

Hornbill



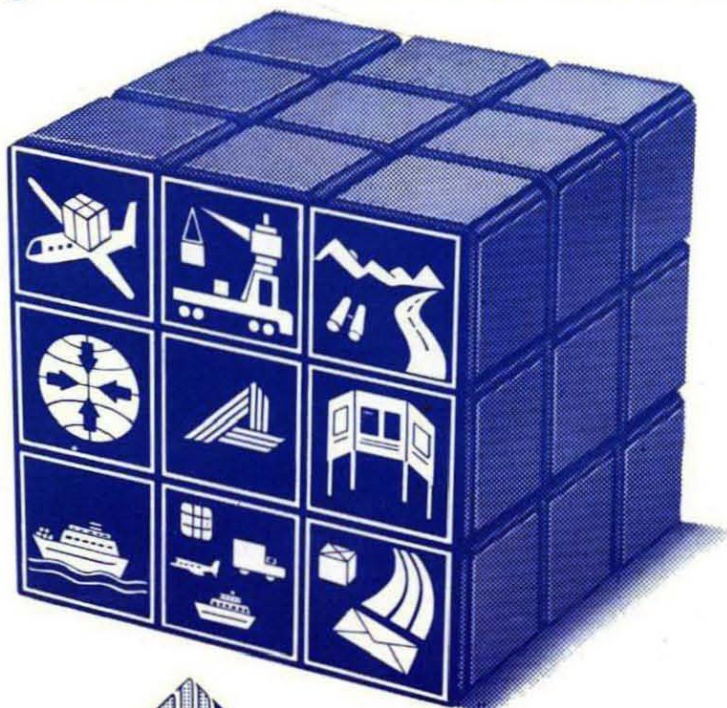
1998 (4) Dec.

about nature and us



BOMBAY NATURAL HISTORY SOCIETY

We've got it all worked out for you



AIRFREIGHT LIMITED

— the single-source service advantage.

Airfreight Limited, an enterprise with over 80 offices in India, presents a complete package of services. All conveniently under one roof.

When you have to freight anything, anywhere in the world, by air or by sea, just leave it to us. We'll take care of all the details. Whenever you need to despatch any official or business-related documents or parcels, desk-to-desk, just call us.

DHL, our Express Division delivers anywhere in India and abroad.

Planning a trip or a tour? INDTRAVELS, our Travel & Tours Division will organise one for you, anywhere on earth. We organise trade fairs, exhibitions and conferences as well, through our Trade Fairs, Exhibitions & Conferences Division.

We deliver the goods.

AIRFREIGHT LIMITED

AIR & OCEAN
FORWARDING

ACE

EXPRESS DISTRIBUTION
SERVICES

INDTRAVELS

TRAVEL & TOURS

DHL WORLDWIDE EXPRESS®

Regd. Office: Neville House, Currimbhoy Road, Ballard Estate, Mumbai 400 001.

To contact us, please refer to your local Telephone/Yellow Pages Directory.



BNHS EXECUTIVE COMMITTEE

President

Mr. B.G. Deshmukh

Vice Presidents

Mrs. D.S. Variava

Dr. A.N.D. Nanavati

Mr. G.S. Ranganathan

Honorary Secretary

Mr. J.C. Daniel

Honorary Treasurer

Mr. Sunil Zaveri

Director

Dr. A.R. Rahmani

Members

Mr. Humayun Abdulali

Dr. Sarah M. Almeida

Dr. A.M. Bhagwat

Dr. Erach K. Bharucha

Dr. B.F. Chhappgar

Mr. K.P. Karamchandani

Dr. Ashok S. Kothari

Dr. Shashi Menon

Mr. Sunjoy Monga

Mr. Ulhas Rane

Mr. Bittu Sahgal

Mr. Ravi Singh

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

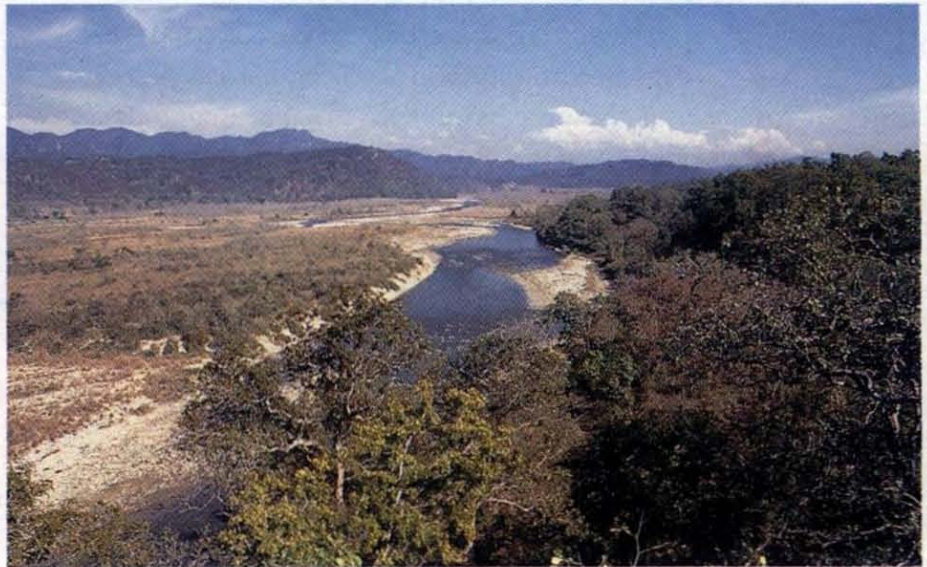
Cover

Mountain hawk-eagle

Rishad Naoroji

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.

