

HORNBILL

ABOUT NATURE AND US

July-September, 2001



BOMBAY NATURAL HISTORY SOCIETY

A photograph of a sunset over the ocean. The sun is a bright yellow circle just above the horizon, casting a glow across the sky. The sky transitions from a deep orange near the horizon to a darker, more uniform orange at the top. The water in the foreground is dark with some ripples, reflecting the light from the sun.

**THE DAWN OF A NEW
MILLENNIUM**

**SAVE NATURE
JOIN BNHS**

Contents

HORNBILL

July-September, 2001



EXECUTIVE COMMITTEE

President

Mr. B.G. Deshmukh

Vice Presidents

Mrs. D.S. Variava

Mrs. Pheroza Godrej

Honorary Secretary

Mr. J.C. Daniel

Honorary Treasurer

Mr. Sunil Zaveri

Director

Dr. A.R. Rahmani

Members

Dr. Sarah M. Almeida

Dr. A.M. Bhagwat

Dr. B.F. Chhapgar

Mr. Debi Goenka

Dr. Robert Grubh

Mr. S.A. Hussain

Dr. Ashok S. Kothari

Mr. Sunjoy Monga

Mr. Ulhas Rane

Mr. Bittu Sahgal

Mr. Ravi Singh

Dr. V.S. Vijayan

The Secretary, Ministry of
Environment & Forests,

Govt of India

The Director of Archaeology
& Museums, Govt of
Maharashtra

Editors

J.C. Daniel

Saak Kehimkar

Gayatri Ugra

Sunjoy Monga

Layout

V. Gopi Naidu

Editorial Assistant

Vibhuti Dedhia

Cover:

Dragonfly

Sunjoy Monga

Inside Front Cover

Varad Giri

Published and printed quarterly
by J.C. Daniel for the
Bombay Natural History Society,
Printed at St. Francis ITI Press,
Borivli, Mumbai.
Reg. No. RN 35749/79,
ISSN 0441-2370.



4 The Essence of Flawless Flight — Anish Andheria

In this issue, meet the monarchs of the sky — the daring dragons and dainty damsels, who are a great company for naturalists stalking their interests in the wild.

24 Swift action is a must — Satish Pande, Vishwas Katdare and Ram Mone

Swift actions are necessary when lives are at stake. The swift actions of some naturalists who helped save swift families in the Vengurla Rocks, are not uncommon these days.



Other Features

- | | |
|-----|----------------------------------|
| 9. | Seashore Lore |
| 12. | Miscellanea |
| 14. | Butterflies — their early stages |
| 18. | The Young Naturalist |
| 20. | Letters |
| 22. | About Books |
| 28. | Nature Watch |
| 30. | News Notes |
| 32. | News Briefs |

For more information on the Society and its activities, write to the Honorary Secretary, Bombay Natural History Society, Dr. Salim Ali Chowk, Shaheed Bhagat Singh Road, Mumbai 400 023, India.
Tel.: (91-22) 282 1811 Fax: (91-22) 283 7615 E-mail: bnhs@bom4.vsnl.net.in Website: www.bnhs.org
Views expressed by the contributors in the Hornbill are not necessarily those of the BNHS. Unsolicited articles and photographs, and materials lost or damaged are not our responsibility and no claims will be entertained.

PLEASE COPY FOR REFERENCE ONLY (WWF-INDIA), NEW DELHI 29/11/01

VIEW POINT

Flight to Extinction?

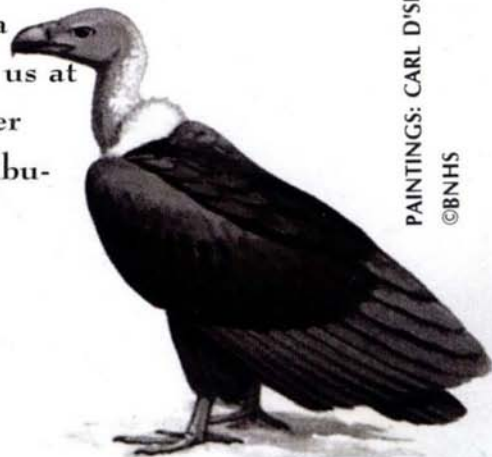


GOUTAM NARAYAN



We are a people addicted to rituals which we observe religiously and forget the next moment. One such ritualistic programme is wildlife week. Every year in the first week of October forest departments throughout the country become active. The minister makes a speech, a simple rehash of the speech made by his many predecessors or plants a sapling. It is safer for the department for the minister to make the speech, saplings have a way of dying and it would be awkward to have the minister plant again in the same pit the next year. Of course there is always the happy chance that the minister may not last the year. We feel that the members of the Society spread all over the country should spend the wildlife year, starting with the Wildlife Week in October, more constructively. Why not do something simple as keeping a count of the vultures that you see in the skies or the world around you for a year. Vultures once an abundant and common species are now endangered. But this is an opinion not shared by everyone largely owing to lack of data on their population throughout the country. Why not keep a diary of sightings and send the diary to us at the end of the wildlife year in September 2002. You would have made your contribution to conservation.

J.C. DANIEL



PAINTINGS: CARL D'SILVA
©BNHS

The essence of flawless flight

Anish P. Andheria

Anish is a naturalist, wildlife photographer and a BNHS member



Gigantic eyeballs, membranous wings, an elongated needle-like abdomen and forwardly directed legs — these characters all too easily lead us to an unmistakable and commonly encountered insect, the dragonfly. I am convinced that all of us can identify the “helicopter” (as it is aptly called) since it has served us as an inexpensive practice-toy before we graduated into skillful kite fliers.

Today, though most of it is still as mysterious as before, I seem to have made some progress in understanding these “amphibious spaceships” Join me as I attempt to unravel some of the facets of these abundant yet puzzling monarchs of the sky.

Epitome of indefatigability:

Sitting beside a pool in the afternoon not only exposed me to the full blast of the tropical sun, but also to the unmatched aerial acrobatics of the dragonfly. Some well-built individuals, called “hawkers”, flected past at impressive speeds, occasionally skimming the water surface with abounding precision. Surprisingly though, the strong wing muscles that propelled them at nearly 45 km per hour could bring about extremely delicate movements. Seeing them freeze in mid-air, with no apparent wing-beat, made me question the Law of Gravity. Even more spellbinding was the rapidity with which they accelerated to top gear from an almost standstill position. Such were their movements that even the fastest cameras would have failed to register their flight patterns on film!

Comparatively smaller, the “darters”, if not as agile, were equally at home in the air. As the popular name suggests, they dart from their perch towards flying insects and return to the same spot again and again. They too frequent water bodies, assiduously guarding a seemingly imaginary territory from other dragonflies. The glimmering wings, camouflaged against a shining background, make them a challenge to trace. Such coloration has probably evolved to fool the insect and bird community – insects being their prey and birds their predators. Apart from assisting in a hunt, such vantage points also help males to woo passing females. I have witnessed a marathon four-hour effort of a red darter end in vain. My bereaved buddy, in his attempts to catch his mate, would have darted from his perch not less than 150 times. His efforts,

HEALTH INDICATORS: Dragonflies are one of the good indicators of a healthy waterbody



however, reiterated his belief in the adage “never give up hope, miracles happen everyday”, as towards the end of the day, while I was tired of observing the unsuccessful ordeal of stalking his “would-be” mates, he looked as robust and hopeful as ever!

Delicate when it matters the most: Not all males are as unlucky as our red-bodied buddy. Most manage to find a mate eventually. Once in their reproductive phase, the males assemble at the mating site, usually near a stagnant or flowing water-body and establish small territories, which

AERIAL HUNTERS: Darters dart from their perch towards insects in flight before returning to the same perch



Water – the irreplaceable natural resource, affects every living thing in some way or other.

It has indeed influenced the evolution of dragonflies and damselflies in more ways than one.

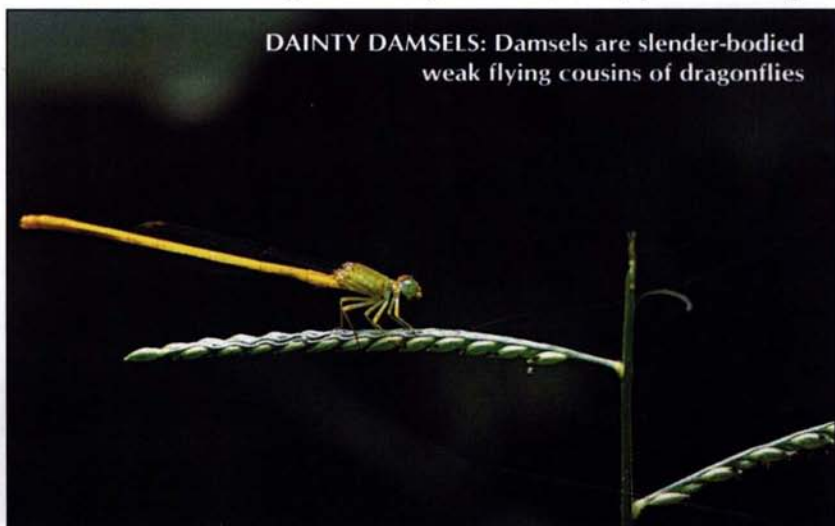


they stringently guard all day. The males then try to mate with passing females without wasting any time, as the competition is often brisk. Copulation may or may not be preceded by a courtship display. The male hovers in front of the female and grasps her head (if they are dragonflies) or prothorax (if damselflies) with his caudal appendages, which are situated at the tip of his abdomen. Once attached, they move in tandem for sometime, after which the male stimulates the female with his abdominal movements to bend her abdomen forwards, so as to engage her genital opening with his accessory genitalia, situated on the lower surface of the second and third segment of his abdomen.

Once the unique copulation wheel is complete, the sperm capsule that the male has already transferred to the accessory genitalia is passed on to the female. Egg laying then begins, either immediately or after a day. If the female lays the eggs immediately, the male may remain attached to her, or stay close by while she scatters them along the watercourses. This is done to stop other males from approaching her, thereby ensuring that her progeny inherit his genes alone.

A wet beginning: Water — the irreplaceable natural resource, affects every living thing in some way or other. It has indeed influenced the evolution of dragonflies and damselflies in more ways than one. A large number of adaptations in the living world are directed at conserving water or utilizing its unique properties. For a better understanding, we need to delve into the early stages of the life of these amphibiotic insects. The dragonfly, like the mosquito, commences its life under water. The eggs that are either sprinkled in water or skillfully attached to the underside of the leaves of aquatic plants, hatch into formidable looking nymphs that single-mindedly and voraciously pursue their goal

DAINTY DAMSELS: Damselfies are slender-bodied weak flying cousins of dragonflies





As soon as the nymph is fully developed, it climbs out of the water and waits for the skin to dry. This is the most vulnerable period in its life and is therefore carried out under the cover of darkness.

