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Isaac Kehimkar

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Consultant Editors

Gayatri W. Ugra

Ranjit Manakadan

Editorial Assistants

Sonali Vadhavkar

Janhavi Rajan

Layout

V. Gopi Naidu

Cover : **Egg of Indian Palm Bob**

Suastus gremius

Anand Narvekar

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For more information on the Society
and its activities,

write to the Honorary Secretary,

Bombay Natural History Society,

Dr. Sâlim Ali Chowk, S.B. Singh Road,

Mumbai 400 001, Maharashtra, India.

Tel.: (91-22) 2282 1811

Fax: (91-22) 2283 7615

E-mail: info@bnhs.org

Website: www.bnhs.org

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Individually Clean, Collectively Dirty

I grew up reading Khushwant Singh's articles. Besides being a fine writer, he was also greatly interested in nature and an ardent supporter of wildlife conservation. While I cannot say anything about his comments on politics, what I remember most is his frequent reference to our dirty social habits, such as littering, talking loudly, spitting, staring at strangers, honking, and cutting lanes while driving.

Littering has become our national character. I have travelled all over India and found litter in every place that I visited – from the pristine mangroves of Nicobar to the sparkling streams of Ladakh. Wherever we go, we leave our mark by leaving litter. These days, the term 'ecological footprint' has become popular when we talk of our use of natural resources. I have coined another term 'litter footprint' for South Asians, because this habit is strangely common in the Indian subcontinent. I have not seen this habit in other countries to such an extent as in our country. Why are we what we are? Why can't we keep our country clean? Individually we are very clean: a daily bath is an obsession in some cultures. We keep our dwellings very clean. I am always fascinated to see people cleaning their house in the mornings and dextrously making *kolam* patterns outside the door in southern India. But the household garbage is pushed out into the common area where no one takes responsibility. Individually clean but collectively dirty, such is our habit!

Before you feel that I am writing an essay on social science, I should tell you why littering and throwing garbage everywhere is dangerous to wildlife, besides spoiling the scenic beauty. Before the invention of plastic, most of our household garbage was degradable. Going shopping meant carrying our own bags to bring vegetables and fruits, and even rice and flour were given in paper bags. Even if carelessly discarded, these paper bags would decompose within a short time and become part of the soil. City garbage would soon turn into fine compost that was bought by farmers to spread over their crop fields to increase soil fertility. Kitchen waste used to be one of the finest organic fertilizers. Not anymore. Now it is full of non-degradable plastic. Some households and organisations consciously separate degradable and non-degradable wastes, but most do not.

Disposing plastic litter is a huge problem all over the world. Burning is not the best solution as the resultant gases are extremely polluting. Using plastic waste for landfills is a temporary solution as the land fills up quickly and city municipalities – those that work, as most do not in smaller cities of India – keep searching for new dumping grounds. With land prices skyrocketing, finding space near a city is a herculean task. Wetlands are the main victims, and thousands of urban wetlands have been thus destroyed or degraded. Even internationally recognised Ramsar sites such as Deepor Beel near Guwahati cannot escape this casual attitude of the government. Instead of waterfowl, we see trucks emptying city garbage in Deepor, notwithstanding the Supreme Court's strict orders to protect



wetlands. Another disturbing trend in smaller towns is to throw garbage along roads. I remember noticing garbage dumps that stretched for kilometres along the road before entering Barmer town. It is not only ugly, but also proof of the incompetence and complacency of city authorities. Such open disposal of garbage attracts dogs, cats, rats, crows, and kites that flourish at the cost of wildlife. Increase of crow and cat population means that your neighbourhood Oriental Magpie-Robin will no more delight you with its melodious song in spring, or the perky Common Tailorbird will stop breeding in your area, as they will fall victim to predation.

Litter in protected areas plays havoc with wild animals. Carelessly discarded chips or biscuit packets attract ungulates that may accidentally gulp them while licking the salt sticking to the packet. In a famous national park in Maharashtra, I have seen Cheetal beside the road, licking such a packet. I do not know what happened to the poor animal. While surveying vultures in the Thar desert, I was amazed to see a huge amount of plastic in a carcass dump near Jodhpur. When I saw a cattle skeleton filled with a thick bundle of plastic carry bags, I realised that all the plastic had come out from the animal carcass while the meat was eaten up by scavengers. Therefore, the next time you accept a carry bag while buying vegetables, remember that it may result in the death of cattle or wild animals.

Just as all the water ultimately drains into the sea, so does most plastic waste. Our oceans are now full of floating plastic, which kills millions of fish, turtles, dolphins, and whales. Floating plastic bags look like jellyfish to a marine turtle, while micro-plastic particles (plastic that is less than 5 mm) appear like plankton or eggs to fish. The micro-plastic particles are now the most abundant form of solid waste pollution on earth. This deadly soup of micro-plastic kills billions of fish every year, mostly unnoticed. We are only now learning the harmful impact of ingestion of these particles by species such as lugworms that are at the base of the food chain. Plastic particles move up the food chain. Drifting plastic fish nets entangle birds, fish, turtles, and dolphins, making it difficult, if not impossible, for them to move or feed.

Teaching billions of people the three 'R's (refuse, reuse, and recycle non-degradable items) will require cultural change. Technological advances, may solve the problem to some extent. Yiannis Levendis, Professor of Mechanical Engineering, Northeastern University, Massachusetts, and his doctoral student Chuanwei Zhou, claim to have found a method to turn plastic into natural gas. They have shown that plastic waste can be treated in such a way that it turns into a fuel that burns just as cleanly as natural gas. If this is commercially viable, even waste plastic will have some value-addition. Let us hope that this will not increase the use of plastic, and instead help in cleaning up our environment.

Asad R. Rahmani

Flight of the Falcon: Saving Amur Falcons

Text: Neha Sinha

Prologue

October 2012

The BNHS team was still recovering from the difficult but rewarding task of being the coordinator for the international NGO Alliance at the Eleventh Conference of Parties of the Convention on Biological Diversity (CBD) in Hyderabad. After a slew of international meetings, hundreds of delegates, high-level ministerial talks, and scores of side events, we heard appalling news. Conservation India (CI) approached us with a shocking video: One that showed hundreds of Amur Falcons being trapped, plucked, and smoked in Nagaland's Doyang reservoir area. CI wanted our help. They wanted the illegal hunting to become a national issue. It was, of course, a national issue. It was an issue of hunting on a scale that was unsustainable (it is estimated at least 100,000 falcons were killed). It was also the issue of India being able to stand to its CBD commitments. The challenge was to make this an issue the government would care about, and actually act on. When I approached the government, I was told it was a 'known fact' that birds and animals were illegally hunted in Nagaland. I was also told that the Amur Falcon was a Least Concern species according to the IUCN Red List – so what was the fuss about? Finally, it was stated that we could not really be sure of the number of falcons killed. But was this a numbers game? No, it was not. It was the fact that wanton illegal hunting was being carried out of a species that was neither well-known nor on the conservation radar. We created an advocacy policy, stressing on India's role in the Convention on Migratory Species and CBD, contrasting that with what had happened. Responding to us and the range of voices that took up this issue subsequently, the Central Government ordered fact-finding and action-taken reports.

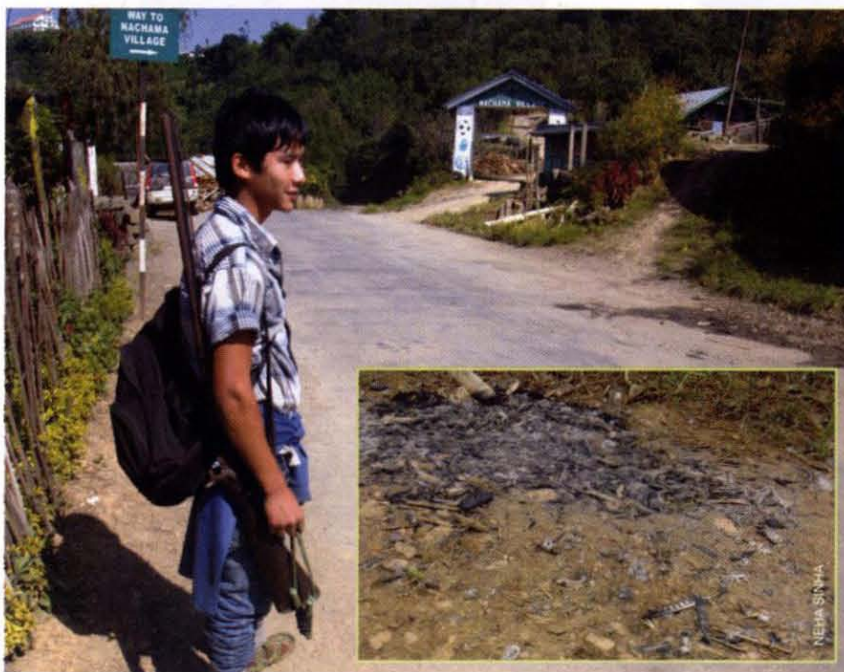
October 2013

Several colleagues, friends and organisations, including BirdLife International, the Royal Society for Protection of Birds, and the Convention on Migratory Species, had helped in taking up the outrage on the Amur Falcon issue the previous year. Looking further, we wanted to create an active conservation plan for the Amur Falcon. BirdLife International was quick to act on our call: they put out an emergency fund appeal for the species. The response was overwhelming: the interested layman, bird lovers, animal lovers, and casual birders responded with generous donations. This was almost a new sort of international conservation action, and it gave us what we were looking for: the fuel to plan ahead. We came up with a two-year plan for vigilance and enabling mindset change among communities in Nagaland and Assam.



ASAD R. RAHMANI

Anwaruddin Choudhury educates locals about different species of falcons in Habang



ASAD R. RAHMANI

the villagers to stop hunting but could not visit the area regularly to monitor the impact of his conservation education. Dr. Choudhury recounted how the programmes were a success, as villagers responded positively on being enlightened about the Amur Falcon's long migration journey. They were surprised to know it came from Russia, and then moved towards Africa, and this moved them.

On the last day of October, we visited Habang IBA. Owing to cutting down of bamboo groves, the falcons had dispersed over Habang and the nearby village of Umro. These remote villages contain Khasi and Nepali populations. From our interactions, fascinating facts emerged. In the small village of Umro, we could see Amur Falcons roosting on electric lines. When the sun rose, the falcons started wheeling in the sky. In the village, people spoke knowingly about the falcons coming to the area every October, and then flying away in November. Hunting was indeed happening — we found evidence in the form of little fires where Amur Falcons were burnt. After a deeper probe into the issue with the help of the Assam Forest Department, we found that the hunters are predominantly from the Khasi community, and several also come from the Meghalaya border to hunt.

“How do I stop hunters, when they don't belong to my community. Do I need to stop them?” the Umro village headman asked us. He added that the Amur Falcon is a *buddhu chidiya* (stupid bird) that is caught very easily.

“Sir, do you allow illegal activity to take place in your village? Would you allow fire or theft?” we asked him.

“No, I would not.”

“It is illegal to hunt wild animals. If you allow someone to come and hunt birds on your fields and your common lands, it amounts to condoning an illegal act.”

He paused to hear us out. Until then, he was not sure whether hunting was illegal. Then, we told him about the Amur

Hunting is still prevalent in the north-east, particularly in tribal belts of Nagaland, Assam, Manipur, Mizoram, and other states.

Inset: Evidence of Amur Falcon killing and cooking in Umro, Assam

5:00 a.m. in an undistinguished guest house in Guwahati: After several phone calls and question-answer sessions, we found out that there was low-scale hunting of Amur Falcon in Karbi Anglong district, near Habang IBA, a site chosen as an Important Bird Area (IBA) for its mass congregation of these raptors. We could not go to this area alone — it is ridden with extremist activity. We decided to take

the plunge and go there anyway, accompanied by the astute Anwaruddin Choudhury, Indian Bird Conservation Network's State Coordinator. Police cars accompanied us, the road went from bad to worse, and yet we hoped to find out more about the Amur Falcon.

In the 1990s, Dr. Anwaruddin Choudhury had recorded hunting of Amur Falcons in Karbi Anglong. He persuaded

Falcon's annual journey from Siberia to India, and then to Africa, crossing over 20,000 kilometres. We also gave him some falcon pictures. Children crowded around us, exclaiming that the falcons had orange-rimmed eyes. The headman was convinced. He said he would do his best to stop the hunting in his village. An important line of communication opened up, one that we will continue to foster.

