

# Hornbill



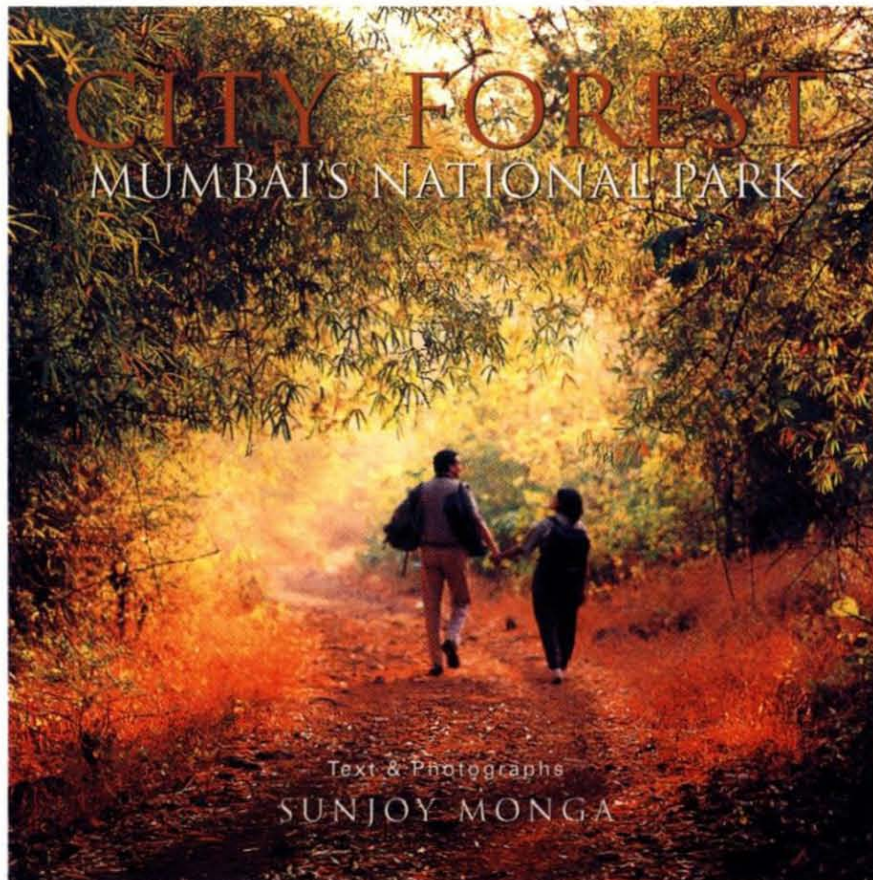
July-September, 2000

*about nature and us*



BOMBAY NATURAL HISTORY SOCIETY

# Come, discover the treasures of a peerless wilderness



The Sanjay Gandhi National Park is a tropical wilderness within the limits of Mumbai, virtually unknown to most people outside the city. A protected area of almost 9,000 hectares, the park is fringed by a burgeoning population of more than twelve million people and is possibly India's most visited nature reserve.

With over 200 stunning photographs, *City Forest: Mumbai's National Park* is a visual celebration of the forest's remarkable biodiversity, offering a glimpse into the secret world of its wildlife. An ideal getaway from the polluted city, this wilderness provides people with a unique opportunity for nature study and environment and conservation education.

RS 1500  
SPECIAL DISCOUNT FOR  
BNHS MEMBERS.  
Contact BNHS office  
for details.

*This book is published with the kind support  
of the Godrej Group of Companies.*



This book is printed on  
100% recycled paper



INDIA BOOK HOUSE LIMITED

412 Tulsiani Chambers, 212 Nariman Point, Mumbai 400021. Telephone 2840165 Fax 2835099 E-mail [ibhpub@vsnl.com](mailto:ibhpub@vsnl.com)

Part of the sales proceeds will be contributed to the IBH Fund,  
a special fund of the BNHS for the conservation of the Sanjay Gandhi National Park.



## EXECUTIVE COMMITTEE

### President

Mr. B.G. Deshmukh

### Vice President

Mrs. D.S. Variava

### 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. Chhappgar

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

Isaac Kehimkar

Gayatri Ugra

Sunjoy Monga

### Layout

V. Gopi Naidu

### Editorial Assistant

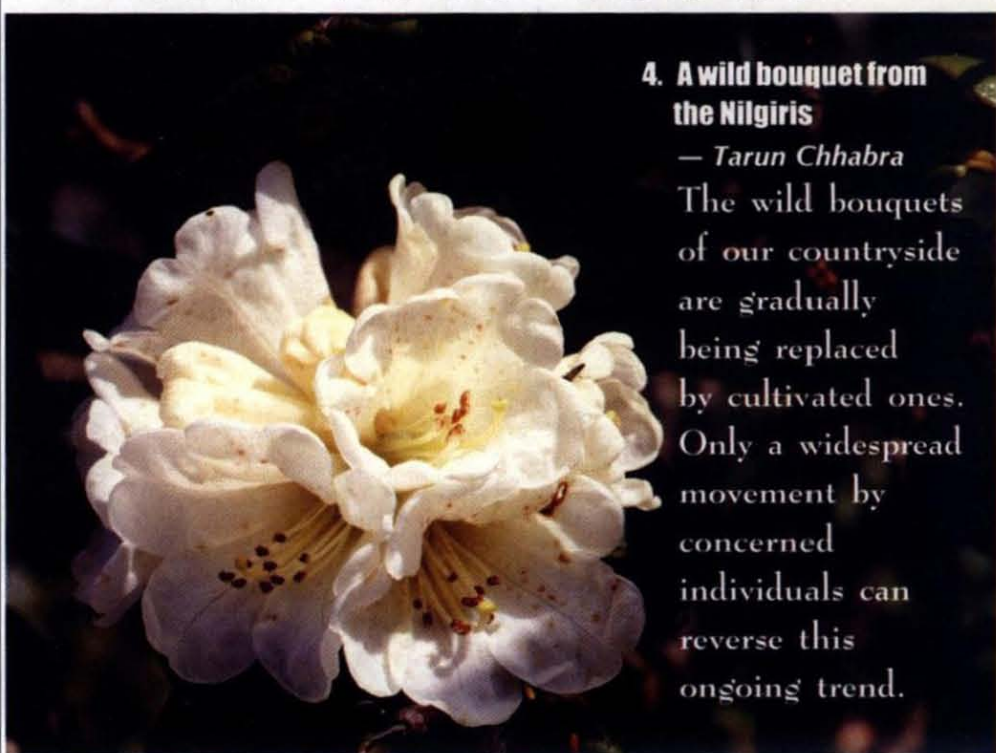
Vibhuti Dedhia

### Cover:

*Strobilanthes kunthianus*

Arokya Das

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. A wild bouquet from the Nilgiris

— Tarun Chhabra

The wild bouquets of our countryside are gradually being replaced by cultivated ones. Only a widespread movement by concerned individuals can reverse this ongoing trend.

## 9. Where the twain do meet

— B.F. Chhappgar

The east may never meet the west, but all along the coast, where the sea water meets fresh water, meet an array of marine life that prefer both or either.

## OTHER FEATURES....

12. .... Miscellanea  
14. .... Butterflies — their early stages  
18. .... The Young Naturalist  
20. .... Review  
22. .... Nature Watch  
24. .... Response  
26. .... Bird Watcher  
30. .... News Briefs  
32. .... News Notes

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.: 282 1811 Fax: (91-22) 283 7615 Email: 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.



VIEW POINT  
**THE CANCER AT KUDREMUKH**

PICS: ASAD R. RAHMANI

THIRTY YEARS AGO, one of the pristine forests in the Western Ghats, Kudremukh, was desecrated by leasing land to the Kudremukh Iron Ore Company. Kudremukh is the highest peak north of the Anaimalais unique in its pure stands of tropical evergreen forests. There are no comparable forests in the Western Ghats and Kudremukh should be a national heritage site. An area that should not have been scarred with mines. The mining lease was, we thought, a temporary governmental aberration, but it is apparently a deep seated and malignant cancer. In spite of the opposition from the Karnataka Forest Department and all environmental groups interested in saving what little is left of our natural forests, the lease has been renewed for a year by the Ministry of Environment and Forests. Tremendous pressure is being brought on the Karnataka government from the highest executive authority

of government to freeze the final declaration of the National Park, to enable still further areas to be denotified, including the sanctum sanctorum of the Park, through which the ore pipeline passes. The mining company, without clearance from the Forest Department, is relaying the pipeline and a road in this area of the National Park. Mining is not the only threat. A highway is planned through the forest, which will sound the death knell for the Park. These developments can only be considered as officially approved vandalism and have to be strongly opposed by an aroused public opinion interested in retaining the miniscule area of land (4.5%) considered as protected areas.

J.C. DANIEL

# A Wild Bouquet from the Nilgiris

The mass planting of thousands of acres of grasslands with eucalyptus, wattle and pines have pushed many rare floral forms to the brink of disaster. A widespread movement by ecologists and nature conservation organisations could reverse the trend of exotic tree plantation, and restore the sacred grass covered hills of the Todas.

With the southwest monsoon at its peak, it appeared as if the Gods were weeping copiously at the destruction caused by *Homo sapiens*. The wind howled and the cold was numbing; my Toda friend and 'guru' Kwattodr kuttan, sensing my plight, guaranteed the end of the monsoon within a week. He explained, 'the *Mawrsh* trees in the shola thickets have started to flower *en masse*, indicating the end of the monsoon.' And sure enough, the monsoon did end abruptly, and the weather cleared up. A trip to the avalanche area, where we saw the *Mawrsh* (*Michelia nilagirica*) trees with numerous fragrant cream flowers, seemed to prove this traditional belief.

