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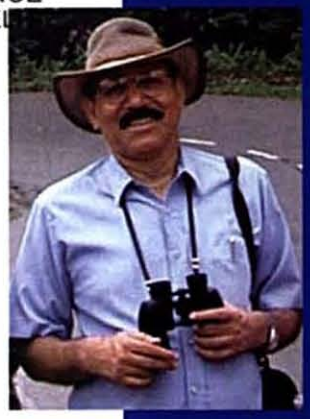
Bird ringing as a tool for conservation



Ringing birds is one of the best ways to learn ornithology. The whole process fascinates me: setting nets, taking the trapped bird from the net, identifying it, taking morphometric data, putting a uniquely numbered ring or band around its leg and finally releasing it. According to me, to see a bird flying from your hand is the final ornithological ecstasy. Every ringed bird also adds to our knowledge about its fascinating world – from where it has come, how it is surviving in its habitat, where it is going and so on. Bird ringing, and now telemetry and satellite tracking open a new window to scientific knowledge. The road to better conservation is through good science. How can we take long-term conservation measures unless we know the migratory flyways, the staging areas, important wintering and breeding areas, population fluctuations and reasons for subtle changes in the community structure, diseases and their causative factors, longevity and survival rates, genetics, habitat utilisation and habitat preference, local movement and adaptability to the changing environment? But, are we allowed to know all this?

Despite being a pioneer in bird ringing in India, BNHS still faces difficulties in getting permission for bird ringing in most states. It all depends on the whims and fancies of the Chief Wildlife Warden (CWLW). Some CWLWs go out of their way to encourage bird ringing, while others keep silent like Stonehenge. One CWLW had allowed, rather reluctantly, the number and gender of birds to be caught for ringing. How can we guarantee that only 20 male and 20 female Magpie Robins would fall in the net? And, what should we do if we caught 22 male Magpie Robins? Should we release two birds as we have permission to ring only 20 male birds? On the other end of the spectrum is a CWLW who asked BNHS to ring at least 20,000 waterfowl in his state in one season, as he wanted to know where 'his birds' were coming from.

In order to convince the government that bird ringing is an important ornithological tool, it is our duty as scientists to analyse ringing data and bring out well-designed, easy-to-understand reports/booklets/maps on bird migration in India. Timely published data lends better support for research. We should ensure that the results of our research reach decision makers and not remain in difficult-to-access scientific journals.

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) met in June in New Delhi, where the 'New Delhi Statement' was released to endorse the 'Proposed Central Asian Flyway (CAF) Action Plan to Conserve Migratory Waterbirds and their Habitats'. A list of seven priority international project concepts to support and inform the implementation of the CAF Action Plan were reviewed. The meeting strongly supported the need to implement projects to (a) prepare a directory of sites of international importance for migratory waterbirds in the CAF; (b) develop a monitoring strategy and strengthen the capacity for monitoring waterbirds in the CAF; (c) prepare a flyway status overview of national and international conservation aspects of migratory waterbirds and their habitats as a basis of cooperative conservation action; (d) prepare a flyway overview of the status and trends of waterbird populations to determine future monitoring and conservation priorities, and (e) establish a flyway network of key contacts and collate an international register of waterbird and habitat projects. These projects involve bird ringing on a large scale, in all the range countries of the CAF. But, the big question is: Will the Government give permission for satellite tracking of some larger birds and mass-scale ringing of common waterbirds? This is what we should call a million rupee question.

Asad R. Rahmani

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Cover
Fungoid Frog
Varad B. Giri

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The world of Jumpers and Croakers

Concept: Varad B. Giri and Sameer Kehimkar
Text and Photographs: Varad B. Giri

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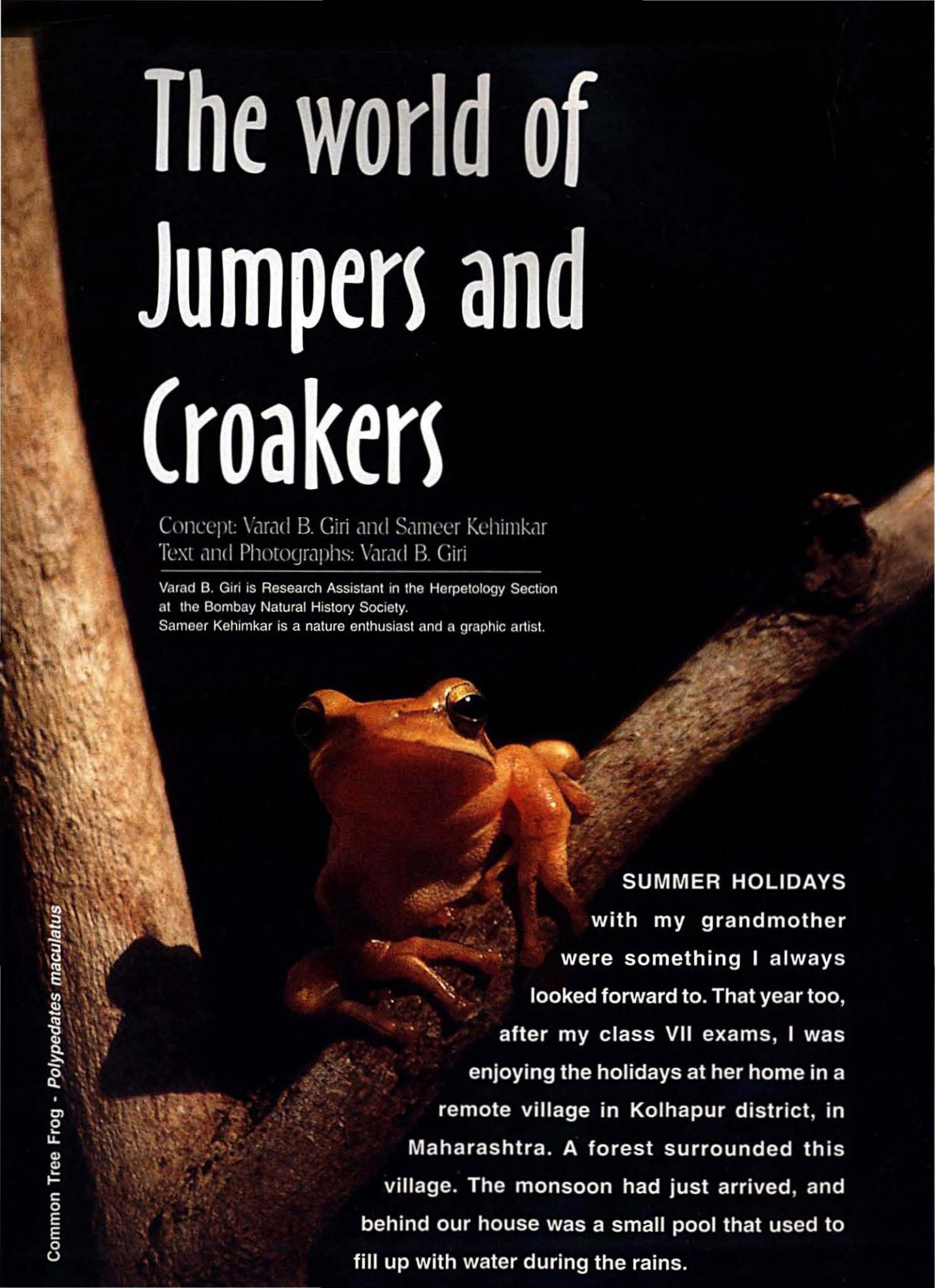
Sameer Kehimkar is a nature enthusiast and a graphic artist.



Common Tree Frog - *Polypedates maculatus*

SUMMER HOLIDAYS with my grandmother were something I always looked forward to. That year too, after my class VII exams, I was enjoying the holidays at her home in a remote village in Kolhapur district, in Maharashtra. A forest surrounded this village. The monsoon had just arrived, and behind our house was a small pool that used to fill up with water during the rains.

Jumpers and Croakers

One evening, after two days of incessant rains, I heard loud calls from the pool. Though I had heard similar calls earlier, these were quite close and got me a bit scared. I ran into the house, straight to my grandmother. "Don't worry, it is only the frogs!" she said. Since I did not look convinced, she took me to the pool, where I saw a few big, yellow frogs croaking loudly and simultaneously following whatever moved in the pond. In the night, I persuaded my grandmother to tell me stories about frogs. That whole night I dreamt only about these creatures. My induction into the world of the jumpers and croakers was complete.

During my childhood, catching toads and frightening people with them was one of my favourite hobbies. And so, in my locality, I was the one who used to 'rescue' frogs and toads that found their way into houses. During my graduation and post-graduation too, I had close encounters with frogs, but mostly for dissection, something I never liked. At around the same time I started trekking and birding. During these visits I used to encounter many frogs, mostly during the monsoon. I was astonished by their colour, size and habits. I tried to identify them, but my efforts were futile, mainly because of lack of literature. This was the beginning of my 'quest' to know more about these beautiful animals, which brought me to the Herpetology Section of the Bombay Natural History Society (BNHS), a place where I am still learning a lot about amphibians.

Now, what are amphibians? That's simple, 'Animals that live on land and in water are amphibians'. I thought so too, until I was corrected. This is one of the widely accepted definitions of amphibians, but an incomplete one. If this were true, then crocodiles and turtles would also be amphibians. But they are, as we all know, reptiles! The right answer lies in the life cycle of these animals. Amphibious means 'living both on land, and in or on water' (in Greek, *amphi*, on both sides + *bios*, life). Thus amphibians are animals that can live two kinds of lives.

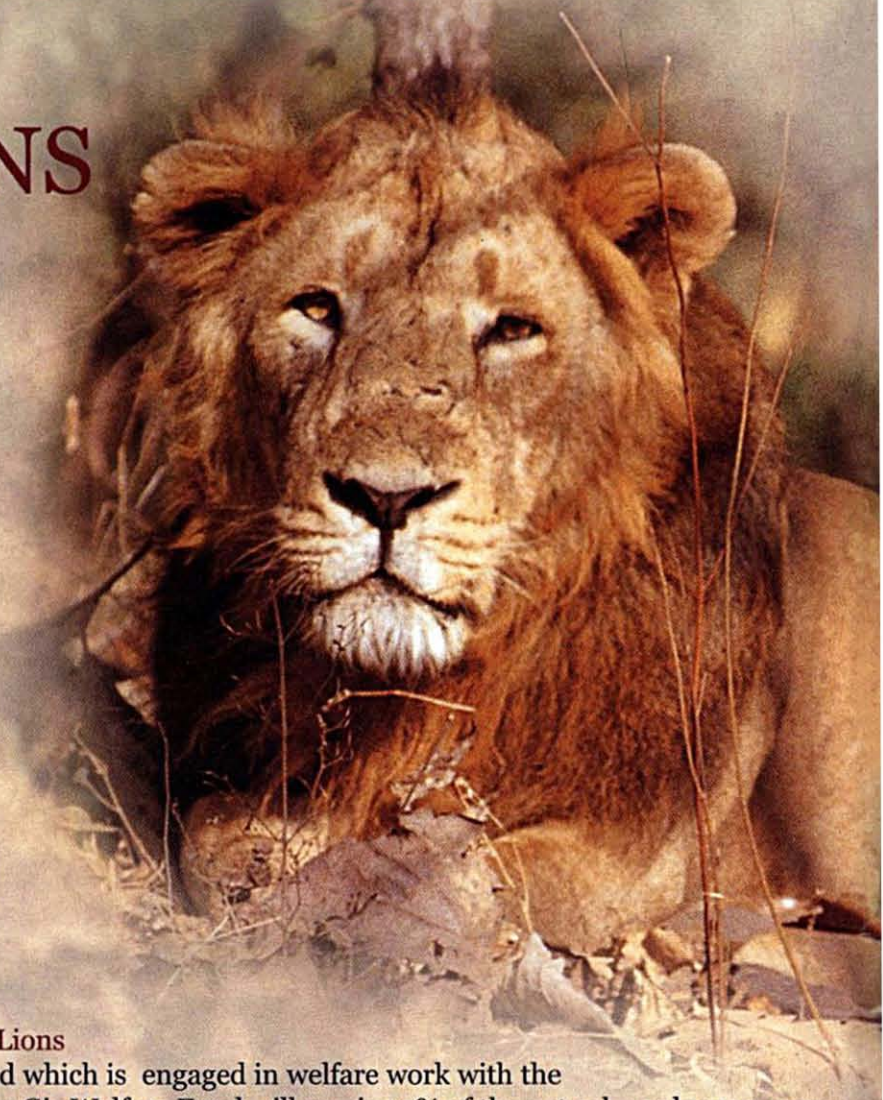
Evolutionary studies reveal that amphibians evolved from fishes, which are aquatic. Thus, amphibians are the first vertebrates to successfully leave water and conquer land, which was still dominated by invertebrates. That was the time when only a few primitive plants had evolved and there were no reptiles, birds and mammals. Consequently, amphibians became the most advanced and dominant form on earth as food was plentiful in the form of invertebrates and no predators harassed them. Although the amphibians dominated land, their placental connection with water remained.

The Bronze Frog though terrestrial, is mostly seen near streams in the forest

To make it a bit simpler, look at the *habits* of a frog when it encounters danger. This will give you an insight into its *habitat*. For instance, if the frog is aquatic it jumps into water, if it is burrowing it dislodges the soil or grass, if it is arboreal it climbs a tree!

MARG PUBLICATIONS

The Story of
ASIA'S LIONS



Writer and conservationist Divyabhanusinh uses literary and visual sources to trace the changing fortunes of the lion in Asia, from the earliest available historical records to present-day observations and data.

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Frogs v/s Toads

Both belong to the Order Anura. Frog skin is generally smooth and slimy; toads have a rough/warty, dry skin. So, it is easier to catch toads rather than frogs. Toads have smaller hind limbs compared to frogs. This makes frogs better jumpers than toads. Toads have a parotid gland behind the eye and frogs have a fold of skin behind the eye and above the tympanum.

Bicoloured Frog - *Clinotarsus (Rana) curtipes*

Common Indian Toad - *Bufo melanostictus*

The life cycle of amphibians begins in water. Their eggs are laid in water, as they are not covered with a hard shell and would perish in a dry habitat. The larval stage, which is the first stage of development, after hatching from the eggs, is also aquatic. The tadpoles live in water, where they use gills to breathe in much the same way as fish. They then undergo a radical transformation and metamorphose into adults, which are ready to move onto land. The gills are reabsorbed into the body, and the animal starts using its lungs for breathing. These stages of development are absent in the life cycles of crocodiles and turtles.

The Class Amphibia is divided into three orders Apoda, Caudata and Anura. Frogs and toads belong to the Order Anura. This was the information I had before I joined BNHS. My perception regarding frogs and toads was that they are mostly associated with water, and if one wants to see them, one should visit streams, lakes or rivers. I discussed this with Vithoba Hegde, my colleague in the Collection Department of the BNHS. He is a field assistant and had earlier accompanied various researchers, working on herpetofauna with the Society. This discussion was an eye opener for me, as he told me a lot about these wonderful animals. He made me look at the specimens of frogs and toads in the Collection and told me about many of their taxonomic characters. This was my first formal training; it was then that I realised the beauty and vastness of this field.

The next monsoon, I visited Amboli in Sindhudurg district of Maharashtra with Vithoba. I learnt about many frogs, and their habits and habitat. And then these so called 'neglected' denizens became my good friends, a relationship that is still going strong.

There are many books on how to watch birds, where to look for mammals, many interesting publications on fishes and snakes, but what about frogs and toads? Knowledge about the habits and habitats of Indian frogs is scanty, apart from some papers published by J.C. Daniel in the *Journal of the Bombay Natural History Society*, which had been the only source of information, until then, for me. These papers and the information I gathered during field visits constitute my database of amphibian facts.

Where does one look for frogs and toads? Near water or on land? Are there any frogs that burrow into the soil? Is it possible to see frogs on trees and bushes? My experience says that they are ubiquitous – they can be underground, terrestrial, aquatic and arboreal too! How is that possible? How do they do that? Are they really so well-adapted?

To answer these questions, let us explore the world of these jumpers and croakers. First, we will unearth the secrets of the burrowing frogs, after that we will search on land for terrestrial frogs. Then we will delve into an aquatic habitat and finally, we shall seek out the arboreal frogs.

Jumpers and Croakers

The large vocal sac of the Ornate Microhylid is the reason for its loud call

STURDY BURROWERS

Most of the frogs burrow during the non-breeding season, but there are a few that are true burrowers. In these frogs a well-developed digging organ, the metatarsal tubercle, is present on the hind limbs. They use this organ to dig into the soil. The best examples are frogs of the Family Microhylidae. They are commonly called narrow mouthed frogs, because of their small mouth. They are generally small, stout bodied and the eyes are also small.

One of the common frogs in this family is the Ornate Microhylid *Microhyla ornata*. This is a small and widely distributed species in India. They mostly call from the grass near pools or puddles, going "*Trruk..Trruk..Trruk...*" and you can hear this call from a distance. When I heard it for the first time, I thought it would turn out to be a big frog, but when I found it, it was a tiny (25 mm), brownish coloured frog with dark markings on the back. As it was calling I saw the inflated vocal sac, it was dark in colour and was as big as the frog, therefore the loud call!