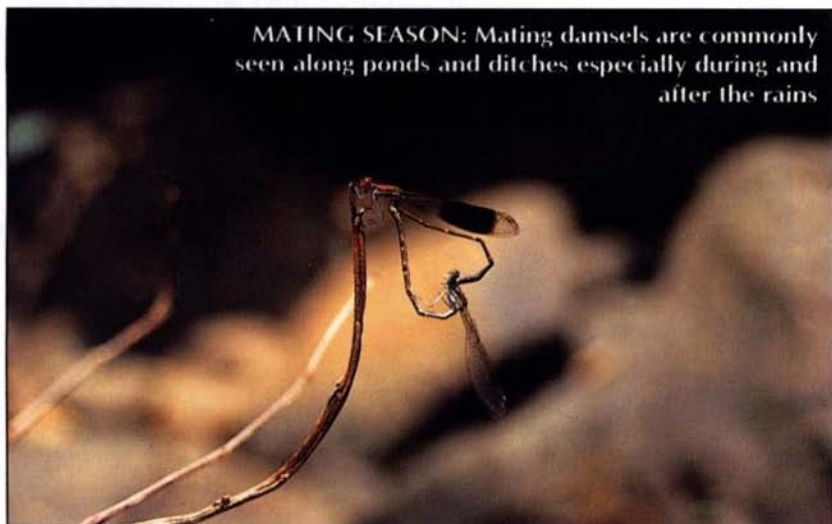
of devouring every organism that can be overpowered — tiny fish, tadpoles, beetles; nothing is spared! The nymphal stage may extend anywhere from one to five years, depending on the species and on climatic conditions. The species found in the tropics have a much shorter nymphal stage than their counterparts in the temperate zones.

The developing nymphs lie hidden in aquatic vegetation, beneath the loose bottom soil in freshwater ponds, streams or shallow rivers, in wait for unsuspecting prey. There are a few species in the tropical regions that even survive in tiny water pools at the base of the large leaved plants. I can vividly recall witnessing the effective ambush-and-

kill strategy of a nymph in a friend's aquarium. As soon as the prey (a fish fry) ventured within striking distance, the motionless nymph, well hidden behind thick aquatic vegetation, extended its labium (mask) with lightning speed, snapped it up in the enormous mandibles and minced the unfortunate victim in seconds. Although I now understand these battles of survival quite well, as a child, I remember seeing the small ugly-looking dragonfly nymphs, which were a threat to his guppies, mollies and swordtails being angrily removed. I had always wondered how these killer insects found their way into the fish tank. It was until ninth grade that I too hated them for eliminating those lovely

aquarium fishes. However, on an early winter morning, I saw this so-called monster climb up a ribbon-like *Vallisneria* stalk, split his skin along the midline and walk away, a glistening new coat and gauzy winged, dragonfly. This transformed me from foe to friend in minutes. Yes, I was stunned. While that magical moment still remains etched on my mind, watching an adult dragonfly emerge from its nymphal case gets the adrenalin rushing even today!

MATING SEASON: Mating damselfly are commonly seen along ponds and ditches especially during and after the rains



Always dressed to the occasion: Like many insects, the outer skin of the dragonfly nymph is non-expandable and it soon outgrows its skin. During its aquatic life, the nymph molts between 8-15 times, growing in size with every moult. As soon as the organs are fully developed, it climbs out of the water and waits for the skin to dry. This is the most vulnerable period of its life, and is therefore carried out under the cover of darkness to elude the hungry eyes of diurnal predators, especially birds. On emergence, the winged adult secures a good grip on the substratum, then pumps its "blood" through the soft wet body and wings. It waits in this position till the wings are dry and strong enough to bear its own weight before joining others of its kind to dominate the skies.

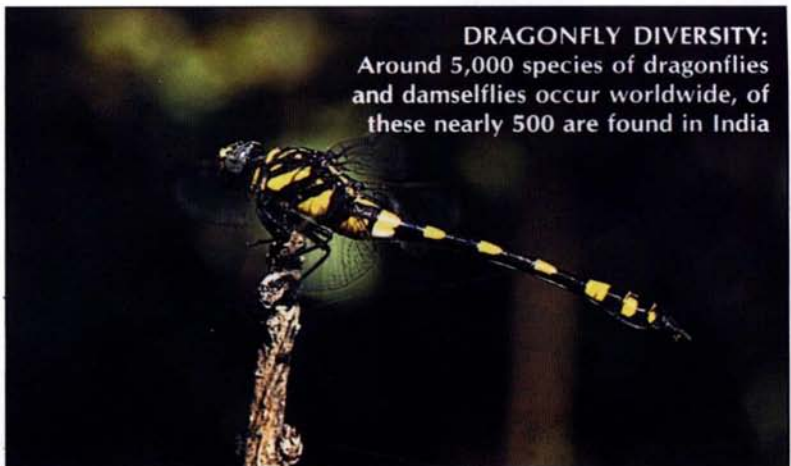
Looks are deceptive: Although dragonflies are better known for their supple aerial movements, their structural finery is no less breathtaking. The first thing that strikes me whenever I see a dragonfly is its pair of massive compound eyes fitted with nearly 20,000 hexagonal facets (lenses) and I wonder at the excellent 3-dimensional vision that enabled the "helicopter" to spot the pouncing kid and whiz out of his reach. Equally astonishing is the sloping thorax with its powerful flight muscles, which support the delicate but elastic wings that can beat independently and twist about their own axis, enabling sharp movements in all directions with equal dexterity. The long forward bending legs, although inept at walking, serve as a basket for scooping insects in flight and also for mopping its eyeballs. Formidable jaws, powerful enough to crush any exoskeleton, ring alarm bells amongst most insects communities.

Today's predator, tomorrow's prey: Dragonflies are efficient pest controllers, both during their aquatic (nymphal) as well as the winged (adult) stages. As nymphs, they crop surprisingly large numbers of mosquito larvae, whereas as adults they make life miserable for most

winged insects including flies, wasps, bees, mosquitoes and butterflies. In fact, some species are even known to be cannibalistic, predated upon their own brethren.

However, due to their round-the-year availability, they too top the menu of many insectivorous birds, like the bee-eater, drongo, swallow, shrike, hobby, flycatcher or warbler. A lot of them fall prey to spiders and reptiles like geckos, chameleons, tree snakes, and amphibians like frogs, either during their nymphal stage or while egg laying. Although a fierce predator itself, the nymph is consumed in great numbers by larger fish. Clearly, they form an important link in the complex food chain by occupying the apical position in the insect world and also as an invigorating food base for larger aquatic and terrestrial predators.

As a bird-watcher, I feel greatly indebted to the daring dragons and the dainty damsels for keeping me company during the blistering afternoons when most birds scuttle for shelter. Watching these "miniature hawks" stalk unsuspecting airborne insects or observing the smooth ballet of a newly formed dragonfly pair, just above the shimmering water, is definitely the most alluring spectacle. Man, with all his technology, will find it difficult to replicate the subtle movements of these accomplished winged creations of Mother Nature. I doubt if there could be a second opinion on that! 🦋



DRAGONFLY DIVERSITY:
Around 5,000 species of dragonflies and damselflies occur worldwide, of these nearly 500 are found in India

SEASHORE LORE



A typical sea-urchin seen from below (left) and from above (right)

BY BEEFSEA

Walking along the seashore, you will find some funny-looking creatures lazing about. One kind looks like a round ball with pins stuck all over it. They seem to be immobile, but if you have the patience to wait and watch, you will find that they are crawling ever so slowly. This living pin-cushion is a sea-urchin.

Sea-urchins belong to an assemblage of animals of which the most familiar are sea-stars (more popularly, but wrongly, named starfish). All of them occur only in the sea and exhibit radial and pentamerous symmetry, that is, the organs of the body are arranged like the spokes of a wheel around the central axis, and are five or multiples of five.

All these animals have an internal system of tubes in which water can be pumped. The tubes end in tube-feet tipped with suckers. With the help of this unique hydraulic system, the tube-feet suckers cling to rocks on the sea bed or to food. Sea-urchins can creep slowly on the sea bottom as well as vertical rocks with the help of their movable spines, or tube-feet, or a combination of both.

If the spines of a sea-urchin are brushed off, we can see its "shell" or test, with a beautifully

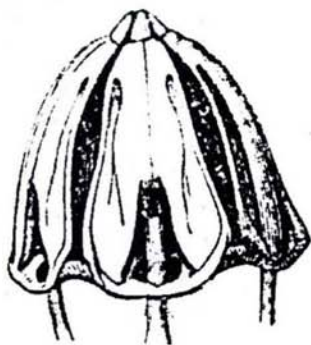


41. Pin-cushions in the Sea

"And, liting where the laver lingers,
The starfish trips on all her fingers;
Where, 'neath his myriad spines ashock,
The sea-egg ripples down the rock."

Rudyard Kipling

intricate pattern of knobs and tiny holes arranged in five double rows which run like longitudes from the top of the globe to the bottom (where the mouth is located). The rows of tube-feet are not spread all over the test. The bands on the test which have tube-feet pores are known as the ambulacral areas, while the intervening areas (without pores) are interambulacral. The sea-urchin's spines fit on the knobs and can be rotated; when threatened,

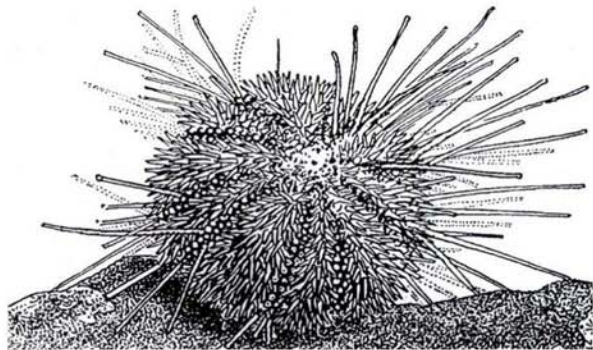


'Aristotle's lantern' — the teeth inside a sea-urchin's mouth
 some sea-urchins clump several spines together and point them at the enemy.

