critically endangered Jerdon's Courser (*Rhinoptilus bitorquatus*).

I have been witnessing the negative impact of these machines ever since I started studying this bird. The sad thing about studying a rare species is that it is difficult to spot it, you can hear it, though not very often, and to find its footprint you need to work really hard. But you can see its habitat - the scrub jungle. The Jerdon's Courser prefers to live only in the scrub jungle. But day after day this land is being destroyed and reduced, mainly to provide for agriculture, especially for lemon farming, to the people who have been displaced by floods.

Despite these pressures, the Jerdon's Courser still survives in a few places in and around the Sri Lankamaleswara Wildlife Sanctuary (SLWLS), in Andhra Pradesh. Initially, it was known only from near Reddipalli village where it was rediscovered. After the Bombay Natural History Society (BNHS) started studying its distribution, we detected its presence in three new places with the help of clues like its footprints, calls and even sightings. But, all these places are in and around the eastern part of the Sanctuary, within 14 km from the original rediscovery site.

Recently, the BNHS obtained permission from the Ministry of Environment and Forests to catch the Jerdon's Courser for radio-tagging, the main objective of our Project. The permission came after four years of persistent follow-up. I reached SLWS in the first week of October 2005, very happy and excited, waiting to start with fieldwork, but these feelings didn't last very long.



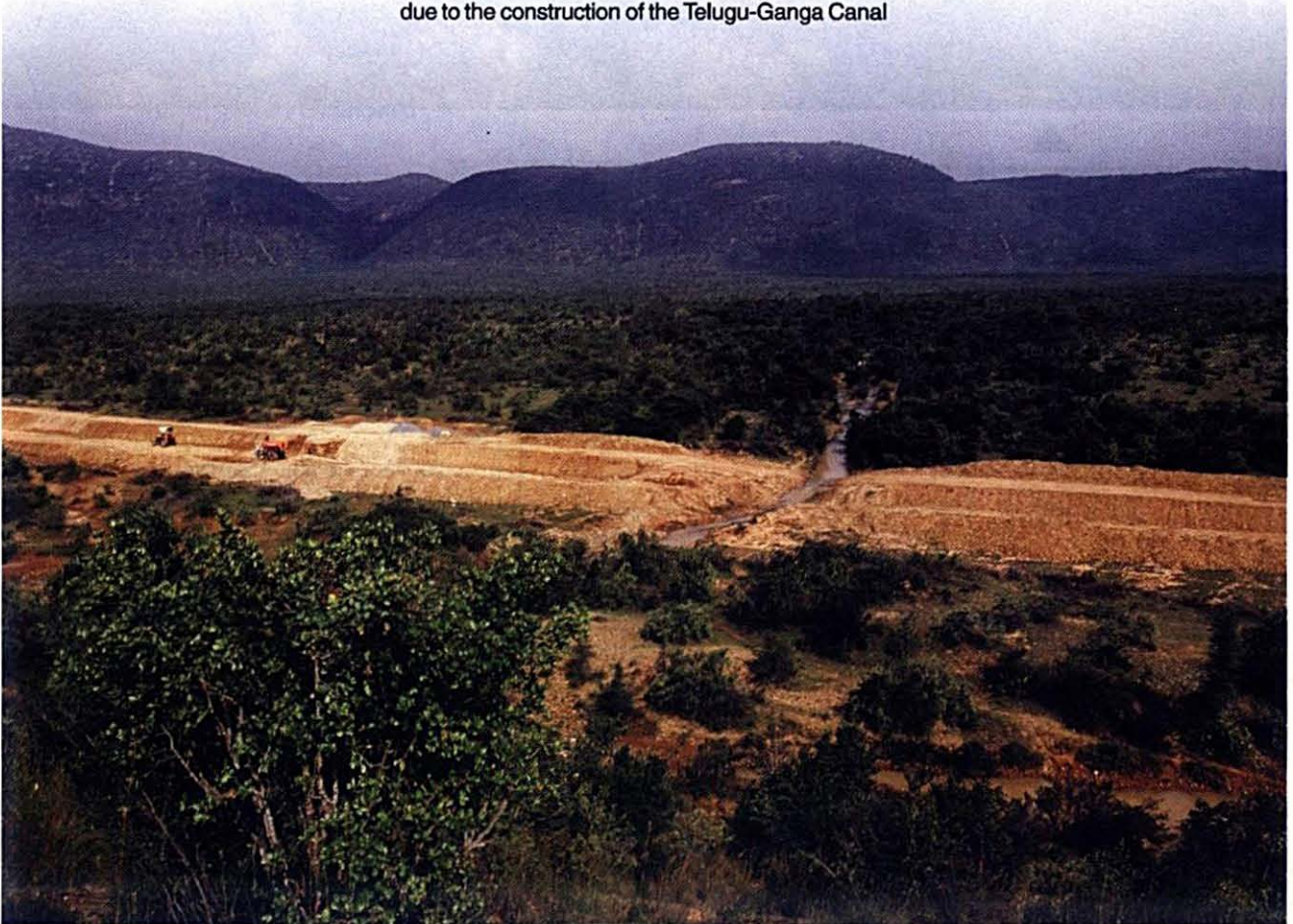
During the third week of October on the way back from our study site, Dr. Rhys Green, from the University of Cambridge, and I saw some heavy vehicles at work in the eastern part of the Sanctuary. My excitement was replaced by depression. We visited the site and found excavation for the Telugu-Ganga Canal had begun. We informed our Director, Dr. Asad R. Rahmani, who immediately notified the Andhra Pradesh Forest Department headquarters in Hyderabad. Prompt action was taken by the Cuddapah Divisional Forest Officer (DFO) B. Sundar. Work on the Canal was stopped and the people involved in the operation were arrested. But a considerable amount of damage had been done by then.

This part of the Telugu-Ganga Canal originates in Sri Potuluri Veera Brahmendra-

swamy reservoir, which is about 25 km north of the Sanctuary. Actually, there are two canals flowing down south that go towards the submergible area of Somasilla Dam. The canal which comes along the eastern side of the SLWLS is referred to as 'Right Canal' and the other canal that runs along the western boundary of the Sri Peninsula Narasimha Wildlife Sanctuary (SPNWLS) is referred to as 'Left Canal'. Both these Sanctuaries were declared mainly for the Jerdon's Courser. Sagileru river runs in between these two Sanctuaries.

In 1986 too, when the Jerdon's Courser was rediscovered, the site was under threat because the construction of the Telugu-Ganga Canal was proposed across it. Officials from the Forest Department and the State Government of Andhra Pradesh recognised the ornithological importance of

**The scrub jungle which is the home for the critically endangered Jerdon's Courser is under serious threat due to the construction of the Telugu-Ganga Canal**





# The Canal and the Courser



▲  
The Telugu-Ganga Canal has already destroyed considerable amount of potentially suitable scrub jungle habitat in and around two protected areas, which were declared for the critically endangered Jerdon's Courser

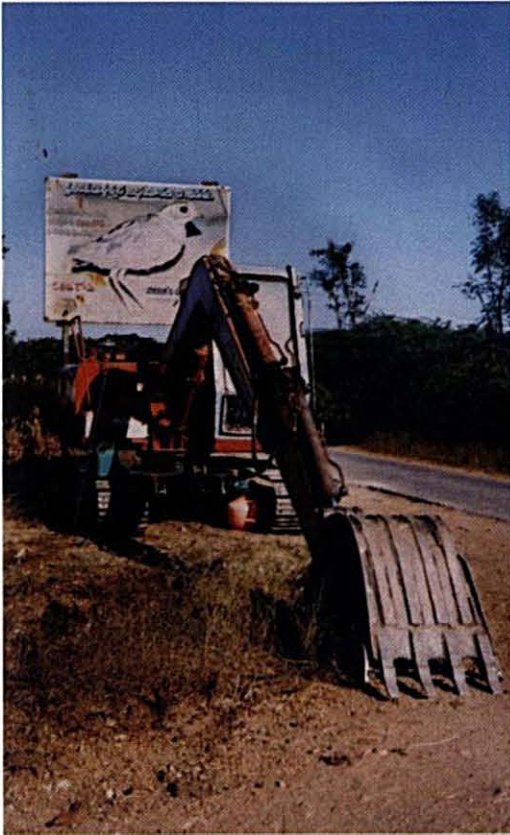
the site and declared it as the Sri Lankamaleswara Wildlife Sanctuary for the Jerdon's Courser and the proposed course of the Canal was adjusted so as to avoid the Sanctuary. The main reason for constructing these canals is to irrigate the fields in the Sagileru River Valley. All for a good cause I agree, but at what cost?

A recent study carried out in and around the SLWLS, shows that the Jerdon's Courser has a strong preference for a particular density of scrub jungle habitat. Nearly 114 ha has been cleared for the construction of the Right Canal around the eastern part of the SLWLS. This resulted in the disappearance of about 22 ha of potentially suitable habitat for the Jerdon's Courser. The total length of the Right Canal, including the area of the forest cleared for further construction in the eastern part of the

Sanctuary, is about 13 km. When the canal reaches the 10.4 km mark it enters the Yerraballi Forest Block, which belongs to the Andhra Pradesh Forest Department. And when it reaches the 11 km mark it passes through the place where I recorded the footprints of the Jerdon's Courser in 2001.

To record the Courser's footprints I deploy soil strips, then monitor and record tracks to know if the Jerdon's Courser is there. On some occasions the rain destroys all the soil strips, while sometimes livestock grazing in the area foul up the soil strips as well. Whenever I see any shepherds close to the soil strips, I urge them to not bring their livestock to that site and to change their route. But they never listen. I have always disliked them for this reason. But now I realise that they are at least much better than bulldozers and excavators.



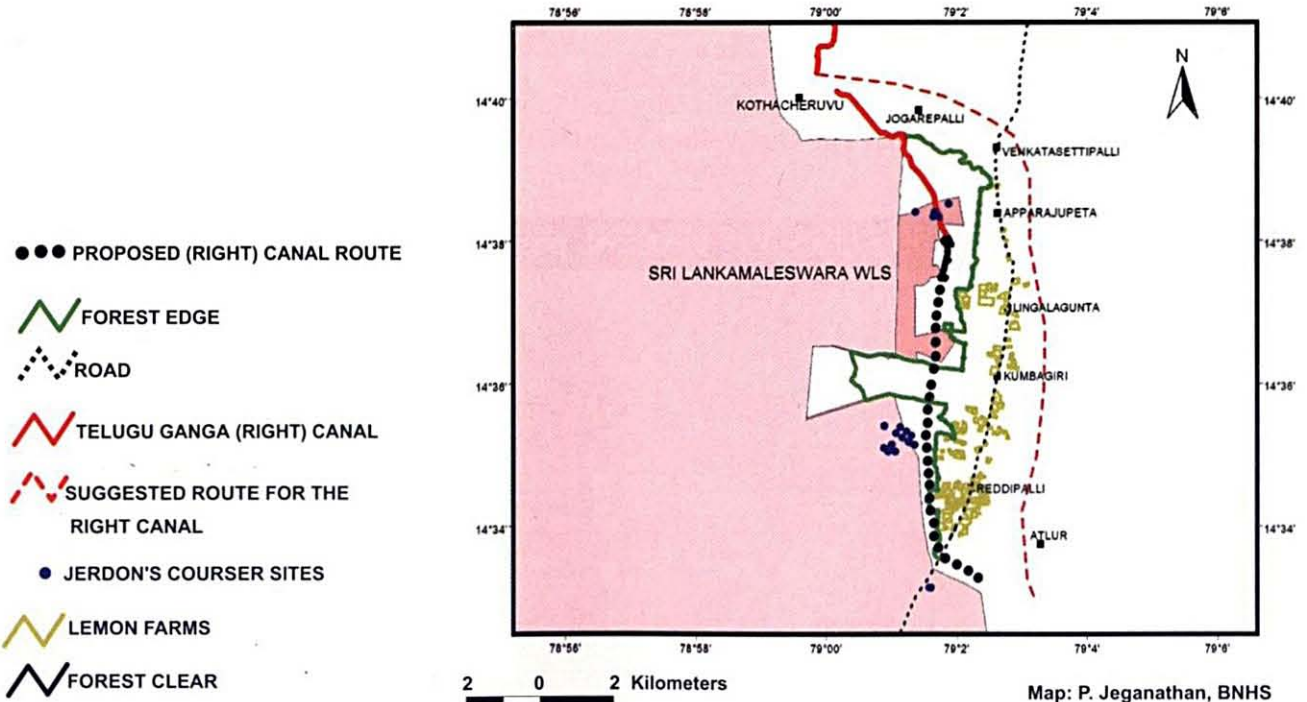


The Jerdon's Courser possesses the highest category of threat for a wild population defined by IUCN — Critically Endangered

“The shocking thing about this Canal construction is that the Telugu-Ganga Canal authorities have not obtained permission for working in the forest from the Andhra Pradesh Forest Department.”

In the very place where I recorded the presence of the Jerdon's Courser there is now a big canal. There is a road. There is a clearance in the forest. And the forest floor is full of the tracks of bulldozers and cattle. The Jerdon's Courser may never come here again. ☹

If water flows in that Canal it will be a lifeline for many. But, for the Jerdon's Courser it will mean death. For me, it will be a wound that will never heal. The beautiful scrub jungle where Jerdon's Coursers love to live now looks like a graveyard, and the Canal the gravestone. I never even imagined that I would see this place in this state and I do not want to go there very often. The destruction has been imprinted in my mind and will never go away.



The Canal route near the Sri Lankamaleswara Wildlife Sanctuary as proposed by the Andhra Pradesh Irrigation Department (black dotted line) and the suggested alternative route (red dashes) by the BNHS



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You may wonder why I am so concerned about this place. That's because this place is close to my heart, because I got the footprint, recorded the call and saw the Jerdon's Courser here after a lot of hard work. And this is the first of three places where I recorded this bird, apart from the known Jerdon's Courser area.

The shocking thing about this Canal construction is that the Telugu-Ganga Canal authorities have not obtained permission for working in the forest from the Andhra Pradesh Forest Department. They have not even informed them. The construction has been stopped temporarily, thanks to the brave efforts of B. Sundar.

I must admit mapping habitat disturbances is a painful task. One day when I was mapping the Canal route with the Global Positioning System I was shell-shocked. Not only was the habitat disturbed but so was I (and you would be too); for I had come across a stone mark that said "TGP - 40 km".

It means if the Canal continued, it would reach the 40 km mark at that site starting

“We are not against this Canal, but at the moment the Right Canal is not in the right direction. The BNHS has suggested that the Right Canal be realigned and go to the eastern side of the Badvel-Siddavattam Road. This would avoid destroying the scrub jungle and will also irrigate the area where there are many fields.”

from the origin. The stone mark is fixed less than 500 m away from the place where the Jerdon's Courser has been sighted regularly ever since it was rediscovered in 1986!