Notes from Nagaland

In our first week at Nagaland, we visited ground zero: Doyang reservoir, which is visited by an estimated one million Amur Falcons each year, and is also the site where hundreds of thousands of falcons were trapped last year. Reaching Doyang reservoir—next to Pangti and Doyang villages—from Kohima is an obstacle course. There is no road to speak of, and chunks of mountain have been chiselled away to make a passage that is wide in parts and dangerously narrow in others. Potholes are not the casual exception—they are the norm. People travel on these roads in shared vehicles. Schoolchildren and young women hang off the doors and tops, as the vehicles lurch falteringly ahead. Nagaland's beautiful evergreen forest is stained in greys and browns on both sides of the road—due to all the fugitive dust created by cars and other vehicles bumping and grinding down the single link of transport.

Doyang reservoir is the product of a dam on the Doyang river. The water body, formed in 2000, has been attracting Amur Falcons *en masse* ever since, and the site is a potential IBA. The sharp-eyed falcons dart above the water, chasing insects. Hunters have been watching the falcons too. Three years ago, fishermen who cast their nets in the water began to cast their nets between trees. It was easy to catch the falcons. They just flew into the nets, one after the other.

Last year, the hunting was phenomenally successful. An ex-hunter



ASAD R. RAHMANI

A huge flock of Amur Falcons at Doyang reservoir



ASAD R. RAHMANI

Doyang reservoir is very picturesque and along with Amur Falcons, can become major tourist attraction

told me how the screams of a single falcon attracted more birds, making the whole hunting exercise extremely simple. Since the issue has been exposed fairly quickly, selling Amur Falcons has not become as economically entrenched as it would have with time. As the number of birds caught is considerable, the sale price of each bird is low, about 10-16 rupees each. However, ex-hunters like

Tajolo Jami say they earned between 30,000–80,000 rupees per season by selling Amur Falcons.

It is tempting to dismiss the issue of hunting as something that Nagas are known to do and infamous for. The fact is that logistics in this area are difficult, and as conservationists we need to be sensitive to this. There are no provisions to carry fish from the Doyang reservoir



The Nagaland Government and Forest Department did a tremendous job to stop Amur Falcon hunting



Pledging support for Amur Falcons at the Sungro Eco-club

to nearby markets, because the only ice factory in the area is defunct. Villagers bring ice from Golaghat, Assam, to carry the fish in small thermocol containers. This method is time-consuming and inefficient. Villagers say there is conflict with elephants in the area as well. Crops get destroyed, and in their perception, villagers have linked elephants to the new reservoir, as the pachyderms get attracted to the unmistakable water body, and towards wild bananas and cultivated crops on the reservoir banks. Many of

the fishermen and villagers are matriculates, some even graduates, but unemployment forces them to turn to farming or fishing. This is a contrast to the well-read, eloquent and English speaking youth of the area, who could easily be part of more lucrative professions.

Looking ahead

Working with our local partner, the Nagaland Wildlife and Biodiversity Conservation Trust (NWBCT), eco-

clubs were started in Pangti, Sungro, Asha, and Doyang villages. This was an intervention meant to appeal to hearts, after we had appealed to heads; and also by reinforcing that hunting was in fact, illegal.

Nagaland has a long, albeit illegal, hunting tradition. People cherish their home-made guns, some of which are antique, old-fashioned muskets. They bring home all manner of animals to eat. One way of changing the mindset is by targeting children, who would bring about change by turning their own parents into conservation partners.

With BirdLife International's help under the Preventing Extinction Programme, and working with several creative people, a range of educational material was created to keep the children busy. For the first time, the kids were exposed to their native birds, animals, and to migratory falcons. At the eco-clubs, children are busy illustrating falcon pictures, learning about their annual migrations, and singing songs about the Amur Falcon. There are success stories here—children who ate Amur Falcons last year did not do so this year.

Church leaders and village councils have also appealed to villagers not to hunt, responding to NWBCT's advocacy. Combined with the vigilance and patrolling by people we have supported, and an active forest department, there has been no trapping of Amur Falcons recorded this year. The people of Nagaland have demonstrated that they



Such posters have been put up in many Amur Falcon staging areas by the Nagaland Government with a passionate appeal by the Chief Minister to stop the killing of these birds

ASAD R. RAHMANI

ASAD R. RAHMANI

are indeed willing to listen and embrace new ideas.

The turnaround is heartening and goes to show that complex problems need multifaceted solutions. Equally, by no means is the fight over. "Hunting will resume if no alternatives are presented" Pangti village chairman head Ronchamo Shitiri told us. Without the basic amenities of *bijli*, *sadak*, and *pani* (electricity, roads, and water) these villages can revert to hunting. The political ecology of hunting requires constant engagement and intervention. One of the ways forward, as we have tentatively discussed, is imparting training in eco-tourism and birding to the locals, as a means of generating employment. The youth here already speak and read English; what they need now is knowledge of natural history. We hope that learning about their natural history will enable them to value it better. The young members of the eco-clubs have demonstrated how natural history fascinates them, when given the right direction. Using the same lens, we hope to turn the youth of the area away from catapults and nets, and towards cameras and binoculars.

Epilogue

The epilogue on the little Amur Falcon cannot be written yet. This marathon migrant has so far been a novice on the conservation radar, slipping by unnoticed for most part, until its slaughter brought it to light. I would be happiest if Amur Falcons continue to be Least Concern on the Red List—read, continue to throng the skies in massive vortices.

When the sun is about to set on Doyang, the falcons form gyres in the



The village head of Bura, Assam, with an Amur Falcon poster



The BNHS team with teachers and volunteers of the Sungro Eco-club, Nagaland

sky, much like the murmuration of starlings. They dart, wheel around, and swoop in the air, in an ever-changing formation. The air fills with their sharp cries and their bodies blur into the twilight. It is a flock working, and playing, together. In a way, saving the Amur Falcon—and all the wild birds it represents—will also be like working

and playing together. We will have to engage children, international conservationists, local groups, citizens, and our own expertise in a part of the world where conservation is but a fledgling idea. But do it we shall, for the sake of all that is wild and free. And for the sake of the brave little Amur Falcon. ■

The team: Dr. Asad R. Rahmani, Neha Sinha, Mayur Bawri, Ngulgholal Khongsai from BNHS. **Our Stops:** Habang, Sabuda, and Umro villages in Assam's Karbi Anglong. Dimapur for meetings with NWBCT. Villages of Asha, Sungro, Doyang, and Pangti, to meet eco-clubs, teachers, church-goers, politicians, fishermen, and village headmen. The team from NWBCT includes Bano Haralu, Ramki Sreenivasan, Rokohebi Kutso, R. Lipenthung Lotha. Teachers and educators in the eco-clubs include Yanger Ao, Janbemi Jami, CK Mhanimo, Yilobeni Yibeni, Runthunglo Lotha, and Yibibeni.

Neha Sinha is Policy and Advocacy Officer with the Bombay Natural History Society. She works on securing sites with a special emphasis on Important Bird Areas.





Indian Roller

Anting

Text: **Ranjit Manakadan**

Recently, I spotted an interesting image of an Indian Roller *Coracias benghalensis* on Facebook posted by Mr. Satish Pradhan, a BNHS Governing Council member. The bird was flat on the ground with its wings spread out and appeared to be anting, which was confirmed by Mr. Pradhan. He had sighted the bird during a birding trip to Pench in June 2013, and was able to record the observations with his camera. However, unfortunately, none of the pictures clearly revealed ants on the ground.

The images brought back memories of when I witnessed this interesting behaviour as a youngster in 1981, while posted at the Society's field station at Point Calimere Wildlife Sanctuary, Tamil Nadu. I was sitting outside my quarters in the evening after fieldwork. Not far away in the compound was a small flock of Common Mynas *Acridotheres tristis* busy doing something 'fishy' in the grass. The birds seemed excited and a few of them were taking turns at lying on the grass with their wings spread out. Having always been crazy about wildlife, I have always had a keen interest in reading stuff on the subject, and I guessed that I was watching an incident of anting.

On inspection of the site, I did indeed find ants swarming there. This rare sight generated a lot of discussion among my colleagues and seniors, and I was asked to write a note on this for the field station's monthly report, which was to be sent to the headquarters, and this was elevating for me as I was just a fresher at the time. However, over the years, I have felt a sense of regret knowing that I could have also got this observation published in an ornithological bulletin – to record it for science. With the posting of the images of anting on Facebook, I realised I had regained the lost opportunity to record the observation in print (via *Hornbill*), and to learn more about anting while working on this article.

The most accepted hypothesis for anting is that ants secrete formic acid on being disturbed or handled, and the toxin deposited onto the bird's feathers acts as an insect and mite repellent, and even a fungicide and bactericide. Other than ants, birds have been reported 'to ant' using mealworms, certain species of caterpillars, earwigs, beetles, and millipedes. Caged birds have also been observed rubbing cigarette and cigar butts, and acidic fruits on their feathers, probably as a substitute for ants. The contrarian

view is that anting is done to make the ants more edible as formicine ants are protected from predators by their spray which contains formic acid. By anting, the feathers are used as 'napkins' to wipe off the secreted toxin, thus making the ant fit or less distasteful for eating. However, literature reveals that birds may or may not eat the ants after anting (discussed further on in the article). There is also the suggestion that anting has an intoxicating effect, as some birds have been known to shake and lose control over their ability to walk. Well, to think of it, the Mynas observed at Point Calimere did seem a little out of their minds!

Anting is now reported in more than 200 species of birds, largely songbirds, but has also been reported in other groups such as owls, turkeys, pheasants, dippers, and some raptors. The ants involved are largely of the subfamily Formicinae. Anting may be passive or active. In passive anting, the bird squats or lies

down assuming an exposing stance to allow the ants to crawl over the body. Sometimes, the ants are 'stirred up' by squirming or by other ways, which causes them to secrete the formic acid and swarm over the bird. In active anting, the bird picks up single ants or small groups and rubs them onto the feathers, either eating or dropping them after that.

A literature search via the database of the BNHS's Environmental Information System (ENVIS) Centre revealed eight reports of anting in Indian birds. The first was by Sálím Ali in the Society's journal – *Journal of the Bombay Natural History Society (JBNHS)* in 1936, narrating a sighting by Humayun Abdulali. Humayun had seen a pair of Jerdon's Leafbird *Chloropsis jerdoni* in the act of anting using red Weaver Ants *Oecophylla smaragdina* on a tree in Mumbai. Each bird would pick up an ant and rub it onto its feathers before swallowing it. This observation, besides being the first reported case of anting in India, was also unique at that time, as the ants were eaten after anting unlike the cases reported in other countries till then – as commented by Sálím Ali. Sálím Ali went on to discuss the subject of anting, the species/families reported



Weaver ants are known for their fascinating nest-building behaviour. Workers weave leaves together to create nests using larval silk. Their bite is painful and they often spray formic acid into wounds

RANJUL KHOT



SACHIN BALKRISHNA PALKAR

The Indian Pitta, seen sunning here, is a medium-sized passerine. Found in thick undergrowth, it can be easily distinguished by its distinctive call

to ant, the hypothesis for anting and the chemistry behind it. He urged Indian birders to keep a lookout for this interesting activity of birds. Sálím Ali also enlightened us that formic acid was first discovered in 1670 by distilling Weaver Ants!

The next Indian report was by T.B. Fletcher from Shillong in 1937, again from the annals of the Society's *Journal*. He witnessed a drongo picking up ants (species not mentioned) and directing them to the base of its tail, and occasionally beneath its wings, before swallowing them. The next, again from the *JBNHS*, was by N.G. Pillai in 1940, who observed "birds bathing in ants" on the lawns of the Government Museum at Thiruvananthapuram. The protagonists this time were a pair of Common Mynas using Weaver Ants, but discarding them after use. On inspection of the site, Pillai found the place reeking of formic acid and littered with dead and dying ants, which strongly contradicts the theory that anting is a strategy wherein birds render ants fit for ingestion. However, there could be the possibility that some were

consumed unnoticed (considering the small size of ants). For example, in a study of anting in White-collared Woodcreeper *Xiphocolaptes albicollis* in Brazil using millipedes, it was found that some were ingested, while others were dropped.

The rest of the records are from *Newsletter for Birdwatchers*. The first was in 1972 by a well-known birder from Kerala, the late K.K. Neelakantan, reporting on a flock of Jungle Mynas *Acridotheres fuscus* anting on a tree. What was unique about this was that these birds were in a "drunken-dervish act" rushing and alighting directly on the ants' nest and picking a few for anting turn by turn. Later in 1974, P.V. Jose, presumably also from Kerala, reported an instance of anting in the House Crow *Corvus splendens* on the branch of a tree and one in the Indian Magpie-Robin *Copsychus saularis* on the roof of his house.

A more recent manuscript suggestive of anting was published in 2009 by Sachin Balkrishna Palkar from Pune.