Sea-urchins feed on leafy seaweeds or scrape algae off rocks, and most are scavengers on carrion, but do not mind slow moving snails, barnacles, sponges or tube-worms. Just inside the mouth are five teeth, which are part of a complex array of hard limy plates and muscles, used for feeding and called Aristotle's lantern.

One might think that, with their formidable array of spines, sea-urchins would hardly have any enemies. But they form the food of helmet shells (*Cassis*) and triggerfish. The helmet shell crawls towards a sea-urchin, lifts the front edge of its shell and foot from the sea bottom and, rearing high with the foot lifted in an arch, drops on to the sea-urchin, pinning it down. Its rasp-like radula (tongue) then cuts a hole in the sea-urchin's test, and feeds on the soft inner parts.

A triggerfish coming across a sea-urchin nudges it with its snout, trying to roll it over and attack the lower portion where the spines are



Long tube-feet jutting out beyond the spines in a sea-urchin

shorter than on the upper part of the body. The spines are carefully broken off one by one, till only the test remains. The fish then crushes it and feeds on the inner soft parts.

The spines of sea-urchins differ in length. In some, they are short, while in others, such as *Diadema*, they may be as long as 30 cm on a 10-cm round test and look like knitting needles. These spines can pierce thin-soled shoes and are poisonous, leaving a festering wound. Moreover, minute backward pointing barbs on the spines make them extremely difficult to remove from the wound.

In the slate-pencil sea-urchin, the spines do not have sharp pointed tips but are short, stubby and soft like crayons. They were, and probably still are, used by coral-atoll schoolchildren for writing on slates.

An interesting association is seen between *Diadema* and razor-fish, or snipe-fish (*Centriscus scutatus*) which are long, extremely thin, with long tubular snouts, and have bodies covered with bony plates. They hover, motionless, head down and tail up, among the long spines of *Diadema*. The way they disappear all of a sudden is weird. At one moment you see a dozen of them with their flat bodies, like a knife blade, among the sea-urchin's spines. In a trice they have vanished. With military precision, all of them turn their body so that, while they are still at the same place, the razor-thin profile of the body is turned towards your eyes and you feel that they have disappeared.

Nestling among the spines of sea-urchins are tiny pincer-like organs called pedicellaria. There are four kinds, the commonest having 3 (but sometimes 2, 4 or 5) movable jaws on a flexible stalk. While some have poisonous glands and catch tiny prey or attack enemies, others pick up bits of dirt settling on the sea-urchin and help in its "toilet".

Some sea-urchins drill deep tunnels in rocks and live at the bottom, many such tunnels occurring close together. It is not known how they bore into hard rock; it is not due to acid secretion, but is believed to be patient and persistent gnawing away by the teeth or steady abrasion by the spines. The tunnel may have a small opening some 15 mm

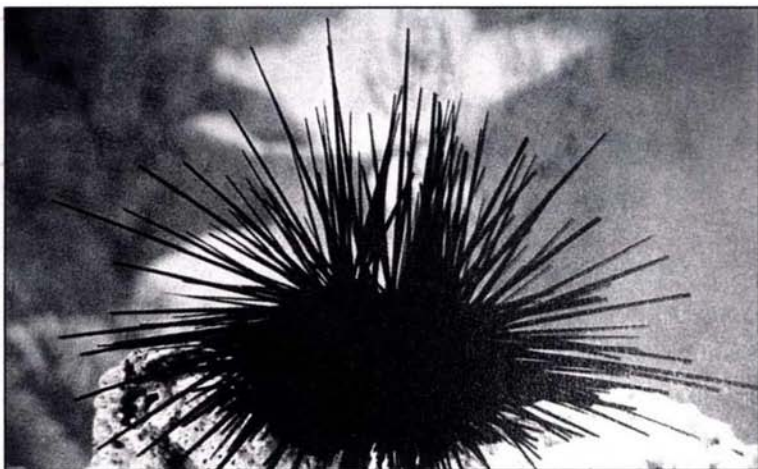
wide, but widens out to accommodate an animal 8 cm in diameter and goes down 60 cm below the opening. Others bore shallow hemispherical pits in which they can just fit, but are so numerous that the rock gets honeycombed with sea-urchin holes.

Unlike the symmetrical, globular sea-urchins which are called “regular” sea-urchins, there is a group of “irregular” sea-urchins comprising the sand- or heart-urchins and the cake-urchins, sea-biscuits or sand dollars. Although, as in sea-stars, there is a subtle bilateral symmetry in regular sea-urchins— even though the body apparently looks radially symmetrical, irregular sea-urchins are distinctly bilateral, with front and rear ends.

In heart-urchins, the lower portion of the oval body is flattened, while the upper part is arched and shows a five-leaved petal-like pattern. The tube-feet on the petaloids are not used for creeping, but for breathing. The mouth may sometimes be displaced forward and the anus backwards. Spines are small, curved and held parallel to the body as if they have been combed backwards. Narrow bands of minute spines, shaped somewhat like a tennis racket, maintain a water current and remove debris settling on the body.

Cake-urchins, also called sand dollars or sea-biscuits, have a flattened, disc-like body covered with very short spines. Five petaloids, as in heart-urchins, are present on the upper surface. The lower surface has five grooves radiating outwards from the mouth; sometimes each groove branches into two. In keyhole sand dollars, the body is perforated by 2 to 6 slits, while in the wheel-urchins or sand-wheels, the disc bears many blunt projections like spokes.

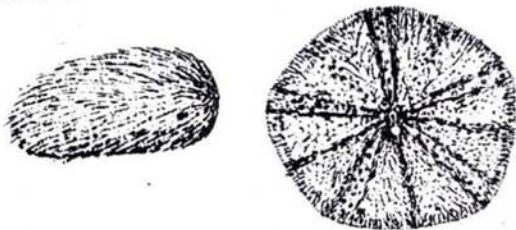
Heart-urchins and cake-urchins live buried in the sand and crawl just below the surface. When burrowing, the heart-urchin erects itself on the oral spines and throws the sand sideways with its curved lateral spines. It then rests in a cavity in the sand, leaving a hole on the surface. The wall and roof of the burrow is lined with slime so that the sand does not fall on to it or touch its body.



The long spined sea-urchin, *Diadema*

Long tube-feet are thrust out through the surface hole to pick up small food particles, and then retracted and brought to the mouth.

Sand dollars also live buried under the sand, crawling just under the surface so that we can see a trail. A sand dollar buries itself by piling up the sand into a mound with its tube-feet in front of itself. Then, using its spines, it shoves itself into this pile, while the tube-feet continue to cover it with sand. It can be completely buried in 15 minutes.



A heart-urchin (left), a sand dollar (right)

A keyhole sand dollar digs by rotating the body from side to side, helped by the spines and tube-feet. If accidentally turned upside down by the waves, it slants its body and drives sand through the front slits and, piling it up behind itself, gradually raises its body into a vertical position and then falls over.

So the next time you walk along a beach, keep your eyes wide open, take care not to step on one of these live pin-cushions, wonders of the sea. 🐚

Miscellanea

FROM JBNHS

A Butterfly attracted by Tobacco smoke

Insects and their like are generally supposed to dislike tobacco, but I have met with a butterfly today which evidently enjoyed it. I was sitting in the verandah, at about 3 p.m., when one of the large black and white butterflies, common here now, appeared and began flying about me, so I sat perfectly still to watch him. He seemed to be attracted by the cheroot I was smoking, for he fluttered about it and actually settled upon it three or four times, once on the ash which dropped off under him. He settled on my forehead several times, and once or twice on the arm of my chair on the leeseide, where he got the smoke. He went off to the garden, but soon came back and repeated his performance. This is so entirely different from the behaviour I should expect in a butterfly, that I think the incident is worthy of record in our Journal.

R. G. Oxenham,
Matheran, April, 1893

A Weeping Tree

A tree (*Ormosia travancorica* Bedd.) growing in evergreen jungle near this Estate has recently been causing a good deal of wonder among those who have seen it.

Standing underneath the tree, one experiences a light but continuous, drizzle

falling from the branches. The tree is about 80 feet tall and has small pale green leaves of a leguminous type. These appear to be just in the process of opening.

Local opinion credits the tree with a demon or god engaged in busily pumping up water from the soil into the branches!

Recently I took a small party from the Estate into the jungle to try and find a more logical explanation for the phenomenon. The first thing noticeable was the almost overpowering noise of cicadas coming from the tree — much louder than in the surrounding jungle, which was fairly loud with insect life. The 'rain' appeared to be falling from almost all the branches and descending to the ground in the form of a fine spray. At first I wondered whether sap could be dripping from wounds in the branches caused by the cicada and sent a man up the tree to cut a branch. As the man climbed, great clouds of cicadas flew out of the tree and both noise and drizzle subsided!

Was the drizzle in fact caused by excretions from the cicadas feeding on the rich sap flow from the tree?

R. D. B. Hughes
Tirinelveli Dist.,
April 18 1961

The plant, was very kindly identified by the Curator of the Central National Herbarium

from the leaves sent by Mr. Hughes.

'Weeping' is a common phenomenon and is usually due to jassid infestation.

A. P. Benthall in THE TREES OF CALCUTTA AND ITS NEIGHBOURHOOD

(1946), p. 225, explains the name of the Rain Tree *Enterolobium saman* thus:

'The usual English name of this tree

originated from the fact that in some places it is infested with cicadas which sometimes discharge moisture in the form of innumerable small drops, like rain, on passersby beneath.' — E.S.S.

Blackbuck versus Motor

I expect many of your readers who have motored through blackbuck country

have noticed the interesting habit the latter animal has of racing a motor car. One drives along a road through open country and sees buck, perhaps a small herd, say one hundred yards off to the left of the road. The buck have the whole country on that side of the road to retreat into but they apparently never seem safe until they have crossed the road in front of the car. They gallop alongside the car (I have taken a doe up to 33 miles an hour) and edge closer and closer to the car when, choosing their time, they clear the road in front of the car with one delightful bound, sometimes with only a yard or so to spare. I have seen

many scores of blackbuck behave as described but never a chinkara.

There seems to be a sort of fatal fascination about a car. I wonder whether buck do it with a motorcycle. Once across the road, they go straight away across country, never taking up the race again on the other side of the road. It is an interesting habit and the reason for it I have never yet fathomed, but perchance some members of the Society have a simple explanation.

John Budden.

5th March, 1921.