From this place we have seen the Jerdon's Courser on several occasions. We have confirmed its footprint, identified and recorded its call and have got footprints of a young Jerdon's Courser as well. We are trying to trap them for radio-telemetry studies. The place has doubled as a laboratory for our scientific studies for the last five years and is the only place in the world, at the moment, where the Jerdon's Courser is known to be regularly present.

Nearly 22 ha of the suitable habitat of the Jerdon's Courser was cleared near the Sri Lankamaleswara Wildlife Sanctuary for the Telugu-Ganga Canal construction





# The Canal and the Courser



Roads along the Telugu-Ganga Canal would pave way for more illicit woodcutting in and around the Sanctuary area and also facilitate the woodcutters to commute easily

We are not against this Canal, but at the moment the Right Canal is not in the right direction. Precious scrub jungle habitat extends over the eastern part of the SLWLS as well as outside the Sanctuary. There is a road from Badvel between the forested area and the Sagileru river. There are villages and settlements by the roadside. Most of the villagers have their fields on the eastern side of this road. So, the Bombay Natural History Society has suggested that the Right Canal be realigned and go to the eastern side of the Badvel-Siddavattam Road. This would avoid destroying the scrub jungle and will also irrigate the area where there are many fields.

If you happen to visit Cuddapah you will be astonished by the number

of signboards depicting the Jerdon's Courser. In fact, there are more signboards than known Jerdon's Courser sites at the moment! If our suggestion is not accepted, then the Jerdon's Courser will be seen only on these signboards in Cuddapah.

## Action taken

A group of experts from the Bombay Natural History Society, WWF-India and Birdwatchers' Society of Andhra Pradesh are working together along with the Andhra Pradesh Forest Department to lobby the Government of Andhra Pradesh to realign the Telugu-Ganga Canal around the Sri Lankamaleswara Wildlife Sanctuary. A detailed report has been prepared by the



BNHS' Jerdon's Courser Project team on the impact of the Canal on the Jerdon's Courser's habitat and has been submitted to Government of Andhra Pradesh. This report can be downloaded from our website [www.bnhs.org](http://www.bnhs.org). 🌳🌳

P. Jeganathan, Senior Research Fellow, BNHS, has been working on the Jerdon's Courser for the last four and a half years in Sri Lankamaleswara Wildlife Sanctuary, Cuddapah, Andhra Pradesh.



We request members of the BNHS to extend their support by voicing their concerns to:

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Like in all barbets, the Coppersmith Barbet's toes are zygodactylic (two toes pointing forwards, and two pointing backwards)

# Birding sans binoculars

Text: Ranjit Manakadan

**D**uring the 1980s, while on a survey of the Great Indian Bustard *Ardeotis nigriceps* in Rajasthan, I took a post-dinner stroll in a small town where we had halted for the night. Passing by the railway station, I was astonished to see columns and columns of House Sparrows *Passer domesticus* roosting in the hedges near the station. One could have easily put one's hand into the hedge and picked out a few birds for the pot for making *chittukuruvi lehyam* (essence of House Sparrows) professed to be a panacea for all ills, especially the libidinous, in Tamil Nadu! I have witnessed 'tameness' in birds (and other wildlife) in sanctuaries, but this was in the heart of a city! The sight was quite unbelievable for someone from southern India where

people do not permit wildlife to be so confiding. Birds were looked upon as food by the poor, or harassed or killed out of curiosity or perversity, which goes for fun.

Two decades later, I was in Ahmedabad for a training programme in database management at the Centre for Environment Education (CEE). Gujarat, like Rajasthan, has a tradition of protecting animals. During the first morning of my stay in the campus of Gujarat University, I came across an iridescent male Purple Sunbird *Nectarinia asiatica* and his female cohort probing into flowers of a milkweed shrub *Calotropis gigantea*. The male did not allow me to transgress a 'respectable' distance of just three feet, the female was a foot further off. What a great opportunity for photography — the birds

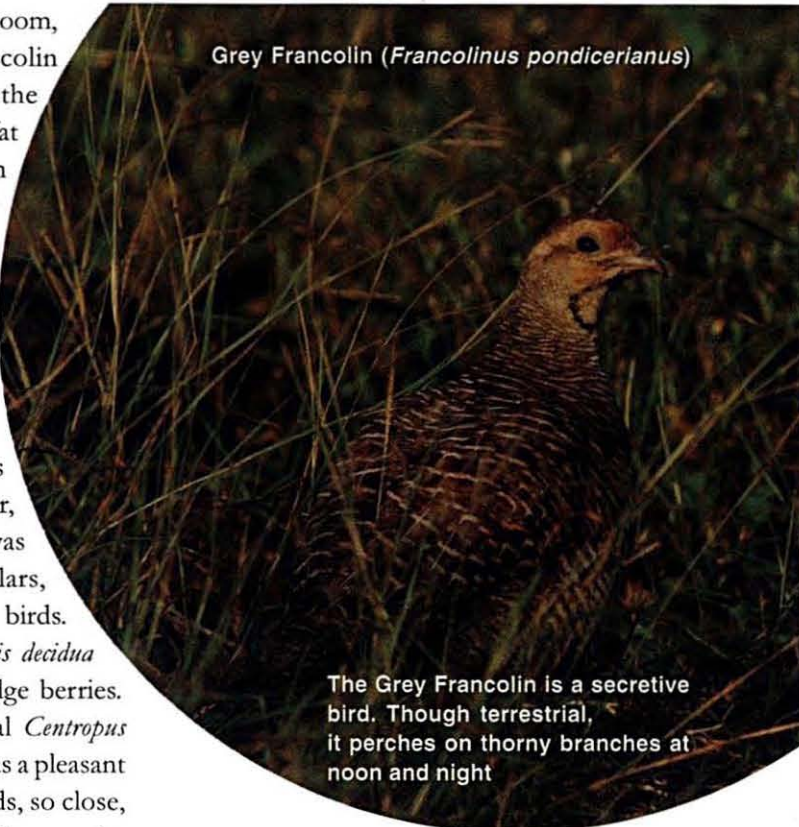


## ding sans Binoculars

were so close and yet, unafraid. Later in my room, the 'titar-titar-titar' call of the Grey Francolin *Francolinus pondicerianus* beckoned me to the window. On the ground were a flock of fat Blue Rock Pigeons *Columba livia*, a Eurasian Collared-Dove *Streptopelia decaocto*, four Common Mynas *Acridotheres tristis* and a pair of Brahminy Starlings *Sturnus pagodarum*. Looking carefully, my eyes could pick out a pair of Grey Francolins, discernible when they moved, otherwise, almost invisible against the yellow and brown of the dry grass and soil. There was another bird a little afar. Was he an intruder, trying to entice the hen from the cock, or was it the other way round? Without binoculars, I was unable to determine the sex of the birds. The pair was lunging at the short *Capparis decidua* bushes, either to flush insects or to dislodge berries. The booming calls of the Greater Coucal *Centropus sinensis* reverberated in the background. It was a pleasant experience to watch so many species of birds, so close, and that too from the window! The only other species seen in the campus during my week's 'passive bird watching' was the Rosy Starling *Sturnus roseus* flocks rummaging in garbage dumps. Interestingly, one of the canteens in the campus had a pair of Red-wattled Lapwings *Vanellus indicus* as unpaid watchdogs in their backyard! That was the impression they gave when I went there for a cup of tea, creating a ruckus at my approach, but at ease with the canteen staff who lazed around at arm's length!

The CEE is located at Thaltej Tekra, an expanse of 14.5 acres of wooded undulating land that also houses VIKSAT and the Sardar Patel Institute of Economic Research. This area is like a breath of fresh air to the polluted and drab concrete jungle surrounding it. The portion of land that belongs to CEE and VIKSAT resembles a small forest. The place was literally teeming with Indian Peafowl *Pavo cristatus*. It was quite a sight. Dazzled by the sight of so many birds, I realised what a beautiful bird the peacock actually is — as enchanting, delicate and beautiful as a traditional Indian woman. The


Grey Francolin (*Francolinus pondicerianus*)



The Grey Francolin is a secretive bird. Though terrestrial, it perches on thorny branches at noon and night

MEETHIL MOHANA

Indian Peafowl (*Pavo cristatus*)



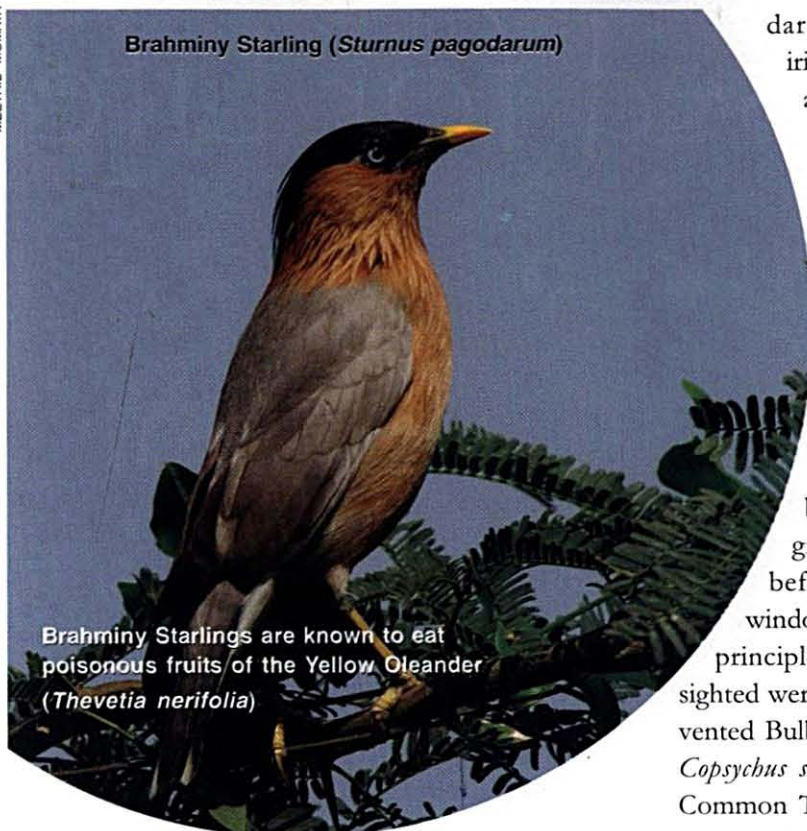
The Indian Peafowl prefers tall, leafy trees for roosting. The vegetation along rivers and ravines is its preferred habitat

ISAAC KEHIMKAR



MEETHIL MOMAYA

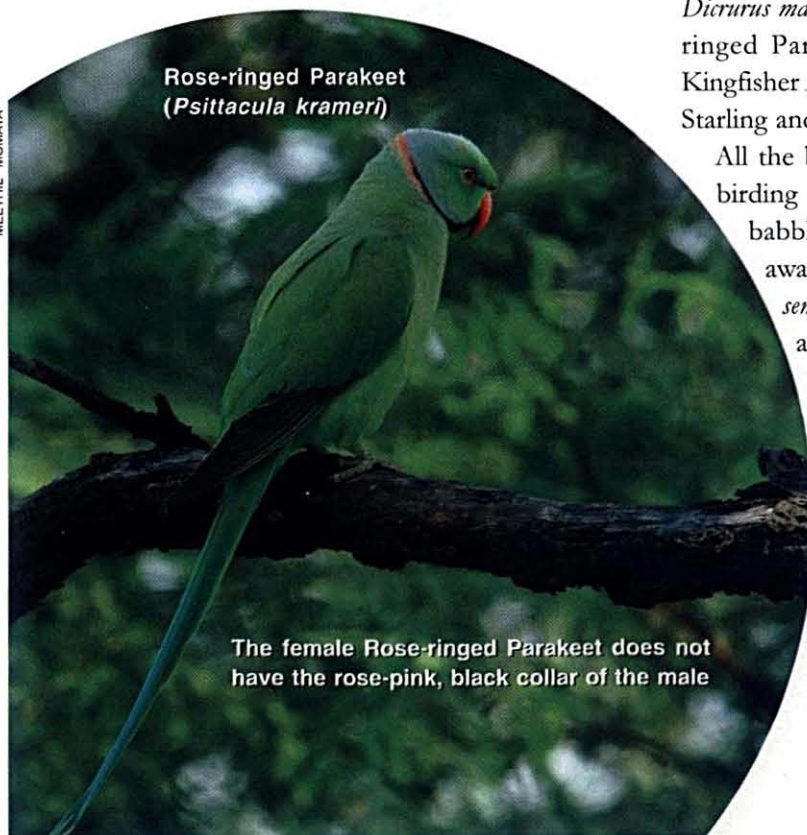
**Brahminy Starling (*Sturnus pagodarum*)**



Brahminy Starlings are known to eat poisonous fruits of the Yellow Oleander (*Thevetia nerifolia*)

MEETHIL MOMAYA

**Rose-ringed Parakeet (*Psittacula krameri*)**



The female Rose-ringed Parakeet does not have the rose-pink, black collar of the male

dark, bright and beautiful eyes, the rich, iridescent colours of the plumage like that of a silk sari, the bedecked head and graceful movements. Could the inspiration for paintings of Rajasthani women have been the Peacock? I then glanced at its 'not-so-pretty' legs, said to be its only blemish — it is said that the bird stops its courtship dance on chancing a look at its not too pretty legs. The legs did look incongruous.

My week at the CEE rewarded me with sightings of many more species of birds. Being the only birdwatcher in the group, I did my birdings early in the morning before the lectures, or from the classroom window — while the instructor tried to instil the principles of database management in us. Birds sighted were the Jungle Babbler *Turdoides striatus*, Red-vented Bulbul *Pycnonotus cafer*, Oriental Magpie-Robin *Copsychus saularis*, Asian Koel *Eudynamis scolopacea*, Common Tailorbird *Orthotomus sutorius*, Coppersmith Barbet *Megalaima haemacephala*, Indian Robin *Saxicoloides fulicata*, Marshall's Iora *Aegithina nigrolutea*, Black Drongo *Dicrurus macrocercus*, Ashy Drongo *D. leucophaeus*, Rose-ringed Parakeet *Psittacula krameri*, White-breasted Kingfisher *Halcyon smyrnensis*, Common Myna, Brahminy Starling and Purple Sunbird.

All the birds were unafraid and confiding, making birding sans binoculars quite possible. Families of babblers would hop about casually only 2-3 feet away. A pair of Little Brown Doves *Streptopelia senegalensis* nested and cooed at each other on a tree, just outside the entrance to the library. Squirrels bounded about all over the place. What a paradise for birdwatchers, and how wonderful if the whole world was like this, a place of greenery, quiet and peace, where animals roam free and without fear. 🐦

Dr. Ranjit Manakadan, Senior Scientist, BNHS. His current projects include the Asian Elephant in Koundinya Wildlife Sanctuary, plant animal interrelationships at Sriharikota, and waterbirds in Pulicat Lake.