He had written about the “peculiar behaviour” of an Indian Pitta *Pitta brachyura* lying spread-eagled on the ground (with an excellent photo of the bird), asking readers what the reason for this behaviour could be. However, on contacting him for use of his images for this article, he stated that there were no ants in the area, and thus this appeared to be a case of sunning rather than of anting (as seen in the picture).

There was a reported observation of passive anting in the Black Kite *Milvus migrans* by Arunayan Sharma, where he saw ants running all over its body as it sat along the road. I wonder whether this was a genuine case of anting or of a very sick bird being attacked/eaten up by ants. My reason for doubting this report is that the bird was not lying flat on the ground to facilitate anting and especially since I had once seen an extremely disturbing incident of a pigeon at a rubbish dump in Mumbai with small common red ants (known for their painful bite) swarming all over its body. In this case, it definitely did not appear to be a case of anting, and it was apparent that the bird was in its death throes. Sharma does not provide details of his anting observation, the species of ant involved, and the fate of the bird subsequent to the observation. However, if this was indeed a case of anting, it would be the first record of anting in a raptor in India.

So the next time you see a bird ‘acting strange’ on the ground or tree, watch out – it may be anting. Besides recording the bird species, and the site and circumstances in which it is taking place, also check out on the ant species. And if you have a camera in hand, try to capture the phenomenon, preferably with the ants in the frame. I am emphasising on this since I strongly recollect that the ants I saw in the birding incident at Point Calimere were not the red Weaver Ants, but large black ones (possibly of the genus *Camponotus*). The fact



J.M. GARG

A Black Drongo in the process of anting

that the ants were on the ground – and not on a tree (typical of Weaver Ants) – also suggests this. Also, observe carefully whether the ants are eaten or discarded after anting. And check if it is instead a case of sunning in birds, which is not unusual on cold winter mornings and after monsoon showers when sunshine creeps in. Your observations could provide valuable inputs for ornithologists to have clearer insights into the fascinating subject of anting.

Happy birding and anting! ■

Ranjit Manakadan has been working with the BNHS since the early 1980s. He has worked and was in-charge of a number of research projects (Great Indian Bustard, Point Calimere Ecology, Grassland Ecology, ENVIS, Sriharikota Faunal Biodiversity, Plant-Animal Inter-relationships in Sriharikota Island, Slender Loris, Spot-billed Pelican, Pulicat Waterbirds, and Asian Elephant) of the Society. He is presently an Assistant Director at the Society.



We are grateful to

RISHAD NAOROJI

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Kekoo Naoroji Memorial Fund
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WIT AND WILL: THE ASIATIC WILDCAT

Text and Photographs: Dharmendra and Divya Khandal



The Arabs say, “Do good and throw it in the river, God will repay you in the desert.” Deserts are indeed the toughest of landscapes on the planet. Surviving in one of the most difficult terrains in the world is the Indian Desert Cat, or Asiatic Wildcat as it is now known. This graceful desert cat is well-adapted to the extremes of the desert environment, and is tolerant of the sizzling and freezing temperatures that are typical of deserts. Like other desert animals, in order to adapt to the environmental conditions, it has special morphological features, such as forelimb pads covered with dense and soft hair for protection from the blistering sand in hot summers. This agile and intelligent cat is representative of our desert ecosystem, where survival depends on wit and will.

Felines are generally perceived as elusive and mysterious, and the Asiatic Wildcat is no exception. However, locals mistake it for the domestic cat, because morphologically the two are very similar, except for the former’s paler coat and slightly longer legs. Genetically, too, they are very closely related, and in fact, the Wildcat is the ancestor of the domestic cat. Due to their similarity, hybridisation resulting in viable progeny is possible, and thus, crossbreeding with free-ranging domestic species is one of the main conservation problems faced by this small cat. A number of demographic and ecological conditions can lead to extensive crossbreeding, threatening the genetic integrity of the species. Only sufficiently large tracts of natural landscape can help in its conservation. Small areas, which are surrounded by human habitation, will ultimately result in hybrid populations.



Not enough is known about the ecology and behaviour of the Asiatic Wildcat, seen here in its scrub desert habitat



Asiatic Wildcat is probably a more appropriate name than Indian Desert Cat for this species, because *ornata* is one of the subspecies of *Felis silvestris*, which is popularly known as the Wildcat worldwide. The Wildcat is distributed in Africa, Europe, and Asia; there are five different subspecies distributed in the various geographical zones. So, now we use the name Asiatic Wildcat *Felis silvestris ornata* instead of Indian Desert Cat. The Asiatic Wildcat is found in India, China, Pakistan, Kazakhstan, and Mongolia. In India, it is found in only two states – Rajasthan and Gujarat.

On a recent trip this monsoon, we were fortunate to observe some interesting behaviours of this cat in the desert region of Rajasthan. One evening on a desert trail, we saw one looking out of its burrow in a sand dune. However, above it was a flock of Common Babblers *Turdoides caudata* that called to alert each other, and the resulting ruckus forced the cat back into the burrow. The cat tried to come out after the babblers left the place, but this time a small bird, the Rufous-fronted Prinia *Prinia buchanani*, started calling out and the Common Babblers returned to resume their 'scolding'. This drama subsided after a while, and the cat came out of the burrow confidently, with a raised straight tail. Later, it disappeared into the bushes. Besides the scorching sun and burning sand of the desert, such troubling bird activity may have persuaded this cat to become a nocturnal hunter – at least during summer! During the monsoon and winter, it is quite active during the day.



The Asiatic Wildcat can go for long periods without water. Its diet includes rodents, jerobas, jirds, voles, mice, and also hares, birds, insects, lizards, and snakes

The Indian Desert Jird *Meriones (Cheliones) burrianae*, Indian Spiny-tailed Lizard *Saara hardwickii*, and ground-dwelling birds are the cat's main prey, all of which are active during the day.

The Desert Jird is the signature rodent of the Thar Desert. It usually forms colonies, with burrows resembling honeycombs in sand dunes. Sometimes, the Asiatic Wildcat lives in dens close to such rodent colonies. It normally does not dig burrows to locate prey, but stalks and ambushes it. In one such instance, we saw a cat in its den, watching a Jird near its burrow, which was hardly 2–3 m away. The Jird was also aware of the cat's presence, but the cat still managed to catch it, being a stealthy and agile predator.

All cats are master predators. They have forward-facing eyes that give them binocular vision and depth perception needed for hunting, and



Habitat loss, hunting and interbreeding with domestic and feral cats are the main reasons for the decline of this species

have retractable claws, sharp teeth, and strong jaw muscles for killing prey. They also have excellent night vision and hearing for detecting small rodents. Like other members of the cat family, the Asiatic Wildcat, too, has very sensitive whiskers that enable it to detect changes in air movement and to hunt at night.

Studies show that rodent populations fluctuate in natural ecosystems, and that there are cycles in population because of food availability and disease outbreaks. However, the population of most lizards is much more stable, and species such as the Spiny-tailed Lizard which are present in large colonies provide the Asiatic Wildcat with a constant food supply. There is no study to indicate that fluctuations in prey populations have an effect on its population. However, it appears that hard ground areas like Tal Chhapar, which have colonies of Spiny-tailed Lizard, have a more stable population of cats compared to sand dune areas that support Desert Jird colonies. Besides the Spiny-tailed Lizard, the Asiatic Wildcat also preys on other lizard species and monitor lizard species such as the Desert Monitor *Varanus griseus konieczyński*, and Bengal Monitor *Varanus bengalensis* and snakes such as the Red-spotted Royal Snake *Spalerosophis arenarius*, Royal Snake *Spalerosophis atriceps*, Indian Cobra *Naja naja*, Common Cat Snake *Boiga trigonata*, Forskal Sand Snake *Psammophis schokari*, Sochurek's Saw-scaled Viper *Echis carinatus sochureki*, Common Krait *Bungarus caeruleus*, Sind Krait *Bungarus sindanus*, Red Sand Boa *Eryx johnii*, Rough-tailed Sand Boa or Common Sand Boa *Eryx conicus*, and Glossy-bellied Racer *Platyceps ventromaculatus*.

Hollow trunks of desert tree species like *Prosopis cineraria*, *Tecomella undulata*, and *Salvadora* spp. provide shelter and also serve as good vantage points, while shrubs and herbaceous plants like *Leptadenia pyrotechnica*, *Calligonum polygonoides*, *Capparis decidua*, and *Crotalaria*



The Asiatic Wildcat is paler than the domestic cat and has longer legs

burbia provide ground cover. The Asiatic Wildcat is generally solitary, living alone for most of the year except during the mating season or when females are raising their young. It has a dispersed social system, where the home range of a male overlaps with one or more female home ranges. However, many aspects of this cat are yet to be studied in the Indian landscape, such as the breeding biology, impact of hybridization, and resource partitioning with co-predators.

The Thar Desert is a treasure trove of biodiversity, and at times the people in the area are oblivious of its existence. However, in general, desert communities display a positive attitude towards

conservation of biodiversity around them. The Thar is one of the most highly populated deserts of the world. This two lakh square kilometre area is the 18th largest subtropical desert. It covers Rajasthan, Gujarat, Haryana, and some parts of Punjab in India, while some parts are in Pakistan. For the conservation of desert flora and fauna, sanctuaries and national parks have been created, such as the Desert National Park, Tal Chhapar, Kachchh Wildlife Sanctuary, and Wild Ass Sanctuary, but these constitute merely 7.5% of the total desert region in India. However, every village and small hamlet in the Thar has a community pasture locally called *oran* or *beed*, which supports livestock, as well as wildlife. These small wildlife refuges provide habitats for the Asiatic Wildcat, but in such areas there is always the lurking threat of hybridisation with domestic cats, and danger from feral dogs.

In the Sikar district of Rajasthan, we visited a small pasture that is protected by the local community, which has 500 Chinkara *Gazella bennettii* and a fair number of Asiatic Wildcat. Attacks by feral dogs are frequent: we witnessed a cat stalking a Desert Jird, but it ran into its den when it heard dogs barking, and avoided coming out for a few hours, obviously stressed. The burgeoning human population in the desert areas has led to the increase in the feral dog and domestic cat populations.

Among the many inhabitants of the desert, the Asiatic Wildcat is a survivor and quite a stunner! It has the will to survive in the harsh environment, and wits to help it to do so. The Asiatic Wildcat is alluring, with its poise and intelligence, yet so much still remains in the dark about this magnificent feline. ■



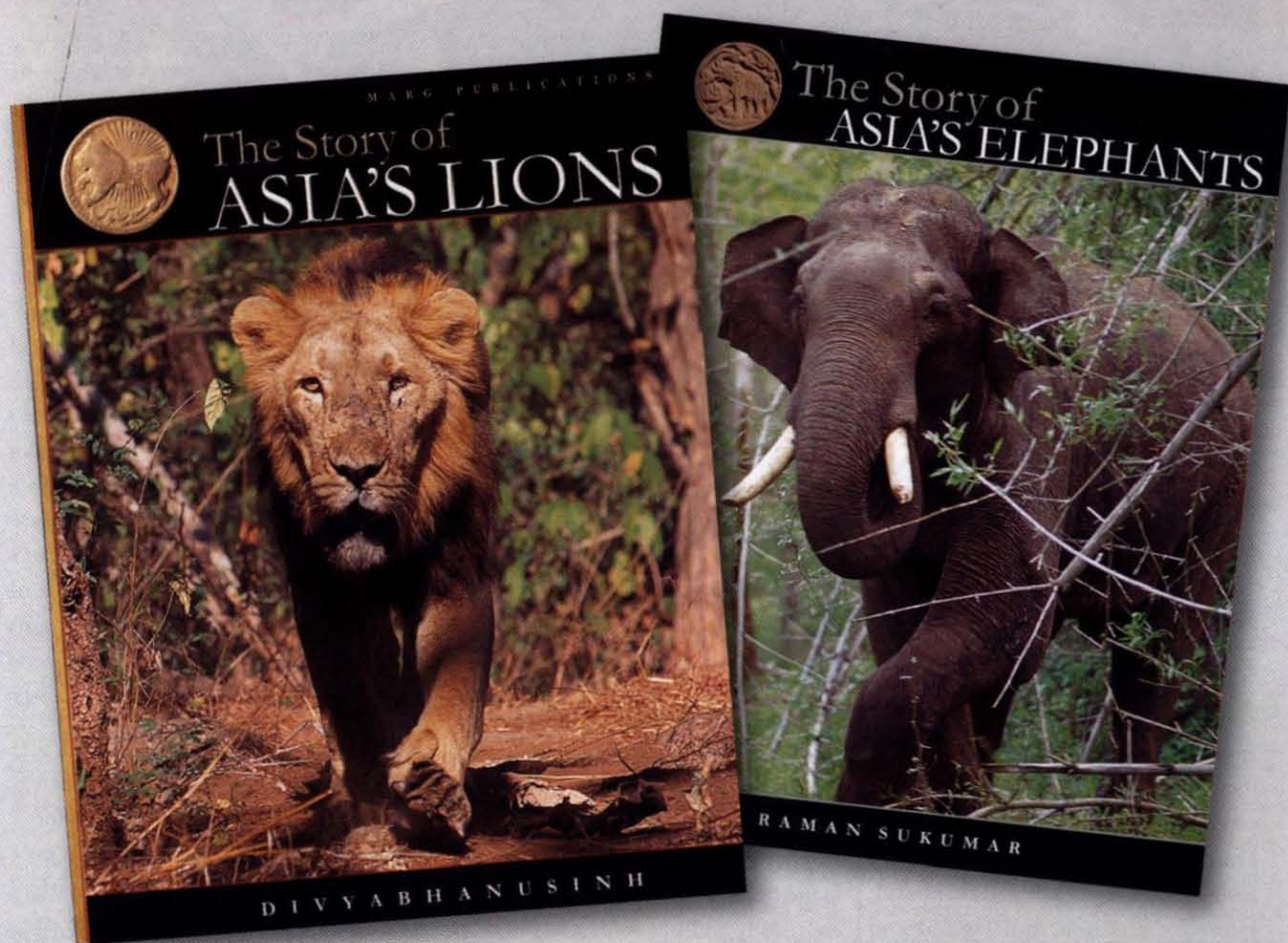
Dharmendra Khandal is working as a Conservation Biologist with Tiger Watch in Ranthambhore. He is also involved in reform of a traditional hunting community, the Mogya.