Recently, I visited Bori Wildlife Sanctuary in Madhya Pradesh with the BNHS camp. On one of the night trails, I spotted a frog in a tree hole. It was an arboreal narrow mouthed frog, Painted Kaloula (*Kaloula taprobanica*). Basically it is a burrowing frog, but with the help of its dilated fingertips it climbs trees and walls also. The striking features of this frog are its colours – a beautiful pattern of red on dark brown. When I pointed out this frog to the members, they said, "I don't believe that frogs could be so beautiful!"

I was in Goa when the monsoon began. Near one of the pools in the forest, I saw something move on the ground. Expecting a snake, I started removing leaf litter carefully, but the movement ceased and there was nothing under the leaf litter. So I waited for some time, after a few minutes the movement resumed and a medium sized frog emerged from the soil. It was another common and widely distributed species in this group, the Indian Burrowing Frog (*Sphaerotheca breviceps*).

These are some of the representatives of the burrowing frogs.

The Painted Kaloula though burrowing, can climb walls and trees

The Cricket Frog looks spectacular when seen calling from the grass

CHAMPIONS OF THE LAND

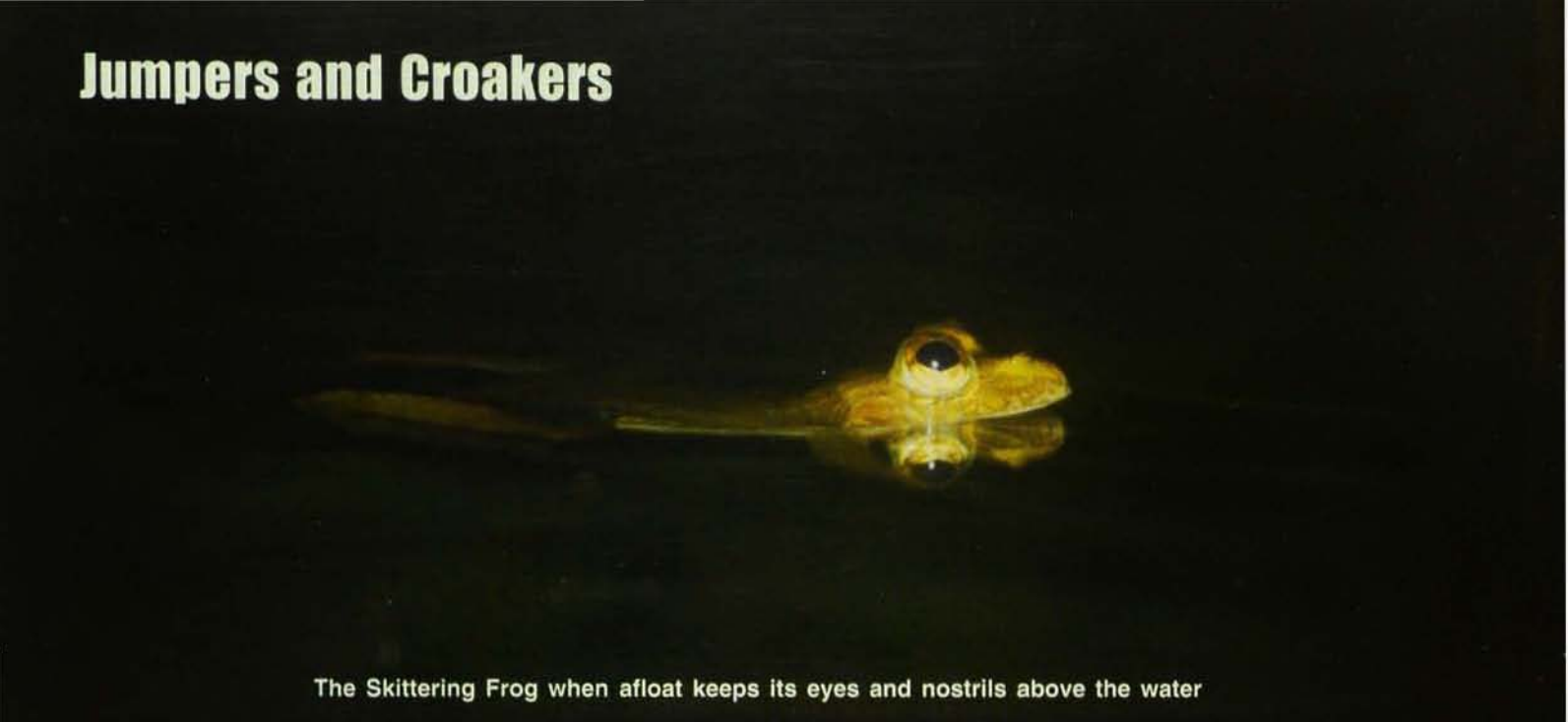
If you visit any wilderness area in the monsoon, you will see many frogs on the forest floor; these are generally terrestrial frogs. Their hind legs are muscular and comparatively long and thus they are very good jumpers. One of the important characteristics in frogs is the webbing in the toes on their hind feet. In terrestrial frogs, webbing is generally rudimentary. The fingers and toes are long and slender or stumpy with no dilations. These are medium to large sized frogs and are always seen on land, close to or away from water. They are cryptically coloured and are perfectly camouflaged on the ground.

One night, on one of my first monsoon trips to Amboli, I visited an open patch of grassland with a small stream. The rain poured down and the grassland was filled with the cacophony of frogs! The calls were coming from every direction. On close observation, we realised that they were frogs of the genus *Fejervarya*, commonly called Cricket Frogs as their call resembles that of the cricket, a small nocturnal insect. They have paired vocal sacs, which are dark in colour. We spotted at least three different species of Cricket Frogs in this grassland and this was confirmed by their different calls!

In this group there are also some beautifully coloured frogs and one of them is the Fungoid Frog *Hydrophylax* (*Rana*) *malabarica*. The general belief regarding frogs is that they are not colourful. But if you look at the colours of this frog, it's unbelievable! The back is bright orange red, the lateral sides are dark and the belly is white. To add to this beauty, the legs are marbled with black and white or yellow. This frog reminds me of my first field visit in Tansa Wildlife Sanctuary. We were on a night search near a big rainwater pool surrounded with trees. I heard a sound like raindrops falling in the pool from the trees, as I got closer, the sound became louder and I saw that it was not the sound of raindrops but the call of Fungoid Frogs! They were sitting around the edges of the pool and calling.

The call of a Fungoid Frog sounds like raindrops falling in a pool

Jumpers and Croakers



The Skittering Frog when afloat keeps its eyes and nostrils above the water

AGILE SWIMMERS

As mentioned earlier, all frogs have a close association with water, but some spend their entire life in or close to the water. They are more or less like the frogs seen on the land, but the web on the hind foot is very well developed. If you open the toes, the foot looks like a fan. In these frogs, hind legs are longer and muscular. Interestingly, the eyes and nostrils are directed upwards, helping them to breath in water and to look around. They are generally medium to large in size.

The best example is the Skittering Frog *Euphlyctis cyanophlyctis*. This is one of the widely distributed and very common frogs in India. They are always seen in pools and puddles. If you move along these pools they jump into the water and float. Their call is also very interesting, "*patt...pattt...pattttt...*" I have heard it along the railway tracks in Mumbai. This indicates that these frogs have adapted to life in polluted waters also. The most amazing thing I observed in these frogs, is that they float on water for hours. At first I wondered how they could manage that, and eventually, I found the answer – in the water their whole body is still but there is a slight movement of the hind feet, which are completely webbed.

One of the largest Indian frogs is the Indian Bull Frog *Hoplobatrachus tigerinus*. This is also an aquatic frog, always seen near water. In the breeding season, the males become golden yellow with blue vocal sacs. Their call is also very loud. These are the kings of the frog world and are reported to feed on snakes, a role reversal! The best time to watch them is during the early monsoon. I usually see them calling from paddy fields filled with water.

During the breeding season the male Indian Bull Frog turns from greenish to golden yellow

ARBOREAL TUMBLERS

"Frogs on trees? Are you joking? Impossible!" Some exclamations I heard when one of our teachers said that some frogs live on trees. What is your opinion? Living on trees away from water does look a bit difficult. But there is one group of frogs, which are arboreal, the true tree frogs. The best way to identify them is to look at their dilated fingers tips. In frogs, if the finger and toe tips are dilated it indicates that they are climbers i.e. arboreal. The surface of the belly is mostly granular. The head is large and they have big eyes. Their hind legs are not muscular, but are long and thin.

The webbing in the digits of the Malabar Gliding Frog help it to glide effortlessly

One of the beautiful frogs in this group is the Malabar Gliding Frog *Rhacophorus malabaricus,* with the most remarkable skills for camouflage! If it is on a tree, spotting it is next to impossible. With a green back and yellowish belly, it looks more or less like a leaf. It has a well-developed, bright red webbing in its fingers and toes. This aids it while gliding from tree to tree. These frogs lay their eggs in a foam nest, always above water and when the tadpoles hatch they fall into the water, where they metamorphose into adults! They are very gentle and beautiful frogs.

Once we found some eggs under a rock in Koyna in Maharashtra. They were small and yellowish. At first I thought they were the eggs of an insect, but my good friend Ishan Agarwal asked me to check them. On close observation I saw a small embryo inside. I was confused and so I carried some eggs home to see what came out! We kept the eggs in soil in a small jar and regularly observed the developments. One morning I saw tiny froglets in the jar and there were no eggs! It turned out that the eggs were of the Bombay Bush Frog *Philautus bombayensis,* a common species of bush frog in this region. On checking the available literature I found out that bush frogs (Genus *Philautus*) develop directly from eggs. In most frogs, the eggs hatch into tadpoles, which then metamorphose into the adults. But in bush frogs, the tadpole stage is absent altogether; froglets come out directly from eggs!

This then was a little excursion into the interesting, but neglected world of frogs! They have for no reason been projected as repulsive creatures, and thus ignored. If you look at them, you will realise that they are quite beautiful. They are seen in all types of habitats and this shows that they are quite adaptable also. Some of them are colourful and some are so cryptic that spotting them in their habitat is difficult.

Once you know more about them, you will also agree that theirs is a truly beautiful world!

***Philautus* is one of the genus in which froglets and not tadpoles hatch from the eggs**

The Bhau Daji Lad Museum, formerly the Victoria and Albert Museum, at Bombay, where the Society held its first meeting in 1883

The Indian Founders

Text: Rachel Reuben

Dr. Rachel Reuben is a former Founder Director of the Centre for Research in Medical Entomology, Madurai. She is currently the Honorary Secretary of the Society.

On the plaque commemorating the eight gentlemen of Bombay who met on September 15, 1883 to form the Bombay Natural History Society (BNHS), there are two Indian names. These are Dr. Atmaram Pandurang and Dr. Sakharam Arjun. There is nothing further about either of them in the Society's records, nor were they remembered during the Centenary celebrations in 1983. The early history of the Society is dominated by Englishmen, for example E.H. Aitken, the first Honorary Secretary, who wrote the delightful TRIBES ON MY FRONTIER and other popular books on natural history. Then there is H.M. Phipson, the wine merchant who invited the Society to function from his premises, and put the Hornbill logo on his labels; and there are others who made major contributions.

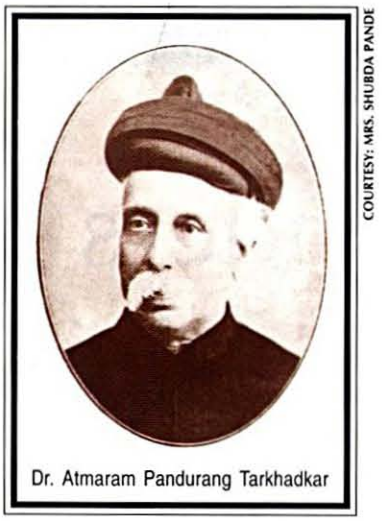
The Society flourished after Independence, and now has an all India image. It is time to find out more about the nearly forgotten Indian founders. Who were they, and what brought them to the BNHS? An internet search reveals that they were prominent citizens of Bombay, and associates of the well-known social reformer Bhau Daji Lad. Both men were active in education and social reform. Dr. Atmaram appeared as expert medical witness in the Maharaj libel case, a sensational

The Founders

Dr. D. MacDonald
Mr. E.H. Aitken
Col. C. Swinhoe
Mr. J.C. Anderson
Mr. J. Johnston
Dr. Atmaram Pandurang
Dr. G.A. Maconochie
Dr. Sakharam Arjun

case of that time. It was in his house that the Prarthana Samaj held its first meeting. Dr. Sakharam also gained publicity by successfully contesting a court case to prevent a child bride from being forced to go to her husband against her will. The lives of these members are interesting because they lived at a time of intellectual ferment, when scientific concepts were driving out superstition and transforming Indian society.

Dr. Atmaram Pandurang Tarkhadkar (1823-1898) was one of fifteen children born to



COURTESY: MRS. SHUBDA PANDE

Dr. Atmaram Pandurang Tarkhadkar

Pandurang Yeshwant and his wife Yashodabai. He, along with Dr. Bhau Daji Lad, was among the first batch of students of the newly opened Grant Medical College in 1845. At first he received a stipend of Rs. 7 a month, and later a scholarship of Rs. 25 per month. He received the diploma of Graduate of Grant Medical College (GGMC) in 1851 and was posted in Bhiwandi, where he did commendable work in running a successful campaign of vaccination against smallpox among an orthodox and initially reluctant population. Later his advice was sought in framing Article 14 of the Contagious Diseases Act (1868). One of his surviving brothers was a well known grammarian, and another the editor of a daily in which he published fiery anti-British editorials.

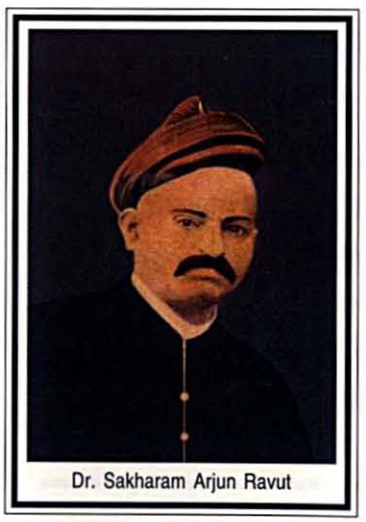
The sensational and much publicised Maharaj case was a libel case brought against the editor of a newspaper, Karandas Mulji, who wrote a series of articles alleging that the head priest of the Vallabhacharya sect was indulging in corrupt practices and exploiting young women devotees by claiming to be a divine incarnation. The head priest filed a suit for defamation, but was completely defeated and discredited during the trial. Dr. Atmaram appeared as one of the witnesses, and presented evidence that the plaintiff was suffering from a venereal disease. The press described the verdict as a "triumph over public immorality".

Dr. Atmaram was also among the founders of the Prarthana Samaj, an offshoot of the Brahmo Samaj, which had four objectives: (1) disapproval of caste (2) introduction of widow remarriage (3) encouragement of women's education, and (4) abolition of child marriage. These objectives were to be achieved through religious reform, and the first meeting of the Samaj took place on March 31, 1867 in Dr. Atmaram's house. The future Justice Ranade joined the organisation two years later. Other members were Pandita Ramabai, S.P. Kelkar and S.P. Pandit.

Dr. Atmaram was a personal friend of Dr. Wilson, the founder of Wilson College. In 1848, Professor Paton of Elphinstone College started the 'Students' Literary and Scientific Society' (SLSS). In the same year Marathi and Gujarati branches were formed. The Marathi branch was called Upayukta Jnanprasarak Sabha, and its members included Dr. Atmaram Pandurang, Dr. Sakharam Arjun, Dr. Bhau Daji Lad, K.T. Telang, and also students, one of whom, Mahadeo Govind Ranade, later became famous. The SLSS ran a magazine called 'Marathi Jnanprasarak', and for some time managed nine schools for girls which had 600 students. The members of the SLSS themselves taught in the schools as volunteers.

It was probably Dr. Atmaram's progressive outlook and interest in science that led him to become one of the founder members of the BNHS. He was a member of a number of other organisations also – among them the Bombay Association, the East India Association and the Bombay Rent Payers' Association. The last of these was started to check mismanagement in the Bombay Municipality of that time. Later he became a Justice of the Peace and Sheriff of Bombay. He was a fellow of Bombay University and Vice-President of the Bombay branch of the Royal Asiatic Society.

Dr. Sakharam Arjun Ravut (1839-1885) was the son of a carpenter in Girgaum, and was



COURTESY: MR. PRAMOD RAUT

Dr. Sakharam Arjun Ravut

orphaned at the age of eleven. He rose in medical and social circles by his intelligence, perseverance, honesty and an intense desire for knowledge. He studied at the Elphinstone Institute, and entered Grant Medical College at the age of nineteen as a stipendary student. He graduated in 1863 as Licentiate of Medicine (LM) and later took surgical training and was appointed as Assistant Surgeon at J.J. Hospital, Mumbai. He wrote medical books in Marathi, because he believed that the medium of instruction should be the mother tongue of the student. In 1865, the Board of Education appointed him to teach medicine and obstetrics in Marathi. He wrote text books on these subjects for his courses.