Presumptive eating of a Krait by Scorpions

In an attempt to study the effects of different insecticides on scorpions, a considerable number were collected and kept in cages, two in each. A seven inch krait, *Bungarus caeruleus*, was placed in one such cage and the following morning found missing, though the cage was closed and there was no possibility of escape. Both the scorpions were dissected for an examination of their digestive tracts, and pieces of some hard and soft material (vertebrae and skin) were found in their guts, especially in the stomach and rectum. There appears to be good evidence of a poisonous snake being eaten by a scorpion *Buthus* sp.

Ishwar Prakash, K. C. Dave

Jodhpur, August 31, 1954.

Butterflies

T H E I R E A R L Y S T A G E S

Text: Naresh Chaturvedi and Isaac Kehimkar

Photographs: Isaac Kehimkar

Among the Pierids, both the Common Grass Yellow and Common Emigrant are most conspicuous and common. They are seen throughout the Subcontinent almost all round the year. Long ribbons of the migrating Common Emigrants have been witnessed regularly, whereas the Common Grass Yellow, which is not a habitual migrant, can be seen migrating in some places.

COMMON GRASS YELLOW

Terias hecabe

Wingspan: 40-50 mm. **Adult:** The Common Grass Yellow is certainly one of the most common among Indian butterflies. Commonly seen along roads and forest paths among low vegetation it visits flowers and damp patches. At places, it is known to migrate in large numbers. On the hills, it flies up to 2,743 m. It is known to occur in two forms: wet season form and dry season form. The dark markings on its wings are variable.

Larval food plant: Pot cassia *Cassia tora*, Indian laburnum *Cassia fistula*, flaming spike *Wagatea spicata*, Manila tamarind *Pithecolobium dulce*, *Sesbania aculeata*, peacock flower *Caesalpinia* spp., shirish *Albizia* spp.

Egg: Spindle shaped, white eggs are laid singly, which later turn yellow. Like a typical Pierid egg, there are fine longitudinal and horizontal lines on the surface.

Caterpillar: The dark green, slender caterpillar has a narrow white band along its either side and can be easily spotted as it rests on the upper side of the leaf, on or along the midrib, with a silken base woven lightly over the leaf surface.

Pupa: The pupa could be green to yellowish-green with a short and conical snout. A white band and brownish spots are seen along either side.

COMMON EMIGRANT

Catopsilia pomona

Wingspan: 55-80 mm. **Adult:** The common Emigrant is a very common butterfly and can be seen throughout India in gardens, city areas and forests. Its flight is rapid with erratic up and down swoops. It is fond of flowers and can be seen on damp patches on hot days. On the hills, it flies up to 2,700 m. Both sexes are yellow to translucent greenish-white. Antennae are black or red. Markings and coloration are highly variable.

Larval food plants: Species of *Cassia*, flame of the forest *Butea monosperma*, common camel foot *Bauhinia racemosa*.

Egg: Bottle shaped eggs are laid singly on the upper side or on the edge of tender leaves, buds and growing shoots of the larval plant. Eggs are adorned with longitudinal striations and are white when freshly laid, but turn yellow as they mature.

Caterpillar: The young caterpillar is a dull yellowish-green, but later turns bright green. Its body is covered with minute tubercles. As a habit, the caterpillar is usually seen resting on the upper side of the leaf, along or over the midrib, on a silken pad made for the purpose. When disturbed, it exudes a foul smelling green liquid, which may to some extent give it protection from predators. However, these caterpillars are often attacked by predatory wasps like the digger and mason wasps, which store paralyzed caterpillars in their nests as living food for their larvae.

Pupa: The pupa has a conical snout with slight protuberance in the wing area. The silken loop in which the pupa hangs is rather long. Colour may vary from a dull greenish-yellow to green with the tip of the snout and a line on either side being yellow.

COMMON GRASS YELLOW



COMMON EMIGRANT



CATERPILLARS



PUPAE



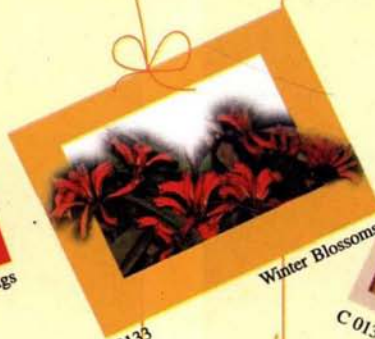
ADULTS

Celebrate this Festive Season with us

S
T
C
U
D
O
R
P



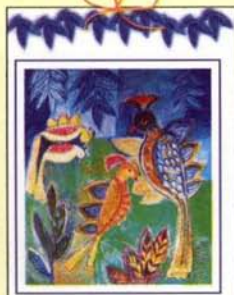
C 0132



C 0133



C 0137



C 0136



C 0134



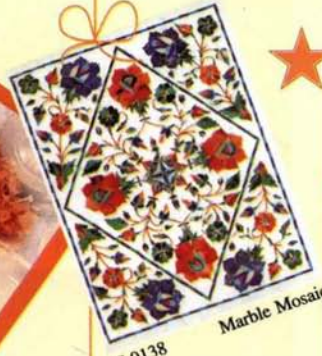
C 0135



P 0110



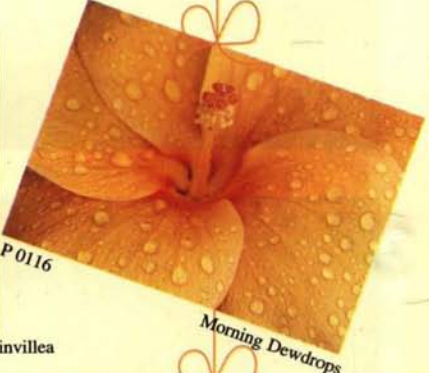
C 0128



C 0138



C 0139



P 0116



C 0140



C 0141



P 0109

C- cards, Size : 4.5 x 6 in. Price : Rs. 8 each

We have 43 designs. Please contact us for a catalogue.

Sanctuaries & National Parks of India



P 0118 The Pride of India



OCTOBER 2002

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		



Blank space for overprinting.

Blank space for overprinting.



P 0111 D'alberti's Birds

Wall Calendar Size : 13.5 x 19 in.
Price : Rs. 80

Flowers in wilderness



Space for overprinting

Front

Back

Desk Calendar cum Planner
Size : 8 x 6.25 in. 12 pages 24 sides
Price : Rs. 42

Executive Range

D- cards
Size : 3.9 x 4.9 in Price : Rs. 6/- each

Wall & Desk calendars 2002

Alluring Avians

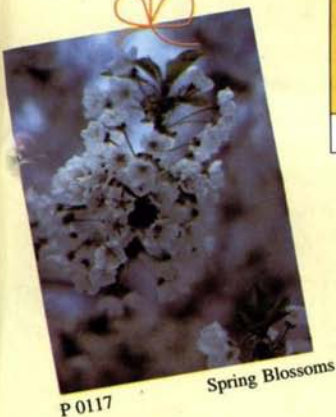


Space for overprinting

Desk Calendar Size : 8.5 x 6 in.
Page a month. Price: Rs.40



Size : 3.5 x 10 in
Desk calendar Rs. 10/ each



P- cards,
Size : 5 x 7 in. Price : Rs. 10/- each



D 0120 Natural Wonders



D 0121 Folk Toys



D 0122 Lilies



D 0123 Christmas

The Young Naturalist

Compiled by:

V. Shubhalaxmi and Vibhuti Dedhia

Bats

Up in the sky, like a bird, if I could fly...? To conquer the skies man had to invent metal birds. But there is one mammal that truly flies. Yes, you are absolutely right — Bats.

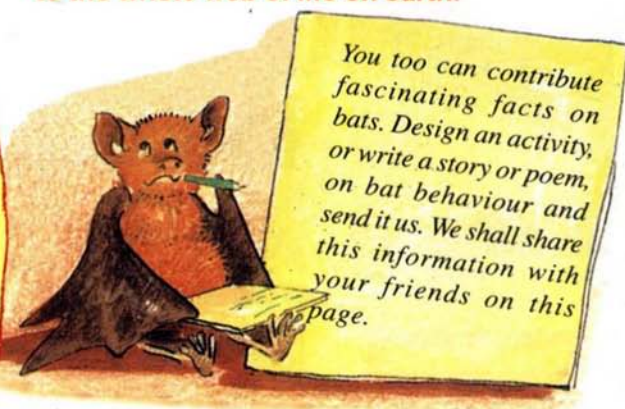
Bats are true fliers, their arms are very much like yours and mine; so much so that long ago they were given the name Chiroptera, which means 'hand-wing'. Imagine if your four fingers were almost as long as your body, with a membrane of skin stretching between each finger and out from your side down to your ankle. You would have 'hand-wings', like those of a bat.

Each species or type of bat is different, flying, feeding and living in its own special way.

We have misunderstood and mistreated bats for centuries. We have hunted them for food and even sport, but the real harm has been caused by the sudden environmental changes that we have made and continue to make.

Discover the environmental changes that have taken place in an area that you know well and how it may have affected the bats.

Today more and more people are finding how fascinating bats are to the whole web of life on earth.



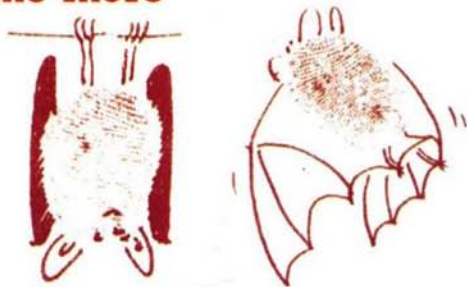
Here's our contribution

All you need is:

- ink pad
- pen
- thumb
- some imagination



Some more



For further information or contributions on 'Natural History' write to The Young Naturalist, Bombay Natural History Society, Hornbill House, S.B. Singh Road, Mumbai 400 023, Maharashtra, India or bnhs@bom4.vsnl.net.in

Blue Whale

Reporter: Good morning friends, welcome to the deep seas. Our guest today is the largest mammal on earth, yes you're right, it's Mr. Blue Whale!

Mr. Whale (whistles): Hi. So, you finally made it!

R: Thank you, Mr. Whale, for sparing your precious time. I am scared of water, but I had to come. For myself and your numerous fans out there. But why couldn't you make it to our studio? This is an uncomfortable place to interview you!

W (laughs): That's simply because I can't manage this 80 tons and 22.5 m long body on land.

R (stumbles on the board): 80 tons!

W: I am much smaller than my aunt, who is a Guinness record holder for being the largest mammal; she's 34.4 m long and weighs all of 150 tons.

R: But then how do you move so swiftly in water?