I soon learnt that the Todas know of several plants whose flowering indicates the different stages of the southwest monsoon. During May, when the pre-monsoon showers (*Tashkwaadr* in Toda) strike the hills, *Avulashky* and *Nitcashky* are in full blooms. *Avulashky* (*Oldenlandia* sp.) means 'puffed rice' and their white buds do resemble grains of puffed rice.

The early monsoon brings into view several flowers of which those of *Kajehl* and *Arkilpoof* are noteworthy. *Kajehl* (*Ceropegia pusilla* and *C. ciliata*) is now endangered. The bulb was traditionally consumed by the Todas down the ages. According to ancient Toda myth, several of their structures and implements have been traditionally modelled from nature. Of these, the unique Toda milk churning cane stick was modelled on the flowers of this *Kajehl*. Wondering if this was true, I set out looking for this plant.

I thought that since it indicates early monsoon, *Kajehl* should be flowering in June. The weather held, and the setting at the Glenmorgan cliffs was stunning. Kwattodr knew by instinct just where to look for *Kajehl*. Soon it was proved to me that this flower does resemble a miniature Toda churning stick! The bulbs, raw or cooked, also proved to be good to eat, especially when we were tired.

Another species that appears in masses of blooms during the early monsoon is the *Arkilpoof* (*Gentiana pedicellata*) or worry flowers. We set out for the Toda homeland, the Wenlock downs, to see the countless small blue flowers. In many places, it became impossible to walk without

.....  
*Text and Photographs*

**Tarun Chhabra**

A dental surgeon by profession, Tarun Chhabra is a keen naturalist and a BNHS member.

treading on them. It is said that if one has worries and holds an uprooted plant by the stem, the flower closes. It even closes faster if the degree of anxiety is pronounced. Sometimes, when a highly troubled person held this plant, the flower would close in a flash.

By mid-July, the monsoon is at its peak. If one is intrepid enough to venture then into the Nilgiri uplands, one can see the *Kwaadr kolpoof* or monsoon flower in profusion. These delicate flowers, *Anemone rivularis*, have sepals that are white, tinged violet on the outside.

The last phase of the monsoon has its own share of typical flowers. But the most beautiful of them all is the Nilgiri lily (*Lilium neilgherrense*), now rare and restricted to a couple of sites in the Western Ghats. This divinely fragrant flower is called *Pehnaapoof* by the Todas, possibly after its location, near the prehistoric stone circles (pehn) seen on the hilltops. Finally, the mass flowering of the *Mawrsh* trees marks the end of the southwest monsoon.

The post-monsoon phase is the ideal time to view nature's garden in all its splendour. Grassy hill slopes are covered with limitless stretches of



wildflowers, and a single slope in some areas could have scores of species flowering together. In the western Nilgiri downs, wild balsam (*Nawtty* in Toda) are dominant. *Impatiens acaulis* is the most abundant species and a sight of hundreds of these salmon-pink flowers covering a rocky hillside makes for a spiritual experience. There are nine species of balsam endemic to the upper Nilgiris. Of these, *Impatiens nilgirica*, with its exquisite delicate blooms, should be crowned King Balsam. It is now extremely rare, restricted to a couple of tiny patches. *Impatiens laticornis* comes a close second, being an equally rare endemic balsam with lovely pinkish-white hooded and magenta haired blooms.

Numerous other flowers grow in profusion after the rains — seventeen species of ground orchids *Habenaria*, some resembling hooded dolls, others elephant trunks, spiders and so on. Another ground

▲  
The doll-like *Impatiens lawsoni*, was rediscovered after a long search

▲  
*Impatiens orchoides* was one among the few rare endemic balsams seen in the Avalanche area of the Nilgiris





swaying in the wind, are a glorious sight!

It is now early October, and the pre-monsoon showers from the northeast monsoon have commenced. The weather is peculiar, with fragmented showers of rain giving way to a clear sky. The Todas have a name for this weather: *Kaashtk*. A star of this name also appears in the night sky during this period and an exquisite flower, again *Kaashtk* (*Exacium bicolor*), is in full bloom simultaneously.

orchid, *Satyrium neilgherrensis*, a solitary flower, resembles bullock horns, which is *Eshtkwebhadr* in Toda. The powdered bulbs of this orchid are consumed by the Todas as a remarkable tonic. Around shola thickets, the ground orchid *Calanthe triplicata* flowers with splendid lilac florets. This plant is called *Tainersh*, or honey leaves, by the Todas, as the large leaves are moulded to hold freshly gathered honey when no vessel is at hand.

Several umbelliferous flowers can also be seen. Of these, the most prominent is *Heracleum hookerianum* — *Kudynawdrn* to the Todas. This is endemic to a few high hilltops and is used to treat hemiplegic stroke. *Pedicularis* and *Sonerila* are other noteworthy flowering species of this period.

*Pedicularis zeylanica* has several pink corollae, all bird shaped, with a cute beak. The rare *Pedicularis perrottetii* is found only around a few remote rocky hilltops. These large white, swan shaped flowers,

The Todas have 28 such star-weather-plant combinations during the year. The *Nawtty*, or wild balsams, described earlier, are another such example.

The northeast monsoon now sets in with a vengeance. The Todas describe the southwest monsoon as the vitaliser and the northeast as the destroyer. At this time, the *Kar Kaashtk* flowers appear all over the grasslands. They are tiny, attractive flowers (*Swertia* sp.) and are also linked to a star-weather-plant unit.

Towards the fag end of the northeast monsoon, the dazzling yellow flowers of the Compositae family take over the grasslands. *Senecio kundiacus* and *Senecio lawsoni* are prominent endemic examples. But to my mind, the most



The beautiful *Lilium neilgherrense* should be proclaimed the queen of Nilgiri wildflowers

*Impatiens rufescens* was seen in the swamps of the upper western Nilgiris





The blooms of *Impatiens nilgirica*  
win the hearts of onlookers

resplendent blooms of this period, November, are those of *Dipsacus leschenaultii*, which the Todas call *Kwehhmeez*. They are erect plants with exquisite, ball-shaped, white flowers whose heady fragrance beckons every casual passerby. Unfortunately, they have become extremely rare, and we were able to locate only a couple of flowering areas.

Kwattodr kuttan often spoke of another mysterious ball-shaped, whitish flower called *Mukhodpoof* which he had seen over two decades earlier. Sadly, all our trips to its erstwhile habitats proved futile. In fact, when we first saw the *Kwehhmeez* flowers, we were certain that the elusive *Mukhodpoof* had finally been located. But this was not to be.

A well known feature of the late northeast monsoon is the *Kurunji*, *Strobilanthes* sp. These blue flowers, not very attractive by themselves, often cover hundreds of acres along the hills. The

honey collected by the Todas around such areas has excellent medicinal properties. The Todas have ancient songs that describe different kinds of *Kurunji* (and some other flowers) that attract specific pollinating bees! They also know a great deal about the flowering of different *Strobilanthes* species. *Tervarykatt* flowers once in 6 years, *Pelilykatt* every 12 years and *Pyoofkatt* mass flowers every 18 years! *Mofkatt*, which is eaten by the sambar, and *Twaarshkatt*, found on the fringes of the sholas, are other examples. The Todas believe that a wise old man is one who has seen at least seven flowering cycles!

A flower that heralds the onset of the winter, and one of the few that seem to thrive in the harsh hoar frost, is that of the *Rhododendron nilagiricum* tree. To see countless trees, aflame with crimson blooms, is an elevating experience. Although Himalayan *Rhododendron* species are found in different colours, only the crimson species have been seen in the highlands of South India. A few elderly Todas spoke of white and blue forms, but I was not inclined to believe them until we came upon one such tree, with snow white flowers. These we have observed over several flowering periods. Efforts to relocate the blue variety have not succeeded so far.

Although the upper Nilgiri plateau has over eighty endemic floral species, several remain undocumented. A thin bamboo reed, locally called *Theff*, is a building component of the local temples. It could not be identified. It is certain that the mass planting of tens of thousands of acres of grasslands with eucalyptus, wattle and pines have pushed many rare floral forms to the brink of disaster. Only a widespread movement by ecologists and organisations like the BNHS could reverse the unwise trend of exotic tree plantation, and restore the sacred grass covered hills of the Todas. This is my dream. And the Todas' dream too. Let us work towards making this dream a reality.