The study of Botany was his passion. In those days biology was a subject taught in medical college, and in 1863 he was Acting Professor of Botany in Grant Medical College. In 1878 he published a book CATALOGUE OF THE BOMBAY DRUGS, including a list of the medicinal plants of Bombay used in the fresh state. In this he lists the medicinal plants in use in indigenous medicine, classifying them by family, scientific name, local name and medicinal use. He had a botanical garden at the back of his house where he grew and studied the medicinal properties of plants. He also experimented and produced a hybrid variety of an ornamental plant, *Drociena fergussoni*, which he presented to the then Governor of Bombay.

The government honoured Dr. Sakharam by making him a Justice of the Peace, and in 1880 he was appointed Surgeon to the Viceroy, the highest honour a medical man could receive at that time.

Dr. Sakharam was a strong believer in women's education. In a letter to the *Times of India* on August 14, 1884 he wrote: "If we would rise in the scale of nations, if we would do away with many deep rooted evils which eat up the very core of our society, if we would surround our domestic life with real and rational happiness, we must raise our women to our level. They must be our equal not in name but in reality...Our women require that education which will make them intelligent citizens, helping wives and learned mothers." He also campaigned against early marriage. After he lost his first wife he married a widow with a seven year old daughter called Rukhmabai. This little girl had been married off as a small child, but her stepfather did not allow her to be sent to her husband against her will, even though this led to a court case involving much worry and expense. Instead, he sent her to England to study medicine. Rukhmabai was helped to find lodgings with a family during her stay in England by a lady doctor, Dr. Edith Pechey Phipson, who was married to Mr. H.M. Phipson, one of the early Honorary Secretaries of the BNHS. Rukhmabai qualified as a doctor, one of the earliest Indian women to do so. But her stepfather did not live long enough to see this, or to see her make a successful career in Surat and Rajkot.

Interest in Botany brought Dr. Sakharam Arjun to the BNHS, but he died two years after it was founded. However, during his membership he was on the zoo committee also, and presented a paper on what improvements were required. He received a government grant of Rs. 18,250, with which he planted trees and ornamental plants around the fountains. Soon after his death, his widow moved to a double storeyed house which she built in the Opera House area. This beautiful heritage house is still there and Dr. Sakharam's descendants who live in it have a three-quarter length portrait showing him holding an old-fashioned stethoscope. Many years later his grandson Madhav Raut was Nature Educator at the Society. Some of our older members will remember the series of little illustrated booklets which he wrote – 'Our Monsoon Plants', ' Our Animals', 'Our Birds' and 'Our Beautiful Trees'.

These, then, were the first two Indian members of the BNHS – passionate seekers after knowledge, men of vision, courage and integrity. We can justly be proud of them. They were role models for their times, and embodied many of the qualities which have become the hallmark of the BNHS. ■

Sources: The information was gathered from various sources, including D.S. Sarma's: *Hinduism Through the Ages*; N.G. Talwalkar's: *Men and Memorabilia of the Grant Medical College and J.J. Group of Hospitals*; Arun Tikekar's: *Ranade: Renaissance Man*; P.B. Vaccha's (1962): *Famous Judges, Lawyers and Cases of Bombay. A Judicial History of Bombay during the British Period* and Mohini Varde's: *Dr. Rukhmabai: Ek Aarth (A Life)*.

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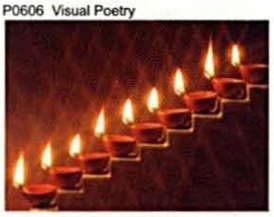

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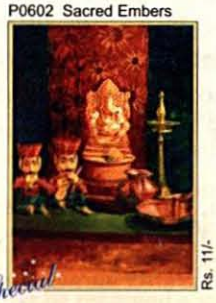

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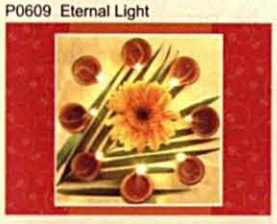

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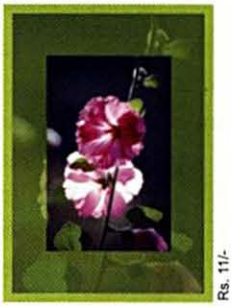

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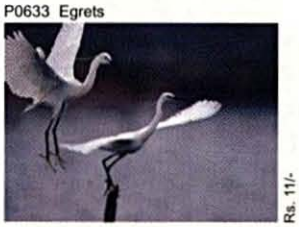

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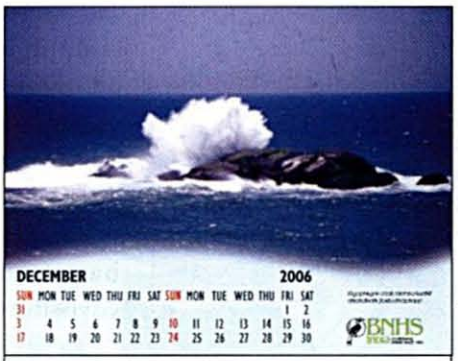

DECEMBER 2006

SUN	MON	TUE	WED	THU	FRI	SAT
31					1	2
3	4	5	6	7	8	9
17	18	19	20	21	22	23

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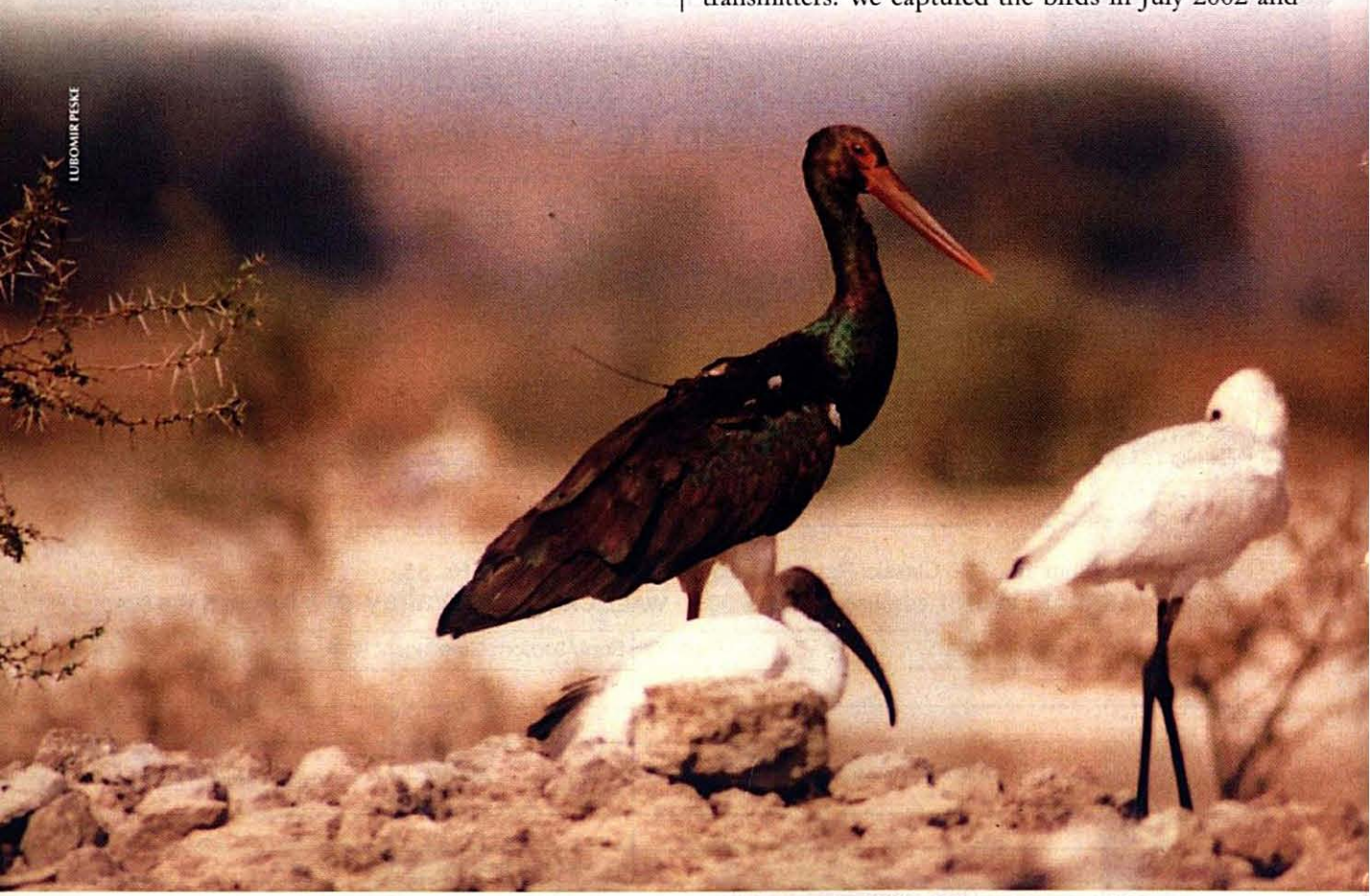
Black Stork Odyssey

Text: Miroslav Bobek, Gopinathan Maheswaran, Lubomir Peske, Frantisek Pojer

Miroslav Bobek, Lubomir Peske and Frantisek Pojer work with the Czech Radio. Gopinathan Maheswaran is presently working as a scientist at the Zoological Survey of India, Kolkata.

Every year, millions of birds undertake a long journey from Siberia to their wintering grounds in India. Ringing has made it possible to learn quite a lot about their migration patterns but not everything. The project New Odyssey is organised by Czech Radio and other organisations in cooperation with the Bombay Natural History Society. The project New Odyssey aims to add to the existing knowledge, as well as to help protect migrating birds. The Project includes the use of satellite telemetry to track Black Storks *Ciconia nigra,* that nest at River Ob in the south of the Novosibirsk region in Russia.

In the first year of New Odyssey, we equipped three adult Black Storks with satellite and VHF transmitters. We captured the birds in July 2002 and



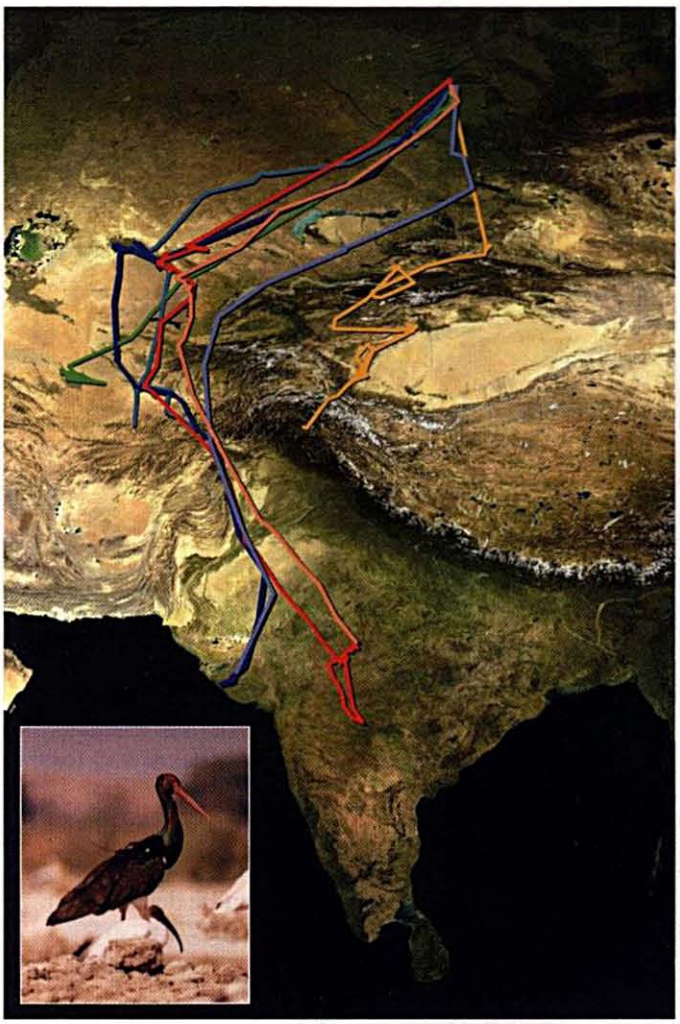
Iristu in his wintering ground in southern Gujarat along with White Ibis and Spoonbill. Jamwari Reservoir is also the main wintering ground for Common and Demoiselle Cranes

named them after members of the Romanov family - Petr, Roman and Katerina.

The biggest surprise for us was the female, Katerina. She set off from Ob as early as August and stopped in the Djungar basin in southwestern China. From there she flew to lake Issyk-Kul in Kyrgyzstan but immediately returned and rested for almost three weeks in southeastern Kazakhstan. At the end of September and beginning of October, she crossed the Tian-Shan mountain range and stayed in the Tarim basin in western China until mid-December. She eventually flew over Karakoram, and through the Khunjerab pass 5,000 metres above sea level. Her unexpected route has prompted questions about navigation mechanisms in Black Storks and the methods these birds use to fix their migratory routes. Unfortunately, Katerina was killed in the Indus Valley near Nanga Parbat. When she and other Black Storks stopped to rest on the riverbank, local village boys shot her. They were very surprised to find that she was equipped with a transmitter. A few weeks later, we managed to retrieve it from their uncle. However, Katerina's death had its positive side, in that it inspired WWF-Pakistan to prepare a research project for the protection of migratory birds in the Karakoram region and Indus Valley.

Both males, Petr and Roman, first flew to the southwest. Roman set off on September 6, 2002, and proceeded very quickly. On September 10, he travelled 565 km, which was the longest known one day flight of a Black Stork. He reached eastern Turkmenistan in just 11 days and stayed there until December when his satellite transmitter went silent. He wintered in an intensively irrigated broad area around the towns of Bajram-Ali and Mara, and undertook long flights between several remote places, as much as 170 km apart.

Petr took a less straightforward course and made three long stops in Kazakhstan before he reached eastern Turkmenistan. It took him 44 days — from September 4 to October 17, 2002 — to fly from his nest to Turkmenistan, including three stops of 10, 13 and 6 days, respectively. After two weeks in eastern Turkmenistan, he flew southwards and stopped deep in Afghan territory, 200 km away. He soon returned to the north and wandered along Amudarya. On November 19, he made another serious attempt to cross



Blue-green Petr (2002), light green Roman (2002), orange Katerina (2002), light blue Iristu (2003) to the wintering grounds, light blue Iristu back (2004), dark red Altynai to the wintering grounds (2003), light red Altynai back (2004)

Afghan Hindukush, but probably died there on November 21. In February 2003, we tried to find out what had happened. We could get as close as 20 km from Petr's still functioning transmitter, but minefields and a lot of snow on the mountain prevented us from retrieving it and establishing the cause of his death. We think it is very likely that Petr was shot dead like Katerina.

The first attempt at tracking Black Storks from Ob ended tragically. Fortunately, the following year was more successful. In July 2003, we equipped three Black Storks with satellite transmitters at River Ob. One of the transmitters went silent while the stork was still nesting, but the other two birds, a male - Iristu (meaning lucky in Altaic) and a female - Altynai (gold moon), reached

Black Stork Odyssey

LUBOMIR PESKE

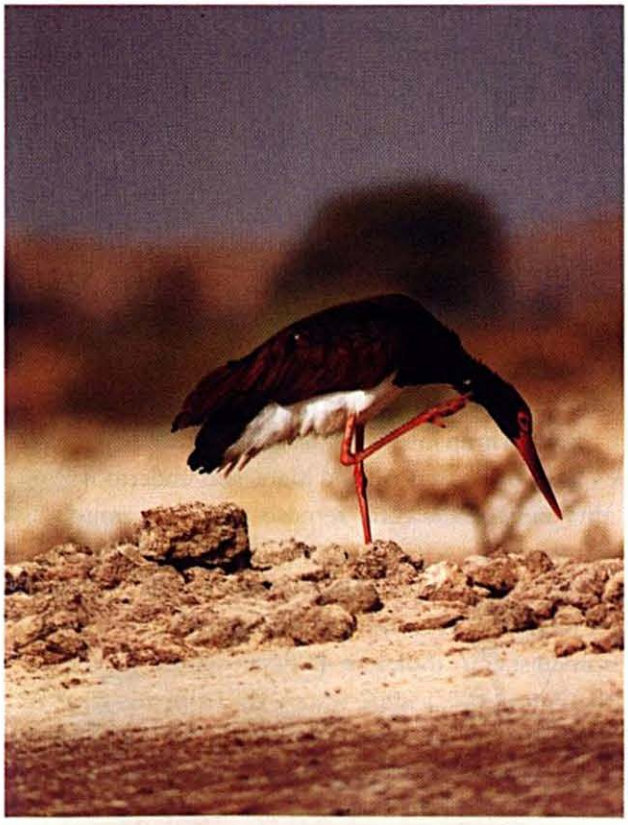
A flock of Black Storks at the Lakhundar reservoir in western Madhya Pradesh where Altynai stayed for more than three months

wintering grounds in India, in spring 2003 and luckily returned to their nests.

They both followed a route that can be described as a curve arching to the west, similar to the course Petr took the previous year. Iristu set off on August 10 or 11, 2003, and reached wintering grounds in southern Gujarat on October 29, having spent 80 or 81 days travelling. He spent a lot of time during stops at Syrdarya (58 to 59 days) and Amudarya (six days). He actually flew for only 15-17 days, each time covering 250 to 300 km. He was 3650 km away from his nest but in reality, he had to fly 4750 km to avoid high mountain ranges.