W: That's because our bones are spongy. Therefore, we weigh much less in water. Nor do we have hands and legs like land mammals, instead we have these flippers for swimming.

R: Mammal! A torpedo-shaped body, no neck, a tapering blue-gray body, a bifid tail, you look just like an enormous fish, not a mammal.

W: We look like fish because our habitat requires us to have fish-like bodies, but we differ greatly from fishes. We have lungs instead of gills, we are warm-blooded. And the most important difference, we do not lay eggs like fish, we give birth to young ones just like other mammals.

R: Thank you, but I always thought that you were a fish. Didn't you, dear friends? (looks at the camera, then turns around, bends and peeps inside the water) Hello-o-o Mr. Whale, can you hear me? (Suddenly, Mr. Whale arrives, with a big splash, from the other side of the boat)

W: Hey, here I am.



R (jerks back with surprise): Where were you? We've not finished yet.

W: Just dived for a mouthful of krill.

R: You mean those tiny little miniature prawns. How can krill suffice for this huge body. You must be eating larger fish, and maybe humans?

W: Good God! Aren't you lucky to be alive yet! (laughs at the panicky reporter). See, I have tiny teeth, which are not meant for tearing flesh. Moreover, one shouldn't presume that all huge animals are carnivores.

R: Now I understand, why you are known as a gentle giant. How deep can you dive under water?

W: We travel to great depths, the greatest to which I have been was around 800 fathoms.

R: You mean 1,500 m! How do you achieve this when you don't have gills? Don't you drown?

W (laughs): Haven't drowned yet. Actually we return to the surface every 20-30 minutes. The harpoon whale, a cousin, returns after 1-2 hours.

R: I am amazed. I believe giant parents have giant children?

W: Our newborn calves are about 7 m long and weigh 2.5 to 3 tons. In some cases they are about one-third the length of the adult.

R: Wow, you have big babies, then the gestation period would also be longer?

W: Yes, about 10 to 11 months.

R: 'Longer in the womb, later to the tomb'?

W: Yes, some whales have lived up to 80 years.

R: I have heard that whales can sing, is it true?

W: Yes, whale 'songs' are well-known. You humans have recorded them. But these 'songs' are actually ultrasound waves used for communication.

R: Wow! One last question. Are you threatened?

W (shrugs): Yes. Humans have massacred some of us, brought us on the verge of extinction. We are hunted for our meat and fat. Even the bones, after extracting oil, are used to make fertilizer. We've been hunted extensively, especially since the arrival of your steam catchers and harpoon guns. International laws do give us some protection, but many countries still hunt us.

R: Whaling does affect the economy of many nations. Commercially important species of whales do occur in the Indian seas, but whaling is mainly restricted to the north Atlantic and Antarctic seas.

W: The Indian Ocean, including Sri Lanka, might soon become a Whale Sanctuary.

R: That's good news! Eco-awareness is your best friend and so are ecofriendly kids, who work towards your conservation! That was a great talk! Goodbye, Mr. Whale, and good luck!

(Mr. Whale disappears in a whoosh, leaving the boat dancing again). 🐳



Farming is no Fun Game

I refer to Mr. Shridhar D. Bhat's letter 'Wildlife and Power Fence' in *Hornbill*, January-March 2001. I agree that the basic problem is a rapidly increasing human population, a problem that is engaging the minds of many brilliant, eminent, and powerful people. However, as long as the population is there, it has to be fed. The farmer is trying to do just that, while wild animals raiding his crops mean, at an individual level, ruin for him, setting at naught, in one fell swoop, all his toil, expense, and time, and leaving him with nothing to fill the stomachs of his family and himself. If this sounds like an exaggeration, let me say I have seen, personally, five acres of grain completely devastated by nilgai and chital in a couple of hours, when the guard was unwell and came late to his post. At the macro level, the country and its people, Mr. Bhatt included, are deprived of the food which the farmer and the government are trying hard to provide.

Power fences, properly designed and operated, discourage intruding animals, and the discomfort is temporary. Otherwise, farmers would resort to shooting, netting or trapping. It is unfortunate that there is little to eat for wild animals. The establishment of sanctuaries, and the provision of forage and water within them may be a partial solution. Surely, however, the answer is not that wild animals should be allowed to eat cultivated crops at will!

Most members of the BNHS and similar organizations are urban, not farmers, and therefore cannot be expected to fully appreciate the point of view of the cultivator — the majority of the population of our country. Farming is a tough business — dependent on weather and absence of crop pests, to name a few factors. Profits are, at the best of times, marginal. Have some sympathy, therefore, for the person who helps to keep you fed.

S. Chaudhuri
Vishnu Farm, Hardwar.

Distribution questions

Having read and enjoyed the October-December 2000 issue of *Hornbill Magazine*, I discovered the earlier July/September issue, hidden under a pile of magazines and have only just read it. It is always full of interest and the quality of the photos and articles gets better and better. I particularly appreciated the tribute to J.C. Daniel.

The second point concerns the article authored by Rachael Reuben and titled 'Saving the Lesser Spotted Eagle'. The statement that this bird is endemic to the Indian subcontinent and is found nowhere else in the world is misleading and should be corrected. Basically it is a palaeartic bird like *Aquila clanga*. Few records of both species breeding in the Subcontinent exist. However, there are still breeding populations in eastern Europe and the western parts of Russia. Indeed, it has declined everywhere and is an endangered species, but it still has a wide distribution in northeastern Europe and parts of Russia. The Russians claim that their populations are relatively stable, particularly in Belorussia.

T.J. Roberts
Anglesey, Britain.

Delayed responses?

On March 6, 2001, I visited Ranganthitoo Sanctuary. In the evening, at around 5-5.30, I heard a splash in the water. A full grown painted stork had fallen into the water. All wet, it could not fly, so it started swimming towards an island where it could climb up and dry itself. After about 5 minutes, it had successfully swam about 30-40 m and had only 15 m to go, when I saw a crocodile swimming towards it. When the crocodile was about 3 m from the bird, it submerged. A few seconds later it attacked the stork and disappeared, under water, along with the bird. Two other crocodiles also tried to reach out for the stork. What surprised me was the time taken for the bird to be attacked, as there are over 10 large crocodiles in that area.

Amitabha Epur
Student Member.

Havoc: Too Soon Forgotten

We had a devastating experience of the havoc created by a rainless cyclone in our small garden. Unfortunately, I did not take any photographs, but I would like to remind readers of the havoc caused that will be too soon forgotten. I had a grapevine tree (*Artabotrys odoratissimus*) in my small garden which died due to the cyclone and it still stands like a skeleton, though much of it was cut down.

A tall papaya tree with a cluster of fruit fell down, taking the tall jasmine, which was spread on our second floor roof, with it. Another very large tree, (*Canangu odorata*), as tall as a 5 storey building, fell down slanting, resting its two-headed trunk on other trees across the road. Some moderately large trees like Spanish cherry (*Mimusops elengi*), *Tecoma*, and *Ficus* were turned southwards, as if a giant had pushed and shifted them.

The beautifully arranged Bharathi Park, Pondicherry, was a scene of utter devastation. On all other roads trees had fallen down. For some days gardens, PWD, Municipality and many other organizations like the Drainage Pumping Station were awfully busy with cutting branches and transporting logs of the uprooted trees.

The wind blew from north to south, from northeast to southwest. After the incident some of my friends from Chittagong, Bangladesh, said that such things happen there from time to time. Chittagong is also on the seashore. Wind without rain is the main cause of the fury, which we had not witnessed before, though stronger cyclones have passed through Pondicherry, we understand from past records.

Aju Mukhopadhyay
Kurichikuppam, Pondicherry.

Sharing delightful moments

Just this morning, I saw something spectacular that will definitely catch the attention of any nature lover or sensitive person. On a group of eucalyptus trees in my neighborhood, I saw a huge flock of rosy pastors, about 1,000 strong!

These are migratory birds from central Asia and eastern Europe, and come to India in winter. They were probably on their way back to their summer homes and mating grounds in the cold north. It was very impressive to see them take flight in unison from the trees and then fly in formation and perfect rhythm, and settle down again on the trees. I was particularly amazed to see such a congregation of wild birds in a perfectly urban locality in Borivili, a busy suburb of Mumbai (Bombay). The distant and sweet chatter of these birds first caught my father's attention and I joined him on our balcony, with my binoculars and Sálím Ali's BOOK OF INDIAN BIRDS. Surely sightings like this are a treat to my urban, but green mind. Any of the readers who see such migratory or resident birds, in such numbers in the most unlikely place, should share it with other nature lovers. This will spread the joy that is heralded by the spring.

Atul Sathe, Student
Borivili, Mumbai.

Extinction is Forever

Thanks to Supriya Jhunjunwala for reminding us that if we lose one species, it is forever (*Hornbill, October-December 2000*). It is sad to learn that 78 species of birds are threatened with extinction in India. We — *Homo sapiens* are responsible for this. So we must take it up on us to protect them for their role in the food chain and as bioindicators of the environment.

The pinkheaded duck (*Rhodonessa caryophyllacea*) is an example of what harm human activities can perpetrate. A species which was common in our eastern regions is now extinct, sighted only in the dusty pages of bird books. The single pinkheaded duck I saw was not alive, but a specimen at Zoological Survey of India, Kolkata. A live bird is much more valuable than a specimen. Let us work to prevent the 78 species of birds from becoming museum specimens. We must all remember: "Extinction is forever".

Arunayan Sharma
Malda, Bengal.



RANTHAMBORE ADVENTURE

by Deepak Dalal.

Published by
Tarini Publishing
Pune, 1998.

Pp. ix + 193
(13.3 cm x 25.1 cm).

Paperback
Price Rs. 90.

Reviewed by: S. Asad Akhtar

RANTHAMBORE ADVENTURE describes in vivid detail the brave struggle put up by four intrepid high school children, who unravel the workings of an organized tiger poaching gang. The author's pen breathes life into the adventure that unfolds, and describes lucidly the heavy odds and sometimes overwhelming circumstances that the youngsters had to face in their pursuit of the kingpins of the gang. The young brave hearts continue nevertheless, and finally bring the culprits to book. The racy narration makes it difficult to keep the book down and almost draws one into the drama. The line drawings in the book give an

edge to the narration and will help young readers to relate to the story. The opening pages of the book, describing the early days of the tiger cubs are true to life, and rivetting.