Divya Khandal is an amateur wildlife writer and photographer. She runs a social enterprise Dhonk, which works with communities around the the Ranthambhore National Park, promoting local crafts.

Marg

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Doksa: Summer home of livestock



In Ladakhi, *doksa* is the term for the seasonal nomadic settlement used by agro-pastoralist communities to shelter their livestock during summer in the Greater and Trans-Himalaya in India. During the course of surveys on the Snow Leopard in Uttarakhand, Himachal Pradesh, and Jammu and Kashmir from 2008–2011, we had some interesting observations on *doksas*.

Doksas are used to keep large herds of sheep, goats, bovids, and equids during the snow-free period from May to September. Also known as *goth* and *mani*, these are permanent or semi-permanent structures constructed using locally available material such as stones and mud, and may comprise several rooms with partitions, and sometimes a kitchen. The size of *doksas* varies depending on the number of livestock. The common practice in the region is to divide the pastures

between herder households, and these are regulated internally and defended from encroachments. Sharing of *doksas* was observed within closely located villages.

Doksas were found to differ slightly in the three states. In Uttarakhand, they are mostly without roofs and are used to maintain the young and ill livestock, whereas most of the *doksas* in Ladakh have a roof and kitchen. *Doksas* are built keeping in mind the travel routes taken by the shepherds and the distance from the village.

A few other interesting observations concerning *doksas* were recorded during the survey. In Ladakh, a female Tibetan Wolf was seen with three newly born pups using a *doksa*; it was not clear if they were born there. In another instance, a Himalayan Brown Bear was sighted at a *doksa* in Himachal Pradesh, perhaps searching for livestock. In

Ladakh, five sheep were reportedly killed by a Snow Leopard while they were grazing near a *doksa*.

Traditional pastoralism has been practiced by tribals in these regions for generations, but the local economy is rapidly becoming integrated with mainstream markets. In the wake of recent changes in the economy and market forces, young herders are increasingly leaving their homes in search of alternative means of livelihood. Due to recent developments in the Greater and Trans-Himalaya, their lifestyles are undergoing drastic changes and the younger generation is attracted to settling down in urban areas, instead of carrying on the traditional profession of agro-pastoralism.

Aishwarya Maheswari
New Delhi

The Menace of Stray Dogs and Livestock

I read with great interest the Editorial in the July–September 2013 issue of *Hornbill* “Civilian dogs, ‘Sarkari’ Dung” regarding the menace of stray dogs and cattle.

I still carry some unpleasant memories of my trip to north Sikkim in 2011, a place of great natural beauty. While birding in Lachung, my father and I strayed close to a place where kitchen waste was dumped, and we had a hard time warding off a pack of stray dogs that advanced on us menacingly. At another place near Thangu, a dog tried to bite me on the leg, but luckily I was well padded because of the cold. Further ahead on the way to Gurudongmar, while waiting for the road to be cleared of snow, I was told of an incident when an argali died of shock and wounds in a shed, after being pursued by a pack of dogs. It was also reported that an army personnel had died in the past after being mauled by dogs. These were, however, not first hand accounts, but reports of locals.



Little Ringed Plover

Regarding the problems from livestock, I would like to add one more to the list – trampling of eggs and chicks of ground-nesting birds. I have seen colonies of island-breeding birds like the Indian Skimmer, terns, and pratincoles wiped out after being overrun by cattle in the Chambal, when they get access to

the breeding islands in the river during low water levels. I once saw a very sad sight, on the shores of the Tighra lake in Gwalior, of a pair of Little Ringed Plovers trying in vain to protect their nest from being trampled by a flock of sheep.

Udayan Rao Pawar
Gwalior

The Caterpillar's House?

Mornings are a great time to sight and photograph wildlife! A few months ago, I noticed a cup-like formation of leaves on a rose bush, and a large caterpillar tucked inside. As I had



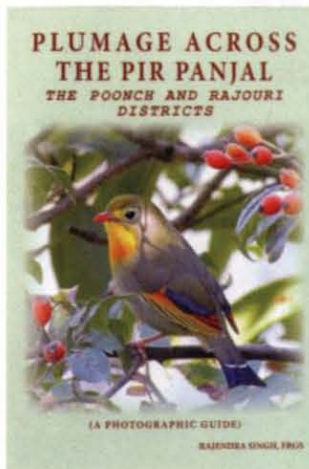
not encountered anything like this before, and I was not aware that caterpillars construct hideouts, I decided to observe the dweller during different hours of the day. The nest, neatly prepared out of 3–4 leaves and glued properly with gossamer-like threads with an opening for entry and exit, appeared to be an architectural marvel. I saw the caterpillar resting inside cozily as though thoroughly enjoying its siesta.

I noticed that it came out of the hideout mostly in the morning and evening, when the sun's rays weren't too harsh. It protected itself by moving about on the underside of leaves.

It was a large caterpillar, c. 50 mm in length, covered with golden yellow hair, and had a few black dots on its body. It looked attractive and fearful at the same time! I could later identify it as the Tussock caterpillar of a species of moth belonging to the family Erebidae.

Prabhat Kumar
via email

Editor's Note: We request our readers to share similar sightings and experiences with us at publications@bnhs.org



Plumage across the Pir Panjal

by Rajendra Singh

Size: 21.5 x 15 cm

Pages: 297

Price: Not mentioned

Hardback

Reviewed by: Atul Sathe

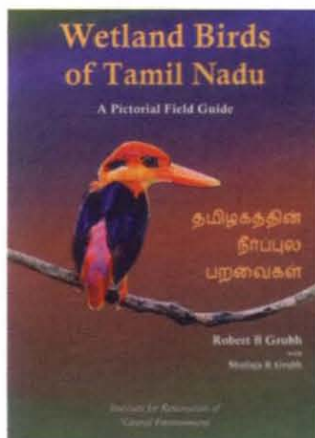
This is a photographic guide to the birds of Poonch and Rajouri districts, situated in Jammu and Kashmir. The area covered in the book is from the lower foothills bordering the plains to the uppermost reaches of the Pir Panjal range. It provides an opportunity for bird lovers to learn about the rich avian diversity of this region. The author's exposure to the birdlife of the region has been significant during his tenure with the armed forces as a brigadier. He discusses 310 species of birds in the book, of which 260 are from the two districts.

Wonderful photos of a spectrum of bird species catch the reader's attention from across habitats, such as wetlands, forests, grasslands, and mountains. The photo of a migrant Black-headed Gull, complete with black plumage on the head, reminds one of its long journey through India. It is also interesting to see photos of the Brown-headed Barbet, which is more often heard than seen. There are images of beautiful, endemic Himalayan birds, such as Himalayan Monal, Kaleej Pheasant, and Himalayan Rubythroat. Birds such as the Spectacled Finch, Alpine Accentor, Red-headed Bullfinch, and Pine Bunting described in the book are not easily spotted, unless one is watching birds in the fabulous mountains of the region. Many of the birds common to the Indian peninsula also occur in the region.

A map of the two districts and adjoining areas of the Jammu region has been provided. The illustration showing the morphology of birds given in the beginning along with English names, scientific names, and small descriptions below each photograph, will be useful in identifying birds. Localities where the different species occur in the two districts are also mentioned. Interesting tips on birdwatching and photography in the mountainous region, where one is prone to 'camera-shake' after a rigorous climb, are provided.

The book can play an important role in encouraging birdwatchers and nature lovers to visit these neglected regions, and in the process promote sustainable eco-tourism. This could be a win-win situation for locals, visitors, and wildlife. It can also encourage people from diverse walks of life to scientifically document the local flora and fauna during their daily routine.

Overall, the book is informative; however, the spelling and punctuation errors could have been addressed. Giving the local names of the birds would have been an added advantage. 📖



Wetland Birds of Tamil Nadu

by Robert B. Grubb with Shailaja R. Grubb

Published by: Institute for

Restoration of Natural Environment, Tamil Nadu

Size: 21.5 x 14.5 cm

Pages: 168

Price: Rs. 250/-

Hardback

This book is a beginner's guide to the wetland birds of Tamil Nadu. Spread over 167 pages, it describes 149 species along with 213 photographs, and indicates the main features that can be used in identification. 📖

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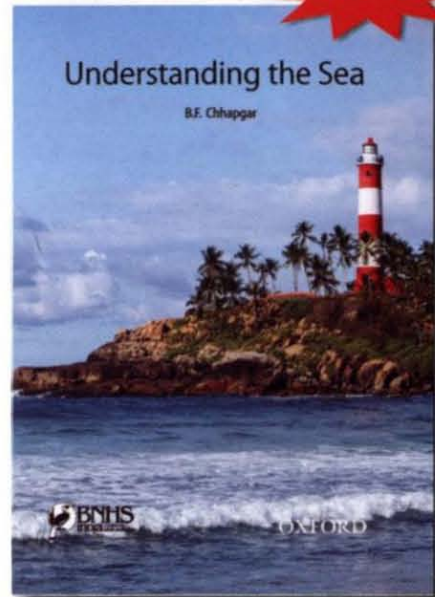
by B.F. Chhappar

The book covers a wide range of subjects, from winds, waves, tsunamis, tides, and currents to biological phenomena like biorhythm and bioluminescence to seamanship and maritime lore. These fascinating facts of the ocean realm will be useful to biologists, nascent oceanographers, sailors, students and anyone interested in the subject. It has been listed as 'recommended reading' for Third Year B.Sc students of Zoology.

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ABOUT THE POSTER

A butterfly starts life as a very tiny egg. Butterfly eggs come in innumerable shapes, beautiful colours, and surface textures – a view revealed only under a microscope.

During mating the male delivers a sperm packet (spermatophore), which is stored in a sac (bursa). Each egg is later fertilised as it passes down the female's egg-laying tube. A minute opening at the top of the egg (micropyle) allows exchange of gases for the developing caterpillar. It is through this opening that the egg is fertilised.

Soon after mating, the adult female starts searching for an appropriate larval food plant with the help of its chemoreceptors. The chemoreceptors are sensitive to taste and smell, and situated on the antennae and the undersurface of the feet. Some butterflies lay eggs singly, others in clusters.