Ants are social insects, which means they live in large colonies or groups. They exhibit highly advanced social behaviour. Ant societies can have millions of members, each rigidly programmed to behave in the best interest of its members, its colony. These colonies are female societies. In a great majority of ants, and Weaver Ants being one of them, colonies are families or groups of related families.

In the simplest case, each colony of Weaver Ants consists of the queen and her daughters – the workers. These workers are full-sisters to each other because they all have the same parents. Some colonies may consist of full-sisters and workers with different fathers, or step-sisters. In still others, a colony may contain more than one queen, resulting in a complicated family structure.

In some ants, including the genus *Oecophylla*, which includes Weaver Ants, it is common for several queens to establish a nest together and either live together

forming small satellite nests, which share workers with the main nest; or at a later time, several of these queens, together with some of the colony's workers, may start a new nest some distance away.

A colony may be dispersed over several nests, which may be placed in various locations in a tree, or even span several trees. The queen is located in one nest and her eggs are distributed to the other nests.

*She reaches the plateau atop the stump of wood. He isn't moving. He is dead. She is running around. She is overjoyed. But her joy soon turns to panic when she discovers how large he is. She couldn't possibly carry him all by herself. She has to get help. She has to call her sisters. It would take more time, but they would be as excited as she is. She hurries down; this time leaving a streak of trail-pheromone to guide her back.*

*A quick tap on the head and a brief exchange of chemical words has half a dozen co-workers hurriedly following her to the newfound treasure. As they follow the trail-pheromone they strengthen it by adding to it.*





# Colonised for Life

Text & photographs: Meethil Momaya

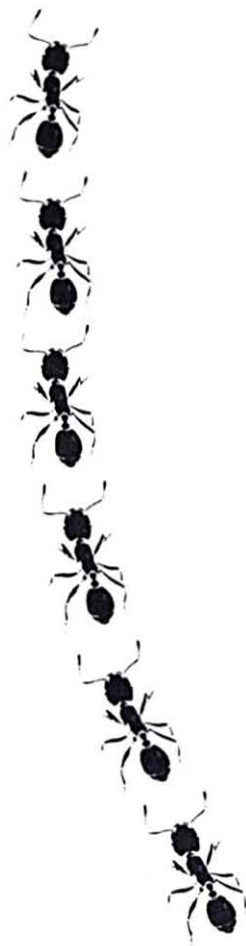


**S**he has been observing him for some time now. There is no movement. No sign of life. She had seen him often. He would be hovering restlessly around the stump taking a brief halt at the pinnacle each time he came around. She had thought him to be a fidgeting restless creature – but today he was different.

From her place down here it would take her the better part of seven minutes to reach him on top of the 0.5 m tree stump. It would be sunset soon – should she make the trip alone? What if it got dark? How would she find her way back? What if she got lost...? She pondered. But the sight of a dead dragonfly was too tempting to consider the consequences of 'what if....'. The Weaver Ant (*Oecophylla smaragdina*) pressed on for her colony, she had to. Her colony was her life, rather, her life was her colony.



## Colonised for Life



Ants use touch, particularly their antennae, to communicate. They also use a variety of sophisticated forms of communication to ensure that all of the work needed to sustain colony life is carried out.

Without voice or ears, an ant sends messages through body language and pheromones. Ants are in fact little chemical factories, continuously producing an array of substances called pheromones that are the ant's language. Through these pheromones the ants can convey messages ranging from describing the location of food to notifying others of the presence of danger. The long lines of ants seen streaming from and to a nest are following these signals. They use pheromones to orchestrate social behaviour as diverse as tending the young, grooming the queen, laying trails and marking their territory.

Ants are highly territorial. They mark the trees on which they nest with their

pheromone and will ferociously guard their territory against intruders. Ants from another colony are identified by their pheromone and are kept from entering the inhabitant's territory and nests.

*When the six or so worker ants see the dragonfly they immediately get to work around him. Surrounding him, they grab hold of any body part within reach – head, foot, wings, tail... and start to pull in all directions. Each wanting to take him away from the others; it begins to look like a mini tug-of-war. They change places and try to pull at different parts of the insect. It's amusing. But it's not play. It's the way they kill their prey. By stretching it to death!*

Weaver Ants can never get their hands on a live dragonfly, maybe only if it is very wounded. This one is stone dead, had it been wounded they would require a lot more time and ant power to stretch him to death. They do this out of habit. Even a dead creature is bitten, injected with formic acid and stretched to ensure it is







A Weaver Ant carrying a larva. Weaver Ants' nests are made from leaves bound by larval silk

dead before it is carried away to their nest in a tree.

A variety of reptiles and amphibians (particularly toads and lizards), spiders and other insects such as beetles feed on ants. Winged male and female ants flying in search of their mating partners are often consumed by birds and bats. Among mammals, the pangolin or scaly anteater primarily feeds on ants and termites which it licks out of ant hills and termite mounds with the help of its long sticky tongue. The Sloth Bear also excavates ant and termite nests to feed on them. The woodpecker is the number one predator of the Weaver Ant.

Weaver Ants are arboreal. They make their nest by rolling and folding living tree leaves and interweaving the gaps with the silk from the larva. Hence, they are called Weaver Ants. Adults are not capable of producing silk.

The ants form a chain along the edge of the leaf and pull the edges together by shortening the chain one ant at a time. Once the leaf edges are in place, an ant holds a larva in its mandibles and gently squeezes

the larva to produce silk. The silk is used to glue the leaf edges together.

In a similar fashion, Weaver Ants also make protective sheds for honeydew producing insects. They tend sap-sucking bugs like aphids and scale insects on plants and in return milk them for honeydew.

There are three types of ants in each species, the queen, the sterile female workers, and the males. The male ants serve only one purpose, to mate with future queen ants and they do not live very long.

Weaver Ants tend scale insects to milk them for honeydew, a sweet liquid





A Weaver Ant takes away the face of the dragonfly (It's a hollow shell like mask of the dragonfly's head). When a prey is too large to carry away whole, it is broken into bits and taken to the nest



Numerous factors determine when queens are produced, including the time of year, the food available to the growing larvae, the size and contents of the egg laid, pheromones produced by the queen and the age of the queen.

The production of males has a simple controlling mechanism. As it turns out, females (queens and workers) are diploid. That is, they have two copies of each chromosome. Males, on the other hand, are haploid and have only a single copy of each chromosome. Because of this, fertilised eggs form females while

unfertilised eggs develop into males. A queen can choose when to fertilise the egg. This gives the colony a high degree of control over when queens and males are produced, as well as the relative numbers of each.

The worker ants manage all the tasks of the colony except laying eggs. Young workers typically take care of the larvae and pupae. Middle-aged workers take care of the nest, repairing breaks, making new nests, transporting food, or carrying discarded materials from the nest. Only the oldest workers leave the nest to search for food.



Ants carry away a feather to their nest. Teamwork helps accomplish tricky manoeuvres easily




The queen grows to adulthood, mates, and then spends the rest of her life laying eggs. She emits a large number of pheromones, which serve various purposes in the colony. For example, some of a queen's pheromones attract workers to groom and feed her. It is these pheromones that make all the workers behave in the way they do. An ant that loses its way to the nest does not live long and is likely to die in great need of her nest's smell.

As the colony reaches maturity, it begins to produce the queens and males, which will form the next generation. Once they emerge, they remain in the nest waiting for environmental triggers to initiate their leaving the nest. These same triggers will cause the simultaneous release of queens and males from the majority of nests of a given species in a given area.

When the time is right they leave the nest and fly high into the air, where they join reproductives from other colonies in what is called a nuptial or wedding flight. The reproductives usually mate with partners from a different colony. A queen may mate with one male or with several males. After mating, the queen commonly prepares to found a new colony.

She finds a suitable nesting site, seals herself in and begins to lay her fertilised eggs. Drawing on the large reserves of fat













and protein in her body, she rears the resulting larvae. After the larvae have pupated, they emerge as small adult workers, the smallest in the life cycle of the colony. The workers open the sealed nest to the outside and take over the work of caring for the queen's later offspring, searching for food and maintaining the nest so that the queen's only task is egg-laying. The colony grows as the workers rear more workers for life in the colony. 

Weaver Ants carry home a flower. Ants forage on flowers for honeydew



Meethil Momaya is a wildlife photographer and a Life Member of the BNHS

## Antoids

-  In some ant species worker ants may be divided into as many as seven castes – each specialised to do a certain task.
-  A queen may mate with one or more males, but in all cases, she stores the sperm in her spermatheca. The queen will never mate again, and this is her lifetime supply of sperm.
-  A Fire Ant queen may lay 100 eggs per hour, around the clock, and an African Driver Ant queen lays 3 million to 4 million eggs per month.
-  Adult ants cannot chew or swallow solid food; they squeeze the juice from their food and throw away the dry part.
-  Some birds put ants in their feathers or crush them against their feathers because the ants squirt formic acid, which gets rid of the parasites.
-  In some species like the Leaf Cutter Ants, the queen lays special non-fertilised eggs, which will be consumed by the ants in the absence of food.
-  Harvester Ants frequent grass fields to harvest and store the grass seeds. Specialised workers crack the seeds for the other ants to eat.
-  Slave-Maker Ants raid the nests of other ants and steal their pupae. When these new ants hatch, they work as slaves within the colony.
-  Carpenter Ants drum their heads on the floor of their chambers, and Leaf Cutter Ants and Harvester Ants make squeaking sounds if their nest caves in. Nestmates follow these sounds to find and rescue the trapped ants.
-  Several species of ants are attracted to plastics and cause damage to irrigation and electrical installations.



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Of the nine species of Giant Clams occurring worldwide, three are known from Indian waters. All three species of Giant Clams are protected under the Wildlife (Protection) Act, 1972. The nine Giant Clams are also included in the IUCN Invertebrate Red Data Book. Those found in Indian waters are classified as under: Scaly Clam *Tridacna squamosa* (IUCN-Low Risk: Conservation Dependent), Small Giant Clam *Tridacna maxima* (IUCN - Low Risk: Conservation Dependent), Bear Paw Clam *Hippopus hippopus* (IUCN - Low Risk: Conservation Dependent).

Giant Clams are unique in many ways. They are the longest living invertebrates with a life span of over 100 years. They grow to a very large size, the *Tridacna gigas* grows up to 1.2 m. They mature very late, the *Tridacna maxima* attains maturity when it is about 40 years old.

Giant Clams are highly vulnerable to stock depletion. It is a feature of their biology that stocks will become non-sustaining when densities fall below certain undefined levels. This is because of their mode of spawning. Giant Clams maximise fertilisation success by spawning in synchrony, in response to current-borne pheromones produced by other spawning individuals belonging to the same species. These chemicals are associated with Giant Clam eggs. Once detected, a



second clam releases sperm and the eggs are thus fertilised. However, if there are no conspecific clams downstream, the eggs are unfertilised. Unfortunately, the larval stage lasts for less than a week thus preventing long range dispersal.

Giant Clams occupy a narrow ecological niche and occur in shallow waters with maximum distribution up to 30 m. The Giant Clams display a symbiotic association with blue-green algae Zooxanthellae. Their immediate need is solid coral (mostly *Porites* spp.) or rock anchorage.

## Project Giant Clam

The BNHS' project on Giant Clams aims to collect systematic data on the distribution, ecology and density of Giant Clams on 21 islands (10 inhabited and 11 uninhabited islands) in Lakshadweep. Since April 2005 we have collected data from 21 islands. Average 25 transects (100 m x 20 m) are laid in confined waters on each island. Total counts of the clams were taken and each clam photographed to analyse habitat and clam associates. The digital database will help us monitor populations of clams in these transects. In the larger lagoons (over 25 sq. km), such as Bitra, Minicoy, Suheli, Beliapani, Cheriapani and Kalpeni we propose to lay additional 50 transects each, over the next year to make a representative sample. Both diving and snorkelling techniques are used to lay the underwater transects.

Additional data collected on Giant Clams includes habitat profile of each island, predators, preferred anchorage, mortality, recruitment and associates.

Project Giant Clam is also undertaking large scale environmental education campaign on 10 inhabited islands to gather people's support for clam conservation. LEAD-UK is our UK partner in the Project, which is funded by the Darwin Initiative, UK.

Project Giant Clam is undertaking studies on the tourism carrying capacity of Kavaratti, Kadmat, Agatti and Minicoy. We are also collecting data on bait fish resources of Lakshadweep islands which are very crucial for tuna fishery. As a part of the Project we propose to establish a community reserve to conserve Giant Clams and bait fishes. ■





Small Giant Clam  
*Tridacna maxima*



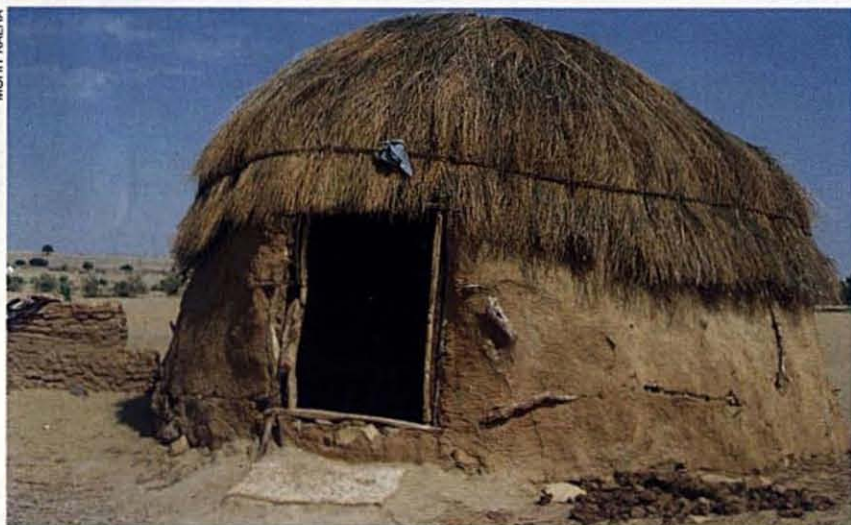
# GEM OF THE

# Desert

Text: Mohit Kalra

On September 14, 2004, after travelling for twelve hours on camel-back, my assistant Narayan Dan and I were in desperate need of rest. As soon as we reached Pabusri, a village in Barmer, we heard people shouting, "Saap, saap". We hurried there and saw that the villagers were digging to catch a snake. I tried to convince them that the snake meant no harm and to let go of it, but nobody cared to listen. After digging it out, they killed it. I took a photograph of the dead snake and it was later identified to be the rare Royal Snake (*Spalerosophis diadema*). I have not heard of anyone being fined for killing a snake, although most snakes are legally protected. This incident moved me and I became more curious about snakes. During a "Save the Bustard" campaign of the Bombay Natural History Society (BNHS) in the Desert National Park (DNP), Rajasthan, I saw that snakes are feared and killed

MOHIT KALRA



Seemingly fragile, these *dhanis* are quite sturdy and practical in the harsh environs of the desert



instantaneously, only because people know very little about them.