As the Mother of Pondicherry once said:

*Lo! Here are flowers and benedictions!*

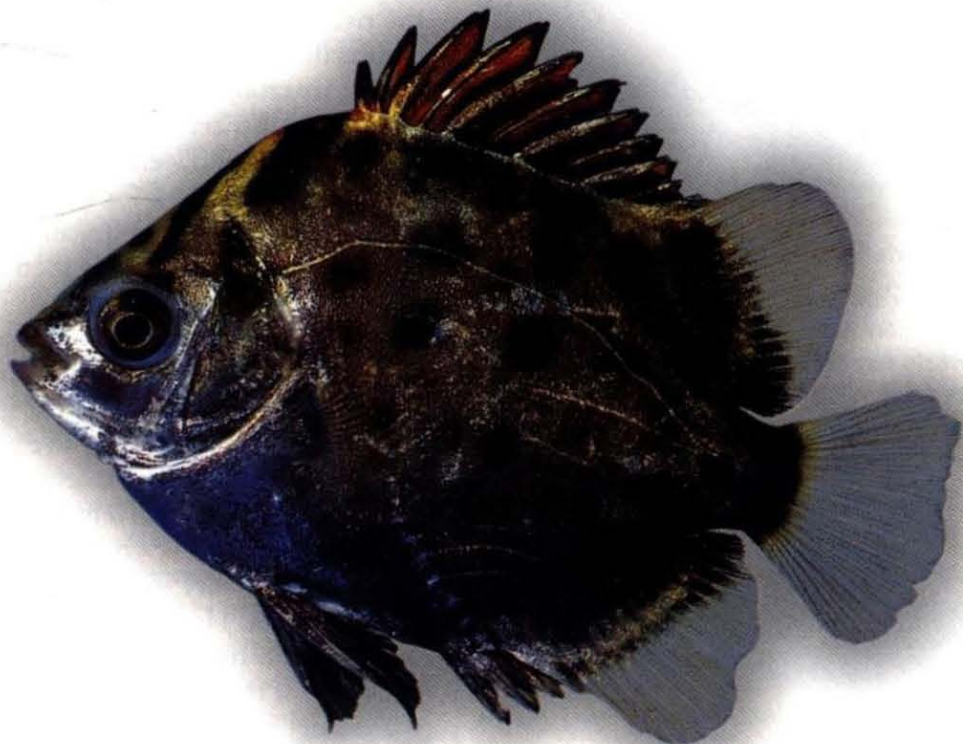
*here is the smile of divine love,*

*It is without preferences and without repulsions.*

*It streams out towards all in a generous flow  
and never takes back its marvellous gifts! 🌸*



# Where the twain do meet



Scat (*Scatophagus argus*) — a pretty estuarine fish with a bad reputation. The scientific name means “Hundred-eyed dung eater” It actually prefers seaweed

## Text and Photographs

**B.F. Chhappgar**

---

The fountains mingle with the river,  
And the rivers with the ocean,  
The winds of heaven mix for ever  
With a sweet emotion;

On the beaches of a northern sea  
Where the tempests shake eternally,  
Where a few grey rushes stand,  
Boundaries of the sea and land.

*Percy Bysshe Shelley*

---

Rudyard Kipling wrote that “East is east and West is west, and never the twain shall meet.” But all along the coast, there are so many places where rivers and seas do meet, to form estuaries, where river water mixes with and gets diluted by sea water. This region is subject to the influence of tides, so there are regular fluctuations of salinity and, to a lesser extent, temperature and dissolved oxygen.

A large amount of water has to flow in (at high tide) and out (at ebb tide) through the rather narrow triangle of an estuary. The mixing of fresh and sea water is usually good at the tidal entrance; the transition point between fresh water and saline conditions ▶

Dr. B.F. Chhappgar, an eminent marine biologist, is authoring the forthcoming BNHS book “Seaside Stories — Marine biology without tears”.



*To a novice, the pearl spot or green chromide (Etroplus suratensis) looks like the marine sergeant-major fish, but it has many white scales, as if pearls have been stuck on its body*



*Seen from above, the curved bands of the target perch (Therapon jarbua) look like the target of rifle ranges, dart boards and archery; the black fin on its back forms the bull's eye*



*Ceylon angel, also called mono, from the shortened derivative of its scientific name — Monodactylus argenteus—is another estuarine fish kept in freshwater home aquaria. It superficially resembles the popular freshwater angel fish from South America, but is a creek dweller*

► depends on the range of the tide and the quantity of fresh water runoff from the river. The action of the tide can be felt a great distance upstream, as much as 950 km in the Amazon river.

In an estuary shaped like a funnel, with a narrow or shallow entrance, the incoming sea water is held back for some time, until the water finally rushes inward as a steep wall which may be as much as a metre high, as in the Ganga. This is known as a tidal bore. In the Tsientang river (China), tidal bores are up to 7½ metres high and advance upriver at speeds of 12 knots.

Most aquatic animals live either in fresh or sea water and cannot tolerate shifting to the sea or river respectively. However, animals living in estuaries — where the water is neither fresh nor very salty — can thrive both in rivers and in the sea. How do they do this?

At ebb tide, river water displaces sea water at the surface. However, the bed of the estuary retains salt water. Hence, the marine forms can live comfortably on the estuary bottom.

Again, in estuaries there is usually a nett upstream movement of salty water near the bottom, while the less saline water flows downstream near the surface. This also



*The rabbit fish (Siganus vermiculatus) is a vegetarian, preferring leafy seaweeds. The species shown here is also called jigsaw-puzzle fish, from the intricate wavy pattern on its body*

enables marine animals to colonise estuary beds. Fishes have the added advantage of being mobile and can move in and out at will, and also survive in water where the salinity can change quickly and drastically.

If you observe fish in an aquarium, you will find them yawning all the time as if bored of doing nothing. But they are not yawning; if you place some coloured fluid near their mouth, you will find that it goes inside when the mouth opens. But the fish is not drinking either. After a moment the mouth closes, the gill covers open, and the water taken inside is now expelled. The apparent yawning, or drinking, is actually the breathing of the fish.

But then, do fishes drink? Well, yes and no. Or, in other words, some fishes do drink. In fishes living in fresh water, there is a tendency for the outside water to flow into the body. The salt content of fresh water is from 0.3% to 0.5%, that of brackish water is 0.9% to 1.5%, and of sea water 3% to 3.5%. The fluid in the tissues of a fish has about 0.7% salt content. The fish's kidney acts as a filter to remove the excess water which has accumulated in its body, and produces urine which is dilute and copious. To minimise loss of salts, the fish's body and gill surfaces are covered with mucus (slime); that is why a freshwater fish is very slippery, whereas a marine fish is usually rough to touch.

In marine bony fishes, water loss occurs as a result of dehydration of body tissues. To offset this loss, less urine is produced by the kidneys, though it is concentrated and usually acidic. The salt that enters the body with the swallowed sea water is selectively

removed by 'chloride cells' in the gills. These cells are similar to the salt secreting cells in the nasal glands of birds and the tear glands of turtles. Marine fish drink sea water but, after the salt is removed by the chloride cells, the water is used to make up for its loss by dehydration. The intestine also absorbs sea water, but selectively removes salts. Freshwater fish do not drink water.

Fishes which live comfortably in fresh as well as sea water are called euryhaline fish. When such a fish enters the sea from fresh water, its chloride cells proliferate to help in the removal of excess salt.

There are three main categories of estuaries. In the Type 1 estuary, when the high tide comes in, a tongue of heavier sea water creeps up the estuary at the bottom, forming a wedge below the lighter fresh water. In Type 2, the flow of fresh (river) water is low, and the tide is strong. Three water layers form: a mixed less salty surface layer, a middle layer below this where the salt water is mixed upward, and a bottom layer of almost the same salt content as sea water. In the Type 3 estuary, vertical water layers are not formed. Instead, the salt water flows up the river on its left bank, while fresh (river) water flows down river on its right bank, due to the twisting Coriolis force caused by the earth's rotation.

Estuaries can also be positive or negative. In the "normal" or positive estuary, the salinity up the river is low because there is a large amount of river water. In the negative or "hypersaline" estuary, on the other hand, there is very little freshwater runoff and a high rate of evaporation. Hence, the salinity is higher upriver than in the open sea. 🐦

*We are grateful to*

**SETH PURSHOTAMDAS THAKURDAS & DIVALIBA CHARITABLE TRUST  
and  
MEHTA SCIENTIFIC EDUCATION & RESEARCH TRUST**

for financial support for the publication of *Hornbill*.  
Their consistent support is greatly appreciated.

## The human ear used as a burrow by a sphegid wasp

A British soldier, recently reported to my father, an account of deafness and on syringing out his ear, portions of a small wasp and larvae were found amongst other debris.

The onset of the complaint had been sudden, the condition of the ear was normal except for rather an excess of wax. Being rather busy at the time, my father asked me to send these abnormal residents of the ear for opinion.

Dr. Hem Singh Pruthi, of the Zoological Survey of India, very kindly wrote the following:

In reference to your letter, dated 24th of August, 1929, addressed to Dr. Prashad, I have to inform you that the larvae are of Lepidoptera, whereas the adult insect (broken in pieces) is a Sphegid (Hymenoptera), probably belonging to the genus *Gorytes*.

Sphegids prey on many insects, including Lepidopterous larvae, which they paralyse by stinging, subsequently storing them in suitable burrows for their young ones to feed on. In the case under reference, it appears that the

wasp mistook the ear of the patient for a burrow in a wall. If so, he must sleep very soundly indeed!

(Sd.) Hem Singh Pruthi, Assistant Superintendent, Zoological Survey of India.

Foreign bodies in the ear are of interest to many; in this case it seems lucky that the man awoke when he did; otherwise, he might have found a hymenopterous family inhabiting his ear, the buzzing of which would have been even more intense than that described by Dr. Oliver Wendell Holmes in his 'Stethoscope Song'.

Further research into the aural contents of those working in some official offices might lead to more interesting finds, perhaps spiders to catch the daring hymenopteron or even 'bats'.

Hoping that the above short notes may prove of interest to readers of the Journal.

LORNA BOYD

Ferozepore,

September 13, 1929

## Of Ratels and Corpses



### I

Nearly thirty years ago, I was in charge of the Hoshangabad Division. It was one of these years of scarcity, not amounting to famine, and I succeeded for the most part in staying off a Gazette Notification of condition of 'Famine' consequent to which all sorts of things happened.