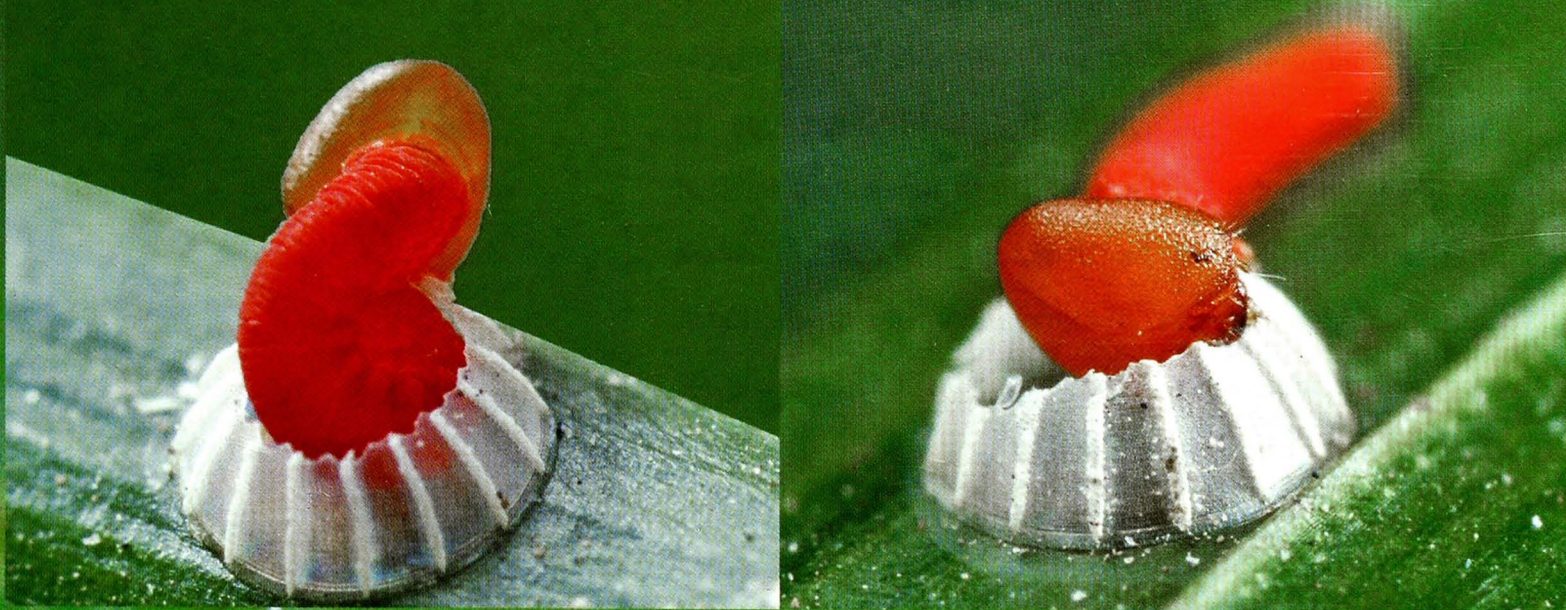
The egg is filled with a nutrient fluid and has a transparent shell, which turns paler as the caterpillar develops inside. The caterpillar is visible through the shell before it hatches. The fertilised egg takes about three days to hatch. The caterpillar emerges by biting through the eggshell; its first food is the empty eggshell from which it emerged. Thereafter, it feeds only on its food plant.



ANAND NARVEKAR

The images overleaf are of the Indian Palm Bob *Suastus gremius*. As the name suggests, the host plants of this butterfly are palms. A freshly laid egg of the Indian Palm Bob is red and turns white as it matures. One egg is laid at a time on the upper side of leaf. A female lays about 7–8 eggs on one plant. The egg hatches in 4 days. Approximate egg width: 1.4 mm. Approximate length of newly-emerged caterpillar: 3-4 mm.

Indian Palm Bob *Suastus gremius*



Sp-egg-tacular Butterflies!

Text: Anand Narvekar



Anand Narvekar is a dental surgeon from Mumbai. His passion for photography runs deep, and he is especially interested in high magnification macro photography.

Different butterfly species have different host plants for laying eggs, and some are restricted to merely one plant species. Some butterflies lay eggs singly, others in clusters. The eggs are of various shapes, textures, colours, and sizes – some eggs can be as tiny as pin heads! They have a funnel-shaped opening known as a micropyle that serve as an opening for sperm to enter during fertilisation, and also facilitates the exchange of gases for the developing caterpillar. The caterpillar is visible through the egg shell, or chorion as it is called, before it hatches. For many caterpillars, the shell is the first source of nourishment.



ANAND NARVEKAR

TAILED JAY

A restless flier, the Tailed Jay *Graphium agamemnon* lays one egg at a time while fluttering. Though its most preferred host plant to lay eggs is the False Ashoka or Mast Tree, it also lays eggs on the Custard Apple shrub. Eggs hatch after 3 or 4 days. Approximate egg width: 2 mm.



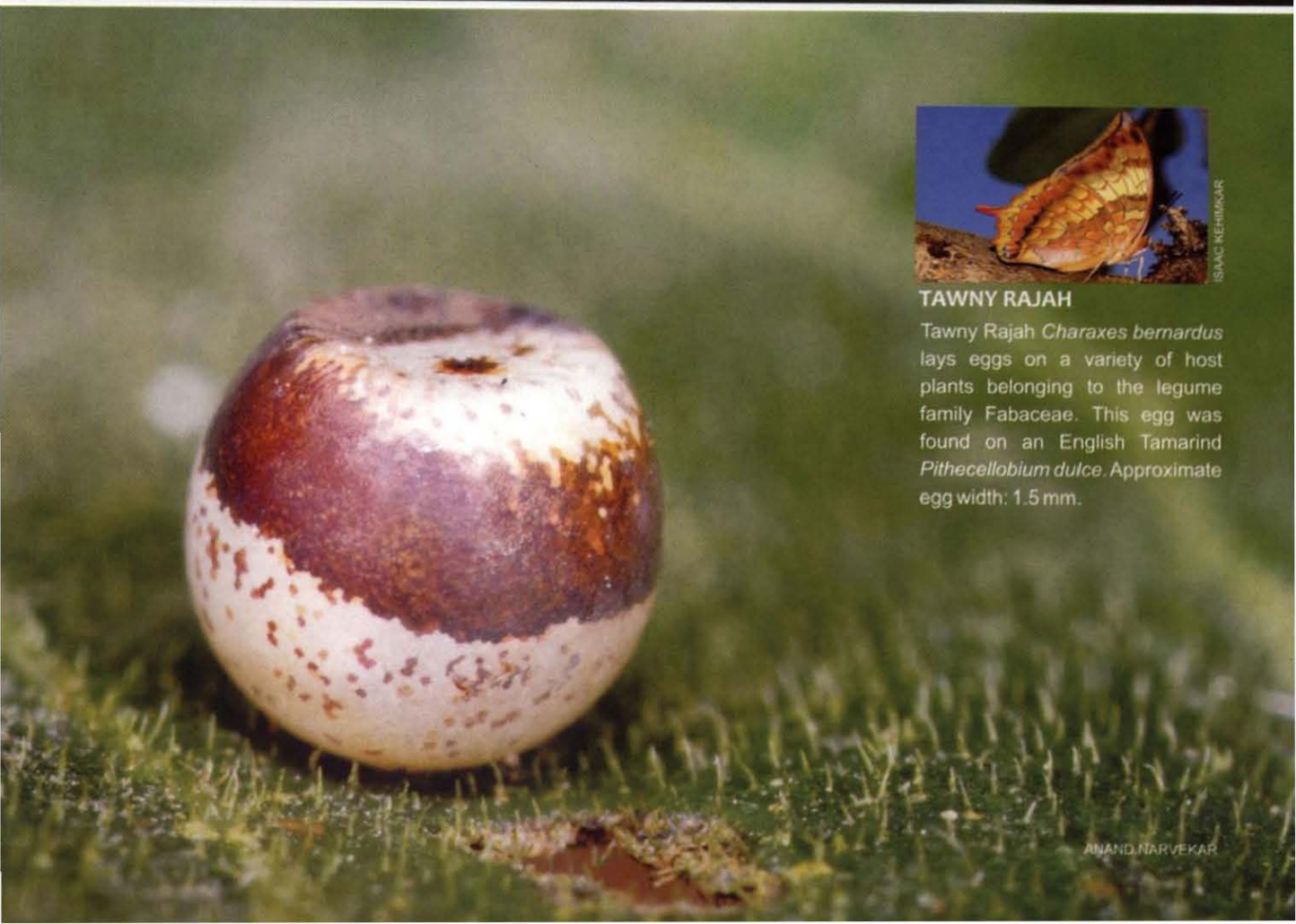


ISAAC KEHNIKAR

COMMON NAWAB

A fast-flier, the Common Nawab *Charaxes athamas* lays eggs singly on the thorny Acacia. Interestingly, Acacia harbours certain organic compounds to repel grazing animals; however, caterpillars of this butterfly are at home on this host plant. Freshly laid eggs are pale yellow and darken as they mature. Here in this image the developing caterpillar can be seen through the egg shell. Approximate egg width: 1.3 mm.

ANAND NARVEKAR



ISAAC KEHNIKAR

TAWNY RAJAH

Tawny Rajah *Charaxes bernardus* lays eggs on a variety of host plants belonging to the legume family Fabaceae. This egg was found on an English Tamarind *Pithecellobium dulce*. Approximate egg width: 1.5 mm.

ANAND NARVEKAR



GREY COUNT

The Grey Count *Tanaecia lepidea* lays eggs singly on the underside of the leaves of *Melastoma malabathricum*. Approximate egg width: 1.5 mm.



ANAND NARVEKAR



COMMON WANDERER

The Common Wanderer *Pareronia valeria* prefers to lay eggs on the capers *Capparis* spp. in small batches of 3 to 12 on the underside of the leaf. Approximate egg width: 1.2 mm.



ANAND NARVEKAR



ANAND NARVEKAR

COMMON BARON

An egg of the Common Baron *Euthalia aconthea* laid on the leaves of the young saplings of Mango. Approximate egg width: 1.8–2 mm.



ANAND NARVEKAR



ISAAC KEHIMKAR

COMMON REDEYE

The Common Redeye *Matapa aria* is seen in Mumbai during the rains, when it lays eggs on bamboo leaves. While laying, the female covers each egg with her abdominal hair. Approximate egg width: 1.3 mm.



ANAND NARVEKAR



ORANGE AWLET

The strikingly beautiful Orange Awlet *Bibasis jaina* lays eggs on Madhavi Lata *Hiptage benghalensis*. Eggs are laid singly on the edge of the leaf on the upper side. Approximate egg width: 2 mm.



COLOUR SERGEANT

This is possibly the first time that the egg of the elusive Colour Sergeant *Athyma inara* has been photographed. It was laid on a plant of the genus *Glochidion*, related to Amla. Approximate egg width: 1 mm.





GOPI NANDU

RED PIERROT

The dainty little Red Pierrot *Talicada nyseus* is a familiar sight in gardens where its host plant *Kalanchoe* grows. The female lays eggs singly on the underside of the thick succulent leaves. Approximate egg width: 0.6 mm



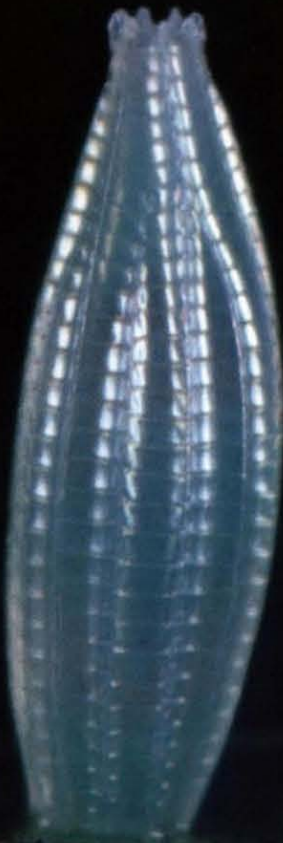
ANAND NARVEKAR



ANAND NARVEKAR

PSYCHE

A weak flier, the Psyche *Leptosia nina* is seen almost throughout the Indian subcontinent. The female lays eggs by curling her abdomen below the leaf either singly or in a cluster of 3–5 on capers *Capparis* spp. and related plants. The eggs appear blue initially and later turn to white as hatching approaches. Approximate egg width: 0.8 mm.



ANAND NARVEKAR

COSMETIC CONSERVATION: Fair is Not Always Lovely



A white tiger loses the advantage of its coat colouration in the wild

Text and Photographs: **Surya Prakash**

Recently, I was videographing a Tiger with its three cubs at a well-known zoological park. They were not the regular orange tigers! A group of school children were looking on excitedly and the guide was explaining that white tigers are “extremely rare” and critically endangered. He added that the tigers were being bred in the zoo as part of a conservation programme and that there were close to 100 white tigers in Indian zoos. I was shocked to hear this, but his statement triggered my curiosity and I decided to follow the group, which he then guided to the Blackbuck enclosure. In the enclosure, there were six white Blackbucks, with coloration quite unlike the normal, which the guide said had been

bred from a single animal. I was extremely curious about these claims and returned home with the intention of investigating the truth behind them.

Reflecting on these odd coloured specimens of Tiger and Blackbuck, I was reminded of an interesting scientific article that I came across on ‘fairness’ creams. It said that such creams suppress and retard the synthesis and deposition of melanin (the primary determinant of skin colour), as a result of which a person looks fairer within a couple of weeks. Despite this probably being unnatural and having a negative impact on their health, many people prefer to be fair rather than tanned, and our obsession with fairness seems to also influence our judgement of beauty in animals.