Altynai left her nest on September 4 and reached wintering grounds in western Madhya Pradesh in 66 or 67 days (on November 8 or 9). She was 3400 km away from her nest but had to fly some 4400 km. She flew for 17-18 days and spent the remaining 49 days during stops (7 days at lakes Aschikol and Akzhaykyn, 37 days at Syrdarya, and 5 days at Amudarya). She always flew 150-300 km a day, but once she flew nearly 675 km in 24 hours!

Both storks followed similar, sometimes identical routes. They proceeded fastest over Kazakhstan and both of them spent a long time at Syrdarya in southern



LUBOMIR PESKE

Jamwari reservoir in southern Gujarat is a major resting site for Black Storks. From here they move to nearby waterbodies for foraging

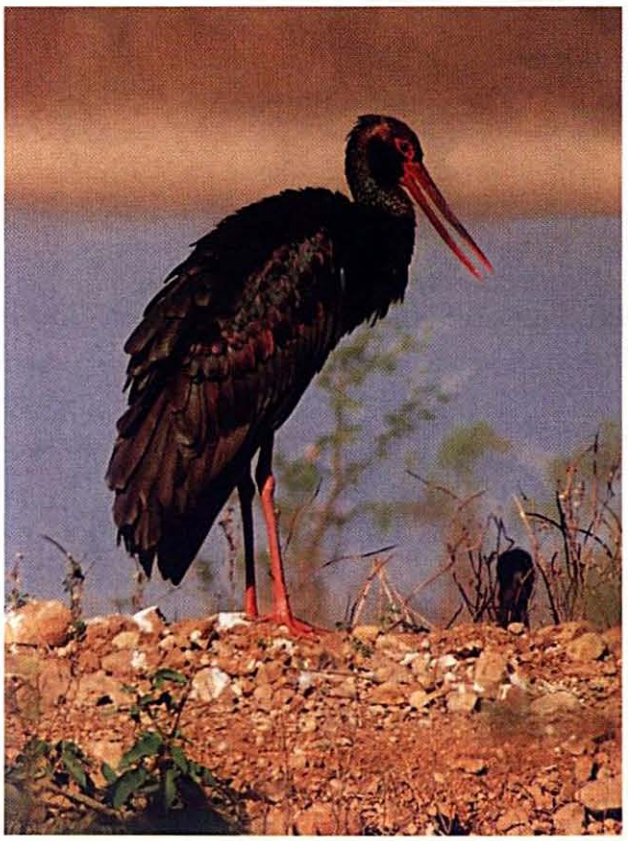
Kazakhstan. Considering that two out of three monitored storks had spent some time in the same area in 2002, it appears to be one of the most important areas for Black Storks and undoubtedly other migratory birds too. We know little about the region and it certainly deserves more attention.

In mid-October, Iristu set off from Syrdarya to proceed further south, Altynai followed him a week later. They both reached another river, Amudarya, near the border between Turkmenistan, Uzbekistan and Afghanistan. That is probably another area frequented by migratory water birds and the last suitable stop before crossing Hindukush. Both Iristu and Altynai flew over the mountain range in Afghanistan in approximately the same area. Their migration paths were almost identical on Pakistani territory too, and diverged only in India.

KHALIL BAALBAKI

Top: Team tracks the signal from Altynai at Lakhundar reservoir. Left to right: Lubomir Peske, Gopinathan Maheswaran, Miroslav Bobek and Ondrej Abonyi

Below: Black Storks use many small reservoirs situated at a radius of 20-30 km from Lakhundar reservoir in western Madhya Pradesh



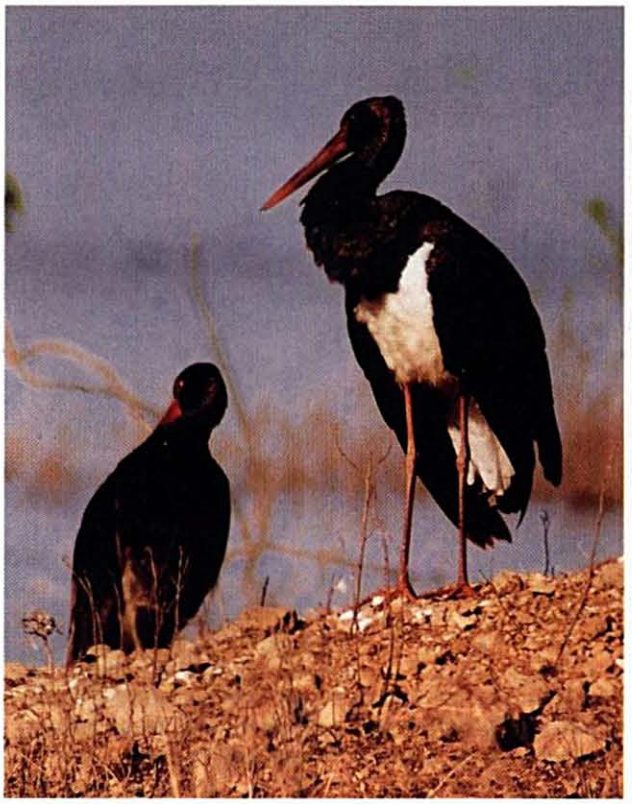
LUBOMIR PESKE

In December 2003, we monitored both Altynai and Iristu in their wintering grounds. We found them in cultivated areas near retention reservoirs, which serve as nodal points in wintering grounds. Besides Altynai, there were about 30 other Black Storks at the Lakhundar reservoir in western Madhya Pradesh. At the Jamwari reservoir in southern Gujarat, there were only two Black Storks regularly spotted with Iristu. However, eight other Black Storks could be seen at the Puljer reservoir some 7 km away, which was another major centre of the wintering area. There were surprisingly few juvenile birds or chicks that had been born that year.

Black Storks not only use the banks of retention reservoirs for resting but also spend the night there. After sunrise, they fly off in search of food in a perimeter of a few kilometres, and for 3-4 hours, they hunt in puddles of water, in channels and depressions in the terrain. Due to dense human populations in Indian rural areas, the storks are constantly disturbed by people, cattle or dogs. When disturbed, they circle at high altitudes, often for many hours, or move to a different location. In every wintering area, there are a few large water bodies that storks know very well. The area of the wintering grounds was estimated at between 100 sq. km (Iristu) and 300 sq. km (Altynai). If conditions

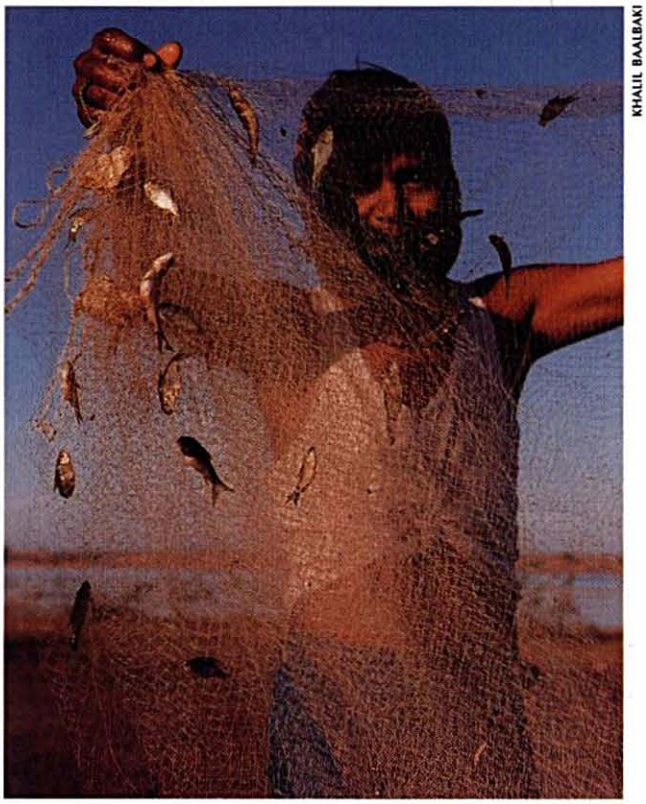
Black Stork Odyssey

LUBOMIR PESKE



More than 30 Black Storks were seen in Lakhundar reservoir — an important wintering ground for Black Storks in India

KHALIL BAALBAKI



Fishing by locals may affect the availability of prey to Black Storks in Lakhundar reservoir

worsen (for instance, due to lack of water), storks look for a more suitable area at the end of winter.

In the first half of January 2004, Altynai flew further south in India, but soon returned to western Madhya Pradesh. She headed home on March 20 and reached her nesting area in 27 days, on April 15. This time, she flew 4100 km but stopped at Syrdarya. Had she not stopped in Syrdarya for about 12 days she would have made this return journey, her shortest one, in just 15 days.

Iristu, who made two visits to 60 km distant system of reservoirs in the second half of his wintering, set off for home on March 14 or March 15, 2004, and reached it in 36-38 days on April 19 or 20. In the first spring days, his crossing of Hindukush was relatively slow. Later, he interrupted his journey with two stops, one at Lake Balkash (approximately for six days) and the other at River Irtysh (also approximately six days). His return journey was 4200 km long — he followed a different and much shorter route than on his way to the wintering grounds.

In the next season, we plan to track Altynai again as well as two birds from Mongolia — from the area between 100° and 110° east. We hope the storks make a happy return and that the project reveals new facts about bird migration.

For more information about the project, visit: www.rozhlas.cz/odysea/eng

Latest news about Altynai

There is some bad news about Altynai. According to Miroslav Bobek (April 4, 2005) "Altynai did not reach Hindukush and will not reach it with a probability of 99%. On the basis of satellite data we can almost certainly say that she died near the Indus River in Pakistan. She died - or was killed? Yesterday, we sent this news to our friends in WWF-Pakistan. They immediately replied and started working. The promptness and willingness of WWF-Pakistan is incredible. After only a few hours, our friends had contacted a man near the place where Altynai's journey ended. Also, a WWF employee, Mr. Uzma Khan will reach that region very soon. Hopefully, we will find out more information about Altynai's fate soon..."

Astonishing construction

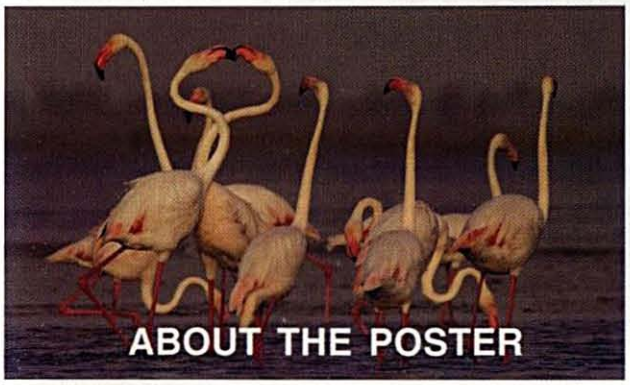
Text and Photograph: Viral Mistry

Viral Mistry is a nature enthusiast and wildlife photographer. He is an Engineer by profession

The 'cage' that this moth caterpillar (Family Notodontidae) has engineered before pupating, would require extremely complex calculations if a similar cantilevered cage were to be designed and erected at equivalent height off the ground by a human being that size, not to mention the acrobatics involved in actually erecting it on the vertical surface of a tree.

The other factors that have to be considered are precise calculations of the strength of the inter-binding joints to avoid collapse, the strength required at the junction of the bark and the cage to counteract the gravitational pull acting on the cage, analyses of various components of force acting on the cage, such as wind, dead load and live load. Imagine carrying the material to be used up a tree! Surely that would require a team, but the caterpillar has managed to weave an entire cocoon on its own, even using material drawn from its own body. ■

ABOUT THE POSTER



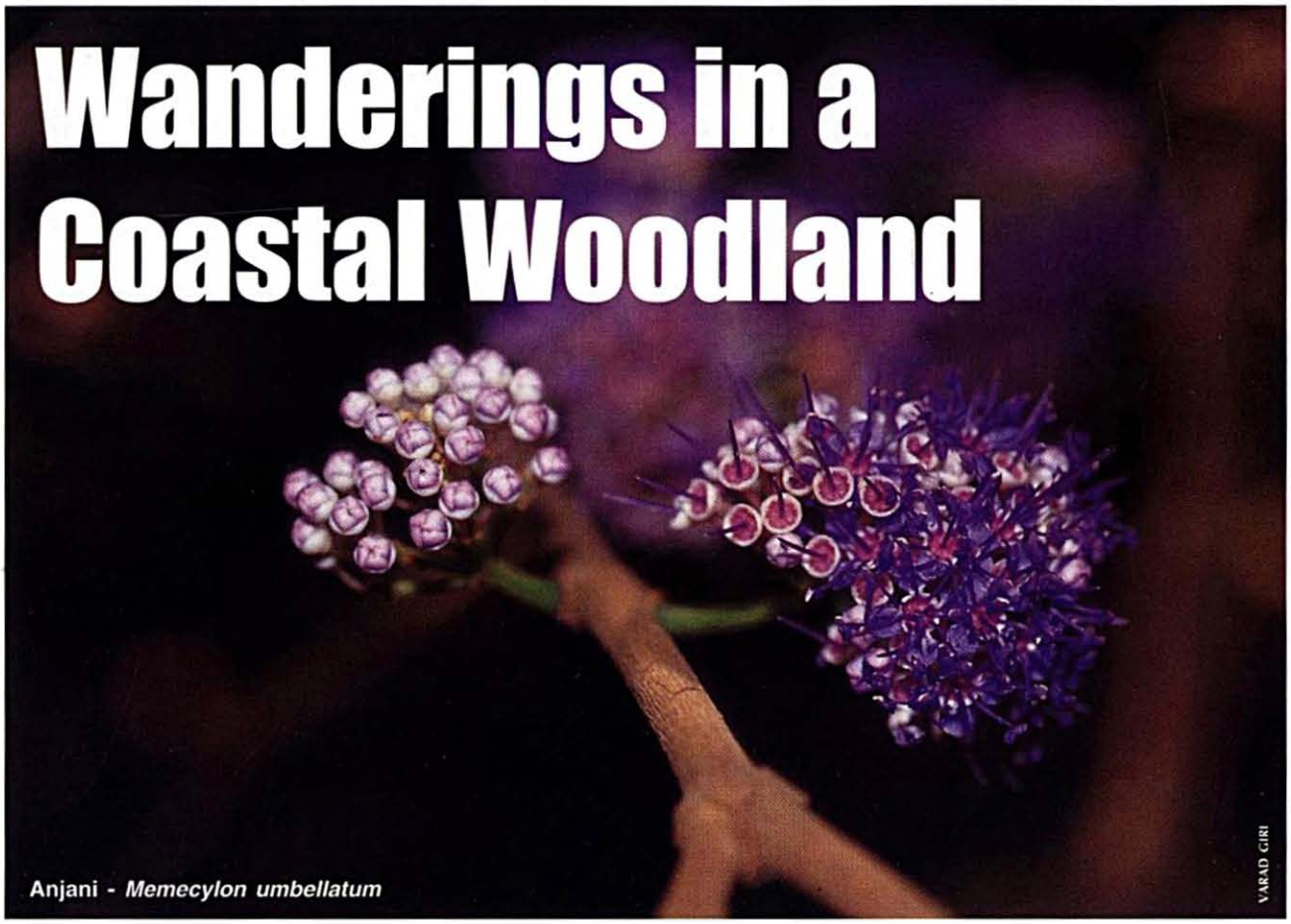
Greater Flamingo *Phoenicopterus ruber*
Population in India: 2,00,000 approx.

The word Flamingo comes from the Latin word for flame. There are five species of Flamingos in the world. The Flamingo habitats are large alkaline or saline lakes or estuarine lagoons that usually lack vegetation. Flamingos use their long legs to stir up mud; they then use their beaks to strain food out of the muddy mixture. They eat diatoms, seeds, blue-green algae, a few crustaceans and molluscs.

The Greater Flamingo is a resident and also a winter visitor to India. More than 20,000 Greater and Lesser Flamingos visit Sewri, Mumbai, between November and May. ■


GREATER FLAMINGO
Phoenicopterus ruber
MEETHIL MOMAYA

Wanderings in a Coastal Woodland

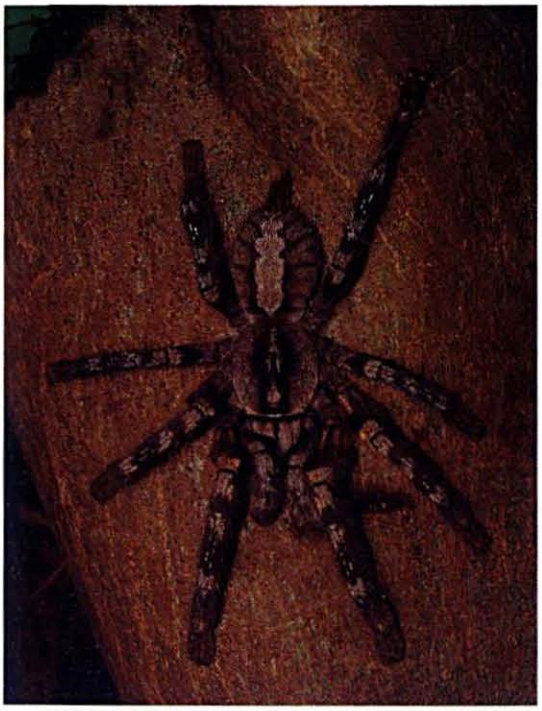


Anjani - *Memecylon umbellatum*

VARAD GIRI

Text: Rama Mulye

Rama Mulye is an avid birdwatcher and explorer. She has participated in many BNHS excursions. Her hobbies include stargazing and she often pens down her experiences in her travelogues.