As is usual under these conditions, mortality was very high, and a wave of cholera passed through the forest villages under my control. I was camped in a village in the extreme western borders of the District, just after this wave had passed.

The Range Officer informed me that there was a man of the village who 'Had risen from the Dead'. He had! And what is more, he believed it himself, along with all the surrounding population. I interviewed the old man — a Korku. What had happened was this. He had apparently passed out. As interments at the time were daily occurrences these were executed in a perfunctory manner: the usual heap of stones was dispensed with.

The old man informed me that whilst he was dead he remembered nothing, but that he

remembered sitting up, and that he was covered with earth, and that he was looking into the face of a hyaena, to whom he said 'Hut Jao!' He could hardly have said less! He then crawled back into the village, arriving with daylight.

In those days Korku huts were contained under one continuous roof running east and west with a main street between the two rows. On his arrival, most of the village did a rapid exit out of the other end of the street.

These undeniable facts intrigued me, so I visited the spot where he had been interred, and came across some 16 to 20 graves of quite recent origin. Most of the corpses had been partially or wholly uncovered. This was the work of two hyaenas, five jackals and two ratels. The two first had left evidence as having been at some or other of the corpses: the ratels had been associated with all of them. The castings of a burrowing animal are individual to the species and unmistakable: it was obvious that the ratels had been the chief excavators. I had had somewhat similar evidence in the Jabalpur and Mandla districts during the famine of 1900.

A.A. DUNBAR BRANDER

Ivy Bank, Bishop Mill, Elgin, Scotland,  
June 26, 1936

## II

In the year 1917, while in charge of a sub-division of the Central Provinces Government Railway Police, the body of an unidentified man was found on the railway track near Gondia. The local Sub-Inspector of Police and members of the inquest were of opinion that the deceased had been killed by a passing train. In accordance with custom, the body was made over to sweepers for burial.

Some days later, anonymous letters were received stating the identity of the dead man, and that he had been murdered. After certain verifications it was decided to have the body exhumed for medical examination. The writer, accompanied by an Indian magistrate, had the

unsavoury duty of supervising the proceedings. Enquiry showed that the burial had taken place in an area used for the interment of low-caste Hindus. This place was some distance from the town, and situated near a thick grove of trees on the bank of a deep *nala*.

After the usual formalities to ensure the exhumation of the identical body, we arrived at the correct grave to find that it had already been disturbed. Rags and pieces of the skeleton were strewn about; there were two or three holes, about a foot in diameter, tunnelling into the grave; and it was perfectly clear that these had been made by some animal. The body had been thoroughly destroyed.

The sweepers, and a local Muhammadan constable who had accompanied me, said *Oode Masans* had done the exhuming. Not having heard the name *Oode Masan* before this I became inquisitive and questioned several other persons standing around. The replies I received mystified me all the more, and it was decided, at the suggestion of the Muhammadan constable, to search the grove for the mysterious disturber of the dead.

The search resulted in two full grown ratels, with three half-grown youngsters, being dislodged from the hollow trunk of a dead tree. These escaped into the undergrowth and were not seen again.

I have no direct evidence that the ratels were responsible for this, and other exhumings indicated by the condition of several graves in the vicinity; but it is well known how negligent the poorer members of the low-caste Hindu community are in regard to the burial of their dead, such being frequently unearthed by hyaenas, jackals and other prowling scavengers. All the natives present were unanimous that ratels were the culprits.

L.E. CLIFFORD HURST

Indian Police  
The Lodge, Coonoor,  
June 3, 1935





# Butterflies

## — their early stages

Text: Naresh Chaturvedi and Isaac Kehimkar  
Photographs: Isaac Kehimkar

### BLUE MORMON *Papilio polymnestor*

**Egg:** On locating the right food plant, the female lays at a time a single spherical egg, about 1.8 mm wide, on the upper surface of the leaf. A freshly laid egg is pale green, which turns yellowish-orange after a few hours. The female prefers to lay her eggs on leaves growing in shaded area, about 3 m above the ground. The young larva, on hatching, eats the egg shell as its first meal. It then weaves a web at the edge of the leaf to rest on.

**Larva:** In the early instars, the larva resembles a fresh bird dropping and rests in the middle of the leaf, along the midribs. In the last instar, the larva is dark grass-green with a velvety appearance. On either side, there is a white lateral line, with a yellowish shade above it from segments 2 to 5. Near the hind margin of the 13th segment there is a pair of short, fleshy, greyish-white tubercles. Its body is covered with minute, almost invisible, erect hairs.

During the last two instars, the larva is often seen sitting on stalks, twigs or branches. When alarmed, the flesh coloured forked osmateria, having a strong pungent smell, protrudes from the back of its head. This chemical defence is mainly against parasitic wasps and flies.

**Pupa:** When the larva nears pupation, it voids the undigested contents of its last meal. It darkens and comes to rest temporarily. And later

wanders on the branches, searching for a suitable place for pupation. The larva, while wandering, may sometimes climb down, to pupate on some other plant or even on a fence or pole. Pupation usually takes place on the underside of the leaf or on a twig. The pupa may be green when formed amongst the foliage and mottled greyish when formed in a drier surrounding. The adult is known to emerge after 14 to 21 days under favourable climatic conditions. The emergence could be prolonged under unfavourable conditions.

The Blue Mormon is often seen sipping nectar or resting with its wings spreadout horizontally, like most Swallowtails. The males can also be seen mud puddling in wet patches. The adult Blue Mormon is a strong flier and commonly seen in the forested hilly regions. It is known to fly down to the plains during monsoon. They fly up to 10 m above the ground during migration. This swallowtail is known to occur in Sikkim, West Bengal, Madhya Pradesh, Bihar, and in the Western Ghats up to Mumbai. This butterfly has been sighted in the Bombay area for the last four years, during August and September. There are records of it laying eggs, and breeding successfully, wherever it finds a citrus plant in the city. 🍌



**THE CALL OF THE WILD**



**Great Indian Onehorned Rhinoceros**

**ARUP BALLAV GOSWAMI**



# THE YOUNG NATURALIST

Compiled by:

V. Shubhalaxmi and Vibhuti Dedhia



DPA-VI

## A Weed in deed and in need!

A versatile shrub of South America, the lantana was brought to India as an ornamental plant. It has overrun large areas with its prolific growth and developed into a serious pest. Its wide adaptability can be attributed to its:

- Growth in varying climatic and soil conditions.
- Survival in heavy (more than 5,080 mm) and poor (about 762 mm) rainfall.
- Growth in rich and poor soils, in gravel and laterite soils and, in low-lying areas and hills (up to 1,800 m).

Lantana is a drought resistant plant, it loves light, but can tolerate moderate shade. It blossoms and bears fruit almost throughout the year. And is a source of fire hazard in deciduous forests, as it burns even when it is green.

Lantana propagates readily from stumps or cuttings and seeds disseminated through bird droppings. Hence, all methods of combat: mechanical (cutting, trampling, burning), chemical and biological have failed to keep a check on the lantana's spread. Its complete eradication over large areas is difficult and expensive. Biological control by insects is reported to have met with some success in Hawaii and Fiji islands, but has not been pursued in India, as the effect of introduction of foreign insects on other plants is yet not known.

Its not just destruction all the way with a lantana. Lantana can be beneficial under certain forest conditions. It retains humus in deforested areas, checks soil erosion and improves fertility of degraded land, rocky, gravel or hard laterite soils. It can be composted with other materials. Its fruits are edible. The stem can be used as a toothbrush, and leaves for polishing wood. But beware, lantana is poisonous for cattle. ♡



## The King of Snakes

Popularly known as the King Cobra today and hamadryad earlier, the world's longest venomous snake, is not a true cobra. Its slender hood superficially resembles a cobra. Unlike true cobras, its diet consists of envenomated and paralyzed snakes. It prefers the dense evergreen forests of the Western Ghats, Orissa, Bihar, West Bengal, Andamans, and the northern hill forests, a habitat generally not preferred by cobras. It belongs to the genus *Ophiophagus*, which is entirely different from that of cobras (*Naja*). The hamadryad found in India grows up to 5 m long. Though not rated as very toxic, an adult snake can yield up to 7 ml of venom, enough to kill an adult elephant!

When threatened, it puts up a splendid defence by raising its hood, growling and charging at the

intruder with an open mouth.

Hamadryad is the only snake which makes a nest for laying eggs. The female gathers leaves and humus with her tail and body to construct a conical nest, about 30 cm high. Having laid her eggs at the bottom of the nest, she guards them for around sixty days and moves away, to hunt, only when the hatching time is near. The hatchlings disperse soon. They climb up bamboo stands looking for young snakes and probably skins for food.

The only enemy of the king cobra is man, who generally shoots it, whenever the two cross paths. Large tracts of pristine forest are being cleared and destroyed

threatening its habitat. Sadly, this fascinating, but rare reptile, still remains largely unstudied. ♡



ISAAC KEHINKAR

## WIN ADVENTURE HOLIDAYS

The prizes\* are sponsored by India Outdoors  
Neelkanth Niwas, 169/C, Dr. Ambedkar Rd,  
Dadar T.T., Mumbai 400 014.  
Tel: 412 5897/416 4785, Fax: 416 6944  
Email: info@indiaoutdoors.com  
www.indiaoutdoors.com

1. The state animal of Maharashtra is  
(a) Tiger (b) Chinkara  
(c) Elephant (d) Giant Malabar Squirrel
2. The tallest Indian bird is  
(a) Sarus Crane (b) Black-necked Stork  
(c) White Ibis (d) Flamingo
3. The longest river flowing through India is  
(a) Brahmaputra (b) Ganga  
(c) Narmada (d) Tapi
4. The Bishnois of Rajasthan are known to protect  
(a) Chinkara (b) Blackbuck  
(c) Sambar (d) Cheetal

 **India  
Outdoors**

MUMBAI'S LARGEST  
ADVENTURE TRAVEL CO.