Breeding of abnormal white forms of species is not encouraged by the Central Zoo Authority of India

Animals are naturally blessed with beautifully coloured fur, coats, plumage, skins, and scales. In some bird species, the plumage changes with the season through a process called moulting and during nuptial displays to woo a potential mate. In his famous book *THE ORIGIN OF SPECIES*, British naturalist Charles Robert Darwin (1809–1882) described the Theory of Natural Selection as the process in nature by which only the organisms best adapted to their environment tend to survive and transmit their genetic characteristics in increasing numbers to succeeding generations, while those less adapted to the prevailing environmental conditions tend to be eliminated.

Albinism, leucism, and melanism are genetic aberrations wherein creatures lack a particular gene which is responsible for the normal synthesis of skin pigments like eumelanin, pheomelanin, and carotenoids. These are mostly expressed as phenotypes, and the other characters remain in a recessive state but may show up occasionally in the wild population. An animal that is odd coloured, especially if white, has little chance of surviving in the wild, as it would be easily noticed by its predator and/or prey.

Considering all that has been discussed, I fail to understand the logic why some zoos are still



Albino and leucistic animals are usually eliminated in the wild



Leucism, reduced pigmentation, can occur in individuals of almost all species

inbreeding 'genetically malnourished' animals globally, including those in India, merely because of the cosmetic value of such animals and the higher revenue that they attract. Such animals have poor immunity and hence are susceptible to various naturally occurring diseases. They are often born with congenital anomalies, mostly because of homozygosity due to inbreeding within the same family. Their white coloration is due to genetic mutations which arrest the synthesis of skin pigments. This is why nature does not select them for survival. It would be unethical to propagate such autosomal recessive gene mutations among captive animals through selective breeding, even with animals

of national importance like the Tiger and Indian Peafowl. In fact, this practice is not encouraged by the Central Zoo Authority of India (CZAI), but is unfortunately still being undertaken in some zoos. The focus, efforts, and money should instead shift to endangered species that are threatened with extinction in the near future. ■



Surya Prakash is a Zoologist, working at JNU, and an avid bird watcher and freelance writer. He promotes urban biodiversity and is presently working on the biodiversity of southern ridge of Delhi.

“The more clearly we can focus our attention on the wonders and realities of the universe, the less taste we shall have for destruction.” – Rachel Carson

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The Nicobar Flying Fox – A Riveting Rediscovery

Text and Photographs: **Bandana Aul Arora**

My passion for studying animal ecology and natural history started at an early age. I was just 10 years old when I wanted to be a conservationist and fortunately during my formative years, I had the chance to travel to several parts of our mega-diverse country. Most of my serious studies were conducted in southern India and my preliminary work dealt with the islands of the so-called “Kala Pani” or the Andaman and Nicobar Islands. There is an old saying that these islands were called so because whoever visited them never returned. It sure made sense to me as I spent almost a decade working there. The remoteness of the islands, coupled with the presence of indigenous tribes, makes them appear to be formidable to some. The thrill of exploring a place where hardly anyone had ventured for a long time, and to study a species ignored by

many, caught my attention. There have been few detailed studies on bats, particularly in the islands, and some date back to as early as 1912. No systematic studies or efforts were ever made to document the number of species in the islands. I began my study in 1999, which lasted till 2007. During this period, we documented the different bat species in the islands and their habitats. We also saw that bats, and especially the large fruit bats or flying foxes as they are called, due to their uncanny resemblance to foxes, were being hunted down by tribes, as well as settlers in the islands. Before I divulge more about my study on the Nicobar Flying Fox, let me give you an overview about bats.

Bats belong to the Order Chiroptera and are the only mammals that have evolved powered flight. They are among the few animals that echolocate. Some bats are also among the

smallest of mammals, but are unusually long-lived, challenging the belief that small-sized animals have a shorter life span. They comprise almost 20–25% of the mammalian fauna in any region. Nocturnal by nature, these shy and elusive creatures have been a symbol of fear and are thoroughly misunderstood as they prefer to roost in dark and inaccessible areas. Among mammals bats are second only to rodents, with respect to number of species, and are found in all major land masses, with the exception of Antarctica. Bats occupy all kinds of habitats ranging from tropical, temperate, even to semi-arid and desert areas. In India, there are 119 species of bats out of a total of 950 species in the world. Bats are divided into two subdivisions based on their food habits. The fruit and nectar feeding bats fall under the Suborder Megachiroptera, commonly referred to as fruit bats or flying foxes. The Suborder Microchiroptera consists of insect feeding bats that use the sophisticated technique of echolocation to hunt for food. Bats belonging to this Suborder primarily live in caves.

Legally, Indian bats do not enjoy the privilege of being considered as important species, and are listed as vermin under Schedule V of the Wildlife (Protection) Act, 1972. The only two exceptions are Sálím Ali's Fruit Bat *Latidens salimalii* and Wroughton's Free-tailed Bat *Otomops wroughtoni*, which as of 2002 are listed in Schedule I of the Wildlife (Protection) Act, thus offering these two species the highest degree of protection in India.

Owing to the ability of flight, it is presumed that bats can cross barriers like mountains, seas and rivers, which are otherwise a limitation for most terrestrial mammals, giving them the advantage of being able to establish new territories. This is, however, contradicted by the fact that most species of bats tend to live or remain in particular habitats, restricting their distributional range. Fruit bats are confined entirely to the tropics and subtropics. In India, they do not live in temperate zones, such as the Himalaya. They are, however, seasonal migrants to these areas during the fruiting seasons. Microbats are also restricted to the tropics and subtropics and hibernate in extreme conditions.

Sporadic and fragmented information regarding the distribution and ecological role of



The Nicobar Flying Fox, like many other fruit bats, plays a vital role in seed dispersal



The preferred habitat of the Nicobar Flying Fox is the outer edge of mangrove swamps, up to 200 m above sea level



The Nicobar Flying Fox has separate feeding and roost sites. Unlike most flying foxes that are known to roost in huge colonies, this species typically roosts solitarily in well-camouflage spots

most bat species in the Indian subcontinent has prevented any major steps from being implemented to conserve bats in India. My work in the Andaman and Nicobar Islands is a simple effort to fill in gaps in the knowledge on species distribution in India, especially in remote and unexplored areas of our country. The islands are home to some of the last remaining pristine rainforest habitats and a unique assemblage of flora and fauna, distinct from those found in mainland India. Biogeographically, the islands have been divided into two major divisions, the Andaman Archipelago consisting of more than 300 islands, and the Nicobar Archipelago consisting of around 24 islands. A ten degree channel separates the two island groups from each other. After an extensive survey of more than 50 islands, I was able to record 25 species of bats, this being the first ever systematic survey of the bat fauna in the islands. The results included a couple of new species to the islands and a couple of new subspecies to science.

Our survey was successful in documenting the existence of the Nicobar Flying Fox *Pteropus faunulus*, apart from the other endemic species of the islands. This species is endemic to the Central Nicobar Group of Islands, and is a rediscovery by my research team after almost a century. It was originally recorded and described for the first time by Miller in 1902 from Car Nicobar island, but had not been reported since then.

The Nicobar Flying Fox is a small-sized Pterodid with an average forearm length (a standard measurement which is used to identify species) of 118.5 mm, and about 170 gm weight. It is dark rufous brown on its back, while the hair on the face is grey and white, giving it a grizzled look. The nostrils are tubular and well emarginated like most flying fox species, giving it a fox-like appearance.

The thrill of rediscovering a species after almost a century was accompanied by the startling revelation that this rare and endemic species is locally extinct from the very island

where it was first reported for science. However, we found it on the other islands, namely Trinket, Nancowry, Camorta, Katchal, Bompuka, and Teresa Islands, which together form the Central Nicobar Group of Islands. Though, we had information on the presence/absence of the species in the Central Nicobar Group of Islands, we were not able to locate its day roosts. Thus, we decided to carry out radio-collaring studies, for which we had to capture animals, fit radio-collars on them, and release them for tracking. This was a tough task which required setting up nets at least 7.6 m from the ground, and then monitoring them throughout the night for captures. The nets were set up using pulleys and strings for easy movement. Weeks went by and we were not able to catch anything, but our persistence paid off and we were eventually able to capture 15 individuals over a span of 30 days. We radio-collared 11 individuals, successfully tracked 9 individuals to their day roost, and documented their roosting habitat. One radio-collared individual was tracked to a hunter's home on Kamorta Island, who was embarrassed and surprised that we knew he had killed and eaten the bat. This not so pleasant ending of one of my radio-collared individuals confirmed the threat to the species, and we undertook an awareness campaign for this bat. The publicity generated by my team was far-reaching, and hunting in foraging areas has reduced over time. We let the belief take root that all biologists 'had trackers inbuilt in them', and hunters could get easily caught. Sometimes a small lie for a good cause is quite beneficial! After tracking the bats successfully for four weeks, we were confident enough to report that this is the only species of *Pteropus* in India and second in the world, which unlike other flying fox species does not roost communally during the day, but is solitary in its roosting habits. The other known solitary roosting *Pteropus* is restricted to the American Samoan Islands. During the entire radio-collaring effort, the tracked bats did not leave the island and the maximum distance they travelled was about 16–18 km in one night from the day roost to the foraging areas.

Our team took up the arduous task of trying to ascertain the probable cause of decline of this endemic species. We were able to identify

The indigenous people or the Nicobarese in the Nicobar Group of islands believe there are two kinds of bats, the big bat and the small bat. In the local dialect, which varies from one island group to another, we were able to note that the big bat was called *Tayam law* (biggest fruit bat) or *Tayam peh* (medium-sized fruit bat) and *Allah* (small fruit bat) or *Alkelein* (insect eating/funny-faced bat) in the Northern Nicobar Group. In the Central and Southern Nicobar Group the big bats were called *Mok-ne-aka law* (big fruit bat) or *Mok-ne-aka peh* (medium and small fruit bat), while the insect eating or microbats were called *Hinglenea*.



Involving communities is pivotal for the success of conservation efforts. The author and her team conducted programmes with locals, including children and hunting teams, spreading awareness for the urgency to protect this endemic species



The author and her team measure a Nicobar Flying Fox. Individuals of this species have an average forearm length of 118.5 mm

Why do bats hang upside down and come out in the dark? – A local legend

A long time ago, there lived a bat who was a postman and used to deliver messages to people, as written script was not yet formulated. During a delivery, the bat fell in love with a girl who asked him to deliver a message to a boy she liked. The bat was upset that someone he liked had fallen in love with someone else, so he lied to both, that each of them believed that the other was ugly! On the day when the boy and girl met, they realised that they had been lied to by the bat and that the bat was responsible for them avoiding each other. So they cursed the bat, because of which he had to hang upside down and could come out only in the dark!

two main causes for its current plight – hunting by local communities and the clearance of prime forests for settlements and coconut plantations. Such encroachments decrease the habitat of the species in terms of availability of roosts and fruit bearing trees.

For any effective conservation programme on the Andaman and Nicobar Islands, the

involvement of local inhabitants is essential. These people depend on the forest and its resources for their survival, and need to be made aware about the sustainable use of these resources. This approach also stemmed from the fact that the inhabitants, being indigenous people, enjoy special hunting rights under Section 56 of the Wildlife (Protection) Act, 1972. We identified the hunting teams and involved them in our data collection, as well as monitoring work. They became so interested in our efforts to conserve a species restricted to their islands that they imposed a voluntary ban on hunting wildlife during feeding times. Our locally trained teams spread awareness within the villages and helped to build a network of local conservationists. Such measures are a stepping stone, and ensure the establishment of a long-term conservation plan. We are confident that our efforts will bear fruit for this elusive little fruit bat. ■



Bandana Aul Arora is a mammalogist at BNHS. She has done most of her pre and doctoral work in the Andaman and Nicobar Islands. She initiated and completed the first ever systematic survey of the islands for recording bat species and their habitats.

IBAs in Danger

Text: Raju Kasambe and Siddhesh Surve

The Important Bird Area (IBA) Programme of BirdLife International – the world's largest nature conservation partnership – began in the late 1970s, and since then over 12,000 IBAs, on land and at sea, have been identified, mapped, and documented worldwide. This programme represents the most comprehensive science-based effort to identify the world's key sites for biodiversity conservation, by far.

In early 2013, BirdLife started an initiative to identify seriously threatened and insufficiently protected IBAs around the world. A hundred and fifteen BirdLife network countries and territories provided data on the pressures in their most threatened IBAs, which helped to identify IBAs at extreme risk of losing their biodiversity. The validated list of 333 IBAs was released during the 2013 BirdLife International World Congress in June 2013 in Canada. These, 'IBAs in Danger' will be used to target enhanced conservation effort on these insufficiently protected or poorly managed sites, through advocacy, campaigns, and local action.