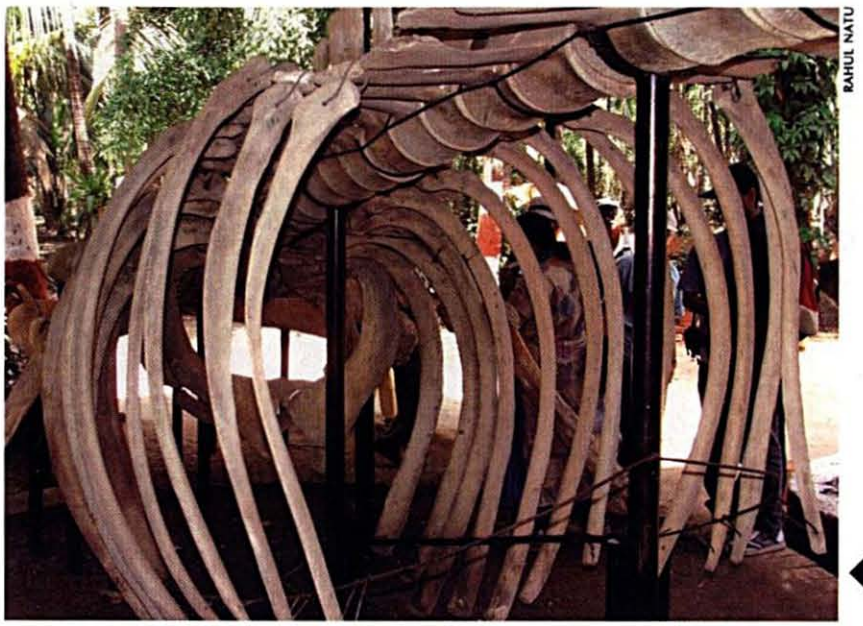


VARAD GIRI

The Indian Ornamental Spider stalks geckos in the night, its favourite meal

THE RELENTLESS call of the Brown-headed Barbet (*Megalaima zeylanica*) ringing in the background, Gold-fronted Chloropsis (*Chloropsis aurifrons*) and Green Pigeons (*Treron* sp.) hiding silently in the bright green foliage, an aggressive scorpion readying its deadly sting, Indian Ornamental Spiders lurking in tree hollows, young Fungoid Frogs (*Rana malabarica*) leaping beside a spring and a riot of colours as butterflies and dragonflies flutter and bask in the morning sun. This and much more is what Phansad Wildlife Sanctuary (WLS) had to offer us, one weekend in March.

Cashing in on the three-day Holi break, I joined the BNHS trip to Phansad WLS,



RAHUL NATU

The skeleton of a baby Blue Whale, almost 14 metres long

situated near Murud in the Raigad district of the Konkan region. Sprawling across 53 sq. km, this coastal woodland represents a unique ecosystem in the Western Ghats.

Led by Adesh Shivkar, Dr. Vaibhav Deshmukh, and Parthiv Patel, 20 of us left Mumbai at 6.30 a.m, on March 25, 2005. After a few wrong turns at Panvel, we headed past Nagaon and Chaul, till we reached Rev Danda.

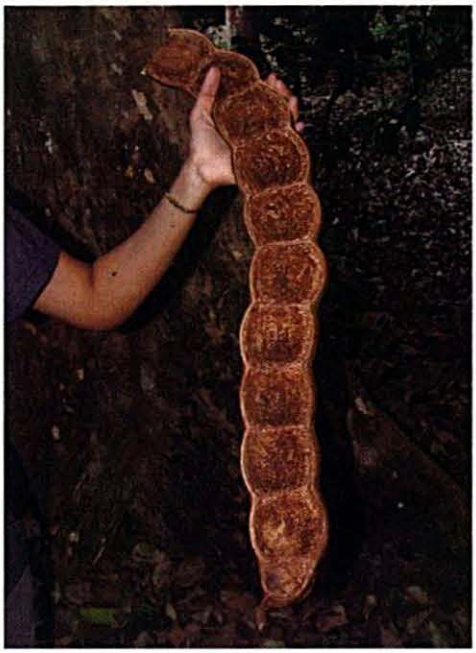
We stopped in Therunda to take a look at the skeleton of a 6-month-old Blue Whale (*Balaenoptera musculus*). After futile attempts to burn or bury the baby whale that had washed ashore, one villager decided to preserve the skeleton, arranged for Plaster of Paris imitations to fill up a few missing bones and set it up for public appreciation. The enormous size of the creature is the first thing that strikes you. If the baby is so huge, imagine a full grown adult! Adesh and Dr. Vaibhav informed us that most whales – the largest mammals – feed on plankton – some of the smallest living organisms. Surviving on oxygen from the air, they surface approximately every 20 minutes. Whales give birth to live young, which are not delivered head first as in other mammals, since the baby may suffocate in the water. The baby arrives tail first and as soon as the head comes out, the mother pushes the baby towards the surface to help it breathe. We left the place feeling grateful to people like this gentleman who had spent his own money for public good.

We proceeded along the seashore of Kashid by road, and reached Phansad at about 3.00 p.m. An hour later, we set out to see what the forest had to offer us. We discovered a Magpie Robin's (*Copsychus saularis*) nest in the roof of a hut. The clever bird had used a snake skin to line its nest, perhaps to deter predators from venturing too close. We arrived at one of the sacred groves (*devrai*) that form part of the forest. God is believed to reside here and so no tree is harmed. Left untouched by humans, sacred groves are valuable gene pools, which preserve biodiversity.

The entire forest floor was covered with thick leaf litter and we made quite a racket walking through it. Surrounded by the canopy of evergreen and deciduous trees, woody climbers - lianas, Strangler Figs and Garambi (*Entada* sp.) we trudged forward. We marvelled at the flowers and pods of Garambi. Each of these woody pods is about 0.6 metres long, probably the longest in the world, which bursts open to disperse shiny black seeds.

Parthiv got hold of a juvenile Bark Gecko (*Hemidactylus leschenaultii*) and we took a close look at its vertical pupils. He explained the difference between the lizard and gecko families. Lizards are laterally flattened while geckos are dorso-ventrally flattened. Some geckos also have lamellae under their paws (small tube like structures that end in cups), which help them climb vertical surfaces. We also sighted a lone Red-wattled Lapwing (*Vanellus indicus*) and some Yellow-legged Green-Pigeons. To reach the grove we had negotiated a small slope covered with thorny dry bushes but returned through Supegaon, the adjoining village. Finally, we settled down in the open courtyard of the forest rest house before dinner, to watch Adesh's presentation on birds. Many of our queries regarding the behaviour and habitat of birds were answered.

On the night trail, Adesh showed us a tree hollow known to be home to the Indian Ornamental Spider (*Poecilotheria regalis*). The torch revealed two yellow and black striped legs, but we were not successful in luring the owner out of its hiding place. Meanwhile, someone found a dead Nightjar lying on the road, probably hit by a vehicle. It was a good opportunity to see its features — Dr. Vaibhav showed us its wide gape and the bristles by the beak, which are very sensitive and help it hunt for insects at night. The feathers are soft, and when it flies it can manoeuvre silently at night. We settled down in a meadow to listen



RAHUL NATU

Perhaps the longest pod of seeds, the Garambi lets loose a battalion of large black seeds

to the calls of the highly vocal Indian Jungle Nightjar (*Caprimulgus indicus*) and Common Indian Nightjar (*Caprimulgus asiaticus*).

The next morning, some of us decided to walk towards the watchtower. The birds were up and about, the forest was alive with their chirping. The sweet smelling Raan Jai (Wild Jasmine) and wild Tagar (*Tabernamontana*) made my short walk invigorating. I was able to shoot Eurasian Golden Orioles (*Oriolus oriolus*) with my camera; Coppersmith Barbets (*Megalaima haemacephala*), Bulbuls, Gold-Fronted Chloropsis (*Chloropsis aurifrons*), Ashy Drongos

VARAD GIRI

The disruptive pattern of the nocturnal Bark Gecko renders it invisible during the daytime

danced energetically from one treetop to another. Yellow-footed Green-Pigeons and Pompadour Green-Pigeons (*Treron pompadora*) sat silently in the trees, hidden completely by their excellent camouflaging colours and contours.

Before I joined the rest, they had sighted a Blue-faced Malkoha (*Phaenicophaeus viridirostris*) and I regretted not seeing it. Thankfully, Sahil, an enthusiastic birder, saw it again. This time I had a fleeting glance, the bird shifted from one branch to another. One group returned with the news that they had located a Jungle Babbler's (*Turdoides striatus*) nest. The neat nest with three bright green eggs was hidden in a bush. Our curiosity satisfied and the eggs intact, we left.

We set out after breakfast and this time we came across a dead Green Imperial-Pigeon (*Ducula aenea*). The beautiful bird lay on the leaf litter, its neck unnaturally twisted. Ants had already started making a meal of its eyes. Its lovely metallic green wings glistened in the morning sun. We hoped to see these birds alive and healthy, and here we had come across two dead ones already!!

Chandrakant Naik, the forest officer of Phansad, offered to show us a Leopard's den. On the way, we came across a baby Indian Ornamental Spider. Although still to reach adult size, it has its share of poison ready for anyone who tries anything funny, so the safest way to handle it is with a twig.

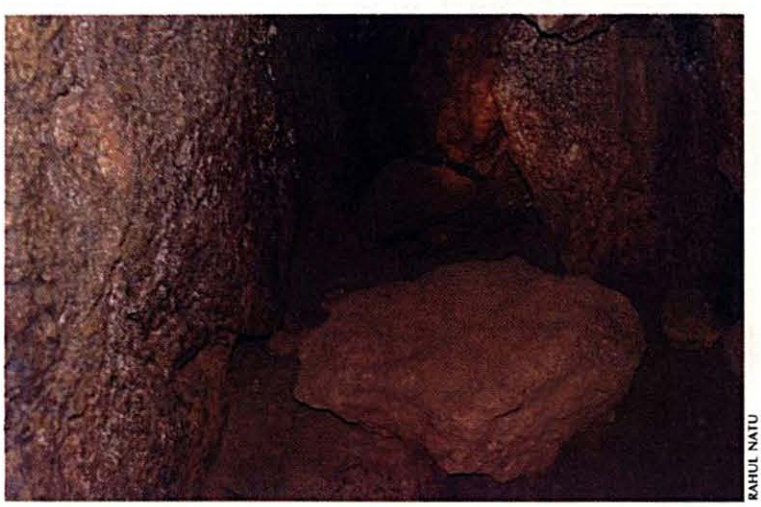
The way to the cave was slightly uphill. The small opening was just enough to fit a person seated on the ground. There was room enough to accommodate cubs. The natural ventilation in the cave was amazing. Outside the cave, the heat was intolerable, but near the entrance, one could sense a comfortable drop in the temperature. Quite a cosy home to rear cubs!

Later that evening, we set out along the main road. Parthiv left no stone unturned (literally), in his search for serpents. Finally, he found an adult female scorpion! He tweaked her from the hole and she became aggressive, her sting all set! After every excited soul had taken a good look, we left the scorpion to her own business. Further down, a Purple-rumped Sunbird (*Nectarinia zeylonica*) perched on a branch, preening in a spot of sunlight, its green cap shining brilliantly.

RAHUL NATU

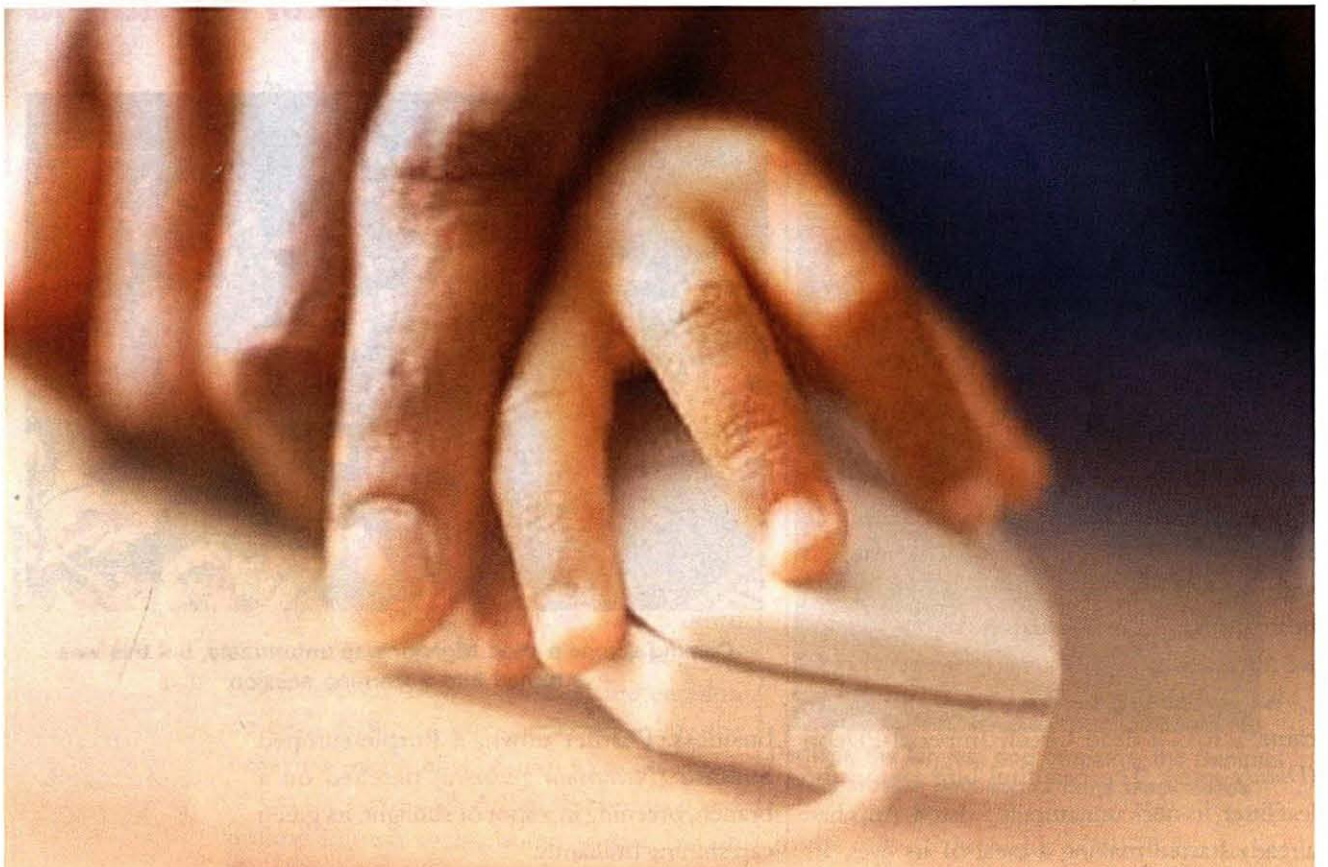
Coming across a dead Nightjar was unfortunate, but this was turned into a learning session

Later we reached a point that looked over the valley. The sight below us was a delightful mix of greens, yellows, reds and browns. The beginning of *Vasant* was announced by the deciduous trees wearing a new coat of bright green, the evergreen trees sporting a darker hue with splashes of red from the Flame of the Forest (*Butea monosperma*), Coral Tree (*Erythrina indica*) and new leaves of the Ceylon Oak (*Schleichera oleosa*), locally known as *kusum*.



RAHUL NATU

This secluded den was a safe spot for the Leopard cubs



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Oysters

All through the trip, Adesh and Dr. Vaibhav made different birdcalls and to their credit, the birds responded. Suddenly, a Hornbill called back. Everyone came together to listen to what soon became a *jugal bandi* between Adesh and the Hornbill. Call answered call, a weird sound like two cranky babies calling to each other. If Adesh lowered his voice, the Hornbill would call louder, and so it went on; all of us were rooted to the spot, listening intently, until someone sneezed and gave us away. A brief glimpse of the bird through the trees led us to believe it was a Malabar Grey Hornbill (*Ocyceros griseus*).

While we were trudging back, Uma sighted a Indian Rat Snake (*Ptyas mucosus*) some distance further. All of us rushed back, but by the time Parthiv and the rest of us could reach the spot, all we got was a glimpse. So much for the excitement. ☺

Before dinner, we entertained ourselves with a quiz. Parthiv and Adesh tested our knowledge on birds. This let loose a volley of questions and answers, which lasted throughout dinner. Dr. Vaibhav and Sahil sighted a Brown Wood Owl (*Strix leptogrammica*) on their night prowl.