### 1st Prize

2 nights / 3 days Rafting Package

### 2nd Prize

Outdoor camping at Karnala Bird Sanctuary

### 3rd Prize

India Outdoors Nature Club Life Membership

\* Inclusive of meals and overnight stay; not including arrangements to reach the appointed destination.

Send your answers to:

Editors, Hornbill,

C/o Bombay Natural History Society

Ans. (Apr.-Jun.): c. King Cobra, c. Sambar,

a. Indian Bull Frog, b. Southern Birdwing

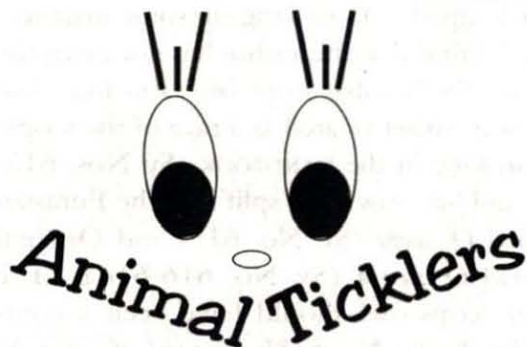
Winners of the Adventure Holidays Contest

(Hornbill October-December, 2000)

1st Prize : D. Devarshi

2nd Prize : Ajaya Jain

3rd Prize : Chandresh Lodhiya



How do you know that owls are  
cleverer than chickens?  
Have you ever heard of  
Kentucky Fried Owl?



What do a vulture, a pelican and  
a taxman have in common?  
Big bills!



Why were the flies playing  
football in a saucer?

They were playing for the cup.



What is Smokey The Elephant's  
middle name?

The.



A flea jumped over the swinging doors of  
a saloon, drank three whiskeys and  
jumped out again.

He picked himself up from the dirt, dusted  
himself down and said, "OK, who moved my  
dog?"



Waiter, waiter! There's a fly in my soup.  
Don't worry, sir, the spider in your bread  
will get it.

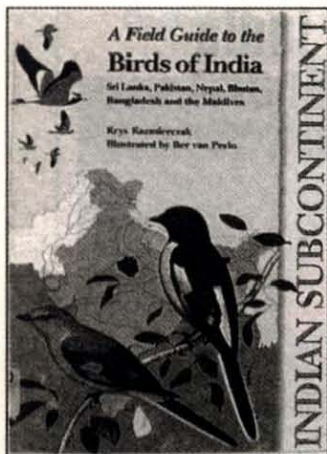


What's wet and wiggly and says  
"How do you do" sixteen times?  
Two octopuses shaking hands.



A man went into the local department store  
where he saw a sign on the escalator —  
dogs must be carried on this escalator.  
The man then spent the next two hours  
looking for a dog.





**A Field Guide to the Birds of India —  
Sri Lanka, Pakistan, Nepal, Bhutan, Bangladesh and the  
Maldives**

by Krys Kazmierczak, Illustrations by Ber van Perlo

Published by Om Book Service, New Delhi, 2000.

pp. 352 + 96 plates, (15.5 x 21.5 cm). Price: Rs. 795/-

**Reviewed by Ranjit Manakadan**

Looks like it's going to be a buyers' market for bird books on the Indian subcontinent with the publication of *A FIELD GUIDE TO THE BIRDS OF INDIA — SRI LANKA, PAKISTAN, NEPAL, BHUTAN, BANGLADESH AND THE MALDIVES*. Earlier, the roost was largely ruled by Sálim Ali and S. D. Ripley's *magnum opus* *HANDBOOK OF THE BIRDS OF INDIA AND PAKISTAN*, and the more popular *THE BOOK OF INDIAN BIRDS* (Ali) and *A PICTORIAL GUIDE TO THE BIRDS OF THE INDIAN SUBCONTINENT* (Ali and Ripley). There were some regional bird books, including the comprehensive *BIRDS OF PAKISTAN* by T.J. Robert in two volumes (1991, 1992).

The first major challenge to the dominance of Ali and Ripley's books was the publication of *BIRDS OF THE INDIAN SUBCONTINENT* by Richard Grimmett, Tim Inskipp and Carol Inskipp in 1999, followed by the paperback edition in 2000. The arrival of these books with changes not only in the classification order and scientific names, but common English names too, put Indian birders in a state of turmoil. However, the quality of paper, print clarity, sketches of birds, and the updated information provided, made these books 'a must buy' for serious birders. The book under review is a continuation of the trend, and with at least one more field guide expected in the coming months, birders of the Indian subcontinent can finally afford to be choosy.

The book covers (with illustrations and distribution maps) the 1,300 odd species that occur in the Indian region, including a few others of the neighbouring countries that may occur

here. As a regular user of Ali & Ripley's *HANDBOOK*, still the Bible for Indian birds, I appreciate the author's consideration in providing Ripley's Synopsis Number (Sy. No.), given for each race and species in the *HANDBOOK*, an easy reference for users of this guide. Additionally, one gets to know cases where species have since been 'split or lumped'. On looking-up some instances of 'splits', I find that the author has not given the Sy. No. for the Nicobar scops-owl *Otus alius*. The species was earlier treated as a race of the scops-owl *Otus scops* in the *HANDBOOK* (Sy. Nos. 615-618b), and has now been split into the Eurasian scops-owl *O. scops* (Sy. No. 615) and Oriental scops-owl *O. sunia* (Sy. No. 616-616a). The Nicobar scops-owl should have been accompanied by the Sy. No. 618b, instead of wrongly placing this number under *O. sunia*. The Sy. No. of the golden-spectacled warbler *Seicercus burkii* (now split into several species, three of which occur in the Indian region) should be 1614-1615a, instead of 1616-1619.

The nomenclature broadly follows that of Grimmett *et al.*, and includes more recent revisions. The English names also conform largely with Grimmett *et al.* A major deviation of the book vis-a-vis Grimmett *et al.* is the adoption of the older and more familiar Peters-based classification and not the DNA based classification as propounded by C.G. Sibley, J.E. Alquist and B.L. Monroe in 1988. It appears that after all the hullabaloo on the need to adopt the new classification, the general opinion now is that one

should continue to stick with the Peters' list till the 'creases' (possibly many!) in the DNA based classification get 'ironed out'.

The plates are more like line drawings and lack the 'natural look' (e.g. lesser florican and bengal florican - Plate 29). The 'flatness' of plates 9 and 10 makes the duck look more like decoys! The plumage colouration is wrong in some species, and the bright green train of the Indian peacock (Plate 28) is unforgiveable. The black used is too dark for many species (e.g., hornbills - Plate 52, mynas - 61 and woodpeckers - 54). Body proportions of certain species are also erroneous. The Indian peahen does not have such a thick neck. Nor have I come across a hen great Indian bustard with such a stout and short neck in all my years of work on the species (Plate 29). The neck of the hen is much slimmer than the cock's, also both have longer necks than are depicted in the book.

The font size is too small, elderly birders will find it too taxing for their eyes. On comparing it with the HANDBOOK and Grimmett *et al.*'s publications, I realise that with an equally small font size, the creamish and non-glossy paper of the HANDBOOK is more comfortable to read.

There is a surfeit of symbols in the text due to the need for brevity (as mentioned by the authors). Maybe one learns the symbols with time, but for the occasional reader, it is tedious to have to turn pages to know what the symbols mean. It is perfectly easy to remember abbreviations as W for winter or V for vagrant, but (\*) for localised or patchily distributed is a bit taxing.

One has to solely rely on the distribution maps to know the distributional range of the species (requires good geography!). Most birders on identifying a new species in the field with the help of field guides, want to know its distributional range (especially to check if the species is a new record for the area). A mention of the distribution along with the other information would have been more convenient

than having to search for maps elsewhere in the book. It would have been a better idea to put all the distribution maps sequentially at the end of the book.

Another lapse, if I may call it so, is the absence of the alternative common (English) names. Had they been given after the description of the species, it would have made things easier for birders not familiar with or who do not wish to adopt names used in the book. For example, I would consider it preposterous to call the white-necked stork as the woolly-necked stork. Giving the alternative name in the text (and not only in the index as in this publication) would have added to the worth of the publication, especially since the issue of common bird names has still not been sorted out. The author's non-use of hyphens for group names (e.g. bamboo-partridge, eared-pheasant, eagle-owl, horned-lark) - as was in the case of Grimmett *et al.*'s publication, unnecessarily adds to the 'dilemma' of common names, especially since hyphens for group names have been adopted by Sibley & Monroe (who first brought out the issue of common name changes with their publication in 1990), Birdlife International's on-going volumes of the HANDBOOK OF THE BIRDS OF THE WORLD and M.G. Wells's (1998) WORLD BIRD SPECIES CHECKLIST.

Priced at Rs.795 and hardbound, it is a hundred rupees more than Grimmett *et al.*'s paperback POCKET GUIDE (which has better quality plates and textual information). One can pick it up, or better still, decide after the arrival of the other field guides expected within this year. Indian ornithology has started moving at breathtaking speed! 🐦

### New Release

#### Tara — the Cocktail Tigress

Dr. Ramlakhan Singh gives an account of genetic pollution in the Indian Tiger.