This list will determine the priority in the implementation of conservation actions (whether local, national, regional, or global), based on need, opportunity, and capacity. The actions include selected campaigns, advocacy, and communication. The threats faced by the listed IBAs and the species that inhabit

them are generally assessed by three factors:

Timing: Some of these IBAs are already facing threats or are likely to face them in the near future.

Scope: Threats affect the entire or most of the population of one or more trigger or qualifying bird species (for which the site has been recognised as an IBA under any of the global or regional criteria) or their habitats within the IBA.

Severity: The degree of danger faced by the species or habitat components of these IBAs.

BirdLife's India partner, BNHS, identified 466 IBAs in India in 2004. Of these, five were identified as 'IBAs in Danger' and the data was uploaded on BirdLife's website. These five IBAs are discussed in this article. We also discuss the situation of four more sites that need attention and urgent action.

The five Indian IBA sites that qualified for inclusion in the list, with their site codes, are:

- Flamingo City (IN085)
- Great Indian Bustard Sanctuary (IN159)
- Mahul-Sewri Creek (IN161)
- Sailana Kharmor Sanctuary (IN151)
- Tillanchong Island (IN465)

Flamingo City, Gujarat

Flamingo City is a potential Ramsar site in the Kachchh district of Gujarat. In 1945, Sálím Ali estimated that half a million Greater and Lesser Flamingos

congregated here. It is possibly the only flamingo breeding ground of this magnitude in Asia. Flamingo City is part of the Kachchh Desert Wildlife Sanctuary.

In 2011, the Gujarat State Public Works Department (GSPWD) submitted a proposal which required diversion of 79.474 ha of forest land in the Kachchh Wildlife Sanctuary and Wild Ass Sanctuary for construction of the Gaduli to Hajipur-Odma-Khavda-Kunariya-Dholavira-Maovana-Gadakbet-Santalpur road. It was claimed that the proposed road would facilitate movement of the Border Security Force (BSF) in this region that falls on the Indo-Pakistan border. However, other sources claim that this project is nothing but a cover for promoting and expanding tourism in the region – BSF already has a frontier road. A highway through the area will not only jeopardise flamingos, but also other species including the Indian Wild Ass *Equus hemionus khur*, Great Indian Bustard *Ardeotis nigriceps*, Indian Wolf *Canis lupus pallipes*, and Caracal *Caracal caracal*.

In September 2011, a three-member expert team from the National Board for Wildlife (NBWL) assessed the potential ecological impact of the project. To quote from their site visit report, "the proposed road would in all probability result in the abandonment of this only breeding site of flamingos, which in turn could spell doom to the population of these birds in the Indian subcontinent." They recommended the rejection of the

'IBAs in Danger' are sites identified nationally through IBA monitoring as being at greatest risk of losing their key biodiversity. They are sites which have Very High threat scores (in some cases IBAs with High scores have also been considered). In the first trial of this new initiative, BirdLife's partner organisations provided details of up to five such sites per country. The limitation in number of sites was imposed to restrict the list to a manageable number of highest priority sites, in order to focus advocacy and action where it is most urgently needed, while ensuring participation across the BirdLife Partnership. The resulting list of IBAs in Danger currently comprises 333 sites across 115 countries and territories, as well as the high seas. The absence of an IBA from the list does not, therefore, mean that it is not facing threats.



ADITYA ROY

The Near Threatened Lesser Flamingo is the smallest species of flamingo

road proposal and an alternative alignment of the road, which would spare this fragile ecosystem from devastation, while serving the purpose of the BSF if needed.

Great Indian Bustard Sanctuary, Nannaj, Maharashtra

The GIB Sanctuary is spread across Solapur and Ahmednagar districts of

Maharashtra. The scattered grassland plots of this sanctuary are home to the Critically Endangered Great Indian Bustard (GIB). The population of GIBs at the sanctuary has plummeted from 27 birds in 2006 to 12 birds in 2012, and a mere three birds in 2013.

The biggest threat facing the sanctuary is the severe antipathy of the locals towards the sanctuary and the GIB.

This was mainly because an extremely large, irrational area (8,496.44 sq. km) was declared as a sanctuary, even though the bustards inhabited a few protected grassland plots scattered in the area. Because of the declaration of the sanctuary, the locals were unable to buy, sell, or develop their own land as it came within the notified area. A proposed irrigation canal passing through the sanctuary awaits the approval of the Ministry of Environment and Forests (MoEF) since the past several years. The people who would have benefited from the canal feel that the bustard “is the problem” and stands between them and “prosperity”. The impasse over the construction of the canal created a public uproar and a campaign was initiated against the GIB, which strangely and ominously coincided with a population decline in the species. The sanctuary area has been rationalised to 1,222.61 sq. km, many years after the recommendations of an expert committee. However, it appears to be a little too late!

Nannaj faces a number of other threats such as overgrazing outside the



BALU PATIL

The Great Indian Bustard population at Nannaj has plummeted to merely three birds

protected grassland plots, habitat destruction, increase and intensification of agriculture, disturbance to breeding bustards by stray dogs, and lack of public support for conservation initiatives. It is certain that the GIB would not have declined to the point of local extinction; rather it would have increased in numbers, if these issues had been addressed early. There is no record of successful breeding in the sanctuary in the past few years, and there is a pressing need to implement the recommendations of the Species Recovery Plan published by the MoEF immediately, to save the species from extinction.

Mahul-Sewri Creek, Mumbai, Maharashtra

The mudflats of Mahul-Sewri IBA along the Arabian Sea in Mumbai are home to around 15,000 Lesser Flamingo *Phoeniconaias minor* and thousands of migratory waterbirds, including sandpipers, plovers, gulls, and terns. The area also has mangrove vegetation and supports diverse flora, and is a potential Ramsar site.

The Mumbai Metropolitan Region Development Authority (MMRDA) had

proposed a 22 km long freeway – the Mumbai Trans-Harbour Link (MTHL) – between Sewri and Nhava, which is pending for the past four decades. This freeway or sea link will reduce the commuting time between Mumbai and Navi Mumbai, and provide direct connectivity to the Mumbai Port Trust (MPT), Jawaharlal Nehru Port Trust (JNPT), and the proposed international airport at Navi Mumbai. However, the link will pose a threat to the habitat of the Lesser Flamingo, a Near Threatened species, due to the disturbances that will result from the construction and use of the freeway.

On October 22, 2012, the Chief Minister of Maharashtra gave clearance to the project. The following day, the MoEF gave a conditional environmental clearance to the sea link project. Some of the conditions were that the MMRDA should put up noise barriers, replant five times the number of mangroves destroyed, no dredging and reclamation should be done, construction equipment with exhaust silencers would be used and work would be carried out in consultation with

BNHS to minimise the impact on migratory birds. BNHS, which does not oppose the idea of the sea link as such, has been advocating that the MTHL should be realigned at the Sewri end about 600 m to the south of the proposed route to save the flamingo habitat from destruction. However, the MMRDA did not accept the proposal and suggested mitigation measures instead. A little foresight and flexibility can help avoid such environmental disasters for a site which supports such a huge congregation of birds.

Apart from the MTHL, another threat to this IBA is the high level of pollution due to direct release of industrial effluents from many petrochemical industries, oil refineries, and power plants located along the fringe of the Mahul and Sewri Creek.

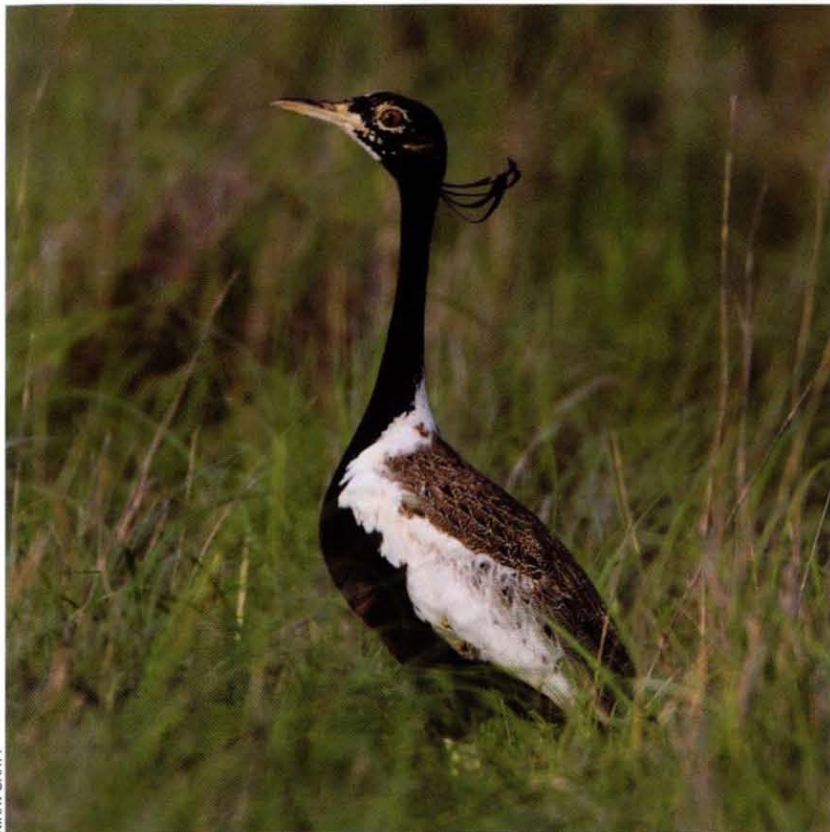
Sailana Kharmor Sanctuary, Madhya Pradesh

The Sailana Kharmor Sanctuary in Madhya Pradesh was declared as a Protected Area in 1983 to safeguard the endangered Lesser Florican *Sypheotides indica*. Most of the sanctuary



The Sewri mudflats are a refuge for thousands of migratory flamingos during their non-breeding season

NOOR KHAN



NIRAV BHATT

The Lesser Florican, endemic to the Indian subcontinent, belongs to the bustard family, which is known for its remarkable courtship displays



ASAD R. RAHMANI

The untouched Tillanchong Island in the Nicobar archipelago is home to breathtaking natural wealth

consists of grasslands. Recently it is reported that the numbers of the Lesser Florican are decreasing, making it difficult to spot it. Major threats to this sanctuary are cattle grazing, agricultural expansion, and human intrusion.

In a census conducted in 1999 in Gujarat, Madhya Pradesh, and Rajasthan for the species, 63 floricans were recorded in Madhya Pradesh. The number declined to 12 in 2011 (the national figures were 238 in 1999 and 84 in 2010). In 2012,

28 floricans were seen, whereas the number fell to a mere 12 in 2013. It is believed that loss of grassland and change in cropping pattern in the region are also forcing them out of the IBA. In Sailana, soyabean is cultivated near the florican breeding grounds, which needs regular application of pesticides. As floricans feed on insects, consuming insects sprayed with pesticides could be affecting them.

Tillanchong Island, Andaman and Nicobar Islands

Tillanchong Island is a wildlife sanctuary, and is uninhabited for most of the year, except when the Nicobarese people holding customary rights visit it for a few months each year during the fair season for hunting wild pigs. Tillanchong is home to virtually all the animal species found in the Nicobar archipelago, including endemic bird species such as the Nicobar Megapode *Megapodius nicobariensis*, Nicobar Sparrowhawk *Accipiter butleri*, Glossy Swiftlet *Collocalia esculenta*, Edible-nest Swiftlet *Aerodramus fuciphagus*, Andaman Woodpigeon *Columba palumboides*, and Nicobar Parakeet *Psittacula caniceps*.

The Indian Navy had sought permission for temporary use of the island for missile testing and erection of a temporary structure as a target for testing the accuracy of missiles fired from submarines. The test firing is proposed to be carried out once a year for a period of 7 to 10 days.

The proposal was discussed during a meeting of the Standing Committee of the National Board for Wildlife (NBWL). In November 2011, the Committee examined the proposal and ordered a site inspection by a two-member panel to assess the impact of the test firing exercise on the Nicobar Megapode, a ground-nester, endemic to this ecologically sensitive area. Subsequently, the Chief Wildlife Warden along with Dr. Asad R. Rahmani, Director, BNHS, visited the site and submitted a report to the MoEF. The report mentions that this

threatened species occurs on the hillock where the RADAR station is proposed. The impact of allied activities after the RADAR installation, like construction of roads, and movement of people will be even more destructive than the installation of the RADAR itself.

In October 2012, the proposal was fortunately rejected, and the endemic Nicobar Megapode's pristine habitat was saved from destruction. However, there is fear that the proposal might resurface in the near future.