Next evening, as the light faded after a glorious sunset, I started looking for snakes. In hot dry areas the most effective way of finding snakes is to look on the roads. Snakes often come out at night for the warmth of the road as the ambient temperature drops. After an hour or so, I encountered a snake in the middle of the road. I stopped my vehicle and as I approached, the snake coiled its body, started wriggling and I heard a familiar hissing sound. It was a Saw Scaled Viper (*Echis carinatus*)!

I had left Mumbai to work on a project led by BNHS and the Wildlife Institute of India. My assignment was to map the boundary of DNP, giving me ample opportunity to appreciate the serene wilderness of the desert. I got an excellent opportunity to work with Dr. Asad Rahmani, Director of BNHS. Our intention was to campaign for the conservation of the steadily declining Great Indian Bustard (*Ardeotis nigriceps*). The campaign



MOHIT KALRA

involved visits to several villages which helped me acquire a new perspective towards wildlife and conservation.

The Thar Desert is rich in herpetofauna. To date, twenty species of snakes, six of lizards, five of skinks, two of varanids, seven of geckos, and eight of amphibians have been reported from here.

Declared a sanctuary in 1980, the DNP extends over Jaisalmer and Barmer districts of Western Rajasthan,

▲ Livestock grazing in protected areas is a major threat to the unique flora of the region



ASAD R. RAHMANI

Bustards are indicators of a healthy grassland ecosystem, by conserving them and their habitats a very large number of grassland species will also be protected



# Gem of the Desert

MOHIT KALRA



▲ A Desert Monitor Lizard basking in morning light. It is distinguished from other monitors by its rounded tail

The Cream-coloured Courser inhabits the dry desert where it is well-camouflaged in the pink-yellow sand ▶



MOHIT KALRA

a total area of 3162 sq. km. The western end of DNP is close to the international border between India and Pakistan. Most of the area is covered with sand dunes and dotted with sparse vegetation. The Government of Rajasthan is taking steps to upgrade its status to a National Park.

It took me some time to adjust to the people and the environment. I started my work in Bambara village in Jaisalmer. There I met Padma Singh, the elder of the village. I learnt about their lifestyle; from July to October they farm and during the rest of the year they sell milk, but because of successive drought years they were struggling to survive. People are deserting the villages in search of new pastures. During our conversation he also informed me that two years ago he had seen two Great Indian Bustards, but had not seen any since.

On September 20, I saw a beautiful sandy brown bird. The bill was slightly curved and sharply pointed. Two curved, parallel stripes, one black and the other white extended from the outer edge of the eye to the neck. It was the Cream-coloured Courser (*Cursorius cursor*), my first bird for the day. After struggling with the camera for a while, I got a picture of this beautiful bird. I would unhesitatingly say that it is the gem of the desert.





MOHIT KALRA

The endemic *Gyps* sp. of vultures are critically endangered following dramatic declines in South Asia resulting from exposure to diclofenac

As the sun rose, I observed Gray Francolin (*Francolinus pondicerianus*), Chestnut-bellied Sandgrouse (*Pterocles exustus*), House Sparrow (*Passer domesticus*), Common Quail (*Coturnix coturnix*) and endangered vultures. The unexpected beauty and rarity of the desert amazed me. I never thought that the desert could be magnificent and full of life. The avifauna of DNP is unique. There are many bird species, which have adapted to the hot and xeric weather. So far more than 100 bird species have been reported from DNP.

That evening, my vehicle got stuck in the dunes. It was getting dark so I decided to leave the vehicle and go to the village. My assistant assured me that it would be safe to leave the vehicle in the middle of the desert. As we approached the vehicle next morning, I saw something lying under it. I bent down to have a closer look and suddenly an animal leapt out. I saw a big monitor lizard looking at me over its shoulder. As I walked towards the lizard, it rushed into a bush. I cornered the lizard and observed it carefully and to my surprise it was a Desert Monitor Lizard (*Varanus griseus*). It has long been my desire to

see this mysterious animal. Later, we rescued our vehicle with the help of the locals. Driving towards Koriya village, I spotted a small creature digging in the sand. I jumped out of the vehicle and ran towards it. The animal was a strange looking lizard. As I came close, it disappeared in the sand. After a brief search I found a creature peeping out of a tiny crater in the sand. Later it emerged, and I saw that it was a Laungwala Toad-headed Lizard (*Bufo laungwalansis*).

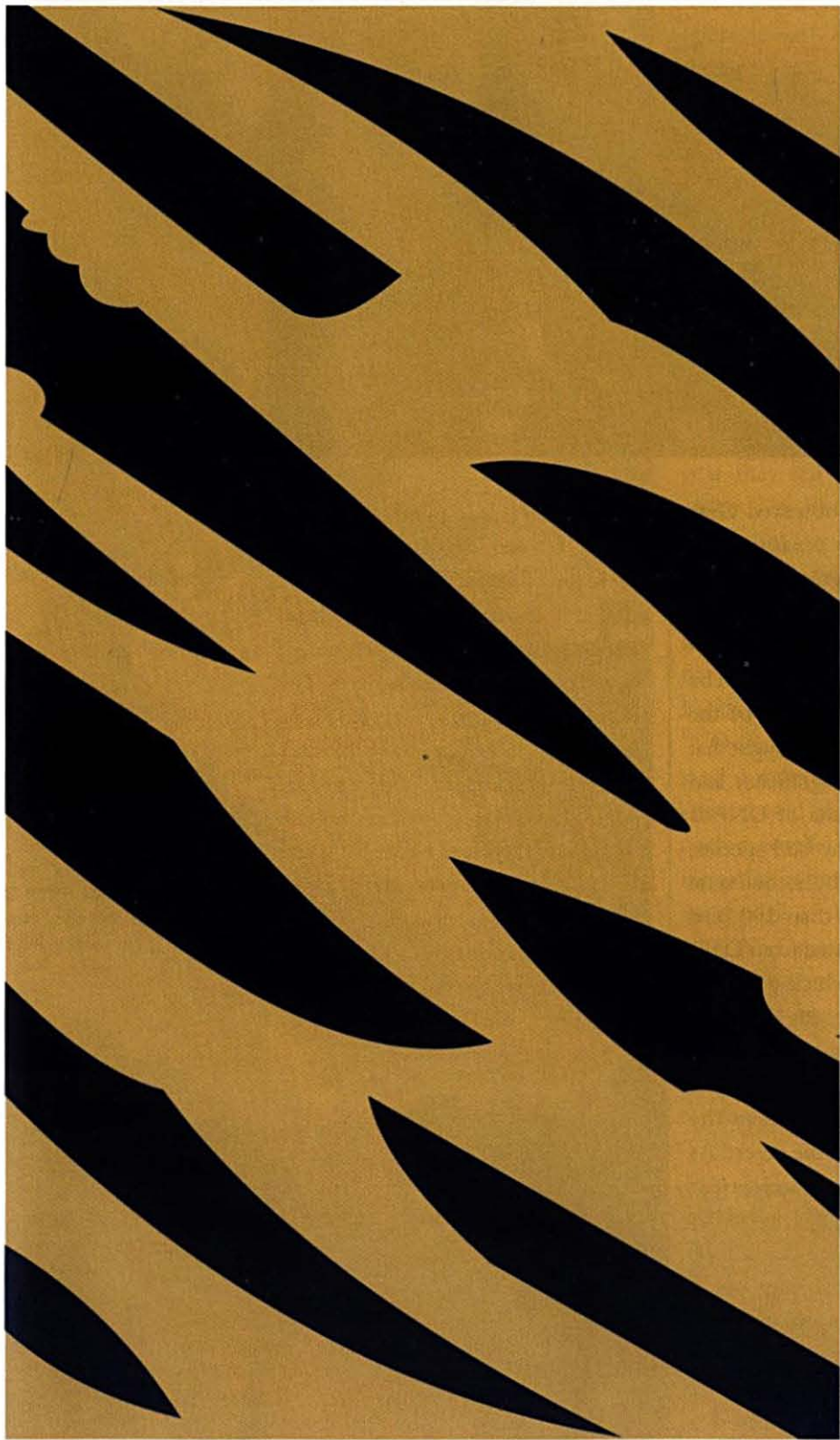
The next day driving towards Khuri village I saw five Great Indian Bustards along the way. This bird is locally

The Desert Fox, a relatively unknown species, needs urgent protection for its survival



MOHIT KALRA





Issued in the interest of tiger protection

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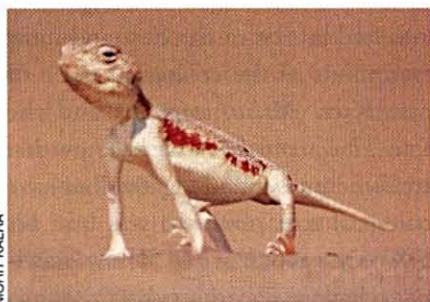




MOHIT KALRA

The Red-headed Vulture – a rare sighting in the Desert National Park

known as 'Godawan'. It was a common bird a few decades ago but now the population is decreasing due to rapid habitat loss and indiscriminate killing. There are now probably 500 Bustards left in the country, mostly confined to Rajasthan and especially in DNP.




MOHIT KALRA

A dune-dweller, the Laungwala Toad-headed Lizard preys on ants, beetles, grasshoppers, flies and lizards

After a while, I saw the Rosy Starling (*Sturnus roseus*). Large numbers of Short-toed Larks migrate to this region in the winter from Western Afghanistan. During winter, the area is also visited by the Houbara or Macqueen's Bustard (*Chlamydotis undulata*), but this year I found the Houbara a little early. We sighted three Houbaras during my three-month fieldwork; two of them were seen inside the Sudasari enclosure, one of the biggest enclosures (1800 ha) in DNP. It was established mainly to protect the Great Indian Bustard. One Houbara was sighted in the Sundra enclosure.

The Chinkara is another commonly seen animal in DNP. I saw them everywhere in the Sanctuary. But as I travelled along the western boundary of the Sanctuary I saw Chinkara in a very pathetic condition. I counted 14 dead Chinkara of different age groups. Death may have been caused by famine, disease or competition with livestock.

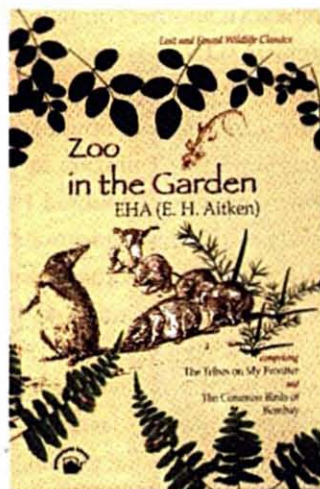
My search for the elusive Desert Fox (*Vulpes vulpes pusilla*) lasted for many days. Finally, one fine evening, I saw this stunning animal. I was lucky enough to capture this moment on my camera. We looked at each other and even as I clicked a picture, it seemed to melt away into the surroundings. Fortunately, I was able to get a picture, and my dream came true.

My stay in DNP was an amazing experience because I got a chance to take a closer look at the wildlife in the Park. During my stay here I observed that the villagers living around the Sanctuary had a benign attitude towards wildlife. However, some were not aware of the importance of wild animals. It is very important that to conserve the animals, we need to educate people and show them the benefit of a healthy environment. National parks and sanctuaries are National Heritage Sites and should be conserved not only for the survival of the wild animals but also for the survival of human beings, because our fate is also linked with that of the animals – the true gems of nature. 

Mohit Kalra, Research Fellow, BNHS is currently involved in the project "Development of Desert National Park as a Biosphere Reserve". His research interests are integration of multi-temporal data sets including GIS databases, high-resolution digital elevation models, satellite imagery to study potential habitat for different species.







**Zoo in the Garden**  
by EHA (E.H. Aitken), 2005.  
Published by Permanent  
Black, Delhi.  
Pp. 277. Price Rs. 395/-  
(Size: 21.5 cm x 13.5 cm)  
Hardback.

Reviewed by **Asad R. Rahmani**

**Z**OO IN THE GARDEN is one of the 'Lost and Found Wildlife Classics' published by Permanent Black, written by the irrepressible E.H. Aitken.

This book comprises of EHA's two books — THE TRIBES ON MY FRONTIER: AN INDIAN NATURALIST'S FRONTIER POLICY (1883) and THE COMMON BIRDS OF BOMBAY (1900). Both books are classics and compulsory reading for anyone interested in the natural history in the then British India. E. H. Aitken, born in Satara district of Maharashtra, used to write on natural history in the *The Times of India* under the nom de plume 'EHA'. His humour, his vivid description of the smallest creature, his incisive and sharp observations and mastery of words, along with his missionary upbringing with the knowledge of Latin, all combined to weave together a tapestry of words which is still considered one of the best natural history writings in India, nearly hundred years after his death.

Three decades ago, I had read three of his books — THE TRIBES ON MY FRONTIER: AN INDIAN NATURALIST'S FRONTIER POLICY, A NATURALIST ON THE PROWL, and THE COMMON BIRDS OF BOMBAY. The last of these was republished as THE COMMON BIRDS OF INDIA, edited by Sálím Ali. However, when Permanent Black sent us a copy of the latest compendium for review, I jumped at the opportunity. EHA's writings are certainly timeless. He takes us to an age when life was more gentle, nature was bountiful, people had time to admire nature in their own backyard, whether it was the beauty, dexterity and agility of a wall lizard (*Hemidactylus*) or capers of a House Crow (*Corvus splendens*). Unlike other British writers who generally talk about their hunting skills, mostly of questionable variety, EHA deals with the so-called

lowly creatures — ants, fruit bats, mosquitoes, frogs, small birds and so on.

It is difficult to point out which chapter is the best. I think, each sentence is a quotable quote, and each chapter is an epitome of good natural history writing. About the common birds of Bombay (now Mumbai) he says: "a misguided Hornbill may make its appearance on Malabar Hill". EHA once caught a canary in a church, "It came in during the service and perched above the pulpit, where the sermon soon put it to sleep" (p. 135). EHA is a master at describing traits and characters of human beings. Writing about a gathering in his favourite Deccanabad, he writes, "There was the jaded literary man, seeking to recover the exhausted phosphorous of his system and the departed freshness of his thoughts, his wife suffering from an acute attack of want of occupation, the pinched and dyspeptic banker, just escaped from the treadmill for a brief season, the stalwart police officer, sick of ordinary crime". Do we see such wonderful writing these days?