The next morning we started out early, and headed towards Chikhal Gan, one of the many perennial springs that bless the forest with water. The highlight of the day was a sighting of the Crested Tree-Swift (*Hemiprocne coronata*). As we reached a large meadow, we saw many of them rising up in the air and settling down on treetops. We spotted a female sitting in a determined manner on her nest. She was not the least bothered with us mortals lining up under the tree to view her through the spotting scope. Not far away was a male showing off his orange ear coverts. Further ahead was the spring surrounded by dense foliage. As soon as we reached the spot, a Honey Buzzard (*Pernis ptilorhyncus*) welcomed us and flew away. The muddy forest floor showed signs that a Wild Boar had come the previous night to wallow in the mud (some *dhulivandan* that must have been ☺). Some of us stayed by the water

RAHUL NATU

Spring is not far behind, with new blossoms and a myriad of colours enveloping the landscape

while others marched further into the forest. We saw many nests of the Malabar Giant Squirrel (*Ratufa indica*), but the furry animal was not visible. We spotted a loud Malabar Grey Hornbill high on a *Eucalyptus* tree. With the spotting scope we could clearly see its huge beak and even its eyelashes!

About a dozen Indian White Backed Vultures (*Gyps bengalensis*) circled above us, taking advantage of the thermals to rest their flight muscles.

Many butterflies and brilliantly coloured dragonflies were basking in the sun, flitting above the mud; noteworthy among them were the - Common Leopard (*Phalanta phalantha*), Common Shot Silver Line (*Spindasis ictis*), Blue Tiger (*Tirumala limniace*), Gaudy Baron (*Euthalia lubentina*) and the Danaid Eggfly (*Hypolimnas misippus*). On our way back we stopped by the watchtower for a panoramic view of the forest landscape and the Korlai Castle by the shoreline. To our amazement we found the Crested Tree-Swift still on her nest, undaunted by the blazing sun! Further down, a Green Vine Snake (*Ahaetulla nasuta*) gave us a final *darshan* before we left Phansad.

For its wonderful mix of deciduous and evergreen forest and the variety of flora and fauna, Phansad is a place every nature enthusiast would love to visit. ■

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The Sand Boa coiling and constricting the Monitor Lizard

The Sand Boa swallowing the head of the Monitor Lizard. The front limb of the lizard is just near the mouth of the boa. The tail of the lizard is also visible

A small portion of the lizard's tail is still visible

Hunter v/s Hunter

Text and Photographs:
Devendra Kumar Bharadwaj

Devendra Kumar Bharadwaj is presently a Forest Range Officer at Jaipur

IN MID-AUGUST last year, I witnessed a rare incident near Gunsi (between Kothune and Niwai). It was around 11.30 a.m. when my attention was attracted by some noisy, excited birds. A large number of them were perched on shrubs and telephone wires. I thought that there might be something unusual happening and I walked towards the centre of attraction.

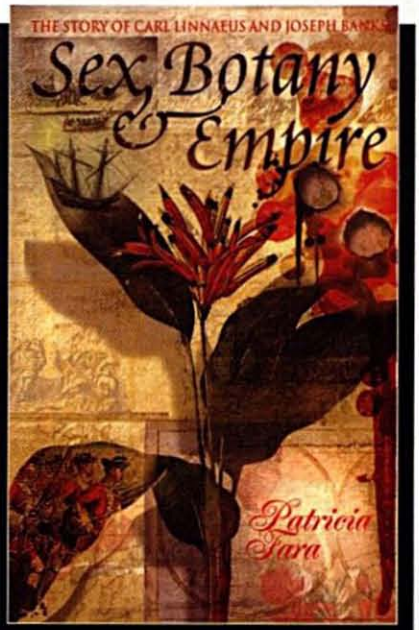
I was awestruck by what I saw. A Sand Boa (*Eryx conicus*) was holding the mouth of a Monitor Lizard (*Varanus bengalensis*) in its own mouth. The lizard was almost equal to the boa in size, which I estimate was about 1 metre long. The boa had coiled its body around the lizard, which was motionless. It had probably died because of suffocation before I arrived on the scene. I took out my camera and started taking pictures while the boa feasted on the lizard. Luckily, the boa did not pay me any attention. It simply kept on devouring its prey. I witnessed the incident for about half an hour, during which the entire lizard was swallowed. After the feast, the boa slowly moved towards a burrow under a bush and disappeared.

This observation is especially valuable and interesting because the boa is supposed to be a secretive snake and this entire drama took place between 11.30 am till noon. ■

Editors' Note

Monitor Lizards are known to also prey on snakes. This could be the first photographic record of a rare instance of the hunter becoming the hunted.

Reviewed by Asad R. Rahmani



Sex, Botany and Empire: The Story of Carl Linnaeus and Joseph Banks,
by Patricia Fara.
Columbia University Press,
New York. 2003.
Pp. 168 (18.5 x 12 cm).
Price not stated.

This is one of the most amazing books that I have read recently, mainly because it unites three disparate subjects into one interesting story. Patricia Fara of Clare College at Cambridge University, where she teaches the history of science, has woven together an entertaining account of how botany explorations were used to expand the empire.

Most biologists know Carl Linnaeus, the Swedish pastor, who introduced a system of classifying living beings more than 200 years ago, but not many people know about Joseph Banks, a man of multiple identities — aristocratic landowner, botanic explorer, scientific administrator and the President of the Royal Society for 42 years. Banks made science central to British culture. He convinced the British government that investing in scientific research would benefit the country's commercial and imperial expansion. In our country where permission for research using modern technology (e.g. telemetry, satellite tracking, DNA sampling and so on) sometimes takes two years, Banks' foresight and his message to the British government should serve as an example. Are the bureaucrats in the Ministry of Environment and Forests listening? No country can progress without modern science, whether it is rocket science or wildlife ecology.

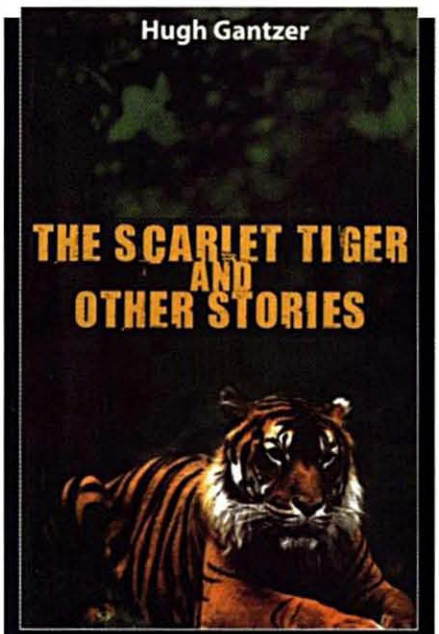
The 18th century is often known as the 'Age of Classification and Exploration', and Linnaeus was the classifier par excellence. While Linnaeus (1707-78) was not a great explorer, unlike Joseph Banks who made many trips around the world in search of new plants and new territories for the British Empire, Linnaeus invented a revolutionary method of classifying plants (later used for animals also), which he boasted was so straightforward that 'even women could understand it'. Earlier botanists had tried to group plants by characteristics such as the colour of their flowers or the shape of their leaves, but Linnaeus classified plants according to their reproductive organs, and used many anthropomorphic terms. Hence, the scientific language of botany was saturated with sexual references. Banks ardently supported the Linnaean system of classification, which relied on counting the numbers of male and female reproductive organs inside flowers. I quote from this book: "To describe different groups of plants, Linnaeus had used extraordinary terms like 'bridal chamber' and 'nuptials'. For prudish Britons, this sexualised version of nature verged on the pornographic, and battles over botanical textbooks resembled current debates about allowing children to watch violent videos. Self-appointed moral guardians of society declared that they wanted to protect young women from the corrupting influence of botanical education. They clamped down on mixed flower-gathering expeditions, and sanitised floral vocabulary by introducing meaningless euphemisms."

This small book is full of little details about the *Endeavour* expeditions to Tahiti and Australia undertaken by James Cook and Joseph Banks, including their sexual escapades with Tahitian women, and also Carl Linnaeus' almost fanatical aim to make his cold country (Sweden) self-sufficient in food by cultivating plants from all over the world, sometimes with disastrous results. As Fara has written: "Linnaeus in Sweden and Banks in Britain illustrate how scientific research is intertwined with commercial development and imperial exploitation." Perhaps, the greatest achievement of Joseph Banks was to make botany central to British science. Still more significantly, by demonstrating how useful foreign plants could be, Banks reinforced the links between commercial, imperial and scientific explorations. He converted Kew Garden into the world's leading botanic garden, where plants from all over the world

were grown, many of them for their commercial value. By the early 19th century, gardens had become a standard symbol of colonial conquest. As part of his schemes to make tea cheaper for British consumers by growing it in India, Banks became involved in proposals to establish a Botanic Garden in Calcutta.

In this age of gene bank robberies, smuggling of plant and animal products, GM crops and commercial patenting, it is necessary to know how the earlier botanical explorations helped the expansion of the British empire, knowledge and wealth. Although the age of empire expansion is probably over (with my apologies to the U.S.), the importance of scientific explorations would never diminish. Reading this book has strengthened my view that the only way to save species and wild places is to learn more about them through modern techniques. The more we know about our threatened wildlife, the better we would be able to design conservation measures. Our government talks about not allowing genetic material to go out of the country, and has recently passed the Biodiversity Bill, but should it not give more attention to the science part of conservation? One of the most (commercially) important genetic material — the Wild Buffalo of Central India — is on the verge of extinction but is there any worry in the corridors of the impressive building of the Ministry of Environment and Forests about the fate of this genetic resource? Perhaps we need a Joseph Banks to promote conservation biology as the central theme of the MoEF.

Reviewed by Asad R. Rahmani



The Scarlet Tiger and Other Stories, 2004.
By Hugh Gantzer, Rupa and Co., New Delhi.
ix+102 pp. (19.5 x 13 cm).
Price: Rs. 95. Paperback

Hugh and Colleen Gantzer are the famous husband-wife team of travel writers, who have regaled us with their vivid description of various wildlife sanctuaries and historical areas. THE SCARLET TIGER shows Hugh at his best. Anyone interested in old shikar stories will like this book. This little book of 102 pages has seven shikar stories, each one more fascinating than the other. Hugh has his own way of introducing a story in 2-3 pages, before revealing the real story. His introduction is like an appetiser; the 'main course' leaves you asking for more.

As in similar books authored by him, Hugh has not given the dates and place names, we do not know when and where the incidents described in the book occurred, but from the description it appears that most of them must have occurred during the British rule. Or, are these stories just a figment of his imagination? Some stories seem to be recent as can be judged by the statement, "The Chhota Nagpur plateau, in the state of Jharkhand" (p. 70). Jharkhand was established as a separate state in 2001, but the description is probably 60 years old as Hugh mentions "densely forested, deeply ravined and alive with game." Is Jharkhand still densely forested? Is it still 'alive with game'?

Hugh has made mistakes by saying that porpoises are found in River Ganga, or that rabbits were flushed during the chase of man-eating leopard. We have dolphin and not porpoise in the Ganga, and hare, not rabbit in India. Like in other books of this series, by the same author, there is a mix-up in the pages. The description and sentence of p. 95 continues on p. 98, while the Introduction of the Terai chapter reads from p. 97 to p. 96! The editor and publisher should be more careful in the future. Perhaps, there is a pressure on them to produce 'quickies' to achieve the yearly financial target. But can we compromise on quality for this?

No place like home?

In most parts of the world the natural homes of birds and animals are shrinking due to rapid urbanisation. In such altered conditions, the survival of a species depends upon its ability to alter its behaviour, especially in foraging and breeding activities. I am putting forward my observations about the behavioural changes in breeding activities in an avian species, the Red-vented Bulbul, *Pycnonotus cafer* in a changed landscape — the suburbs.

The Red-vented Bulbul forms a cup-shaped nest in shrubs, small trees and thorny bushes 1-2 m from the ground, while in some cases, it is reported to nest in an unusual manner, namely nesting in a tree-hole, mud-hole or a disused tube light.

On June 29, 2000, I noticed a Red-vented Bulbul's nest in the front shade (made up of jute) of a general store at Osian town, Rajasthan. The shop was shaded by a wooden frame, supported by wooden pillars and covered with a thin jute cloth. At the joint of the wooden frame, the twigs of the nesting material were firmly wound together with the help of spider webs. The Red-vented Bulbul was incubating the egg, despite human presence. The nest was located about 2 m from the ground. People (average height 1.52 m) passed by just below the nest. When the bird flew away for a while, I could see three eggs in the nest.

Besides this, a few other unusual nesting locations have also been observed during the last six years. In July 1997, when I was collecting data on the breeding biology of this species in Haridwar (29° 55' N, 78° 78' E), one pair had formed a nest

in the broken cover of a tube light, on a street pole. However, the nest was disturbed by an Indian Tree-pie, *Dendrocitta vagabunda*, within a few days after the nest was completed. In April 1998, the same pair (they were colour-banded) was observed nesting in the same location. The result was unsuccessful, perhaps due to predators. In the last week of April 1999, another unusual nest was observed. This time the nest was located beneath the ventilator shade of a house in an urban area in Haridwar. The nest was firmly attached on one side with a rubber coated electric wire, while the opposite side of the nest cup was attached with another metallic wire. It was the supporting wire for an electric cable. Two nestlings were successfully raised.

Behavioural deviations have also been reported in a number of other species, such as in Europe, where urbanisation has existed over a thousand years and many birds such as Rock Doves *Columbia livia,* Starlings *Sturnus vulgaris,* and House Sparrows *Passer domesticus* have become human commensals. The latter species is now so closely associated with man that its original niche is unknown. Shining Starlings *Apolonis metallica* transferred their nests from holes in trees to vents of air conditioners. Swiftlets (*Collocalia* sp.) that would otherwise nest in caves now use tunnels excavated by man. Goldie's Lorikeet *Trichoglossus goldiei,* which was formerly a rare species occurring in primary forests, arrived in the 1970s to feed on *Casuarina* seeds in highland towns, where it is now the most abundant bird.

Anil Kumar
via email

Aberrations in nature

One day in class, the students drew my attention to a House Gecko that had two tails. At first I thought that they were joking, but after a close look at the tiled roof I saw not one, but two geckos with a bifid tail. One was black with an olive green back, the other was creamy grey. The young of these geckos, born soon after, also had bifid tails.

Unfortunately, one of the parents died when the classroom in which they lived was being repaired. The Gecko is preserved in the laboratory of our college.

Veera Mahesh
Andhra Pradesh

Strange times

One evening when I was walking along Vithalbhai Patel Road (near Opera House, Mumbai), I saw a crow eating a dead crow. Though I could not tell whether the dead crow was killed by this crow or whether it was dead when this crow found it, I could make out that the crow had died recently.

Though crows are known to be scavengers I have never seen a crow eating one of its own species, which I understand is a general phenomenon in the animal world.

I mentioned this to a friend who has seen a few crows attacking another crow. I am not sure whether these incidents have anything to do with the recent news about the sudden death of crows reported in the press.

A.V. Shenoy
via email

Where have all the Blackbuck gone?

In his interesting and informative article on Point Calimere, J.C. Daniel mentions an approximate figure of 750 Blackbuck there in May 1967. A more thorough census taken in 1989 logged only 490. There is an intriguing side to this sad decline of 240 Blackbuck which the *Hornbill* readers might find amusing. The Blackbuck could have been wiped out altogether but for a chance intervention at the nick of time. Duleep Mathai, a founder trustee of WWF-INDIA (and a life member of the BNHS) rang me one morning in 1986-87 stating that the LTTE who had encampments inside Point Calimere Sanctuary were shooting animals, and particularly the Blackbuck, wantonly.

I was to discuss a brief with Gen. K. Sunderji that afternoon and at the end of it I mentioned what I had learned from Duleep. The large-hearted supporter of the conservation movement that the General was, he told me to accompany him to a meeting late that evening. Once there, he led me to a gentleman and said, "He is your man". Four days later "my man" gave me the happy news that the LTTE had given an undertaking not to shoot Blackbuck henceforth. And yes, that the snipers had indeed used Blackbuck, especially when running at full stretch, to sharpen their shooting skills! How close we came to lose them all.

Although the sandy beaches on the east coast of India are alien to the favoured Blackbuck habitat, yet they seem to thrive there. Not just at Point Calimere but once upon a time even at Konark. Maj. Gen. D.K. Patil VrC in his autobiography *Musings and Memories* (2004) writes of Christmas spent at Chilika Lake and Konark in 1931:

"I think it was at the end of the Chilika trip that we decided to pay a visit to the newly located ruins of the "Black Pagoda" at Konark... we made ourselves comfortable at the small IB near the beach. Our first quest was for the pot — to shoot Blackbuck, big herds of which could be seen on half-mile wide belt of sand along the coast... At 40 mph we easily caught up... but since it was not easy to isolate a good head from the ruck, Father didn't attempt a shot."

This was the honourable though indefensible dividing line between "sport" and outright killing.

Lt. Gen. Baljit Singh
Chandigarh

What's in a name?