The 'Afterword' section in the book is a brilliant idea, which will enthuse young and old alike to participate in the struggle to save the tiger. The Section highlights the role being played by organizations like the BNHS and TigerLink to network individuals and institutions for tiger conservation. The brief updates on the conservation status in different sanctuaries depicts the grim scenario that faces almost all the protected areas in the country. The momentum built up by the story is bound to inspire and provoke an appropriate response in real life situations, even from indifferent readers.

The book will help raise awareness levels amongst school students and encourage them to channelize their concerns for wildlife conservation through simple but effective initiatives like writing letters to the concerned authorities and newspapers or by joining conservation organizations like BNHS, WWF, and Green Peace. These children in their later years are more likely to participate as motivated and concerned citizens in the larger struggle for the tiger's survival, and will, in the long run, make a difference to the state of the environment. The book is a timely addition to the list of conservation oriented publications and a must for school libraries. 🌿

Reviewed by: V. Santharam

The title under review is part of a series on the breeding birds of North America. The national bird of India finds itself in this series because of its introduction into the United States from the Hawaiian Islands in 1860, and later at California (in 1879). Feral or semi-domestic population of the peafowl are now found over most of North America and occur in good numbers in Florida, California and in the Hawaiian Islands.

This booklet contains information about this species from both its native and introduced

COMMON PEAFOWL (PAVO CRISTATUS) — THE BIRDS OF NORTH AMERICA NO. 377

Raghupathy Kannan and
Douglas A. James

Published by:

The Birds of North
America, Inc.,
Philadelphia, 1998.

16 pp., Price: \$ 7-50.



ranges, arranged conveniently as under: Distinguishing Characters, Systematics, Migration, Habitat, Food Habits, Sounds, Behaviour, Breeding, Demography and Populations, Conservation and Management, Appearance, Measurements, Priorities for future Research and References. These are further specified, e.g. the section on Behaviour includes: locomotion, self-maintenance, agonistic behaviour, spacing, sexual behaviour, social and interspecific behaviour and predation.

The text is crisp and as a result of the well organized structure, it is easy to locate information. There are four figures and a table. Data has been gleaned from nearly ninety reference works, but of these less than a third pertain to research work conducted in the Indian subcontinent, the original home of the bird.

The authors have done a commendable job in putting together available information on the peafowl. However, it is sad that just a handful of

the recent field studies on this species were conducted in our country. Particularly in the section 'Conservation and Management', the references cited are dated 1922 and 1969! The only quantitative estimates of the population status of the bird in India dates back to a 1969 paper. It is a shame that India's national bird, one that has caught the imagination of writers, poets and artists, a bird that is etched in the national ethos and culture and associated with myths, legends and religions, has not attracted enough attention of our scientists and ornithologists. Can we remain complacent in the belief that the bird is doing well, since religious sentiments protect it? We need to bear in mind the fact that the peacock is a nuisance to farmers as it is highly destructive to crops, and to urbanites due to its noisiness and its habit of defecating in residential areas. We should also consider the impacts of other human activities such as habitat destruction, and pesticide use on the wild populations. 🌿



Courtesy: Times of India

EDITORS' CHOICE

BE A GOOD ECOTOURIST



THE FUTURE OF OUR FORESTS



IS IN YOUR HANDS!

Please help prevent forest fires

Public Interest Advertisement by Lucky Peak Nursery

Swift Action is a must



By Satish Pande, Vishwas Katdare and
Ram Mone

The Vengurla Rocks are important, not only to the swifts, but also to several marine terns and ocean birds for their nesting. All this needs to be studied afresh. The Vengurla Rocks should be declared as a special status protected area. The problem of the swift family not featuring in any of the schedules should now be thrashed out and the gaps filled. Their legal status should be strengthened.

We reached the fishing hamlet of Niwati Medha which lies between Malwan and Vengurla, by bus on April 7, 2001. Our final destination was Vengurla Rocks, Burnt Island (N 16° 35'-45', W 73° 27'-30'), one of the many islands in the Arabian Sea, 7 nautical miles from the coast. We spent some time in making arrangements for our ferry transport, food supplies, stay, and so on. The remainder of the day we photographed the swallow-shrikes, which are seen on the coast of Vayangani, about 40 kms from Niwati, in south Konkan. The next day, at 5.45 am, we sailed in the motor driven ferry for Vengurla Rocks. The long overdue visit was made with the specific purpose of finding out the current status of the terns and the edible-nest swiftlets of the Rocks for publication in our forthcoming book THE BIRDS OF KONKAN AND THE WESTERN GHATS. After an hour and ten minutes of sailing, we alighted on the farthest island with the old lighthouse.

It was difficult and risky going. On the underside of a dome in the crumbling but majestic building of the old lighthouse, we saw thirty or more nests of the edible-nest swiftlets *Collocalia unicolor*. This is a new, hitherto undescribed site. Many blue rock pigeons, a juvenile whitebellied sea-eagle, jungle crow, and sandpipers were all that we could find. On the steps of the lighthouse tower, and on the ground in the chamber were two active pigeon nests.

Then we ferried to the new lighthouse island, and saw the wonder was that the lighthouse. On a palm tree we saw a female kestrel. Two Indian robins and a few swifts also flew around the island. Then we ferried to the eastern most squarish island, Burnt Island or Bandra as it is locally called. Here were the celebrated caves, where edible-nest swiftlets and various marine terns have been known to nest. The Ratnagiri Gazetteer, and later writings of the great naturalist and birdman Humayun Abdulali, have described these swiftlets and their saliva nests, that are prized as table delicacies in the Far East.

Again, landing on this island was no less perilous an adventure. We unloaded our haversacks, water cans and sent back the ferry with a request to collect us at 6.30 pm the same day. Thousands of the swiftlets were flying and sweeping the sky above the island. We saw them occasionally disappear into the ground in front of us. As we investigated this, we found it to be a skylight to the large cave that actually

sprawled under our feet. We peeped into the skylight, and what a shock awaited us! The cave, which was expected to be occupied by birds alone, in fact contained a gigantic framework of large bamboos. This unexpected finding confirmed our worst fears. A clandestine trade in swift-nests appeared to be very much in evidence.

To investigate further, Vishwas clambered down a 30 metre vertical cliff face that led to the entrance of the cave at sea level. In the meanwhile, we moved around and found the island littered with broken blue-blotched egg shells, dead terns with black wings, and others with yellow beaks. Obviously, marine terns were still nesting on the Island. After some time, we came back to the skylight. We then lowered our cameras, measuring tape, notebook, pen and flashlight through the skylight with a long rope to Vishwas who, by that time, had reached the cave.

Ram tried to negotiate the cliff face, but since it was difficult and risky, at my behest he unwillingly abandoned the attempt. After some time, and much restlessness, I swam to the entrance of the cave, circumventing the island and negotiating the goose barnacle studded, sea-urchin covered sharp rocks, liberally cutting my hands and feet on these creatures. A large number of edible-nest swiftlets were nesting in the dark recesses of the cave, and were navigating by echolocation. Pigeons and small bats clung to the roof of the cave, and guano-eating cockroaches were also plentiful.

But the most plentiful things were the bamboos! These were neatly tied to make enormous frames which reached the roof of the cave about 30 metres high. Long, 4.5 m wide and 15 m high frames occupied the entire cave. No floor space was free of the bamboos. Truckloads of them lay rotting on the floor, indicating that this activity was

old. New bamboos indicated that the poaching was ongoing. The cave was filled with the pungent odour of bird guano, which formed a thick sheet on the floor. On the bamboo frame, the nests were at hand. The lowest nest was just a metre from the ground, and the highest on the roof. The nest density at various places was 22/sq. m, 38/sq. m and 40/sq. m. A conservative estimate of at least 3,000 bird nests was in that cave! The nests were pearly-white, shiny, sticky and gelatinous to touch. All the nests were attended by swifts, which freely entered the cave and occasionally dashed against us.

The nests were infested with tiny maggots, bugs and guano-eating cockroaches. These species need to be studied and identified. The nests were almost complete, they were attached to the wall bracket-wise and their free edges were reinforced with straw, obtained from the island. Eggs would be laid in a few days. After completing our reconnaissance, we reached Niwati-Medha at 7.45 pm by the launch which had arrived punctually. We invited the important citizens of the village, the youth and village elders, and replayed for them the video recording of the cave, and to their great amazement showed them the bamboo scaffolding. On being asked by whom and for what reason the scaffolding had been



A new colony of swifts is taking shape in the old light house of Vengurla rocks

erected, they said that it was the work of visitors from south India who came to collect pigeon droppings for medicinal purposes. They came in April and September, before and after the monsoon. *This was alarming.* When asked why a tall bamboo frame was required for collecting the guano from the ground, they seemed to realise that what they had been told earlier was a lie. They were not aware of the swiftlets and their saliva nests. We spent an hour telling them about the Wildlife Protection Act, 1972, which covers the nests and the birds. They were shocked to learn about the trade in the nests for culinary and aphrodisiac purposes in the Far East. *This one hour that we spent on nature education was to pay us major dividends later.*

I reached Pune on 10th April, and immediately dispatched letters about what we had seen to the forest authorities, the Chief Conservator of Forests (CCF), Nagpur, Conservator of Forests (CF), Kolhapur Circle, and the Deputy Conservator of Forests (DCF), Sawantwadi and since the trade was likely to be abroad, the Deputy Director Regional, Western Region, Mumbai. In these letters an urgent request was made to remove the bamboo frames from the cave and to place an iron grid on the entrance and the two skylights immediately. The

poachers were expected any time now and 3,000 nests were in imminent danger of theft.

On 11th April I panicked: 13th to 15th April were public holidays. The letters would not reach the forest officials in time. The removal of the bamboos would have to be really fast. I e-mailed these people, but realized that the mail would not be accessed. Then I e-mailed my friends and asked them for help, and to convey the urgency to all concerned. Something would happen. Mr. Ulhas Rane mailed back and forwarded the alert to Pakshimitra, the all India birdwatchers online group. That night I phoned the CF Kolhapur and conveyed the message. They were not aware of high sea poaching. There was the question of the coast guard, who would also come into the picture! However, he assured us that the forest officials would go to the island and see for themselves what was happening. But that would only be on Monday. No one was available on holidays. Being a medico, I found this holiday business very frustrating. We have no holidays! *And here 3,000 nests were at stake.* My God, I thought, how could holidays matter? But sadly, they did.

The next day I called up the DCF Sawantwadi from CF Kolhapur. The Rocks were under his direct jurisdiction. He too was taken



Bamboo framework was setup by the poachers to collect delicacies for plates in the fareast

by surprise but requested a detailed e-mail, which I sent him. He promised to look into matter. He understood the gravity and the urgency. But "at the earliest" would still be Monday.