Technical terms like 'ecological separation' and 'niche' were probably not coined during EHA's time, but his acute observations and felicity of words has resulted in one of the best and most readable descriptions of the ecological niche of the Common Kite (*Milvus migrans*) and the Brahminy Kite (*Haliastur indicus*). We all know that these kites are sometimes found together but have different ecological roles, but can you beat his description: "For the avoidance of family brawls nature seems to have assigned separate portions to these two birds, giving the refuse of the land to the one and the refuse of the water to the other. It is not that one eats flesh and the other fish. Nothing that goes overboard from a ship comes amiss to the Brahminy, and the Common Kite will snatch fish from the very basket on a woman's head. But the one likes to pick its food off the water and the other off the ground. So the one haunts the harbour, while the other takes charge of the bazaar". I wish I could write like this.

Which is the best chapter in this book? My choice is titled 'Hypodermatikosyringophoro'. Please read this wonderful book to know why I like this chapter the most. ☺



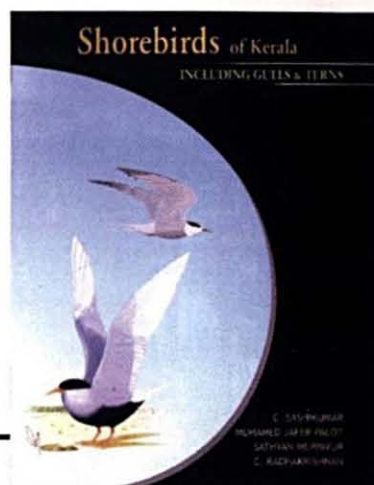
Reviewed by **Asad R. Rahmani**

Kerala and Karnataka are two states with perhaps the largest number of bird watchers and bird-related e-groups in India. For almost 40 years, the late Prof. K.K. Neelakantan dominated bird study in Kerala and published numerous articles, reports, pamphlets and books, both in Malayalam and English. His impact on the younger generation of bird watchers is evident in this book.

Shorebirds, especially the smaller species, are considered difficult to identify in the field. There are 343 members of the Order Charadriiformes, of which 71 species have been recorded in Kerala. The book gives the field characteristics, descriptions of adult breeding plumage, call, habitat, habits, breeding season and status, and the global distribution for each species. The book also includes the English (based on Manakadan and Pittie 2001, *Buceros* Vol. 6(1)), scientific and Malayalam names and an illustration for each species. In case of migratory species, the non-breeding plumage, as it is generally seen in Kerala, is depicted in large size, whereas the breeding plumage is shown in smaller size in some cases. In case of resident birds, the order is reversed and an illustration of the immature bird is also shown. Breeding, resident and wintering areas of the birds are shown in different colours on the distribution maps. Only Oriental, Palearctic, Australian and African zoogeographical realms are included in distribution maps.

Although the format is user-friendly, the size of the book makes it cumbersome to carry. It is

**Pictorial Handbook —  
Shorebirds of Kerala  
(Including Gulls and Terns)**  
by **C. Sashikumar,  
Muhammed Jafer Palot,  
Sathyan Meppayur and  
C. Radhakrishnan, 2004.**  
**Published by Zoological  
Survey of India. Pp. 165.**  
**Price: Rs. 700/-**  
**(Size: 24 cm x 18.7 cm)**  
**Paperback.**



a pictorial handbook, not a true field guide. The illustrations are passable, but not of international standards. While the depiction of the plumage is fine, sometimes the shape of the bird is incorrect. For example, the legs of the Little Ringed Plover (p. 28) are too thick, and the Black-tailed Godwit (p. 58) does not show that lanky, thin shape for which it is famous. Similarly, Temminck's Stint in flight (p. 92) looks too whitish. Does it have so much white underneath? Interestingly, the name of the illustrator has not been mentioned anywhere in the book. However, on the whole, the illustrator has done a good job.

Owing to its subject, the book has limited appeal. Nevertheless, it is a valuable addition to the increasing literature on Indian avifauna. I am happy that the Zoological Survey of India, a professional body, has used the services of amateur bird watchers like C. Sashikumar and Sathyan Meppayur. This book is a happy amalgamation of the knowledge of professionals and amateurs. 📖

If you want to read these books or browse through 21000 titles, 250 journals and periodicals, theses and reports on the natural history of the Indian subcontinent, then visit the BNHS Library at Hornbill House, Mumbai. Write to The Librarian at [bnhs@bom4.vsnl.net.in](mailto:bnhs@bom4.vsnl.net.in) for more details.

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## Brown Fish Owl at Rishi Valley



GIRISH JATHAR

A large owl with a tufted head, the Brown Fish Owl prefers to be close to water. Its call has a loud, ventriloquial quality

Text: Geetha Iyer

The place where our house in Rishi Valley now stands, was, till a few months ago, the goal post of a hockey field. On a monsoon night some years ago, there was a heavy downpour as I turned in for the night. Some sound woke me up at around 3 a.m. I took a look outside the window and saw a strange sight which I would not have missed for anything. There was a large owl in the garden.

As I have been observing large owls for the last two years and studying, amongst other things, their breeding habits, I immediately recognised this one to be the Brown Fish Owl, *Ketupa zeylonensis*. What was it doing in the garden? With the tall *Eucalyptus* trees

behind the house and some vacant space, this must have been a hunting ground for the bird till the buildings came up. Now with the rains, the accumulated water must have attracted the bird. I expected it to look around for prey and then fly off. However, what happened next was quite unexpected and new in my experience of owl watching.

As I watched, the owl flew to the ground. It then hopped back and forth and finally hopped into the puddle. It then squatted (if you can visualise a large bird like that squatting, a very funny sight indeed!) very low on the ground, for the puddle of water was quite shallow, and began to splash

about in the water. Its activities can only be described as play. It went round and round in the water, splashing about like an excited child in a village pond. As it splashed about I also saw it search for something in the mud. Then it opened one of its wings and splashed water onto it with the other (this it did by literally pushing water on the wings); this went on for about five minutes. Then it flew onto the roof, and began to preen itself thoroughly. When it appeared to be satisfied with this activity, it fluttered its wings in the air as if to dry them. I thought it was preparing to fly off but I was wrong. It came down to the puddle once again and started repeating the activity. Of particular interest was the way it kept directing water, from the puddle, with the help of feathers of its left wing, onto its stretched wing of the right side.

As I watched fascinated by its puddling activities, it called. This was no regular call of *K. zeylonensis* with which I am very familiar. The sound reminded me of the call of owl chicks. Earlier, when I sat observing the chicks in their nest, I heard them call like this several times. Now, was this still one of the juvenile owls? Was this a young one from this year's brood? Its activities in the puddle definitely had the signature of playful behaviour. I very clearly saw all the features to confirm that it was a Brown Fish Owl; but I could not say conclusively whether it was an adult or a young.

Back to the owl in the puddle. It finished its bath, flew away and began its preening process, occasionally calling out. It then flew off south into the trees, leaving me with a whole lot of questions. As I was pondering over them, I heard the distinctive call of the Fish Owl. Nearly 15 minutes had elapsed after its flight and I had



thought that the encounter for the night was perhaps over. But no. The call was coming from the western side where the Rishi Valley estate manager's house is located. There are even taller trees all around his house, and I have known from my experience, and of others, that the Fish Owl was a regular visitor here.


Unable to sleep, I concentrated. Soon, I heard an answering call. I got up once again and went to the window; this time to the one that looked towards another house. Sitting on top of the house was the owl again. As I continued to watch another owl flew and perched itself atop the electricity pole between the two houses. It started calling, surprising me again. It did not sound like the owl but more like that of a kite; there was no usual echoing boom, but a squeakiness to the call. However, an answering call came from the direction of the estate manager's house. The first owl I had seen was silent. Were there three owls? Was I mistaken about the direction of the earlier call?

My doubts were soon cleared. The first owl, suddenly took off and landed

on the roof of my house. The activities that followed, I could understand only from sounds; 'understand' would be presumptuous, 'confusion' would be a better word. While the conversational calls between the owl on the pole and the owl on the estate manager's house continued, and was unmistakably distinct, the near one on top of my roof it seemed was perhaps continuing its playful behaviour. It seemed to be moving stones. I could hear very clearly the rolling of stones on my roof. In the stillness of the early morning these sounds were clear, distinct and unmistakable. After playing with stones I heard it move from the roof of my bedroom to the roof of my sitting room. It made no call. Suddenly I heard the sound of a stone being dropped. Perhaps, I should have stepped out of the house for clear observation, but each time I decided it I gave it up because I did not wish to disturb the owls. I was well hidden from them.

The stone, which I retrieved in the morning, was a medium-sized one. What was it doing with the stone?


There was only one. Why did it carry it and then drop it over my roof? These are some of the many intriguing questions I have. However, the early morning activities concluded without any further quixotic behaviour. The two owls continued their conversation, while the third one sat on the roof. I left them at this juncture to catch up with my sleep wondering what the next night would be like.

The next night I heard the bird's squeaky call coming from the direction of the estate manager's house at around 10 p.m. but beyond that there was nothing. When I have been unable to sleep at night, or on rainy nights I have often hoped that the owl would return. But it hasn't. The whole episode has confirmed one thing though, that of the two young chicks that hatched in January 1998, one of them has survived and therefore, the Brown Fish Owl is safe in the Valley for now. 

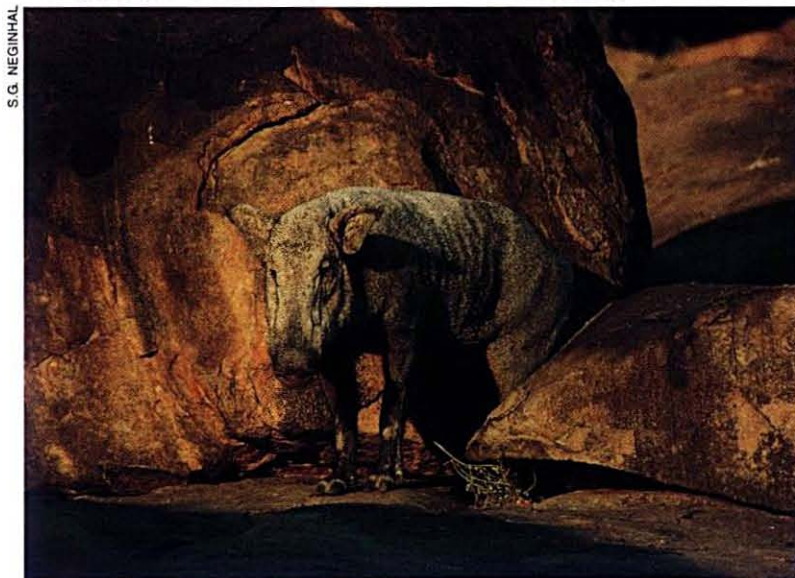
Geetha Iyer was a teacher at Rishi Valley School and was actively involved in documenting the biodiversity of the region. She is also a member of the BNHS.

## Albino Wild Boar

Text: S.G. Neginhal

While sitting in a hide to photograph the wild Sloth Bears of the Daroji Sloth Bear Sanctuary, situated in the Hospet Taluka of the Bellary District of Karnataka State, in November 2004, I was surprised and unbelievably lucky to spot a big male albino Wild Boar (*Sus scrofa*). It was completely white. I immediately took photographs of this wild boar. This Sanctuary has been created for Wild Sloth Bears. 

S.G. Neginhal is a former officer of the Indian Forest Service. He is the author of *FOREST TREES OF SOUTH INDIA*.



S.G. NEGINHAL





RAJU VYAS

## Persian Gecko in India!

Text: Raju Vyas, Varad Giri and Aaron Bauer

Raju Vyas is a renowned Herpetologist from Gujarat. Varad Giri is Scientist 'A' in the Bombay Natural History Society and is currently studying Caecilians. Aaron Bauer is a Professor in Villanova University, USA, and an authority on geckos of the world.

At first it was just an unusual gecko that we could not identify. We puzzled over its identity while we were studying the reptilian fauna of Gujarat. We collected a few specimens from in and around Jassore Wildlife Sanctuary (JWS), which is in the south-western part of the Aravalli Hills.

For many days the specimen was a mystery as its description did not match any of the known Indian geckos. We checked with available literature in the Bombay Natural History Society and found that it could either be *Hemidactylus persicus* or *Hemidactylus turcicus*, which was remarkable because both these species are not reported from India. Aaron identified it as the Persian Gecko, *Hemidactylus persicus*. It was great news! One more addition to the reptiles of India.

The Persian Gecko is very widely distributed from eastern Arabia to southern Iran and in the east it reaches Sind and Waziristan in Pakistan. In Pakistan also, this

species was never recorded to the east of the Indus river. It prefers xeric habitats, especially rocky deserts, flood plains and thorny *Euphorbia* forests.

Recent survey results show that the JWS harbours 12 species of amphibians and 35 species of reptiles. This gecko species is locally uncommon and is found in and around areas used by humans including under rocks and tree logs, on large boulders and in ruined houses along with two other closely allied species, Northern House Gecko *H. flaviviridis* and Brook's Gecko *H. brookii*. It is very active from early to late evening emerging from diurnal retreats to forage as soon as the sun sets. At present, the species has been recorded at three localities.

The present localities of JWS and its environs in the Banaskantha District of Gujarat State are east of Indus river, approximately 600 km (airline distance) from Karachi, Pakistan, previously the most southeasterly recorded locality for this gecko.

*Hemidactylus persicus* has not previously been recorded from Gujarat nor from anywhere else in India, thus our records are not only a significant eastern range extension for the species, but also new state and national records.


For more information contact:  
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Varad Giri: [varadgiri@bnhs.org](mailto:varadgiri@bnhs.org)  
Aaron Bauer: [aaron.bauer@villanova.edu](mailto:aaron.bauer@villanova.edu)

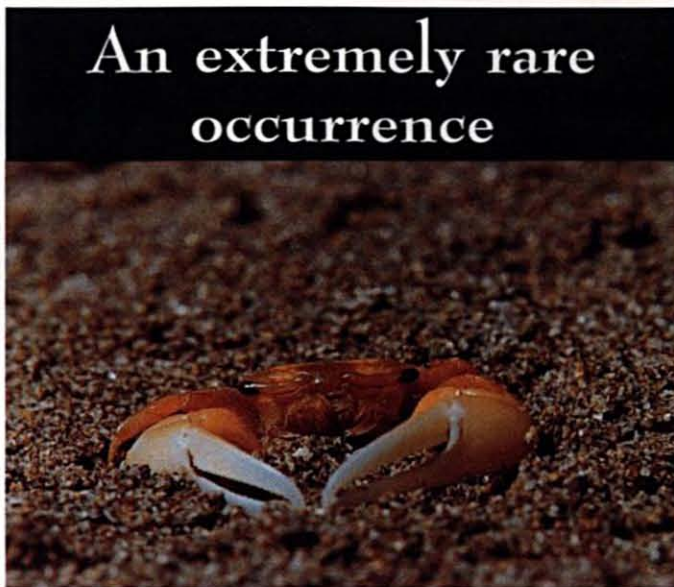


Text: Dr. B.F. Chhappgar

Normally, only one claw is enlarged in male fiddler crabs and neither in females. In my fifty years of studying marine crabs, this is the first time that I have come across this anomaly of a male fiddler crab with both claws enlarged. This crab was collected by Vilas Y. Mangale.