While browsing through a copy of *The Week*, I chanced upon an article 'Daughter of the Coast'. It mentions the efforts by NGOs and religious leaders to save the Whale Shark, now christened *vhali* — 'daughter coming home for a short stay'. According to a report, this led a fisherman to release a Whale Shark caught in his fishing net, as he considered the gigantic fish 'as his daughter coming home to give birth'. In fact, the NGOs have put up an inflatable model of a Whale Shark and hope to make it a tourist attraction. I hope other NGOs follow suit and consider similar names for Olive Ridley Turtles. A good example of an animal saved from poaching is the *nilgai*, which means 'blue bull'. In fact, we, a group of herpetologists, during a study trip to Amboli chanced upon caecilians and christened them *dev gandul*, which means 'earthworm of God'. With a little more campaigning we hope to save the caecilians in Chiplun, Amboli and other areas.

Sanal R. Nair
Mumbai

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DAMMED...OR DAMNED?

PARTHA DAS

The dam on the Ranganadi (RHEP-Stage-I) at the 43 mile point near Yazali, in the Lower Subansiri district in Arunachal Pradesh

Compiled by Naomi Patrao

Naomi Patrao is a dentist with an abiding interest in natural history. She has been associated with the Conservation Department of the BNHS as a volunteer for more than three years. Currently, she is studying Palaeontology at Kent State University, USA.

The Ranganadi Hydroelectric Project (RHEP) was conceived in 1978 by the then Department of Power, Ministry of Energy of the Government of India, as the Paynor-Dikrong Scheme, to be executed in the Lower Subansiri district of Arunachal Pradesh. Paynor is the name of Ranganadi river at its upper reaches in Arunachal. It was reconnoitred in February 1978, first by a team of experts constituted by the Department of Power. Later, the North Eastern Council (NEC), the agency authorised to implement the scheme, entrusted the North Eastern Power Corporation (NEEPCO) with the responsibility of carrying out the investigation on the scheme from June 1978. After preliminary and detailed investigation, considerable modifications were incorporated in the earlier scheme and it was reconceived as the RHEP to be implemented in two stages on the River Ranganadi in the Lower Subansiri district of Arunachal Pradesh.

In the first stage, called RHEP Stage-I, a concrete rock fill diversion dam was proposed near the 41 km post of the Kimin-Ziro Road near Yazali (27° 20' N, 93°49' E). Stage-I envisages inter-basin transfer of water from the Ranganadi to the Dikrong using a flow diversion plan to achieve the required head of 300 m to generate 405 MW of electricity. According to this scheme, from the pondage created by the diversion dam, a discharge of 160 cumec (cubic metre) will be diverted to the power house at Hoj on the left bank of the Dikrong river, 10 km from Yazali and to the southwest of the dam-site through a tunnel 8.5 km long. The same amount of tailrace water (160 cumec) will be released from the powerhouse to the Dikrong.

In the second stage of the project (RHEP Stage-II), a 112 m high rock fill storage dam would be built on the Ranganadi, near the 51 km post of the Kimin-Ziro road at Yazali, 10 km upstream of the diversion dam-site of Stage-I, to create a reservoir with an effective storage capacity of 370×10^6 cumec. The regulated discharge from the reservoir will be utilised to produce 30 MW of electricity at the powerhouse, which will be constructed at the toe of the dam to get a design head of 86 metres.

Work on the RHEP Stage-I started in 1988 and was completed and commissioned in March 2001.

Background of the Present Study:

Because of its flow diversion scheme, the RHEP-I became controversial since its commencement in 1990 on two counts. First, there was large-scale apprehension among people in the Dikrong valley that the increased volume of water from Ranganadi would aggravate flood hazards in the valley which is already a chronically flood ravaged area. Second, riparian people in the valley of Ranganadi feared that there would be a drought-like situation in the valley because of damming and transfer of water from the Ranganadi. As the work on the project progressed, several organisations protested against the possible adverse impacts of the project and demanded a halt on the proposed inter-basin transfer of water. The issue was also highlighted by the local print media. However, neither the state government nor NEEPCO took these protests seriously. The Project

PARTHA DAS

The entrance of the tunnel carrying water from the Ranganadi dam reservoir to the powerhouse at Hoz, 15 km from Yazali

was completed and commissioned in March 2001 with partial generation of the installed capacity.

It was at this point that Aaranyak decided to investigate the case on its own. A rapid survey was planned in the Ranganadi-Dikrong valleys with an aim to find out whether the flow diversion scheme of NEEPCO really augured ill for the two valleys. A two-phase research study was planned. In the first phase, a rapid survey was to be conducted in the valleys of the Ranganadi and the Dikrong to gain a preliminary understanding of the immediate fallout that has already been experienced in one way or another.

Proper assessment of the impact of a dam requires a long-term survey and monitoring of changes in the eco-hydrological behaviour of river regimes and socio-economic status of the people in the concerned river basin(s). This is because many of the expected fallouts take quite some time before becoming prominent enough to be observed and measured both qualitatively and quantitatively. Therefore, a second phase of the study was conceived to assess in the next three years, the complete range of long-term impacts of the project.

The first phase of the study i.e. the Rapid Survey started in May 2002 with financial support from the Bombay Natural History Society (BNHS). It was completed in the first week of December 2002.

Salient observations on the Dikrong and the Ranganadi and their valleys:

- *Siltation:* This was especially evident at the stretch from Duimukh to Badati of the Dikrong river. The height of the riverbed (which showed a slow and steady growth from 1972 to 1987 of 2.5 metres) grew alarmingly from 1987 to 1992 and more so from 1992 onwards. Similar observations have been made along the Ranganadi from Kimin to Pahumaraghat. Increased channel braiding has resulted in more areas being engulfed, albeit to a shallow extent. Such a situation may prove dangerous when the carrying capacity of the river is already at its peak, as the possibility of flooding in such a multi-channeled river is high. This is ironical as the much-touted 'advantage' of damming rivers is to *protect* against flooding.
- *Conversion of cultivable land to marshland:* As the river bed has risen above the level of the paddy fields (according to the survey), the addition of the seasonal 160 cumec of water will cause winter floods in these extremely low lying areas. Many patches of good cultivable land will get converted to stagnant marshland.
- *Shifting of the 'thalweg':* Another probable consequence of the change in the flow regime of the Dikrong concerns the two concrete bridges on the river at Harmotti and Sisapathar and the Public Works Department (PWD) road network on its two banks. These bridges were built nearly 35 years ago with respect to a particular *design flood* [1]. The riverbed has swollen so high in these areas that the design flood must have become larger in magnitude by now. At present, the thalweg (deep channel) of the river is seen to shift to the left bank (eastern side) near the Sisapathar Bridge in the low flow season, when the bridge hardly covers the width of the channel. Any additional flow will surely change bed and channel configuration of the river, which may accelerate the eastward shift of the main channel and its rise in bed level, rendering the entire bridge redundant. This will necessitate extension and restructuring of the two bridges as well as redesigning and reconstruction of the entire PWD road network on the two banks of the river. The possibility of such an event was anticipated in 1997 by the then Superintendent Engineer (Roads), PWD, Lakhimpur, in a letter written to the Secretary of the Dikrong Ban Pratirodh-Paribesh Sangrakshan Sangram Samiti, hereafter referred to as the

[1] *Design flood of a river* at a location is defined as that maximum value of discharge (water level) that would probably occur at that place in a certain period of time, which a structure such as a bridge can withstand without any damage to it.

Dikrong Sangram Samiti (DSS), an organisation of Bihpuria spearheading an agitation against the RHEP. In his letter he stated, '*the interest of the district of Lakhimpur and hence the state of Assam will be hampered if the proposal to lead the Ranganadi's flow into the Dikrong river through tunnels and canals is actually carried out at site by NEEPCO*'. In this communiqué he requested the Chief Engineer, PWD (Roads) to take up the matter with the appropriate authority and/or NEEPCO, so that existing flow of the Ranganadi is maintained.

- *Change in Physico-chemical Parameters:* Construction activities at the dam site have contributed considerably to increasing loads of silt and pollutants in the river in the last 10 years or so. High rate of silt deposition, coupled with reduction in flow, have brought about subtle changes in physico-chemical parameters such as temperature, turbidity, dissolved oxygen, biological oxygen demand etc. that control the riverine ecology and habitat suitability of the aquatic fauna. The consequence is the decrease in population, distribution and diversity of fishes in the area for some time now.
- *Insufficient flow in parts of the Ranganadi:* The abandoned irrigation scheme near the Pahumaraghat bridge standing in a dilapidated state is a telltale sign of the kind of changes taking place in the river regime. Constructed about five years ago, the scheme was abandoned after a year due to unavailability of sufficient flow in the Ranganadi. Sand quarrying in the river that provides income to local people may stop in the future with river flow decreasing considerably in the dry season.
- *Diminishing wildlife resources:* Villagers of the Ujani Miri Gaon say that the lean season flow is decreasing over the last five years and so are different varieties of fishes in the main river and the surrounding *beels*. Green Heritage, a local activist group, provides a list of fish varieties that were once plentiful in the river and nearby *beels* and are now fast diminishing in population. River dolphins that were a common sight in the Pohumaraghat area and further down are no longer seen.

Sins of Omission and Sins of Commission:

The callousness of NEEPCO and its criminal attempt to disregard and dilute the issue is evident from the fact that not a single word was mentioned in the Detailed Project Reports (DPR) about the adverse affects that could be brought about by the inter-basin transfer of water. In fact no hydrological (or other) investigation was done on the Dikrong River and its basin. Interestingly, the amount of water to be diverted from the Ranganadi and released to the Dikrong was never mentioned in the DPR. It was only at the time of commissioning of the Project in early 2001, when public demand for information on the water transfer scheme peaked, that NEEPCO issued a public notice divulging some information on the scheme. It is a common practice for the Ministries of Water Resources and

PARTHA DAS

Glimpse of the Ranganadi at the upper stretches flowing down pristine landscapes full of luxuriant vegetation in the Arunachal Siwaliks

Power and allied agencies to mark all important documents on water resource projects as classified, denying public access to such documents. But interventions like engineering changes in the natural flow regime of rivers and inter-basin transfer of water are extremely crucial and sensitive issues, having far reaching implications on the lives and livelihoods of people downstream. Implementing such plans without prior knowledge of stakeholders, concealing crucial information from people who are potential victims of such manoeuvrings is an utter disregard and denial of citizens' basic human and environmental rights.

When the time for commissioning the project approached and news of the flow diversion plan became public, widespread apprehension and fear gripped the people living in the flood prone banks of the Dikrong. Similarly, faced with steadfast public demand to divulge information on the flow transfer plan, NEEPCO reportedly got a study done by the

Pune based *Central Water and Power Research Station*. It has never made the results of the study public. Instead, it churned out a few figures regarding possible increase in water level. According to NEEPCO, the planned inter-basin transfer of water will result in an increase in water level by a mere 7 cm at Harmotti and 12 cm at Badati. NEEPCO's refusal to divulge the whole document for public appraisal lent credence to the notion that either the document was fabricated or it contains facts that are in line with fears about the adverse effects of diverting water. NEEPCO's secretive manner of operating the powerhouse provides a strong motive to believe the various allegations made by the local people.

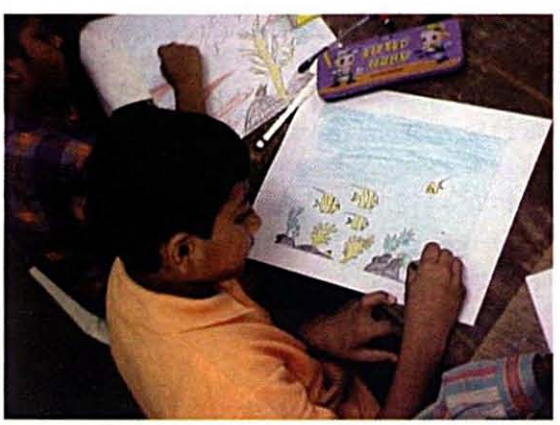
Conclusion

The riverine ecology of the Dikrong river is fast degrading due to a vicious mix of natural and anthropogenic factors like soil erosion induced by landslides as well as forest denudation in the upper reaches and development activities in Arunachal Pradesh, as indicated by the high rate of sediment deposit. The Dikrong valley is one of the most flood prone regions of Assam. The flow diversion scheme of the RHEP-I has the potential to further intensify flood hazards and damage, if and when implemented in full-scale. Even in the present circumstances, when water diversion is being done at a low key and in a secretive manner, local communities are observing some adverse impacts. The river-regime of the Ranganadi too, is witnessing significant disturbances since the construction of the dam commenced in the early 1980s. Construction activities at the dam-site have increased the amount of sediment and pollutants in the river. Temporary diversion of the river course at the dam-site at Yazali resulted in erratic changes in the river course, which still continues to sinuate on both sides. However, presently the river is showing a tendency to carry much less flow, resulting in virtual drying, especially in the lean season, compared to what was observed five years ago. Both Dikrong and Ranganadi have suffered from loss of innumerable aquatic faunal species, probably due to subtle but serious changes in the riverine ecosystems by physico-chemical alterations in the flow regime. A detailed study on the biotic resources supported by delicate ecology of the rivers upstream and downstream may provide insight into the degradation pattern along a longitudinal profile. ■

Source: *Downstream impact of the Ranganadi dam with special emphasis on hydrological impact of the flow diversion plan: A rapid appraisal* by Partha Das and Firoz Ahmed of Aaranyak

BNHS Celebrates World Environment Day in Lakshadweep Islands

BNHS and Lead UK with financial support from Darwin Initiative under its project titled 'Project Giant Clams' organised a painting competition for school students to commemorate World Environment Day in Kavaratti Island in the Lakshadweep Archipelago. Over 250 students from 1st to 9th standard participated in the competition. The judges were Mohammed Haneefa C., Abdul Kader K, Mr. Abdul Salam P. The theme of the competition was coral reef conservation.



DEEPAK APTE

A budding artist tries his hand at painting his idea of coral reefs for the competition

The sun, with all those planets revolving around it and dependent on it, can still ripen a bunch of grapes as if it had nothing else in the universe to do.

— *Galileo*

Jamsetji N. Tata (1839-1904)

J.R.D. Tata (1904-1993)

Naval Tata (1904-1989)

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Coast Guards and conservation of marine biodiversity

DEEPAK APTE

Participants of the seminar organised for the Coast Guard unit at Porbandar

As part of the activities of the Vasant J. Sheth Memorial Foundation Fund, a seminar was organised for the Coast Guard unit at Porbandar on December 7, 2004. The programme focused on the conservation issues affecting the Gulf of Kachchh, especially coral reef poisoning, and Dugong and Whale Shark conservation.

Commander Coast Guard (Gujarat) DIG A. Rajasekhar inaugurated the programme speaking briefly on the current role of the Coast Guard in conservation activities on the east and west coasts of India. He applauded the work done by Bombay Natural History Society (BNHS) in environmental conservation and expressed his desire to increase the involvement of the Coast Guards, since, besides being well equipped with resources and trained manpower to tackle marine conservation issues, environmental responsibility is also a part of their mandate.

Eleven officers attended the seminar. Lt. Cdr. Abhijit Ghatak of the Indian Navy spoke on Whale Shark distribution and presented a systems approach for its conservation. He reiterated the important role that the Coast Guard could play in its documentation and conservation.

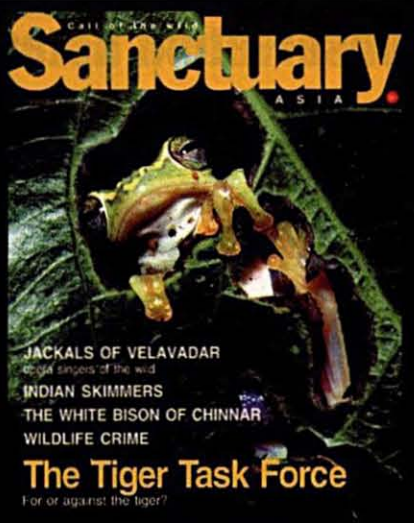
This was followed by a presentation by Deepak Apte, Conservation Officer, BNHS on the status of the Dugong, another globally endangered species. He briefed the officers about the inclusion of this species in the Wildlife (Protection) Act, 1972. Documentation sheets and posters exhibiting a photograph of the animal, along with BNHS contact information, in case of sightings, were provided to the Coast Guard personnel.