Other IBAs in 'danger'

Dihaila *jheel* and Karera Wildlife Sanctuary, Madhya Pradesh

Dihaila *jheel* is one of the richest wetlands of the state. The *jheel* or lake is entirely rainfed, and is the only source of water for wildlife in the Karera Wildlife Sanctuary. Across the waters lies Dihaila, a village whose inhabitants own land around the margins of the lake, and whose crops benefit from the guano deposited by waterbirds in the lake. Thousands of migratory birds congregate in the lake in winter. Experts have recorded 245 bird species in this sanctuary. The area also has around 2,000 Blackbuck *Antelope cervicapra* and a fairly large number of Indian Gazelle *Gazella bennettii*.

The Karera Wildlife Sanctuary was notified in 1981 by the Government of Madhya Pradesh to protect the Great Indian Bustard. It is spread over an area of 202 sq. km, of which 146 sq. km is privately owned. The bustards have disappeared from this sanctuary, and owing to public pressure, the National Board for Wildlife and the Government of Madhya Pradesh have decided to denotify the sanctuary. The decision is now awaiting final approval from the Supreme Court of India, and should it come through, the sanctuary will become the country's first such reserve to lose official recognition after the flagship species has been lost.

Basai Wetland, Haryana

This wetland IBA is situated in Haryana near New Delhi. Recently the migratory bird count of this wetland has shown a decline, mainly because of habitat loss due to human encroachment. Many threatened species of birds are reported from this IBA including the Marbled Teal *Marmaronetta angustirostris*, Sarus Crane *Grus antigone*, Black-necked Stork *Ephippiorhynchus asiaticus*, Ferruginous Pochard *Aythya nyroca*, and Asian Dowitcher *Limnodromus semipalmatus*.

Rapid urbanisation is one of the reasons for the decline in bird populations. Several waterbodies in Haryana and Uttar Pradesh, which used to attract migratory birds, have also dried up. Flamingos and Common Crane, which were once commonly sighted in this wetland, have declined in numbers.

Also, the population of the state bird of Haryana, the Black Francolin *Francolinus francolinus*, has reduced owing to unfavourable alterations in its habitat.

Sardarpur Florican Sanctuary, Madhya Pradesh

This sanctuary is located in the Dhar district of Madhya Pradesh. It was established on the recommendation of Dr. Salim Ali for the protection of the Lesser Florican *Sypheotides indica*, an endangered bird seen in this sanctuary

during its breeding season. It arrives with the onset of monsoon by the end of June or in the beginning of July, and leaves by the end of October or in November.

Only three floricans were sighted during a census conducted in 2011. In 2012, four floricans were seen, whereas none were sighted in 2013. Human settlements, livestock grazing, and water scarcity are some of the major conservation issues in this sanctuary.

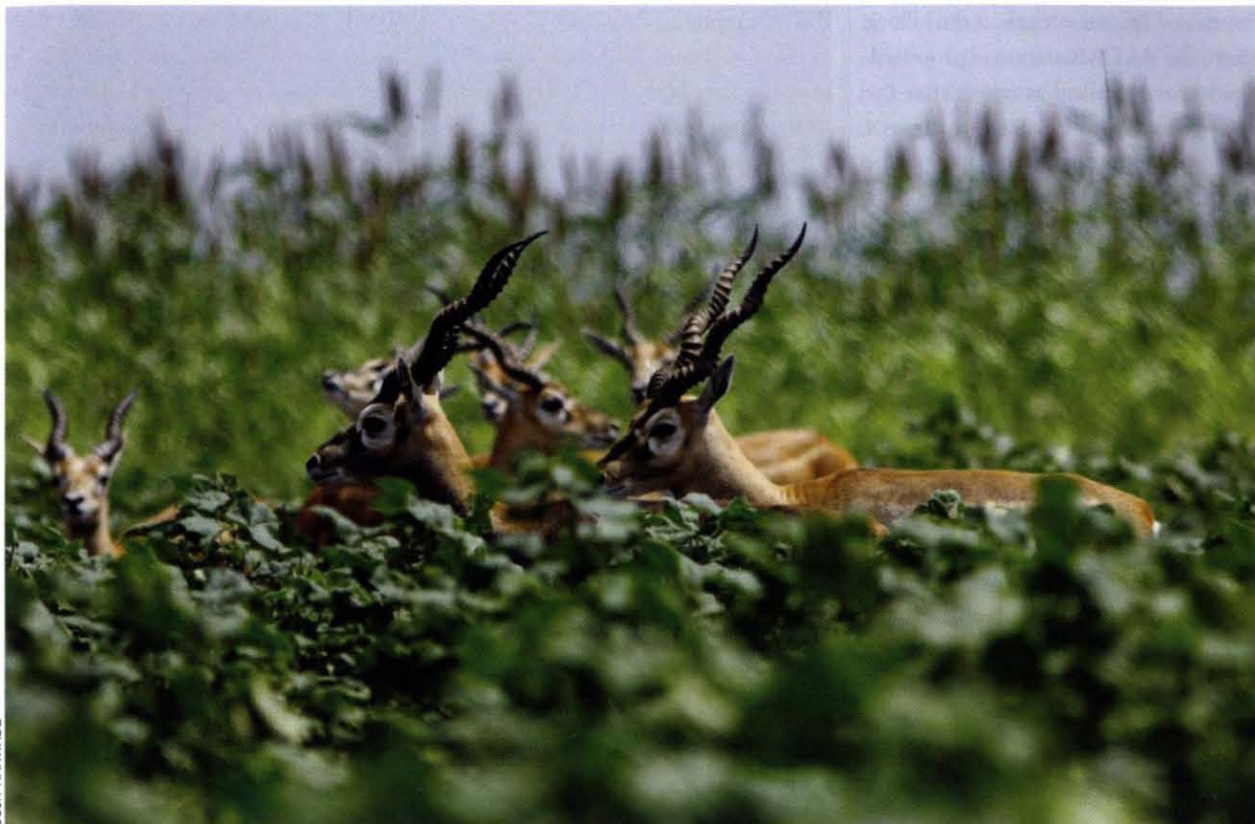
Ranebennur Blackbuck Sanctuary, Karnataka

Situated in the Dharwad district of Karnataka, this IBA was once home to 25 Great Indian Bustards. However, there have been no bustard sightings from the area for the last 15 years. The main threat to this site is from shepherds who allow their sheep to graze inside the sanctuary. There are thousands of sheep in the areas surrounding the sanctuary. Other threats include afforestation, poaching, and firewood collection.

The major conservation issue of this IBA is the disappearance of the Great Indian Bustard due to lack of attention towards its habitat requirements, which is open grassland. Exotic trees (eucalyptus) have been planted on a large scale in the grassland patches by the Forest Department. The grasslands outside



The Near Threatened Ferruginous Pochard visits the Basai Wetland



SLUJIT NARWADE

Male Blackbucks are dark brown and white, and sport long, spiral horns. Females, on the other hand, are yellowish-brown and lack horns

the sanctuary face severe grazing pressures.

Most of our unprotected grassland and wetland IBAs are facing severe threats from afforestation, poaching, or because conservation policies are going in the wrong direction. The apathy or even antipathy of the local people has almost resulted in the extinction of flagship species like the Great Indian Bustard and the Lesser Florican for which the sites were declared as IBAs. IBAs near or in megacities are in danger of being lost due to the pressure of encroachments like construction of

highways. Unfortunately, major threats are looming from various projects which ask for IBAs to be given away partly or wholly for the cause of so-called “development”. This list of the five most threatened Important Bird Areas of India is just the beginning of an ever increasing list of sites

threatened with destruction. If we do not take steps to ensure their conservation, they are bound to disappear sooner or later, along with the birds they harbour. ■

For more information on the BirdLife IBA programme, visit: www.birdlife.org/datazone/site and www.ibcn.in



Raju Kasambe is the Project Manager, and Siddhesh Surve is the Project Assistant for the Important Bird Areas Programme at BNHS. Raju is an ornithologist and has studied the Indian Grey Hornbill for his Doctorate, and Siddhesh is an avid birder.



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Vulture Awareness Exhibition in Mumbai



Ian Barber, Sr. Partner Development Officer – Asia, RSPB, talks about the vulture crisis in South Asia

On September 7, 2013, the eve of International Vulture Awareness Day, BNHS organised a two-day Vulture Awareness Exhibition, as part of the activities of the Indian Bird Conservation Network (IBCN), which is a network of bird conservation NGOs initiated by the BNHS. The exhibition, which was organised at Hornbill House on September 5–6, was well-received by bird lovers and nature lovers. The exhibits covered topics such as species extinction in India; role of vultures in maintaining ecological balance; veterinary diclofenac as the cause of vulture decline; other threats faced by vultures; and the efforts by the BNHS, Royal Society for the Protection of Birds (RSPB) and the Saving Asia's Vultures from Extinction (SAVE) consortium to save vultures. On the second day, the exhibition concluded with an interactive talk by Mr. Ian Barber, Senior Partner Development Officer, RSPB, and Ms. Kazveen Umrigar. This was followed by the screening of the film "Vanishing Vultures", which gives insights into the fascinating world of vultures in South Asia. ■

BNHS-CEC, Delhi celebrates Wildlife Week



A participant (left) and winners of the poster competition (right) at the BNHS-CEC Wildlife Week in Delhi

On the occasion of Wildlife Week in October, a series of indoor and outdoor events were organised for the citizens of Delhi, in association with the Delhi Forest Department. The events were held from October 2–6, at the verdant 6,873 acre Asola Bhatti Wildlife Sanctuary, where CEC Delhi is located. The events included an online slogan competition for students on the state bird of Delhi, the House Sparrow, a poster competition on the mammals of Asola

Bhatti, a wildlife photography competition for students, a nature trail and volunteering opportunities at Asola Bhatti. These interesting activities conducted for people from all age groups and all walks of life, was a unique opportunity for Delhiites to explore their very own city forest. This semi-arid forest habitat is one of the last surviving forest tracts of Delhi Ridge, which is formed by the northernmost limits of the Aravalli range. ■

BNHS-CEC, Mumbai Foundation Day

This year BNHS celebrated the completion of 20 years of its Conservation Education Centre (CEC) in Mumbai. On the Foundation Day, September 21, a seminar on Promotion of Environmental Literacy in Maharashtra was organised in collaboration with the United States-India Educational Foundation (USIEF). It covered themes such as the role of nature education in conservation, impact of nature clubs in schools and colleges, virtual learning tools and platforms supporting nature conservation, corporate social responsibility and environment issues, effective environmental journalism, and wildlife photography as a tool for nature study. The seminar was followed by a 'dusk walk' and high tea. The next day, on September 22, a visit to the CEC was organised for underprivileged students of three organisations. ■



The Promotion of Environmental Literacy seminar held at BNHS-CEC, Mumbai

BNHS PHOTO LIBRARY



Dr. Asad R. Rahmani, Sharad Kale and Phiroza Godrej at the book launch at Hornbill House

'Rani Bagh – 150 varshe'

Rani Bagh has been an integral part of Mumbai for over a century. Apart from being as a zoological garden, it is also one of the finest botanical gardens in the country, with a wonderful diversity of plants. It is a vital green lung in the highly urbanised South Mumbai. To celebrate 150 years of Rani Bagh and to highlight its importance to the city, the book RANI BAGH – 150 YEARS was published in 2012. In order to reach out to a wider audience, the Marathi version of the book titled RANI BAGH – 150 VARSHÉ was launched at Hornbill House by Mr. Sharad Kale, Senior Scientist, BARC, on November 29, 2013, jointly by BNHS, Friends of Trees, and the Save Rani Bagh Botanical Garden Foundation. The function received a remarkable response. Limited copies of the English and Marathi version of the book are available at BNHS. ■

BNHS PHOTO LIBRARY

'Birds of Rajasthan' released

Rakesh Vyas' BIRDS OF RAJASTHAN published by the BNHS and Oxford University Press is a comprehensive field guide for ornithologists, amateur birdwatchers, bird photographers, students, and tourists. The book launch was held at Amalsara in the Godavan Protected Area, Rajasthan, on October 1, 2013. The book was released by Shri Bharat Singh, Minister, Public Works Department, Rajasthan. ■



'Birds of Rajasthan' was launched at Amalsara in Rajasthan

Courtesy: RAKESH VYAS

ERRATA

Hornbill July–September 2013: Page 8

The image of the flock of Spotted Sandgrouse was wrongly identified as a flock of Chesnut-bellied Sandgrouse

Published on December 23, 2013, by Ms. Sumaira Abdulali for Bombay Natural History Society, Hornbill House, Dr. Sálím Ali Chowk, Shaheed Bhagat Singh Road, Mumbai 400 001, Maharashtra, India.

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