It was believed earlier that when a large claw is lost by accident, the smaller claw grows into a large one at the next moult, while a new small claw develops to replace the lost (large) one. But it is now known that when a large claw is lost, a new large claw develops on the same side at the next moult.

A majority of males of *Uca lactea annulipes* and *Uca dussumieri* have the large claw on the left side, while *Uca vocans* have it on the right side. 



B.F. CHHAPGAR / R. D. PADTE

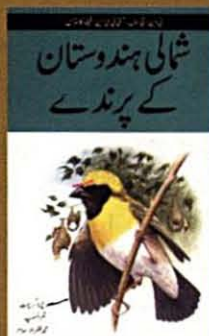
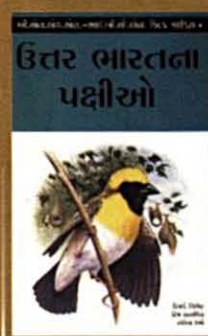
A male fiddler crab (*Uca lactea annulipes*) with both claws enlarged

Dr. Chhappgar is a former Curator, Taraporevala Aquarium

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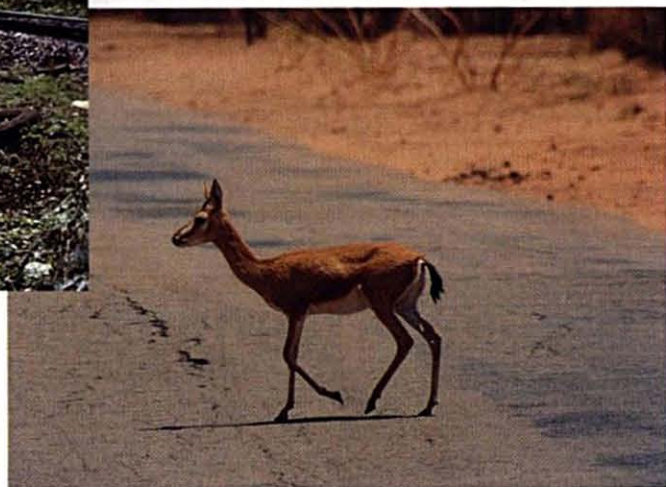
# WILDLIFE CROSSINGS

Text: Pradip Shah



A.J.T. JOHNSINGH

Railroads and highways fragment habitats, disrupt animal migration and disrupt gene flow



ASAD R. RAHMANI

Wildlife crossings reconnect habitats and are especially beneficial to animals with a long home-range

**T**he home range of male Asian Elephants (*Elephas maximus*) is about 15 sq. km, whereas herds of females have ranges of about 30 sq. km. However, the home range increases in the dry season. Elephants inadvertently step into human habitats during migration or in search of food. As the population of human beings increases, the area of natural habitat available to the elephants decreases. Railways and highways pass through many sanctuaries and national parks endangering the life of elephants and other animals on the move.

Therefore, there is an urgent need to recognise the importance of creating corridors to facilitate the

intra-migration of wildlife in broken habitats which will also preserve biodiversity. Where roads and railways fragment habitats, overpasses or underpasses can be built, thereby preserving the traditional movements of wildlife.

The National Highway Authority of India (NHAI) must issue guidelines requiring mandatory wildlife crossings on all new or under-construction national and state highways which break up wildlife habitats. The NHAI must also encourage the retrofitting of wildlife crossings on roadways in such habitats.

For decreasing animal-vehicle collisions and thereby improving

safety for people travelling on highways as well as for providing a linkage for animal movement across highways, roadway crossings (i.e. overpasses and underpasses) are specifically constructed throughout USA and most developed countries. Railways and highways are sources of road mortality for wildlife; indirect effects on wildlife include reduced access to habitat due to road avoidance; fragmentation of wildlife populations; restrictions on wildlife movements and the disruption of gene flow.

Each of the 16 German states have a nature conservation act and all road improvement and construction projects are required under such



MEETHIL MOMAYA

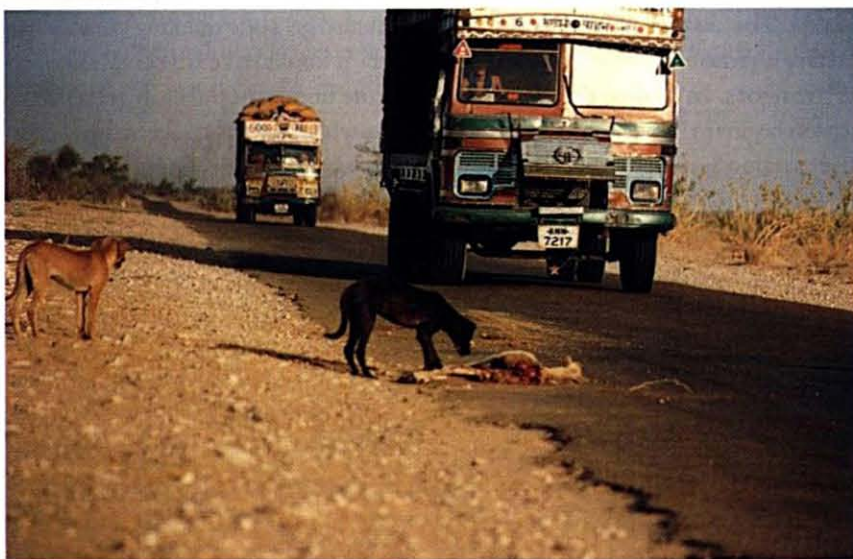


SCOTT JACKSON/www.ibowildlifebridges.org

Overpasses, underpasses and tunnels are some of the options available to planners so as to ensure a safe passage to animals on the move

laws to avoid environment impact; wildlife crossings are a key component of that strategy. By 2002, there were 32 overpasses (“green bridges”) in Germany, eight more were under construction and 20 planned. Florida has amongst the first documented wildlife passages, constructed in the 1950s – along Alligator Alley (a highway in Florida) alone, 36 tunnels have been installed – and wildlife crossings exist throughout the USA. In the Banff National Park in Canada, there are 22 underpasses and two 50 metre wide overpasses for wildlife. Australia, UK, France, Switzerland all have wildlife crossings on roadways fragmenting wildlife habitats. In Arizona, USA and in Spain, canal crossings have been established to facilitate movement of wildlife across the canals.

Inspired by The Nature Conservancy of USA, WildHavens is being established with the mission to preserve, improve, interconnect and enlarge habitats for wildlife, with the consequence of creating employment opportunities for nearby communities and augmenting water resources.




ASAD R. RAHMANI

All new highways, and those that are being constructed, must provide for wildlife crossings

As a response to WildHavens’ appeal, some officers in the Gujarat Government have identified the need to provide a corridor over the Narmada Canal that divides the Rann of Kachchh. Since canals are more common to the relatively underdeveloped semi-arid regions of the world, not much experience of such wildlife mitigation corridors is available. India can begin by creating effective wildlife crossings over canals.

If you would like to pursue this constructive idea of promoting

wildlife crossings then you can begin by persuading the government to require all highways, railways and canals to have appropriate wildlife crossings and enjoin the NHAI to issue urgent guidelines under Section 16 of the National Highway Authority Act, 1998.

To know more about the efforts undertaken by WildHavens, contact: [pradip.shah@indasiafund.com](mailto:pradip.shah@indasiafund.com) 

Pradip Shah is the Chairman of IndAsia Fund Advisors Private Ltd., Mumbai.



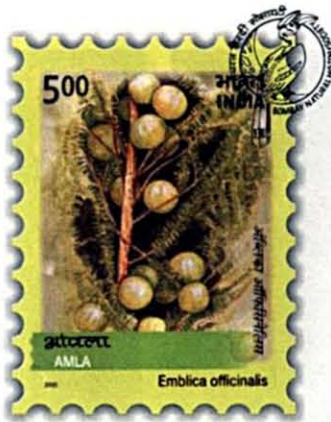
## Silent Killers

I have been studying the relation between birds, pests, insects and pesticides in Malda district, West Bengal, for years. It is evident that the use of pesticides and insecticides reduce the role of insectivorous birds. What isn't much studied in India is the role pesticides play in directly or indirectly killing pollinator and insectivorous birds. My studies have led me to believe that there is a link between increased use of pesticides and increasing bird deaths.

For instance, mango trade is one of the most important businesses in Malda. The district is famous for the quality and taste of its many varieties of mangoes. In Malda, the flowering season begins in November-December, and goes on until June-July. Traders at every level need to maximise their profits. The health of these trees, therefore, becomes a secondary concern. The only prevailing plan is that of short-term gain; to sell the fruits at the highest possible profit.

Insects and small birds that feed on the sap of mango blossoms either die instantly or become drowsy during the spraying of pesticides. I witnessed many such instances in the mango orchards in Malda. There were also instances where small and medium-sized birds fed on dead insects covered in a film of pesticides. These died within the space of a few hours. If these birds consume even a few insects, they become drowsy and cannot fly, becoming easy prey to dogs and cats.

I have recorded about 21 bird species that have been falling prey to pesticides in the area. These include: Common Iora (*Aegithina tiphia*), Small Bee-eater (*Merops orientalis*), Small Minivet (*Pericrocotus cinnamomeus*), Dusky Warbler (*Phylloscopus fuscatus*), Red-vented Bulbul (*Pycnonotus cafer*), Red-whiskered Bulbul (*Pycnonotus*



*jocosus*), and Common Tailorbird (*Orthotomus sutorius*).

If no action is taken now, there will soon be very few bird species left in Malda. This effect of pesticides on birds also gets one thinking about what effect it could have on other animals, and the human population in this area. Meanwhile, as we concern ourselves with saving birds from poaching, habitat loss and illegal trade, what are we doing about these silent killers?

Arunayan Sharma  
via email



## Bird's own country?

In 1997, I worked with a construction company on a project of residential flats in Elamkulam, Cochin. Located just off the highway, the building was ensconced in an Arcadian setting and fronted by marshy terrain dotted with islands of habitation. The view from the second floor office window was soothingly panoramic. Egrets, herons and waterhens could be seen about the tall reeds. One spring morning, I saw a saffron coloured bird, the general shape and size of a lone Pond-Heron, partially hidden by the reeds. I checked the field guide later, it was the Chestnut Bittern (*Ixobrychus cinnamomeus*). I saw the bird a few more times, it did not fly high, but had a low flying path in the manner of a lethargic Coucal.

The Chestnut Bittern is widely distributed in the Indian subcontinent,

particularly in the regions south of the Himalaya. It is generally found in pairs or singly. A shy bird, it hides from curious eyes by taking advantage of the surrounding vegetation. Orange hued and built along the lines of a heron, the Bittern has a lovely yellow stout and pointed bill, which helps it jab at its food, which consists mostly of fish, crustaceans, and molluscs.

The full-scale destruction of its natural habitat, along with industrial pollution has been held responsible for the large-scale disappearance of a common bird like the House Sparrow (*Passer domesticus*), whose population in cities has fallen drastically. A similar fate awaits the Indian White-backed Vulture (*Cypris bengalensis*).

The great ornithologist Salim Ali mentioned in his writings that Kerala is a haven for birds. He was smitten by its avian wealth. His appetite was sufficiently whetted by the variety of birds in Kerala. For bird lovers, the spotting of such birds as the Bittern reaffirms the belief that all is not lost on the environmental front. The bird species that we encounter in cities are among the more fortunate ones to have escaped man's plunder of nature.

For instance, there was a public controversy in recent times over the proposed conversion of a small bird sanctuary in Kochi (a small bay of brackish water and mangroves) into a car park for the lawyers of a nearby High Court. The fruition of that ill-conceived idea would have destroyed Mangalavanam (good forest), a place sanctified by a visit from Salim Ali. This avian paradise in the heart of the city is home to some migrant and endemic species of birds. Luckily for them, the public outcry has overruled the parking proposal, at least for the time being.

V.G. Rao  
Kochi





### Forts and the war for conservation

Forts carry high sentimental value for some people. In historic times, forts had strategic military importance. Most of the forts are located at high altitudes in the Sahyadri ranges, the Western Ghats. The sea forts are along the Arabian Sea. We must remember here also the pilgrimage spots, such as Bhimashankar on the mountain and Ganpatipule on the coast. These hills were once dense forests. Now most of the tree cover has vanished and the barren hills radiate heat during dry days. The obvious result besides countless other losses is loss of subsoil water and loss of bio-energy sources, which are the immediate and daily needs of the villagers. The destruction that takes place at the seaside is yet another matter of concern.

The hills still look picturesque and photogenic. So do the seas. But everyday the silent war goes on. Tourists, groups of nature lovers, mountaineers, and researchers visit the forts and hills.

Could the authorities, the locals and the visitors come together for some time during these visits? Could organisations like the BNHS and Parisar Asha take the initiative to bring them together on such occasions?

It is not only the forts, as architectural edifices of the past, that need to be restored, but also the hills and forests. The restoration has to be undertaken with a purpose. It will then in return restore the life and dignity of the people who depend for their daily needs on the land. This is a task for the collective.

There could be many strategies to restore hills with reforestation, but we could learn from the lessons of history. Angkorvat, the world famous monument, and Angkor City, which had covered 1000 sq. kms, were taken

over by a dense forest. The great metropolis had vanished because of an ecological collapse. Elsewhere, the Easter Islands turned into a desert. Just as a forest can spread, so can a desert. A few oases like Bhimashankar cannot stop desertification. If intervention by human beings is phased out in a planned manner for a few years then the forest could regenerate itself, this being a tropical region. There could also be other methods, for instance, Devarai and tree reserves for the funeral of the aged. Such customs, which come from the conservation of our cultural heritage could be practised.

The forts can be given a new purpose as 'natural history centres' to spread an environmental revolution,

as a living museum, and a laboratory in the open field. They could house arboretums to save the vanishing species of the region. They can support research, documentation, application and dissemination of information on the ecology of the region. These centres could be run and managed by the locals. One action on the ground could be worth millions of rupees spent on advertising conservation efforts. The forts could regain once again their strategic importance in the new war — a beautiful war, a creative war — to restore the collapsing environment in modern times.