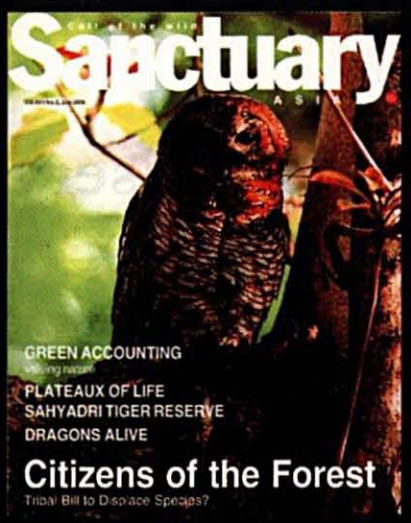
The third presentation, also made by Mr. Apte, focused on sea turtle conservation and provided a detailed account of nesting, congregation and migration activities in and around the Gujarat coast. Major threats such as extensive sand mining activities, predation, solid waste disposal and other developmental activities were discussed. It was concluded that because of the extensive facilities available with the Coast Guard, in terms of communication and accessibility, they could help in documentation of nesting beaches or migratory routes where researchers do not have easy access, thereby expanding the knowledge pool concerning the five species of sea turtles found in India. ■

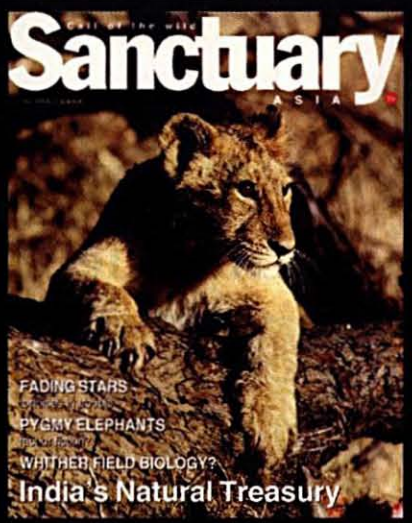
Coast Guard seize fishing trawlers near Rushikulya

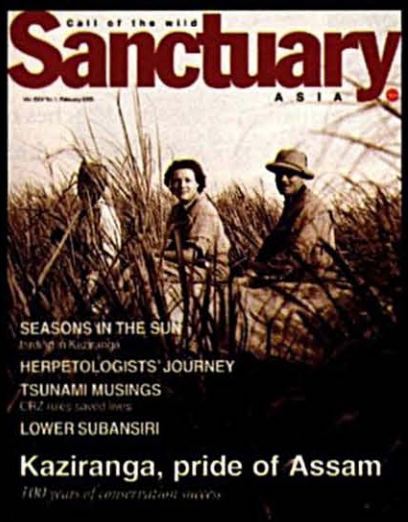
On February 12, 2005, personnel of the Coast Guards seized four trawlers operating in shallow waters of Rushikulya. Rushikulya is the third known rookery of Olive Ridley Turtles in Orissa. During February through April, large congregations of Olive Ridley Turtles are seen near Rushikulya seashore. The timely seizure of the gillnet fishers would have saved several turtles which are known to get entangled in gillnets. Every year over 5000 turtles die due to gillnet fishing in the shallow coastal waters of Orissa.

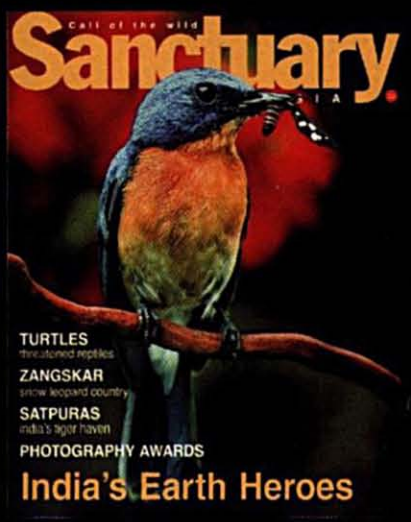
Bombay Natural History Society conveys heartiest congratulations to the Coast Guard for their timely action. ■

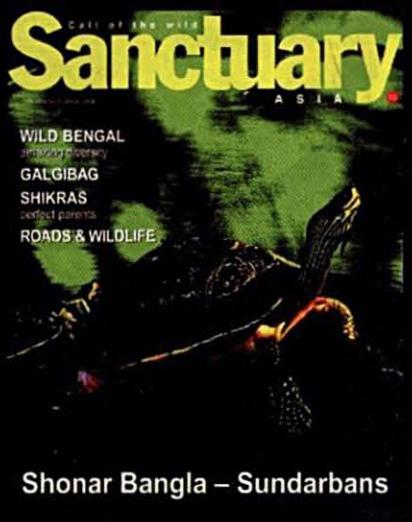


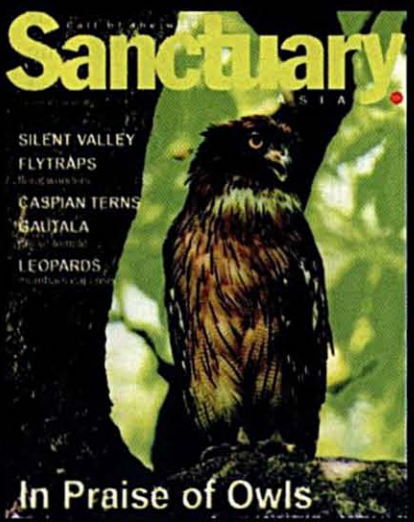


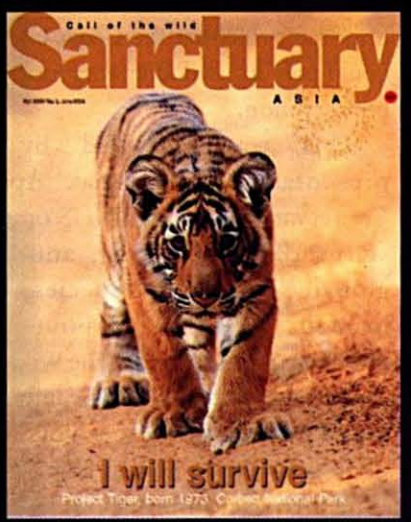


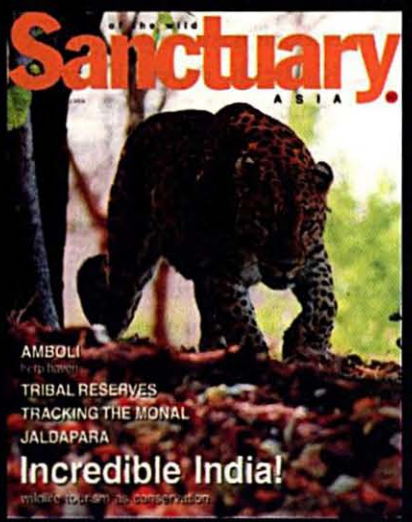












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Environmental Awareness Camps at Nature Information Centre

The Nature Information Centre (NIC) in collaboration with Greater Bombay Science Teachers' Association (GBSTA) conducted two Environmental Awareness Camps the first from April 20-21, 2005, for English medium students and the second from April 23-24, 2005, for Marathi medium students.

Since the last 24 years, the GBSTA has been conducting a competitive exam for the 'Dr. Homi Bhabha Young Scientist Scholarship', every year, at the state level for students of Standard 6th and 9th studying in Marathi, Gujarati and English medium schools. The winners are selected after a series of three rounds. The first round is a written test, the second a practical test and the third round is an interview. The eligible students are awarded a scholarship of Rs. 250/- and enrolled for an environment related programme. For this, the GBSTA collaborated with NIC to conduct overnight camps in Sanjay Gandhi National Park (SGNP). The 86 camp participants were from Standard 6th, and were between 10-11 years of age.

The main objective of the Environmental Awareness Camps was to impart basic knowledge about SGNP and its relationship with the citizens, to arouse the child's awareness and curiosity about the flora and fauna of the Park, and to develop a sense of responsibility towards it.

The activities conducted in the camps included interactive sessions such as presentations on the biodiversity of SGNP, games like 'Snakes', 'Misbeliefs' and 'Bird calls', a visit to Tulsi Lake and Kanheri Caves, to explore the richness of this forest, a Tiger and Lion Safari, a film show on Indian wildlife, quizzes, to help them understand ecological concepts and also painting sessions to explore creativity.

The feedback form revealed that the participants enjoyed the camps and were happy with the knowledge gained. They wished that the camps had been of a longer duration and would be glad to visit again.

GBSTA also expressed their desire to conduct more camps and some programmes for their Silver Jubilee celebrations, next year. ■

Turning the Tables

The Nature Information Centre (NIC) conducted a programme for teachers of Environmental Science (EVS) on July 2, 2005, at the request of Mrs. Kaur, Assistant Deputy Education Inspector. The National Council for Education and Research Training (NCERT) organised a six-day workshop to train teachers in this subject.

Seventy-one teachers were selected from Raigad, Thane and Mumbai, who will now impart their knowledge to zonal level resource persons. The chain reaction continues as the zonal level resource persons will help train ward level resource teachers who will train school teachers in various tools and techniques that can be used to teach EVS.

Close on the heels of this workshop, the NIC conducted a similar programme on July 22-23, 2005, for 110 teachers from the R East (56) and R West (54) wards. They were taken on a nature trail, after which the NIC emphasised the importance of non-formal teaching methods such as nature trails, conducting games and quizzes and art activities, exhibitions, film screenings so as to emphasise the importance of alternative teaching methods in understanding and appreciating difficult environmental concepts like camouflage, adaptation and so on. The teachers not only learned about the games but also joined in a practical demonstration of 'Web of Life', 'Spots and Stripes', 'Colour Challenge', among others.

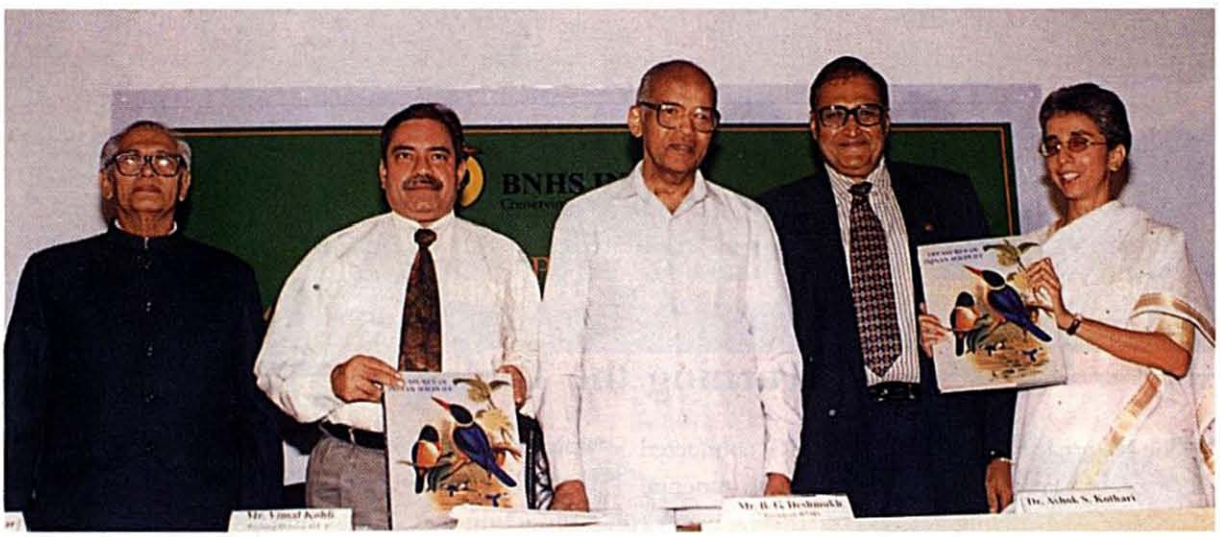
A feedback on the NIC programme and relevance of the activities conducted to the EVS syllabus was also taken. Almost all the teachers expressed their willingness to conduct study tours or field visits for their students at Sanjay Gandhi National Park and found NIC activities relevant to the EVS syllabus. ■

BNHS releases a compendium on Indian Wildlife

The Bombay Natural History Society (BNHS) released a compendium of rare paintings and writings on nature from the classics on June 23, 2005. THE TREASURES OF INDIAN WILDLIFE contains 220 printed pages, 76 colour reproductions of century old lithographs, 35 black-and-white plates and interesting articles and episodes from rare books, journals, gazetteers and other such rare works on Indian natural history, which are not easily accessible. Besides drawing attention towards these fine works on Indian natural history, BNHS aims to raise funds for nature conservation from the sales of this book.

The book is edited by Dr. Ashok Kothari and Dr. B. F. Chhapgar, who had together edited SALIM ALI'S INDIA. In a substantial section at the end of the book, gleanings from the miscellaneous notes section of early issues of the *Journal of the BNHS*. provide interesting snippets of information on species as wide ranging as Red Ants, Mongoose, Monitor Lizard, Python, Cobra, Cheetah and Darter.

With interesting text and stunning visuals, this volume, like its predecessor SALIM ALI'S INDIA, will be a prized possession for anyone with an interest in India and its natural history. ■



L-R: Dr. B.F. Chhapgar, Mr. Vimal Kohli Regional Director, Oxford University Press, Mr. B.G. Deshmukh President, BNHS, Dr. Ashok Kothari and Ms. Radhika Sabavala General Manager, Marg Publications during the release of the book

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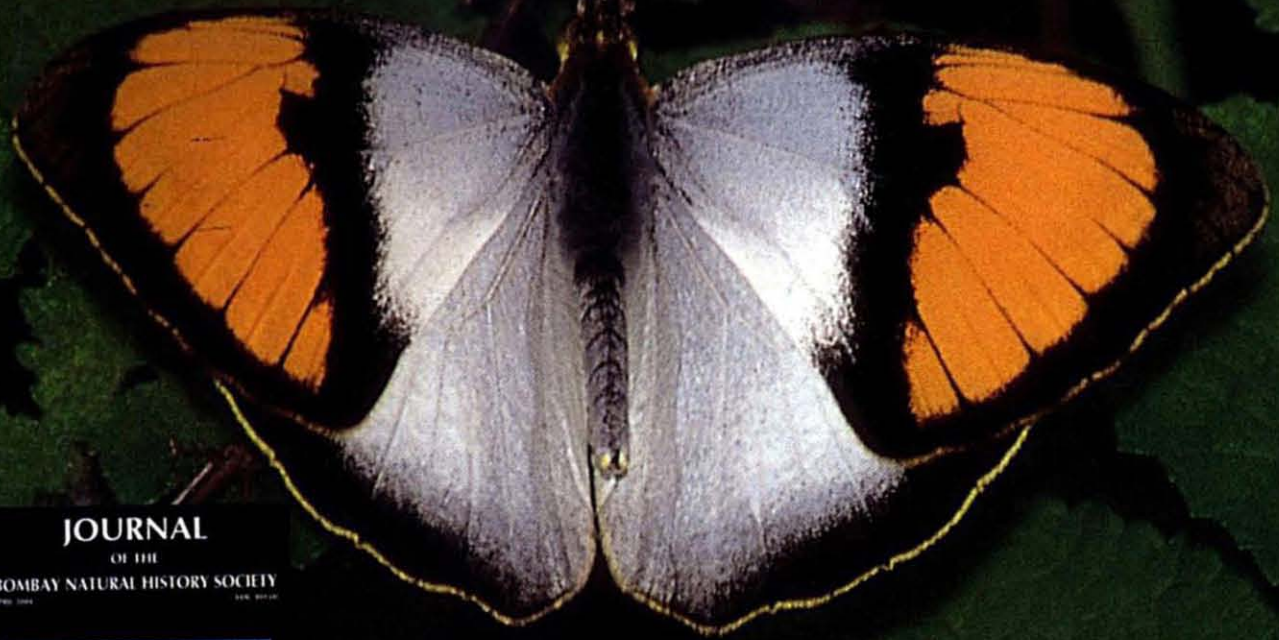

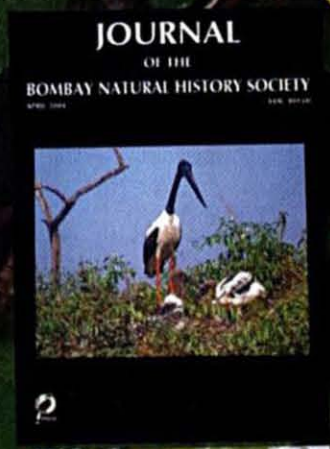

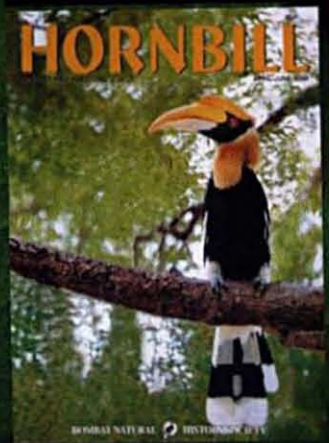

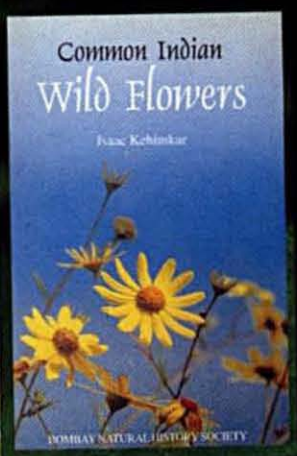

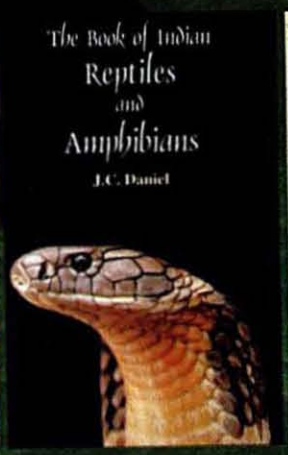

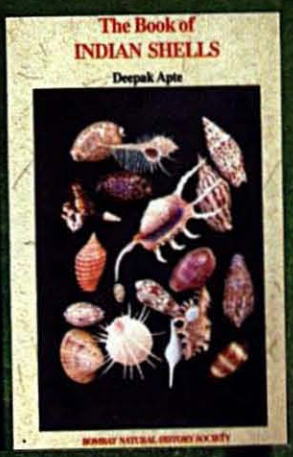

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