Published by: Print World,  
Hardbound copy Rs. 300/-.

pp. xxiv + 90



**Text and Photograph: Usha Ganguli-Lachungpa**

Biodiversity surveys in several remote and inaccessible areas of Sikkim have revealed that information on many species of Sikkim is yet to be sought. One such example is *Yarcha Gombuk* (Bhutia, Tibetan) or the ‘Summer Grass — Winter Worm’.

I first heard about this ‘walking plant’ from some Bhutia tribals and Tibetans in 1984. Some described it as a caterpillar with a stick growing from its head. The first specimen I saw, was brought in by a young forester, in the first week of September 1999. It was a dried, brown caterpillar with a 7.5 cm long, stick-like projection on its head.

A short note on this ‘Peter Pan’ of Sikkim Himalayas, in the newsletter of the Sikkim Science Society, in 1994, had called it a ‘combination’ of *Cordyceps sinensis*, a species of capless fungus and, *Hepialus virescens*, a moth caterpillar. This habitually parasitised caterpillar is apparently found at high altitudes in north and west Sikkim, from the slopes of Thay La, the Kishong La area and around the Yunthang meadows in north Sikkim. Along the Lachung Valley, from Khora Phu area above Sebo, from Sim Tsokha beyond Dombang Valley and at Langthang Tsokha above the Yumthang meadows. A Lachenpa porter, accompanying a Japanese expedition to Green Lake in 1995, reportedly collected and gave specimens to one of the Japanese mountaineers.

The parasitised caterpillars are collected around October, when the fruiting bodies of the

fungus are exposed above the ground. Experienced collectors, look through the vegetation, for the erect fruiting bodies of the fungus, which are extracted along with the vertically embedded caterpillars and later sun dried.

Other caterpillar-fungi have also been recorded. *Hepialus fabricius* is found in soft soil or in grassy marshlands over 4,000 m, in China. One of the oldest records of *Hepialiscus* (*Hepialus*) *nepalensis* Wlk. for India is from Simla, Kulu, and ‘Sikhim’ (*sic*) in the Himalayas.

The caterpillar-fungus has been used in traditional medicine, since time immemorial. A search on the Internet, will yield many results of Chinese use of the parasitised caterpillars (*Dong chong xiz cao*), as a stress-relieving tonic and for various other medicinal uses. Its use in Sikkim, other than the limited use by the local *Amji* or Tibetan doctors is, however, not yet studied.

The caterpillar-fungus is believed to have medicinal properties and often mythical virility hence, enhancing its commercial value. It has been collected routinely from the wild, along with the traditional medicinal herbs. Since the collection sites are normally kept secret, most people are unaware of its existence. No study has been initiated so far for the *Yarcha Gombuk*, and its status in Sikkim remains unknown.

However, according to the Wildlife (Protection) Act, the moth classifies as ‘wildlife’. Its habitat in Sikkim classifies as ‘forest land’ according to the Forest Act. The collection or harvesting of this exclusive, expensive, rare and widely sought natural resource, from the wild, constitutes a wildlife crime and the trade is illegal, as no permits have been sought from or issued by the Department of Forests, Environment and Wildlife, Government of Sikkim. A member of the Khangchendzonga Conservation Committee (KCC) recently brought the illegal collection of plants including, *Cordyceps sinensis* from west Khangchendzonga National Park, to the notice of the Divisional Forest Officer.

Many modern drugs are derivatives of plant chemicals, long used as traditional medicines. The high altitude *Yarcha Gombuk* seems to be one of

## Obituary



J.S. Serrao

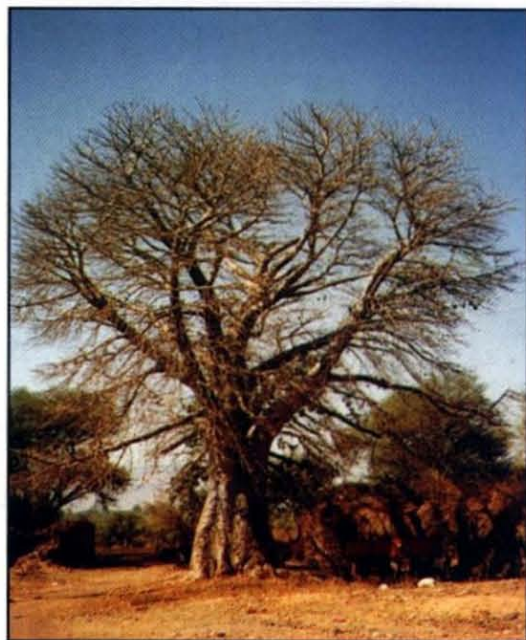
Mr J.S. Serrao, who passed away on August 24, 2000, at the age of 84, worked with the BNHS for almost forty years. He was a repository of knowledge, information and anecdotes which he shared freely and enthusiastically with one and all. He was a veritable institution within an institution, a library of knowledge within the BNHS library. His face would light up with joy as he dipped into the treasure trove of his knowledge and memories, and shared them. His generous heart always had place for those in need of help and he was never hesitant in seeking help for a deserving person, who was in need of support. In this way, he made a difference in the lives of many. With his passing, there is one more gap in the fabric of natural history and the conservation movement. A part of the BNHS history has passed away with him.

*Cont'd from p. 22*

the few fungi that have found their way into medicinal use. Its traditional collection suggests that though rare, the species of both the moth and fungus may not be endangered. It would be interesting to have a study initiated on the present status, trade, local folklore and uses of the little known caterpillar-fungus of Sikkim. It could be complemented by researching the properties and life-cycles of both the moth and fungus, and an awareness drive. 🐛

## The Baobab Tree

— J.S. Serrao



ASHOK KOTHARI

It is said that the shiploads of troops and sailors who came to India as Portuguese adventurers, spent their time in transit from Lisbon to their destination in drinking orgies. So much so, that by the time they reached Africa their livers were in a bad state. Here in Africa, they sought medical help from the local men of medicine. The African medics treated them with a brew made from the baobab fruit. Restored back to health, the Portuguese *fidalgos*, resumed their voyage to their Indian destination, but carried with them some of these baobab fruits in case of a relapse. Once they landed at their Indian destination, they threw the baobab fruit about their settlements. From such thrown away fruits, sprouted the baobabs we see in India.

It is computed, that a baobab takes 400-600 years to reach maturity, and according to this computation, the baobab that stands opposite Bhabha Hospital, Bandra, and the one on Saraswati Road in Mumbai should be ancient indeed.

From all that is said above, it is safe to infer that wherever a sizeable baobab stands, there must have existed a Portuguese settlement or at least some Portuguese influence. 🐛

## VULTURE WATCH IN KUTCH



J.K. TIWARI

The decline in vulture population over the last few years was brought to notice by the articles written in *Down To Earth* by Dr. A.R. Rahmani and in *Hornbill* by Dr. Vibhu Prakash. One never thought that vultures would one day be threatened. Whatever the reason, disease or overuse of organochlorine insecticides, the results are alarming.

Four resident species, the white-rumped, long-billed, king and Egyptian vulture and two migratory species, the cinereous and griffon vultures can be seen in the Kutch district. Sight records in the

last decade indicate a general decline in the numbers, which could be due to the over use of insecticides in agriculture and hazardous chemicals by cattle graziers to kill predators like wolves.

The two disastrous cyclones in Kutch, (9th June 1998 and 19th & 20th May 1999) took a great toll of wildlife. At least 50 vultures died in Naliya town alone.

Vulture watch groups, should be formed in all parts of the country as suggested by the BNHS.

S.N. Varu & J.K. Tiwari,  
*Kutch.*

**Editors' note:** A 3 day workshop on vulture problems was jointly organised by the Royal Society for Protection of Birds, UK, Ministry of Environment and Forests, Government of India, the BNHS and the World Wide Fund for Nature — India, at Delhi on 18-20th Sept., 2000. The drastic decline in vulture populations in recent years has been attributed to a new viral disease, according to papers presented at the workshop by various scientists.

## ALL FOR A FEMALE !

On April 1, 2000, late in the morning, I heard two mynas (*Acridotheres tristis*), making a lot of noise. The two birds seemed to be fighting over a female. They had clasped each others legs and were pecking at each other.

They went all around my backyard fighting on the ground. After sometime, a few babblers (*Turdoides affinis*) arrived and began mobbing the mynas, lending their voice to the racket. The tussle lasted for about 3-4 minutes, to which the babblers were active spectators.

Amitabha Epur,  
*Hyderabad.*



## SECRET AGENT 007

It amused me to learn that James Bond, secret agent 007, got his name from an ornithologist, author of *FIELD GUIDE OF BIRDS OF THE WEST INDIES (1936)*. Ian Fleming, writer of the detective series, was looking for a name which would be brief, unromantic, and yet masculine. When he saw the bird book in Jamaica, Fleming concluded that this was just what he needed. Thus, a famous ornithologist's name is now known to all film buffs.