Remigius de Souza  
Mumbai

### Combat dance of Rat Snakes



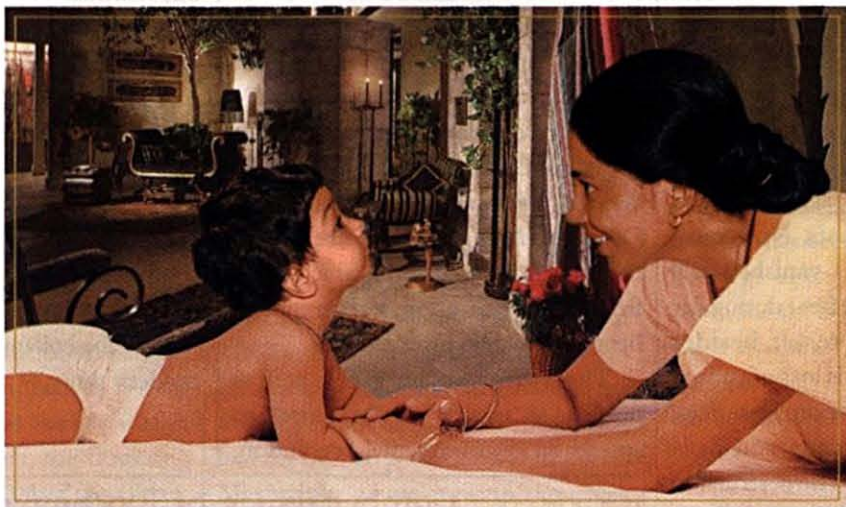
It was late June and the smell of rain was in the air. At around 6.30 p.m. I heard that the workers had seen two snakes in an abandoned part of the factory. I went there and was surprised to see that there were two male rat snakes. The snakes were in a ditch. The snakes were 1.8-2.1 m in length. They were trying to pin each other down. At one point they were completely coiled around each other. It looked as if someone had physically coiled them.

The snakes were oblivious to the six people standing around the ditch. The dance went on for around an hour. We left as the evening grew darker. I live in Morbi, a town in Saurashtra. Rat snakes are fairly common but seeing them like this was truly awesome. It goes to show that even the so-called common species are to be treasured.

Rohit Ganpule  
Gujarat



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# The G8 Summit and **CLIMATE CHANGE**

Text: Aisling O'Sullivan Darcy

The author is currently pursuing a Diploma in Environmental Sciences. Following her internship with the BNHS, she was inspired to take up Masters of Environment and Development at the London School of Economics.

## The G8

The "Group of Eight" consists of Russia, the United States, the United Kingdom, Germany, France, Japan, Italy, Canada, and the EU who come together in non-formal summits, where they commit to semi-formal agreements regarding transnational problems. India had a prominent position at the recent G8 summit in Scotland, with Prime Minister Dr. Manmohan Singh attending as a special invitee, as a representative of a G5 developing country. The July summit adapted *Climate Change* as one of its priority areas. In a G8 statement UK Prime Minister, Tony Blair described climate change as "probably, long-term the single most important issue we face as a global community".

G8 countries account for approximately 65% of global Gross Domestic Product and 47% of global CO<sub>2</sub> emissions. Thus, accountability for global warming due

to anthropogenic actions has traditionally been seen as the responsibility of these developed countries. However, there is an increasing awareness of the growing emission rates of developing countries. A 67% growth in carbon dioxide emissions between 1999 and 2020 is forecast to originate in developing countries. Thus, the Summit has taken place at a pertinent time in addressing future emission trends.

## Greenhouse Gases

Global warming is a phenomenon which was first related to anthropogenic actions by the Swedish Nobel Prize winning scientist Svante Arrhenius over a hundred years ago. Due to increased amounts of Greenhouse Gases (GHG) in the atmosphere, an escalating amount of heat reflected from the Earth is trapped, with a resulting increase in global temperatures.



DEEPAK APTE

An abnormal rise in temperatures will result in accelerated melting of the glaciers, which would increase water in the rivers and consequently water in the seas. A rise in sea-levels will first impact low-lying areas





GIRISH JATHAR

Man-made forest fires are on the rise in Southeast Asian forests, adding CO and CO<sub>2</sub> to the atmosphere

Despite dissent about the exact environmental implications of increased emissions and over the scientific accuracy of the models used to predict global warming, the G8 countries launched a scientific statement, including research by a representative of the Indian National Science Academy, which bases its ideas on the studies of the Intergovernmental Panel on Climate Change (IPCC). The IPCC predicts global temperatures will increase between 1.4 and 5.8 °C above 1990 levels by 2100. The results of which may lead to melting of the polar ice caps and the associated increase in sea-levels, a predicted 0.1 to 0.9 metres between 1990 and 2100 – which would have detrimental effects for the world's population, particularly those in low-lying areas — in Bangladesh alone, approximately 6 million people would be in danger from flooding.

## World energy demand to increase

Global demand for energy is set to increase by up to 60% over the next 25 years, with the trend occurring predominantly in developing countries. The International Energy Agency (IEA) estimates that 85% of this demand will be powered by increased fossil fuel consumption. With a growing economy India's energy needs are set to expand, particularly when it is estimated that at present 43% of Indian households do not have access to electricity. With economic growth and domestic development this figure is set to decrease, but with an associated increase in energy consumption and emissions. India presently accounts for approximately 5% of global carbon emissions, and with

predicted economic growth India's GHG emissions are set to soar in the coming years. Klaus Toepfer of the United Nations Environmental Programme has recently remarked that "rapidly developing economies like China and India need new and more efficient energy technologies if they are to lift their populations out of poverty without compromising the environment or destabilising the global economy". With this in mind energy was an elemental topic at the climate change discussion table.

## G8 resolutions

On initial examination, the dossiers from the G8 Summit cover an impressive assortment of areas from addressing illegal logging, consumer awareness, cleaner fossil fuels, building development and renewable energy to transportation. In a positive light, the outcomes of this Summit dictate that the G8 countries have a firm commitment to the United Nations Framework Convention on Climate Change, an advocacy of the need to develop clean technology and reduce reliance on fossil fuels, and in providing a helping hand for developing countries to improve their energy awareness and consumption in an eco-friendly manner. Reports and documents from the Summit are explicit in their condemnation of GHG emissions, and clear about the potential dangers evident with increased emissions, particularly for those in the developing world. The main commitment by the world leaders is to "work together, and in partnership with major emerging economies, to find ways to achieve substantial reductions in GHG emissions and



our other key objectives, including the promotion of low-emitting energy systems". The Summit identified three areas for further action:

- promotion of energy efficiency,
- conservation and deployment of cleaner technologies,
- working with developing countries to enhance private investment and transfer of technologies.

The G8 statements envisage key roles for the IEA and the World Bank, the former which will provide advice on alternative energy scenarios and the latter which will take a leadership role in creating a new framework for clean energy and development, including investment and financing.

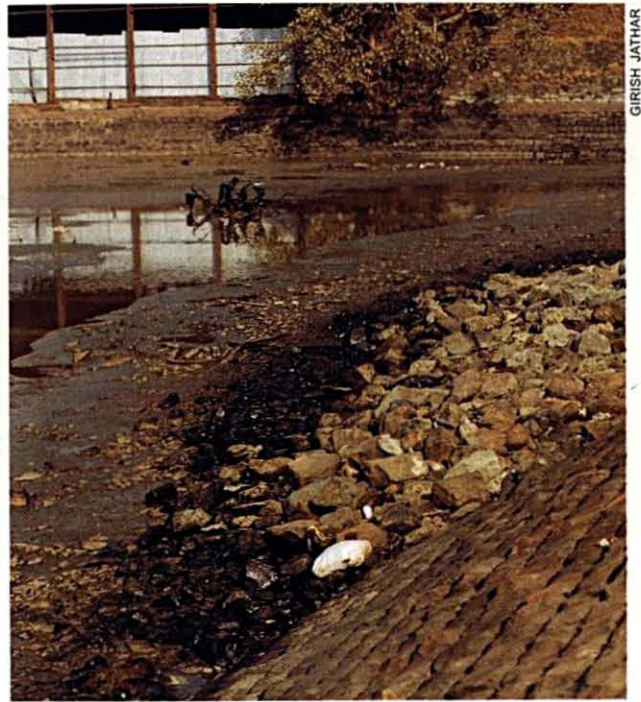
The final communiqué from the G8 made it clear that clean technologies and the transfer of these technologies to developing countries are the main keys to achieving a stabilisation and eventual reduction of GHGs.

## An opportunity lost?

Under critical examination the commitments made in Scotland embody only aspirations and merely present a skeletal framework for changes to take place. While the resolutions present several long-term possible options for addressing climate change and transfer of cleaner technologies, the language used is countered by words such as "encouraging research", "where appropriate" and "promoting dialogue", essentially presenting get-out clauses. If Kyoto was heralded for initiating a new precedent in the creation of binding decisions on climate change, the outcome of this Summit must be assessed in an opposite light.

Criticisms levied on the outcome of this Summit have stemmed from the weakening of several specific pre-summit proposals. *The Washington Post* reported, prior to the Summit, how during a meeting between Bush and Blair, key sections of the aspirations were weakened – including those on creating stricter environmental standards for World Bank funded power projects, and the creation of a timeframe by which the G8 members should reduce GHG emissions. As the only non-signatory of the Kyoto Protocol in the G8, USA is fundamentally opposed to binding decisions on the reduction of GHGs, and the split in opinion has had a visible (negative) influence on the results of the Summit.

India and world responses to the G8 declarations have in essence been quite negative. In a press statement Indian Prime Minister Dr. Manmohan Singh said "I agree the communiqué does not come to grip with the challenges



GIRISH JATHAR

Frequent oil-spills in oceans can arrest the respiration of marine life which can add to the increase in greenhouse gases

of climate change. There are visible open differences between USA and many other members of G8 on the issue". Dr. Singh did, however, present a positive view of the motion proposed by Bush that the development of clean technologies and the transfer of these to developing countries is an essential step forward. Meanwhile, international opinion also suppressed disappointment at the outcome of the Summit. French President Jacques Chirac stated, "the agreement ... is an important agreement, even if it doesn't go as far as we would have wanted. It restores dialogue between the 7 (G8) Kyoto members and the United States".

## What has been achieved ?

For any plan of action a clearly defined structure needs to be created, and the G8 Summit has provided it. While the accomplishments of the Summit may be subject to criticism for lacking in practical applications, the Summit has taken the concrete step of affirming the G8 leader's commitment to the environment as a crucial topic and their pledge to finding mechanisms by which developing economies such as India may find a way to develop cleaner technology while increasing energy usage.

The substantial outcome of the G8 Summit is the commitment to take forward a Dialogue on Climate



Change, Clean Energy and Sustainable Development. A follow-up meeting will take place in November, where the World Bank will discuss plans for mobilising investment in clean energy and development. The progress sustained

**UPDATE:** The follow up meeting was held in Montreal from November 28 to December 9, 2005. A new working group was established to discuss future commitments for developed countries for the period after 2012, it is scheduled to start work from May 2006. The 'Marrakesh Accords' were adopted, which specifies measures needed to put the protocol into effect, including how GHG emissions are measured, joint projects implemented, quotas traded, and so on. They also stipulate additional quotas for forest powers (the oxygen sink). However, the delegations have not coordinated the individual obligations of each party, without which no progress is

## The Tiger Cell leaves its mark

THE TIGER has always been a part of Indian history and will continue to be so. The Tiger Cell of the BNHS, conducted youth camps, school programmes and screened documentaries in villages around Tiger Reserves in Central India, while highlighting the plight of the tiger and the importance of forests. The Satpura Landscape Tiger Project has been funded by the Born Free Foundation, enabling it to conduct various educational activities around five Tiger Reserves in Maharashtra and Madhya Pradesh.

The Mobile Education Unit conducted three Environment Awareness Camps for young people in Tadoba-Andhari Tiger Reserve (TATR), and one in Pench Tiger Reserve. The tribal youth who attended the camps are collecting socio-economic data from the villagers, so as to help strategists formulate rational governance policies that will ultimately result in the conservation of the tiger. In TATR, 15 villages were selected for Environment Awareness Camps for the Community; and in Pench, 12 villages were chosen for similar camps. The Field Director of TATR, Dr. Shesharao Patil inaugurated the first camp in Tadoba. Vivek Tondre (Project Officer, MCED, Chandrapur), Rajiv Aade (Industrial Inspector, DIC, Chandrapur), D.R. Chavan (Khadi Gramodyog Officer, Chandrapur), Atul Dhamankar (wildlife enthusiast from Chandrapur), Uday Patel (Honorary Wildlife Warden, Chandrapur), Neal Gogate (Tiger Expert), Girish Washishtha (ACF-

from both, the G8 Summit, and the new Asia Pacific Pact may be built upon in Montreal in November, when delegates from nearly 200 countries will meet at the UN Climate Change Conference to discuss a path beyond Kyoto. ■


possible. A dialogue on strategic approaches for long-term global cooperative action to address climate change was also launched. A series of workshops are planned to develop broad range actions.

One of the main successes was the strengthening of clean development mechanism, helping the developing nations to improve the quality of life for their citizens. Adaptation to the impacts of climate change was also an important focus of the conference. However, the reluctance of developed countries and countries like China and India is a major concern as they are leading emitters of the GHGs.

TATR, Chandrapur), Umeshchandra Dhotekar (RFO-TATR), P.K. Dayamwar (RFO-TATR) gave valuable guidance to the participants.

Apart from talking about environmental issues, the camps were also a platform for discussing eco-friendly agricultural practices, self-employment methods such as making greeting cards using small strips of bamboo, as an alternative to making bamboo baskets which do not earn as much as the cards.

Wildlife Week was celebrated in a big way in the schools and junior colleges in and around TATR and Pench. In Pench, the 'Tiger Week' was an occasion to screen documentaries in schools and a seminar was organised to acquaint the forest officers in Karmaza with tiger conservation issues.

The Project continues to enlist the support of local stakeholders and aims to create a movement to save the tiger while simultaneously educating the villagers and tribals about the tiger and the forest. 



BNHS PHOTO LIBRARY

Sanjay Karkare, Project Officer of the Tiger Cell speaks about forest and wildlife conservation to children in Pench



## CEC Teachers Training Programme in Environment Education

Inculcating a healthy respect for nature in the next generation is especially important with tsunamis, earthquakes, floods, tornados impacting human communities. Flash floods, global warming, diseases, and the depletion of natural resources are warning signs that we need to sensitise ourselves and students to these issues.

The inclusion of Environment Education (EE) in the school syllabus as mandatory is testimonial to the change in our attitude towards our environment. The Conservation

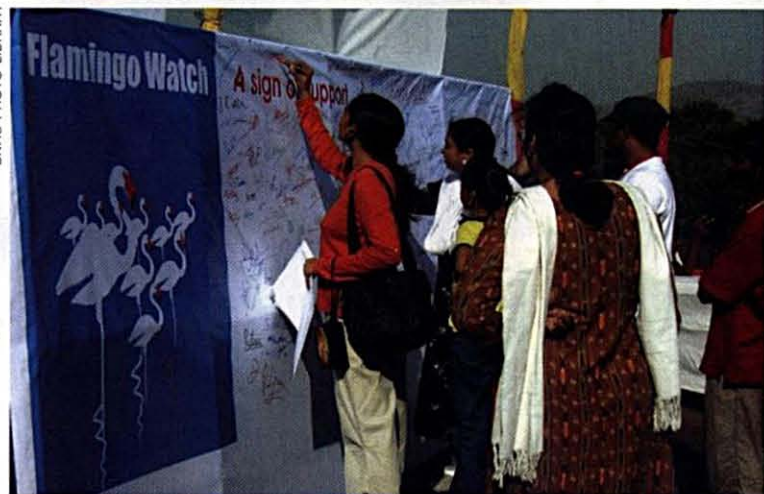
Education Centre (CEC) of BNHS at Mumbai is playing a major role in reaching out to people communicating various conservation issues through EE. As part of this outreach programme the CEC-Mumbai conducted a Teachers Training Workshop in Environment Education from November 28-30, 2005.