All our online birdwatcher contacts agreed on the urgent need for action, and had lodged reports with the CCF. The importance of generating public awareness through the media was discussed. On 15th April, the news was flashed in all the editions of *Sakal* in Maharashtra. On the advice

of Mr. Prakash Gole, Vice Adm. (Retd) M.P. Awati was also appraised if the need for help from the coast guards should arise. He assured us of his wholehearted help. The next evening, I talked to the CF Kolhapur and learnt that the forest guards still hadn't started. This was discouraging. On reaching home, the phone rang and a fisherman from the Niwati village told me that he had read the *Sakal* news and was convinced of the integrity of our efforts. Then he said that around ten poachers had landed on the Rocks that very afternoon, and had unloaded fresh bamboo. This, in my opinion, was the most crucial part of the entire episode. The fisherman was one of the crowd who had seen the film that we had displayed and he had spontaneously offered help! That is the importance of nature education. The one hour spent with the village folk had helped. I immediately contacted DCF Sawantwadi. He was in the office at 9 p.m. That was comforting in itself. He said that he was sending off two men to the Rocks the next day. I felt concerned not only about the nests but also about the guards. I told the DCF about the latest news of the arrival of the poachers who could be armed. A bigger and better equipped party should be sent. Mr. Gupta, the DCF, thanked me and promised to take action. Then I also phoned Vice Adm. Awati about the arrival of the poachers and sought support from the coast guard.

On April 17 at 8 am I got a call from the Admiral and then from the office of the coast

The Vengurla Rocks
are important,
not only to the swifts,
but also to several
marine terns and ocean
birds for their nesting
and therefore should be
declared as a
protected area.

guards at Mumbai assuring help and that a chopper would be sent to the Rocks and if necessary a ship too. They wanted a written complaint and I faxed it. This was a relief. I phoned Sawantwadi and learnt that a team of 15 RPOs had left for the Rocks at 6 am. The same evening Vishwas phoned me, saying that he had confirmed news that five persons were arrested red-handed in possession of 6 bags or so of bird nests. But a number of nests were still intact. A local person from the fishing hamlet of Kochra was also involved and had been

arrested. The very next day I congratulated the DCF Sawantwadi, Mr. Gupta for the great work at this point.

The bamboos are yet to be removed from the cave. An iron grid should be placed on the entrance and on the two skylights. That alone would be a permanent deterrent to the poachers.

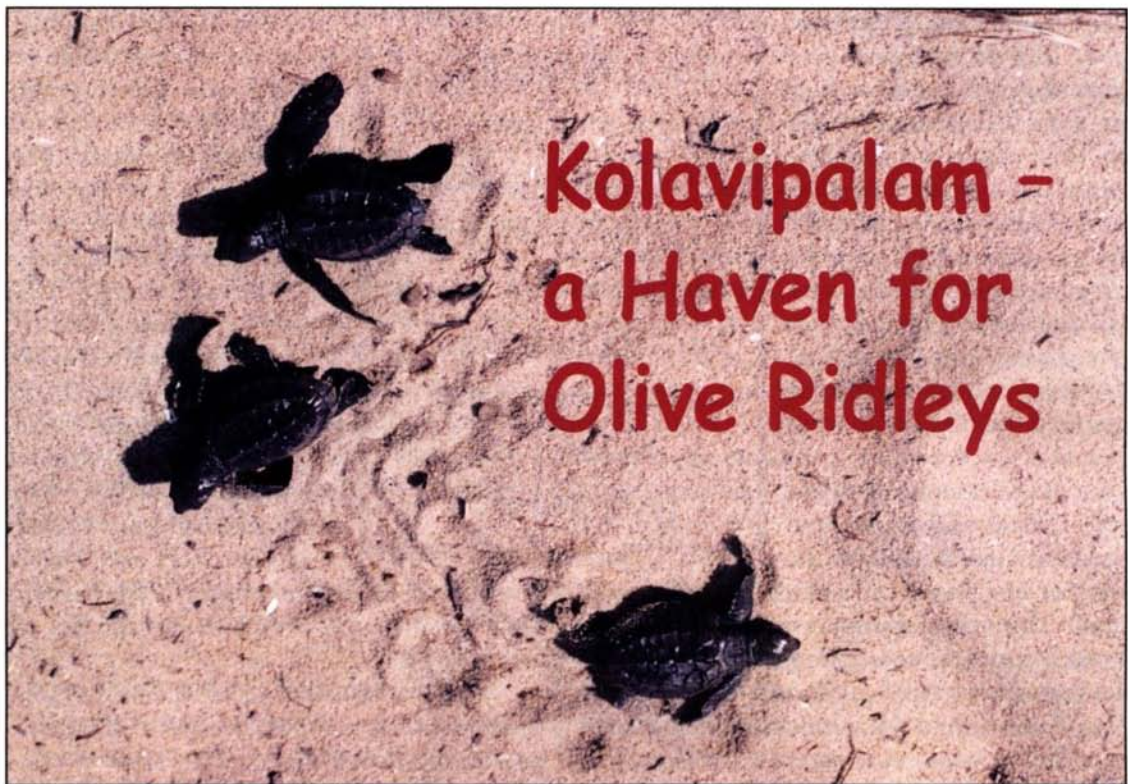
A nature awareness campaign should be organised in the fishing hamlets. The Vengurla Rocks are important, not only to the swifts, but also to several marine terns and ocean birds for their nesting. All this needs to be studied afresh. The Vengurla Rocks should be declared as a special status protected area. The problem of the swift family not featuring in any of the schedules should now be thrashed out and the gaps filled. Their legal status should be strengthened. 🌿

Dr. Satish A. Pande, a physician, is the President of Ela Foundation, a body devoted to nature conservation and awareness. Vishwas Katdare and Ram Mone are members of Sahyadri Nisarga Mitra, a Society devoted to nature conservation.

We are grateful to

MEHTA SCIENTIFIC EDUCATION & RESEARCH TRUST

for a generous corpus grant to constitute
the *Pratap Saraiya Hornbill Fund*
to support the publication of *Hornbill*.



K. RAMACHANDRAN

K. Ramachandran

Kolavipalam is a small seaside village about 6 kilometres from Payyoli, northwards of Kozhikode town in Kerala. I visited Kolavipalam on 18th January, 2001, on being told by my friends at the news desk of the daily *Mathrubhoomi* at Kozhikode. This group of publications, which includes a weekly, daily, and Sunday special, give a lot of importance to news relating to the protection of nature in Kerala. They have published reports about Kolavipalam and turtle migration, which are both interesting and informative.

The Honorary Secretary of Theeram, a nongovernmental organisation, welcomed me at Kolavipalam and explained to me the activities of this NGO (meaning Shore in Malayalam). It has an interesting history, having been initiated by some educated young fishermen of Kolavipalam to protect the endangered olive ridley turtles visiting the seashore regularly every year, to lay

eggs and hatch. Once, not only the turtles eggs, even the large turtles were killed without restriction, for the table. Now, such poaching is hardly reported, thanks to Theeram and the resident villagers. The NGO works ceaselessly to increase public awareness, and patrols the breeding sites of the turtles to save the olive ridleys. The eggs are collected from various egg laying sites and buried in natural conditions in protected enclosures till they hatch out. The hatchlings are then released into the sea. During 2000-01, more than 1,600 ridley eggs from 14 nests were reared under protection, and most of them hatched and were released. Occasionally, twin eggs were also seen, but unfortunately they did not hatch. The paper white eggs are rather small, like those of village hens.

The turtles visit Kolavipalam between September and March every year, mainly from October to January, with a peak period in November. Using their flippers, they dig large pits in the sand around 30 metres away from the

K. RAMACHANDRAN



Kolavipalam hatchery is a haven for olive ridleys

shoreline, lay the eggs and go back into the sea, leaving the eggs to nature or to their fate! Up to 180 eggs are laid in a cluster. The hatchlings emerge in 47 to 60 days, depending on the sun's heat. Turtles up to 1m x 1 m size have been seen along the 3 km long seashore, coming in to lay eggs from Korapuzha riverbed to the granite paved areas built to protect the sea line from erosion. Hatchlings are carefully released into the sea only after the return of the fishing boats, to prevent injuries or collection. In this task, the State Forest department and the District Collector of Kozhikode give great help.

The Theeram Prakriti Samrakshana Samithi Sea Turtle Sanctuary, Kolavipalam is committed to protect this globally endangered species. The present threats to the Sanctuary are unlimited sand mining from the Korapuzha riverbed, which leads to erosion of the shoreline. This year, a large number of coconut trees fell and a part of the hatchery was washed away by the sea. There is a good mangrove forest, which attracts large numbers of migratory birds, such as redshanks, sandpipers, stints, and plovers, among other species.

The sand mining should be stopped with immediate effect to prevent further erosion on the seashore, and the biodiversity of the area should be thoroughly assessed to protect the egg laying site of a globally endangered species.

K. Ramachandran is a freelance photographer and a keen naturalist.

A Snail Story

N.A. Madhyastha

As we walk towards Abbey Falls from Madikeri town in Coorg district, home of vast coffee plantations, at about 800 metres above msl, an uncommon little creature draws our attention. About 10 cm long, flat, with an orange body and a large, dark brown, dome-shaped shell, this creature crawls slowly on its creamy white "foot" over the rich litter on the forest floor, secreting a copious trail of mucus all along the way. You guessed right — this is the giant snail *Indrella ampulla*, in my opinion the most beautiful and largest snail endemic to the Western Ghats.



N.A. MADHYASTHA

Collected from Hassan district in Karnataka, the Nilgiris and Anamalai ranges, a hundred years ago, it has surprisingly caught little attention from malacologists or shell experts since it was first described by Godwin Austen in 1901. *Indrella* is seen on the forest floor during the monsoon in cool, moist, shady spots, feeding on dead mushrooms. Occasionally you see it on a tree trunk. Like all snails, it shrinks into its shell at the first sign of danger, but doesn't quite fit in, as it is too large to be fully accommodated into its dark brown "house". Incidentally, in earlier descriptions of the snail, the colour of the animal is described as greenish yellow or black! Perhaps those descriptions were based on preserved specimens.