Rashna B. Peer,  
*Mumbai.*

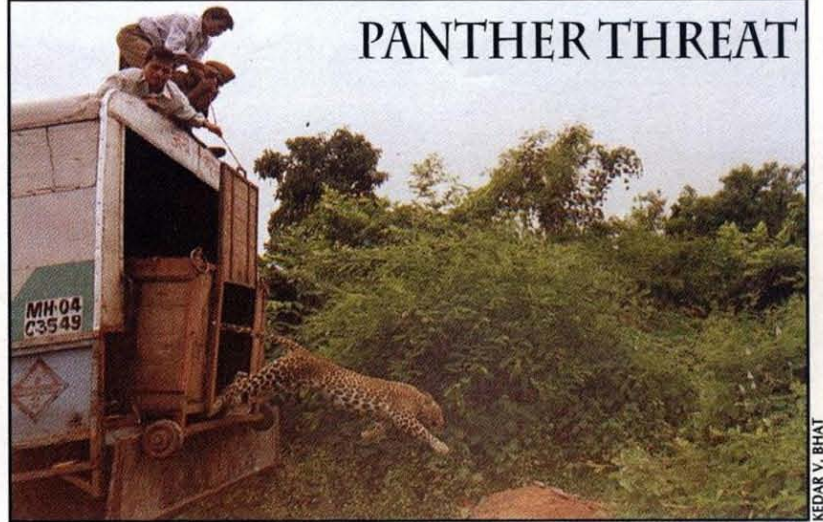
**Editors' note:** The book is present in the BNHS Library.

## SAY NO TO PLASTIC

On June 8, my friend Mahesh Pawar brought a young pariah kite which had fallen from a nest. On examining the bird, I found its left leg swollen above the ankle and entwined with plastic and jute strings. I removed the plastic bit by bit as it had cut deep into the tissue. After recovering the plastic, I examined the ankle and foot: it had sensations and the claws moved slightly. I was happy, as the bird had not only escaped neurological damage, but would in due course also be able to use its leg. The young pariah kite was sent to the Snake Park Orphanage where Mr. Neelamkumar Khair looked after the bird till it was fit to fly.

These days one can see crows using plastic wires, and the common, brahminy and jungle mynas using plastic for nest building. Could the use of plastic over the traditional building material be due to its easy availability and light weight? Does it act as an insulating agent, keeping the nest warm? Is it hygienic, as droppings do not adhere to plastic? Is it to decorate the nest as seen in bower birds? Whatever the reasons, the above incident points otherwise. Can't we say no to plastic for our flying friends?

Dr. Sattayasheel Naik,  
*Pune.*



KEDAR V. BHAT

## PANTHER THREAT

On August 23, 1999, a 3 year old panther was trapped by a team headed by Sameer Deshpande, Range Forest Officer (RFO), Yeoor, Sanjay Gandhi National Park (SGNP) in the backyard of Edan Woods housing complex, Thane, located at the periphery of SGNP. Residents of Edan Woods and the neighbouring housing complexes had regularly sighted the panther in the wee hours of the morning

At least five times in the past two years, a panther was trapped by the Forest Department in the surrounding Ghodbunder, Kalshet, Manpada region. Some were released in the Nagla-block of the SGNP and some in the Tansa Reserve Forest. The present panther was released in the Nagla-block. All six panthers trapped in the past two years were 3-4 years old and no human was attacked. But residents were worried at having panthers in their backyard. The housing complexes virtually touch the periphery of the SGNP. RFO Sameer Deshpande, pointed out some causes of the problem.

- Stray dogs in the region.
- Uncleared shrubs in the backyard provide a hideout for panthers.
- Broken compound walls.
- Improper lighting in the concerned locality.
- Security personnel of the Society are not trained appropriately, keeping in mind the proximity of the Society to the National Park.

Kedar Bhat,  
*Thane.*



# Friends Forever!



## **Text and Photograph: Gargi**

**I**t was a cold November morning in 1997, with the sun filtering through the thick blanket of fog, that had engulfed the marshes and the forests of Keoladeo National Park (KNP). The halcyon morning was disturbed by the resonating duet of a pair of graceful sarus cranes. A loud, but flutey call also rhymed along with the duet. Soon, various shapes began to emerge in the marshes, as the veil of mist lifted, making way for the first light of dawn. Out in the marsh, a few hundred metres away, the image of three figures, standing tall became visible. The sunrays suddenly lit up the tall figure of Baharami — a snow white Siberian crane, standing in the shallows, looking majestically all around herself. Baharami was part of an experiment which the Bombay Natural History Society was conducting in association with the International Crane Foundation and Ministry of Environment and Forests, Government of India, to save the fast dwindling population of Siberian cranes from extinction.

The Siberian crane is a highly endangered species wintering in India. Its population has



An unusual relationship  
seemed to develop  
between these  
two species, known for  
their inherent enmity.  
The bond between  
the congenierics was  
getting stronger with  
each passing day.



reduced to only a pair, due to hunting, from a recorded population of 200, in 1964, at KNP, Bharatpur, Rajasthan, the only known wintering ground of the species in India. Three populations of Siberian cranes have been recognised on the basis of location of breeding and wintering grounds. Of these, the central population of an estimated two birds breed in the Kunovat river basin and winter at KNP. They migrate from western Siberia to their wintering ground in India, through Kazakhstan, Uzbekistan,

Turkmenistan, Afghanistan and Pakistan covering a distance of about 5,600 km.

We were studying the captive bred Siberian cranes released in the Park, to see if they would survive the rigours of the wild and the torrid tropical climate to migrate with the wild cranes to Siberia, raise young, and save the population from extinction.

The four, parent reared, captive bred Siberian cranes were flown to the Park, from the International Crane Foundation, USA, on January 29, 1997. They were banded with different colour combinations on the same day. The birds were also banded with the BNHS metal ring and a green leg band with a radio transmitter. There were three females, Ayafat, Baharami and Annbur, and a male, Alkanost. Before releasing the birds in the wild, the cranes were kept in quarantine for 13 days. While in quarantine, they were kept in pens erected in the marshes of the Park.

Sarus cranes usually arrive in the Park, during summer, when the water starts drying up everywhere. They breed in the marshes, usually at the edge of wetlands, towards shallow water areas. Their chicks are quite big when the Siberian cranes arrive, usually in November. They winter in the Park, and establish feeding territories in the marshes, in areas of about 30 cm deep water, which usually overlap part of the sarus' breeding territories. This results in constant squabbling over territorial rights. It is usually the taller and stronger sarus, which drives the Siberian away.

However, this time an unusual relationship seemed to develop between these two species, known for their inherent enmity. The two year old female Siberian — Baharami, seemed to have struck a chord with the new arrivals in the Park. An interesting incident, worth recording, occurred when a group of villagers entered the water to remove aquatic grass for their cattle. Baharami with her wings spread wide, repeatedly lowered and thrust her neck aggressively at the villagers. I could barely see the two sarus, our resident cranes, foraging just behind her outspread wings, unmindful of the villagers, and

probably confident of the ability of their fair complexioned cousin to keep the villagers at bay.

A family of wild Siberian cranes arrived in the Park, during mid-November in 1997. The cranes landed in a lake behind the Keoladeo temple, also known as Block 'E', as they did every year. The shallow water and thick vegetation of Block 'E', finally made them settle for Block 'D'.

Baharami often flew to Block 'D' with the sarus. The entire wild Siberian crane family of the block would come charging, whenever she landed in the lake. Her two escorts, would then aggressively defend her and chase the attackers away. The three would then, in chorus, announce their victory.

The other two Siberians released with Baharami returned, on migration, in early December. Baharami was seldom seen with them though they tried to forage close to her, and called out to her.

A few weeks later, we noticed the sarus pair vocalising with Baharami. Another pair in the vicinity also joined them. Suddenly, one of the new sarus headed towards Baharami with an outstretched neck. One of Baharami's friends lunged at the attacking sarus. A big fight ensued, with both the sarus jumping up in the air, hitting each other with their claws. The intruding pair was soon defeated and chased away. The bond between the congenics was getting stronger!

By now, Baharami was behaving exactly as the sarus. Though distinctively uncomfortable, she would join her friends when they flew out of the Park, to visit the adjoining wheat fields. She would spend a couple of hours in the field, trying to pick up a few grains, while her friends would gorge themselves. Siberians by nature, do not feed in cultivated fields, they would rather feed in the natural wetlands, i.e. they are truly wild species.

The wild congeneric did, however, teach Baharami a few lessons in survival. She was very wary of humans and dogs, and would behave exactly as is the wont of wild birds. On seeing them, she would become alert, stop feeding, and

look around nervously, giving an alarm call till the danger had moved away or disappeared. The other released cranes behaved differently. They would try fighting the dogs and let humans approach as close as 10 metres.

It was the end of February, the water had dried up in most of the blocks and the wheat had developed mature ears. The sarus would go foraging in the mornings, but Baharami would stay back, joining them as soon as they returned to the Park. She had probably learnt from experience that there was no food of her liking in the fields. However, the friends would constantly keep in touch with their calls. They would sleep together, on a mound, a few feet away from one another. The sarus' even took her along to the big roost of congregating sarus in Block 'E'. They would be very protective of Baharami, driving away the threatening birds of their kind.

As the summer progressed, the sarus started going out more regularly to the wheat field. Baharami was seen more often with the other two Siberian cranes now. But this was more because of the shrinking habitat than a sudden affinity for them. She still preferred her friends, the sarus pair.

By June, the conditions in the Park, were not too conducive for the survival of the Siberian crane, the water had dried in most of the areas and it was extremely hot. A big fire that swept through most parts of the dried lake, ended any hopes of an extended stay by the visitors for that year.

All the sarus, including Baharami's friends left the same night the fire broke out. Baharami remained with the other Siberians. One hot and sultry morning on June 16, she left with Alkanost, probably in search of her lost friends, never to come back again. Harsh ecological conditions and food scarcity had separated the interspecific friends. They had to look for food and shelter, that unfortunately, was very different for both of them. 🐦

A research fellow, Gargi is presently working on the effect of environmental contamination on raptors at the BNHS Research Centre, Rajasthan, Bharatpur.