The workshop was based on the curriculum of the ICSE Board for standards 9 and 10. It catered to secondary English medium teachers. The workshop had modules on the

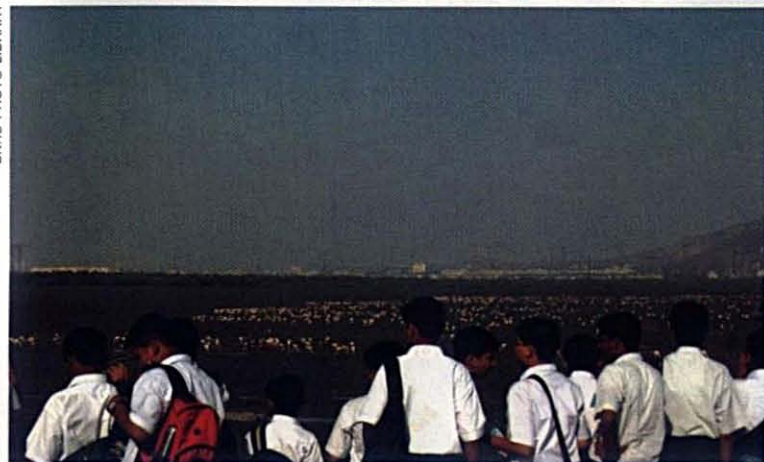
Introduction of Basics, Concepts and Approaches in teaching EE. Fresh ways of teaching EE by means of several out-of-the-box techniques were discussed to make the topic interesting, informative and thought provoking for both teachers and students.

The workshop included nature walks, talks by experts on waste management and sustainable development. The participants also discussed the promotion of Eco Clubs in schools. ■

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BNHS has suggested the realignment of the proposed Nhava-Sheva Trans-Harbour Sea Link to conserve the feeding ground of the flamingos

### A sign of support

The BNHS organised a Flamingo Watch with its Indian Bird Conservation Network on January 26, 2006 at Sewri, Mumbai. This event was sponsored by Tata Motors and HDFC.

A 22-panel exhibit was set up with information about the flamingos' geographical distribution, breeding behaviour, migratory routes, feeding habits and threats. Bird experts spoke with visitors about various conservation issues and answered their queries. A number of binoculars and spotting scopes were set in place giving visitors a better look at the magnificent birds. Around 15,000 flamingos could be seen at the mudflats.

More than 500 concerned citizens signed the petition urging the Union Minister, A. Raja to realign the Nhava-Sheva Trans-Harbour Sea Link, which is proposed right through the Sewri mudflats.

As the event was open to the public, the Flamingo Watch proved to be a splendid opportunity to interact not only with our members, but to enlist the support of new members. ■

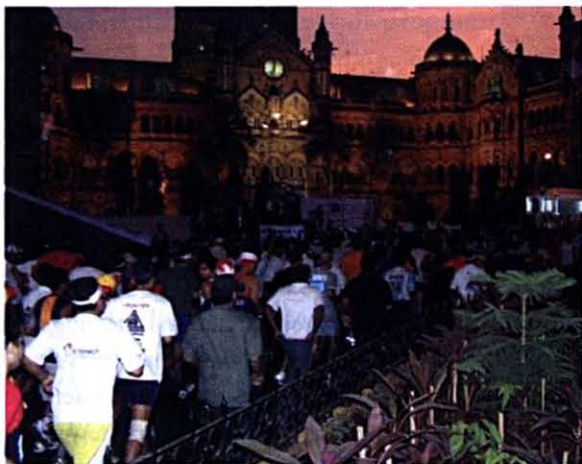


## Marathon effort

The Standard Chartered Mumbai Marathon 2006 held on January 15, 2006, saw the BNHS Dream Team participating with generous support from Dr. Manoj Vaish, who raised over Rs. 1 lakh for the Society. "It was a wonderful experience running for a cause. I could not believe that I completed it," Dr. Vaish said after his successful Dream Run (of 7 km) in just 45 minutes!



Anagha Shukla and Ajay Bijoor, two member-volunteers of the Society took part in the Dream Team and completed their 7 km run. Anagha said, "It was really very exciting to walk in the crowd with the Society's name emblazoned on my t-shirt. It made me feel proud of being a member." Ajay had participated in the Marathon before but said that, "This time it was satisfying because I was running in support of the BNHS...that made my run very special."



BNHS PHOTO LIBRARY

Making every step count — Dr. Manoj Vaish (top) raised over Rs. 1 lakh for the BNHS

Dr. Salil Choksi, a senior BNHS member, participated in the Half Marathon and successfully completed 22 km in 1 hr 42 min 20 sec standing 64<sup>th</sup> in 6000 participants. He said, "The next time I shall participate with my two sons and run for the Society."

This was the Society's first appearance in the Mumbai Marathon. We look forward to generous and active participation from the members, perhaps the next time we can boast of a Dream Team of 500 members! ■

## Our Treasures displayed once again

The Society has always been proud of its collection of rare books. The Rare Book Exhibition is organised to share its treasures with everyone. The Society held its 6<sup>th</sup> Rare Book Exhibition, from February 8-11, 2006, as part of the Kala Ghoda Festival. His Highness the Nawabsaheb of Palanpur, Shri Iqbal Mohamed Khan inaugurated the exhibition on February 7, 2006, at Hornbill House, Mumbai. The Rotary Club of Bombay, Seacoast and IndusInd Bank sponsored the event.



BNHS PHOTO LIBRARY

The Rare Book Exhibition graced by the presence of His Highness the Nawabsaheb of Palanpur, Shri Iqbal Mohamed Khan

The donation of some rare books from the private collection of members has added immeasurably to the quality of the library. A few of the books on display are 100 to 200 years old. Dr. Ashok Kothari, a BNHS Library Subcommittee member generously agreed to display his collection of rare books as well.

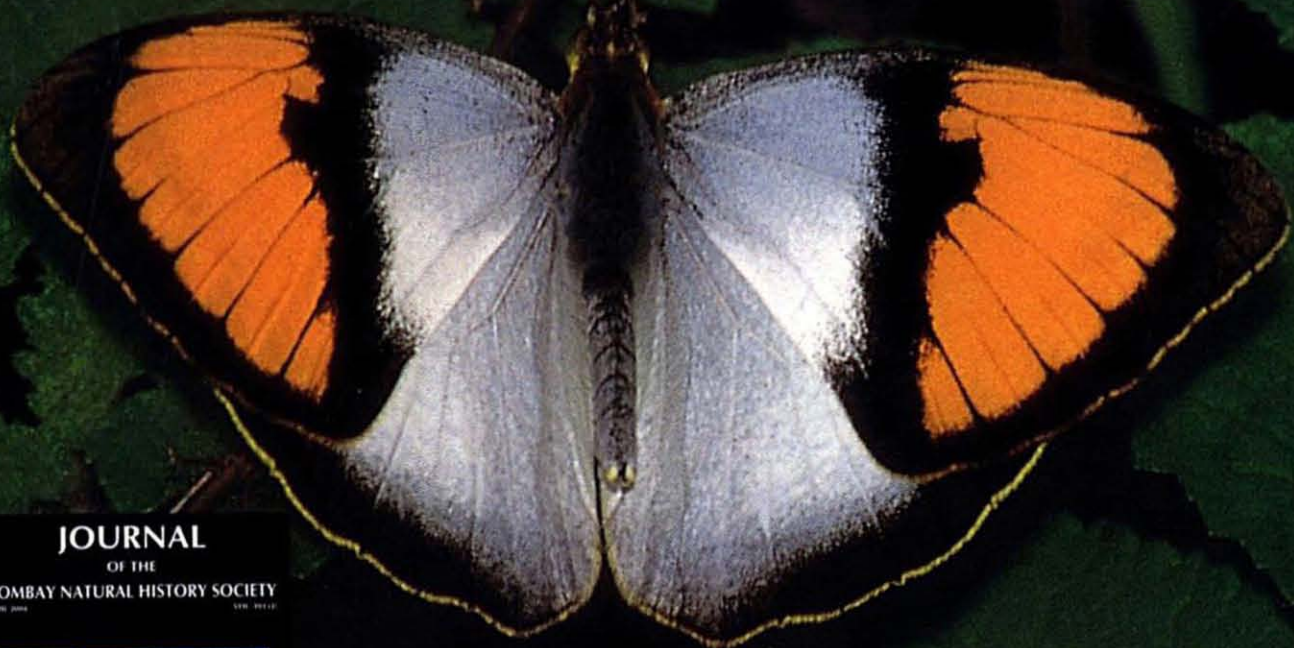
Books on varied subjects such as the history of Mumbai, Bombay Police, Indian Army, Oriental Armour, Kashmir, Tibet, China and books on the history of Gujarat and the Marathas were displayed. Visitors could see rare books like *BIRDS OF ASIA* by John Gould, *ORIENTAL MEMOIRS* by James Forbes which was published from 1812-13, *DENIZENS OF THE JUNGLES* by Robert Sterndale (1886) and *BIRDS OF NORTH CACHAR* by E.C. Stuart Baker (1901-02). Most of the books are profusely illustrated and depict the state of the environment of the period in which they were written.

The century-old *Journal of the Bombay Natural History Society* and other publications of the Society were displayed. ■



# BNHS PUBLICATIONS

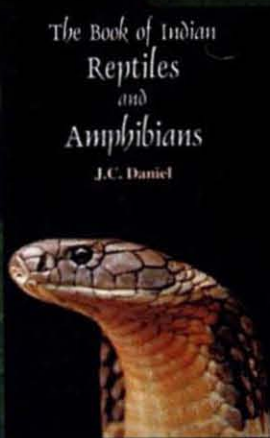
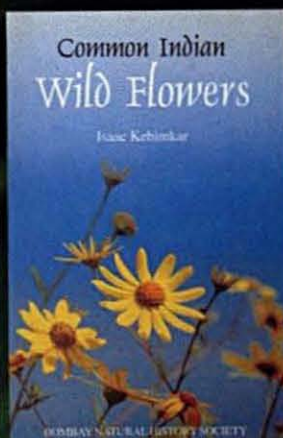
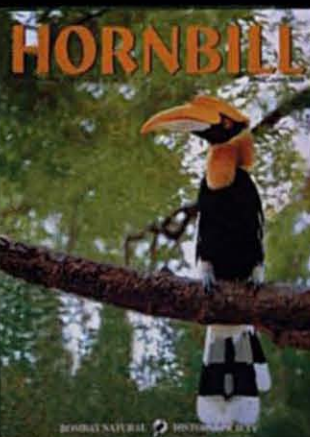
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The Book of Indian Animals ...  
The Book of Indian Trees ...

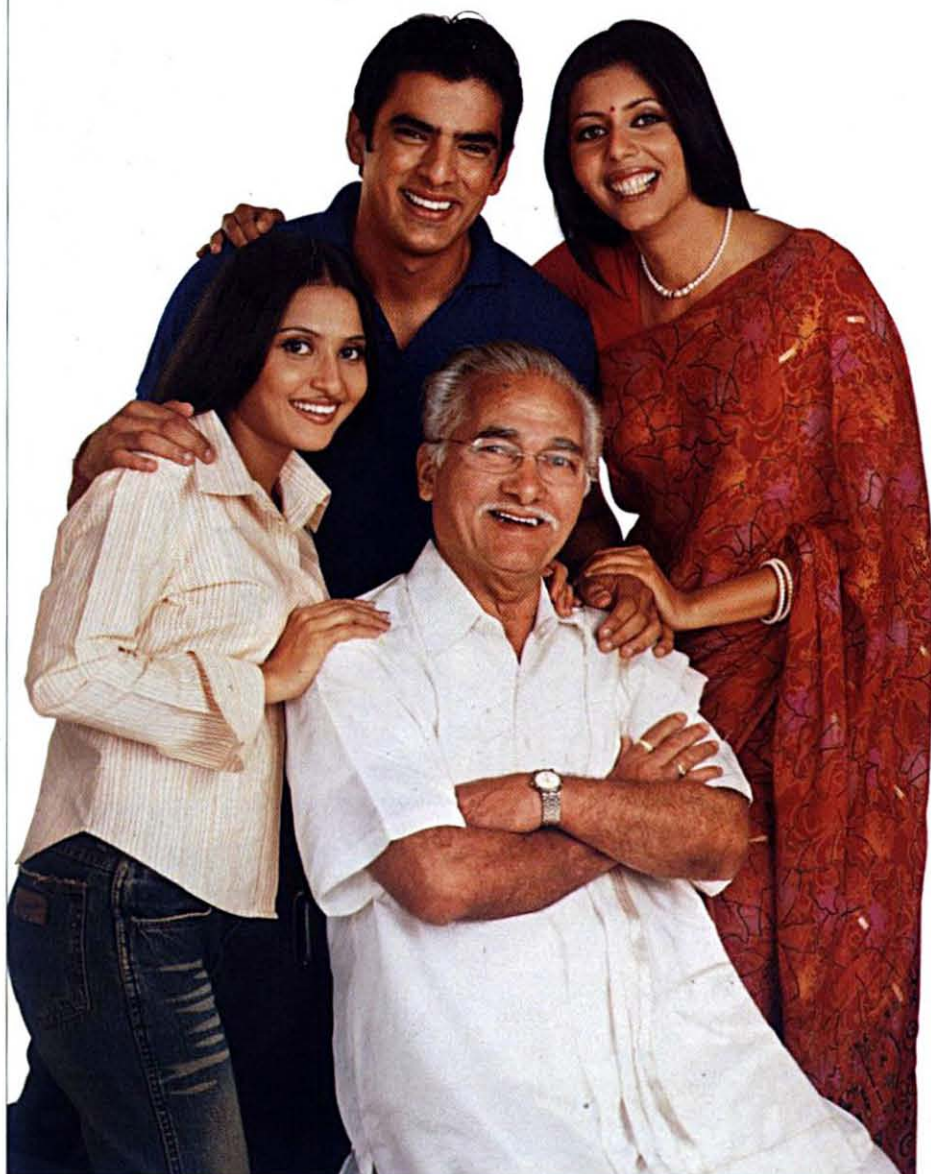
Forthcoming Title:  
**The Book of Indian Butterflies**



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