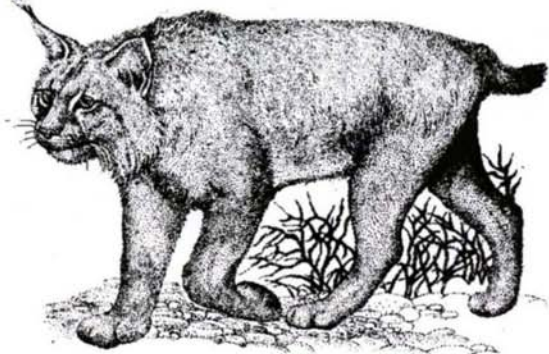
Prof. N.A. Madhyastha is the Head, Department of Zoology, Poornaprajna College, Udipi.

Return of the Swiss Lynx

R. Reuben and Ira Smith

As we came up from the underground car park by the lake, close to Geneva's famed floral clock, we were confronted by a large poster of a lynx, with the caption "Ou est Tito donc?" (So where is Tito?). Tito was a 2 year old lynx, briefly the centre of a raging controversy last summer. The lynx formerly ranged from the Jura plateau to the Alps in the east of Switzerland. Roe deer and chamois are the natural prey of the lynx, but sheep are sometimes taken also. Hunters and farmers combined to exterminate the lynx, and the species became locally extinct by the end of World War II. Now, after a gap of 25 years, environmental NGOs, authorized by the Swiss government, are implementing a programme to restore the lynx to its former range. From 1971, when the project began, to 1980, 25 to 30 lynxes captured in the forests of the former Czechoslovakia were released in various districts in Switzerland. Tito, born in Switzerland, was one of several animals that were radio-collared to monitor their progress. There are about 80,000 sheep in the mountains (about double the number at the end of the war) which, according to environmentalists, are already causing problems of overgrazing and erosion.

Pro Natura, the Swiss League for the protection of nature, compensates farmers for sheep lost to lynxes, but any lynx that kills more than 10 sheep in a year has to be destroyed, for it may acquire a taste for sheep as prey. Tito attacked a small flock of 45 sheep, killing 3 and wounding 2 others in a few days. Should this lynx be destroyed? Pro Natura's interactive website enabled a surprisingly large number of citizens join in the debate. It was still early in the year and it seemed to many that it would not be justified to wait for more slaughter when the lynx was clearly a sheep killer. Many others felt that it would be a dangerous precedent to shoot a lynx every time 3 sheep died, leading to a return to the old days when they were shot as vermin. The debate raged, with much



sympathy for Tito, but it was finally decided that he must be shot, but that nevertheless he would be given a sporting chance. Hunters would have to locate him without access to data from his radio-collar, and if he left the locality he was not to be molested. In fact, very shortly afterwards he left the area, and established a new territory in a neighbouring valley. With a little bit of help from friends? We will never know. A few months later, Tito was killed by an automobile on a highway. A new young male has established himself adjacent to Tito's old territory.

Data from collared lynxes shows that many die prematurely in the wild. Two have drowned while trying to cross streams. Tito's mother Tana gave birth to another cub, and those interested could follow her movements on the Pro Natura website, and listen to the cub's recorded squeaks. Sadly, both disappeared, probably lost to poachers. Nevertheless the population of lynxes seems to have stabilized, and is estimated at 1 per 100 km². Hunters dispute this estimate and claim that they are in fact confined, at a higher density, to an area between the Alps on one side and major autoroutes of the plateau on the other. Territorial disputes between males have been observed, which probably indicates that the population has reached the maximum carrying capacity and in future natural stabilizing factors will operate to maintain a balance.

Though the big predators threaten the interests of farmers and hunters, both groups

cooperated with the reintroduction programme, and the lynx is generally well accepted by the Swiss. Officials estimate that the population of 100 lynxes believed to exist in the Alps and the Jura would consume 5,000 roe deer and 1,800 chamois annually, while in 1999 hunters shot about ten times as many — 43,839 deer and 18,543 chamois. Switzerland has a long tradition of legal hunting, but increasingly hunters are realizing that environmental degradation is an urgent issue and will ultimately affect them too. Many have accepted quotas and restrictions on firearms, as well as programmes of biotype restoration. However, very recently an ugly incident showed that there is still hostility. A lynx was accused of mauling a German tourist, photographs of whose arm were splashed in the press. The only evidence was some hair at the site of the alleged incident. Neither the victim nor his torn leather jacket could be traced. Nor was there any record of first aid being administered. Experts think that the scratch marks in the photograph are more likely to have been made by human nails. This appears to be a deliberate attempt by the influential hunting lobby to frame an innocent animal.

Like the Swiss lynx, the Indian cheetah was hunted to extinction. The last recorded Indian cheetahs were shot in Bastar district in 1949. The Department of Biotechnology has recently

sanctioned a programme to clone this species so that it can be reintroduced into its natural habitat. This makes the Swiss experience extremely relevant. Switzerland is among the most environmentally conscious countries in Europe. The headquarters of both WWF and IUCN are close to Geneva, and the Swiss love their wilderness areas, on which their whole tourism industry depends. The legitimate interests of farmers and hunters have been protected, and transparency in their decision-making is notable. Yet conflict and hostility remain, and there have been many setbacks. In India hunting is illegal, but nevertheless any reintroduction programme would have to contend with farmers and graziers as well as poachers with political links, in addition to tremendous pressure on land. The scrub and grassland habitat of the cheetah has mostly disappeared. Much as naturalists would love to see the return of the cheetah, any such attempt is likely to be an exercise in futility. To return captive bred populations to the wild will be virtually impossible. It would be far better to concentrate all our efforts and resources on protecting our remaining big cats (including the Himalayan lynx) and their habitats. Conservationists are doing their best to achieve this, and they need all the support that nature lovers can give them. 🐾

Colour no bar?

.....
Naresh Chaturvedi

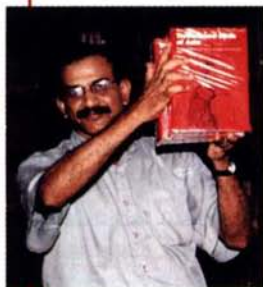


Albinism is a rare phenomenon in the animal world. Recently, Mr. Vinod Kansara from Madhavpur village (Ghed), Gujarat sent us a photograph of an albino snake for identification. We identified it as a common sand boa (*Eryx conicus*). This snake was caught by Mr. Arun Devani near the village and was photographed by Mr. Vinod Kansara. It was released in the field outside the village. From the available records, we found that there were very few sightings of such snakes, and there was no published report of albino common sand boa. The snake is found in the drier parts of the Indian subcontinent. 🐍

Mr. Naresh Chaturvedi is the curator and in-charge of the Collections at the BNHS

Conservationists meet to save Indian birds

The Indian Bird Conservation Network (IBCN) was set up by the BNHS in collaboration with BirdLife International and the Royal Society for the Protection of Birds (RSPB), in 1999. The IBCN aims to bring together Indian organizations and individuals who are concerned to collaborate to promote the conservation of birds and their habitats in India and through them strengthen the biological diversity of the region. The Network consists of around 300 partners, which include 30 NGOs. The Network Secretariat is based at BNHS. The first meeting of the 20 State Coordinators facilitating the activities of the Network in India, was inaugurated at Hornbill House, and held at the Conservation Education Centre, Goregaon



from September 13-15, 2001. Mr. Richard Grimmett, head of BirdLife Asia Division made a presentation on the BirdLife Asia Programme. Mr. Mike Crosby, Research and Data Manager in BirdLife gave a brief overview of the new BirdLife publication THREATENED BIRDS OF ASIA (TBA). Copies of the TBA were presented to



Above: Mr. Richard Grimmett, head of BirdLife Asia Division making a point at the meeting;
Below: Dr. S. Subramanya with a copy of the Threatened Birds of Asia

Dr. (Mrs.) Lalitha Vijayan (coordinator of the project in India) and Dr. S. Subramanya (an author of the book). The meeting was aimed to strategize the functioning of the Network. Five core areas such as research and monitoring, partnership and sustainability, conservation action, policy and advocacy and awareness and education were discussed.

REFLECTIONS 2NOITCEFFER

"Concern for man himself and his fate must always from the chief interest of all technical endeavours in order that the creation of our minds shall be a blessing and not a curse"

Albert Einstein

"This we know: The earth does not belong to man; man belongs to the earth. Man did not weave the web of life, he is merely a strand in it. Whatever he does to the web, he does to himself..."

Chief Seattle

Snap Shots

Text and Photograph: Hira Punjabi
Hira Punjabi is a widely travelled, award winning photographer
and a BNHS member

It was around 8.00 in the morning. After an elephant ride in Kaziranga National Park (KNP) I was returning to the forest office, to pick up a forest guard before proceeding by jeep through KNP. While driving along the dust track of the nearby village, I was attracted by the yellow and black bands of a snake lying on the roadside.

I stopped my vehicle and asked my guide, Polash, "Which snake is this?"

"A banded krait!" he said, his eyes widening. I could hardly control my excitement on this rare sighting. Unfortunately, the snake had fallen prey in a fishing nest, may be the previous night. I observed it closely; it was alive, about 2 m long and stuck in the net to about 0.3 m from its head. Many locals came to see it, but were scared to touch this beautiful reptile, because of a myth that the snake could bite even with its tail!

I took some photographs, then decided to try and help the snake. I contacted a forest guard and told him that the snake must be released somehow. At his suggestion, we took the snake in our Gypsy. On the way, he called a fisherman, who examined the snake and agreed to come after an hour or so, to help release it. Satisfied that I had done my best for the snake, I resumed my trip inside the Park, leaving the snake near the main gate, with an assurance from the forest guards that they would protect the snake from predators like serpent eagles,

of which there was a good population in the Park.

At around 12.00 noon, when returned I was disappointed to see that the snake was still lying exposed on the ground in the afternoon heat. Worried whether it was dead or alive, I touched the snake and saw it move. I decided to stay till the snake was released.

I asked the forest guards for a pair of scissors to cut the net, or better still if there was a veterinary hospital nearby where the snake could be freed. I got a negative reply. They said that the snake was dead, and there was no antivenin either in the forest office or in hospitals nearby. It was, therefore, best to leave the snake to its fate.

We proceeded with the rescue anyway. About half an hour later, the fisherman arrived and we began. My guide pressed the tail of the snake with a stick and the fisherman started to cut the net with a sickle.

Finally, the last three strands around the mouth of the snake were cut very carefully. After getting free of the net, the snake hid its face in its body — typical self protection behaviour. The 'deadly' snake was scared close to death! We lifted it with a stick and released it in water.

I had a good opportunity to take some photographs, but I felt that the snake was already traumatised and "the welfare of an animal is more important than a photograph".



DON'T
EVER
GIVE UP