## Unusual Behaviour of a Siberian Crane

**Text and Photographs: Vivek Sinha**

**Vivek Sinha's observations reinforce the theory, that a protective relationship can develop between two congeners**

On December 21, 1997 at 2 p.m., my wife, Arati, and I accompanied Dr. Vibhu Prakash of the BNHS to the Keoladeo National Park. During our walk, we sighted two sarus cranes *Grus antigone* feeding, and a lone Siberian crane *Grus leucogeranus*, resting besides them in the 'F' Block of the Park. We slowly moved forward to photograph them, when the Siberian crane stood up, slowly spread its wings, looked at us and aggressively rushed forward in front of the sarus pair in a protective gesture. With fully spread wings, it was indeed a formidable sight. We could see satellite transmitters (PTIs) attached to the legs of the Siberian crane with light backpack harnesses. Vibhu Prakash remarked that this was the first time he had seen such behaviour in a Siberian crane.

The crane, known as Baharami, was one of the four captive bred cranes brought to the Park from the International Crane Foundation, Wisconsin, USA, in the hope that they would fly back with the migratory cranes to the breeding grounds in Western Siberia. Baharami was befriended by a pair of sarus cranes in the Park. They were seen moving or flying together. The sarus cranes were quite protective, keeping the Siberian crane in the middle even while flying. 🐦

Vivek Sinha, a BNHS member, is an avid wildlife photographer and the author of a recently published book 'The Tiger is a Gentleman'.



## BSAP felicitates BNHS

On August 29, 2000, the Birdwatchers' Society of Andhra Pradesh (BSAP), awarded BNHS a memento for its consistent work in conserving the natural heritage of the country. Aasheesh Pittie, Honorary Secretary, BSAP, read the following citation:



Mr. Aasheesh Pittie, Hon. Secretary, BSAP, presenting the memento to Mr. J.C. Daniel, Hon. Secretary, BNHS

“For the past 117 years, the Bombay Natural History Society has been the leading institution, in India, engaged in the study of the natural history of the Indian Sub-continent and the neighbouring countries...

Though the BNHS is involved with all the branches of natural history, there has been a surfeit of studies on birds and ornithology. Bird studies have always occupied a very high priority in their work and tremendous amount of data is available on the avifauna of the Oriental Region. There is none other who has been so actively and extensively involved with avifaunal studies of this region.

In appreciation of this work of the BNHS, the Birdwatchers' Society of Andhra Pradesh feels happy and proud to present it with this memento.”

## Sálim Ali Award for Peter Jackson

The second Sálim Ali International Award for Nature Conservation instituted by the Bombay Natural History Society was awarded to Mr. Peter Jackson on September 14, 2000, amidst a huge gathering at the Max Müller Bhavan, Mumbai.

Peter Jackson has devoted a great part of his life to the cause of conserving the wildlife and natural resources of India. He has spearheaded conservation of endangered wild cats, especially the tiger, and other endangered species like Asian elephants and rhinoceros through the IUCN's Species Survival Commission, and research and publications. His contacts with the late Prime Minister, Smt. Indira Gandhi, helped establish the Sultanpur Bird Sanctuary near Delhi and the Porbandar Flamingo Sanctuary in Gujarat. He was a close associate of the late Dr. Sálim Ali.



## Conservationist Extraordinaire

Mr. J.C. Daniel received due recognition for his meritorious work in the field of natural history this year. In April 2000, the Sanctuary Magazine declared its Millennium awards. Mr. J.C. Daniel was given the Lifetime Service Award for his dedication to the conservation of natural India, for helping to protect elephant ranges in India, for his commitment to consolidate the foundations of the BNHS and for helping to mould and motivate a virtual army of field biologists and naturalists in India.

On September 19, 2000, he was awarded the prestigious Indira Gandhi Paryavaran Puruskar for 1997, in recognition of his wide ranging contribution in the field of environment and conservation of endangered species. This annual award is a recognition of exceptional and outstanding contributions in the field of environmental protection.

The BNHS was awarded the first silver lotus of these trophies, and now a second one adorns the office of Mr. Daniel, who may not know that he is affectionately known as grand-dad among the staff.



ASHOK KOTHARI

## Parliamentary Standing Committee Visits BNHS



Mr. J.C. Daniel, Hon. Secretary, introducing the Society to the Parliamentary Standing Committee

Eighteen members (Lok Sabha and Rajya Sabha) of the Parliamentary Standing Committee on Science and Technology, Environments & Forests, visited Hornbill House on September 23, 2000. A presentation on the Society's activities and the research projects undertaken was given by the Hon. Secretary and Director respectively on this occasion.

Shri C. Ramachandraiah, Chairman, Parliamentary Standing Committee, praised the BNHS's role in nature conservation activities and reiterated that it should submit proposals for the capacity development of BNHS.

# Saving the Lesser Spotted Eagle



VIBHU PRAKASH

**Compiled by: Rachel Reuben**

Eighty-one years after the last breeding record by the LSE, lesser spotted eagle (*Aquila pomarina hastata*), Vibhu Prakash, Principal Scientist of the BNHS, spotted a nest in the Keoladeo National Park (KNP), Rajasthan. Almost nothing was known about the biology of the eagle, and in fact, there were only three descriptions of the nest in the literature. That was in 1986. Now Prakash has over a decade of observations, of the breeding biology, of the LSE in the Park.

The LSE is endemic to the Indian sub-continent; i.e. it is found nowhere else in the world. Its known distribution covers the Gangetic plain, east through Bengal and Bangladesh to the northeastern states, and there is a record from the Nilgiri hills in the south. Even though it was always considered to be rare, it is a cause for concern that it was sighted only in six localities, during a recent intensive survey of raptors carried out by the BNHS. This eagle was identified as one of

three species requiring immediate attention and conservation action.

The eagle prefers a habitat of tall tree groves surrounded by grasslands and agricultural fields. In winter, it was seen near the marshes as well. The nest is built in kadam (*Mitragyna parviflora*) trees or sometimes peepal (*Ficus religiosa*). Only one nest was observed in six years of the study, and 2 nests in each of the four years when there were 2 pairs of resident eagles holding breeding territories in different blocks in the KNP.

Only one egg is laid, and is incubated by the female, who is relieved only briefly in the middle of the day by the male, so that she can rest and feed. The male does most of the hunting. Small mammals make up 47% of the prey brought to the nest. These are mostly field rats (*Millardia melstada*) which can find little grass or crop cover in the summer, and squirrels (*Funambulus pennanti*), also very active and conspicuous during this season, 33% consisted of birds, mostly terrestrial, and the rest, garden lizards (*Calotes versicolor*) and bullfrogs (*Hoplobatrachus tigerinus*). Nesting success was low. Of 13 nesting attempts observed, the nestling fledged successfully in only 4 cases.

In some years, LS eagles in KNP faced stiff competition from white-backed vultures for nesting sites. As soon as the eagles finished nesting, the vultures would move in. Sometimes the vulture nestlings, were still there when the next breeding season began, thus forcing the eagles to build at new sites instead of using the old nest.

The groves surrounded by fields and grasslands which are the habitat of the LSE occur mostly outside the protected areas, and are therefore vulnerable. Their prey feed in fields, and therefore environmental contamination with pesticides is a potential hazard for these raptors. Efforts will have to be made to locate and protect the nests of these rare eagles wherever they occur. 🐾

# SNAP SHOTS



Text and Photograph: Varad Giri

Varad Giri is a Research Assistant in-charge of the Herpetological Collection at the Society

The Bombay Natural History Society team had gone for an amphibian survey at the Phansad Wildlife Sanctuary, Maharashtra. There, in a nursery, near the forest rest house at Supegaon, on August 3, 2000, at about 10.30 p.m., while searching for frogs, we saw a moth (*Theretra nessus*) feeding on banana flowers (*Musa* spp.). We moved closer to observe the feeding behaviour of the moth, to discover a longtailed field mouse (*Vandeleuria oleracea*), busy chewing the base of the flowers.

We noticed an interesting interaction between the mouse and the moth. The mouse, disturbed by the presence of a moth, feeding on the same flowers, tucked its ears behind and remained motionless for some time. When the moth flew away, the mouse resumed feeding. This was repeated a number of times, till a few moths came together. The mouse then immediately abandoned the flower.

The longtailed tree mouse is widely distributed throughout India. It is small, chestnut red, with soft fur and a long tail. Its fore and hindlimbs are modified to suit its arboreal habits. The first and the fifth toes are partially opposed and have a flat nail, instead of a claw. The long tail helps it get a better hold while climbing. 🐭



## COMMON INDIAN WILD FLOWERS

I wish to purchase \_\_\_\_\_ copies of the Common Indian wild flowers.

Name \_\_\_\_\_ Membership No. \_\_\_\_\_

Address \_\_\_\_\_

Price to members Rs. 280 + Rs. 40/- per book as handling charge.

Kindly send a Demand Draft in favour of the Bombay Natural History Society, Hornbill House, S.B. Singh Road, Mumbai 400 023, India.

This form may be photocopied.

ORDER FORM



# ARRIVING SOON

# COMMON INDIAN WILD FLOWERS

Isaac Kehimkar



Rs. 375/-

240 photographs with easy to follow text.

How to photograph and cultivate wild flowers.

All this and much more in this first Indian wild flower book of its kind.

25% discount on all BNHS Publications for members

BNHS Publications: A tradition of excellence