Contents



4. In Corbett National Park

— *Rishad Naoroji.*

Work, when interspersed with adventures, becomes an unforgettable memory. Naoroji relates his experiences during his innumerable visits to the Corbett National Park.

Other Features...

- 10. Response
- 12. Miscellanea
- 14. Indian Wildflowers
- 18. Seashore Lore - *Beefsea*
- 31. Home is where the Heart is**
- 22. The Young Naturalist
- 24. Book Review
- 25. Nature Watch
- 31. News Briefs

For more information on the Society and its activities, write to The Honorary Secretary, Bombay Natural History Society, Dr. Sálím Ali Chowk, Shaheed Bhagat Singh Road, Mumbai 400 023. Tel.: 282 1811 Fax: (91-22) 283 7615.

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.

NO ROOM FOR WILDLIFE

A natural corollary of the exploding human population is the search for space to live and the consequent destruction of wildlife habitats. Some illustrative instances of this process are what is happening to the Borivli (Sanjay Gandhi) National Park in suburban Mumbai and the Bhitarkanika Wildlife Sanctuary in Orissa. In the Sanjay Gandhi National Park the forest department was apathetic or looked the other way while a part of the National Park was overrun.

Conservative estimates indicate that almost 200 hectares of the Park has been encroached upon. Other estimates indicate that almost 800 hectares of the Park has already been devastated by encroachment and quarrying. Large scale tree cutting also poses a serious threat to the Park's existence. The latest government figures have identified 33,000 families as encroachers. On an average of 5 persons per family, the figure comes to about 1,65,000 persons on a very conservative estimate, though some estimates put it at 3.5-4.0 lakhs.

Not only slums, but bungalows have come up on the Sanjay Gandhi National Park land. Only the courts have stood up against the complete take-over of the National Park land. The tragedy is that in spite of court orders against the desecration, the State wants to denotify the encroached land. The solemn oath that ministers make to uphold the law are of little value; political compulsions do not permit them to keep faith.

What is happening at Bhitarkanika is equally disgraceful. I had surveyed the area 25 years ago, and was partly responsible for having it declared a sanctuary. Though an unique habitat with estuarine crocodiles, the second largest mangrove forest in the country and perhaps the largest Ridley turtle rookery in the world, it has now 25,000 illegal settlers, has lost 350 sq. km of its forests, and the forest department is fighting a losing battle against prawn farms and ancillary infrastructures. The Divisional Forest Officers who protest are promptly transferred and revenue officials set fire to a forest block to settle migrants — a vote bank for the politicians — a case of official vandalism. These are just two examples of what threatens our National Parks and Sanctuaries. I may be a pessimist, for to me it is the beginning of the end. I would paraphrase Pandit Nehru's favourite lines from Robert Frost to express what we face.

"The woods are lovely, dark and deep
But they're no longer ours to keep."



J.C. DANIEL



In Corbett National Park



PHOTOGRAPHS: RISHAD NAOROJI

One had always heard of Corbett National Park and the famous man-eating tigers of Kumaon through Jim Corbett's books. All of these I had read avidly by the time I entered my teens. Corbett National Park had gained eminence by being the first protected area in the country and the spring board for Project Tiger. It was, in fact, the tiger that initially fired my enthusiasm for wildlife and conservation. In 1964, when I was 13 years old I visited Corbett and Kumaon for the first time with my parents. It was to be a visit that

Corbett National Park has gained eminence by being the first protected area in our country



subconsciously determined the focus of my life many years later. Though disappointingly no tiger was seen on this short trip, the grand setting and vistas of the Park, especially along the blue-green Ramganga river with its reflecting white-washed

boulder-strewn banks, the extensive *chaurs* (the river wasn't dammed then) and a back-drop of the foothills were not easily forgotten. I particularly remember trekking with an armed guard (which was allowed in those days), being shown my first tiger pug marks, and observing a herd of elephants crossing the Ramganga; a young calf's repeated attempts to climb up the steep, slushy bank and eventually being physically pushed up by its mother. We then proceeded to Ranikhet where I was shown a golden eagle at its nest on a cliff ledge overlooking Philkoli



Bonelli's eagle

village, and was instantly mesmerized by the beauty, power and regal bearing of the bird. One plunge directly from the nest-ledge into the forest below, the attack directed at a covey of black partridge, particularly left an indelible impression on my mind, and in later years when I got the opportunity to study birds of prey, or raptors as they are called, I immediately took up the challenge. Alas, the stands of deodar and oak below the cliffs which then supported a good population of *Kaleej* have long since vanished. The eagles do not breed there any more, and are

Keen eyed vultures patrol the barren slopes, looking for sources of food.



not seen in Ranikhet except as vagrants. Bearded vultures and kestrels do, however, use the cliffs to breed and roost, while the Bonelli's eagle patrols the barren slopes for unsuspecting chukor and black partridge.

March 1990

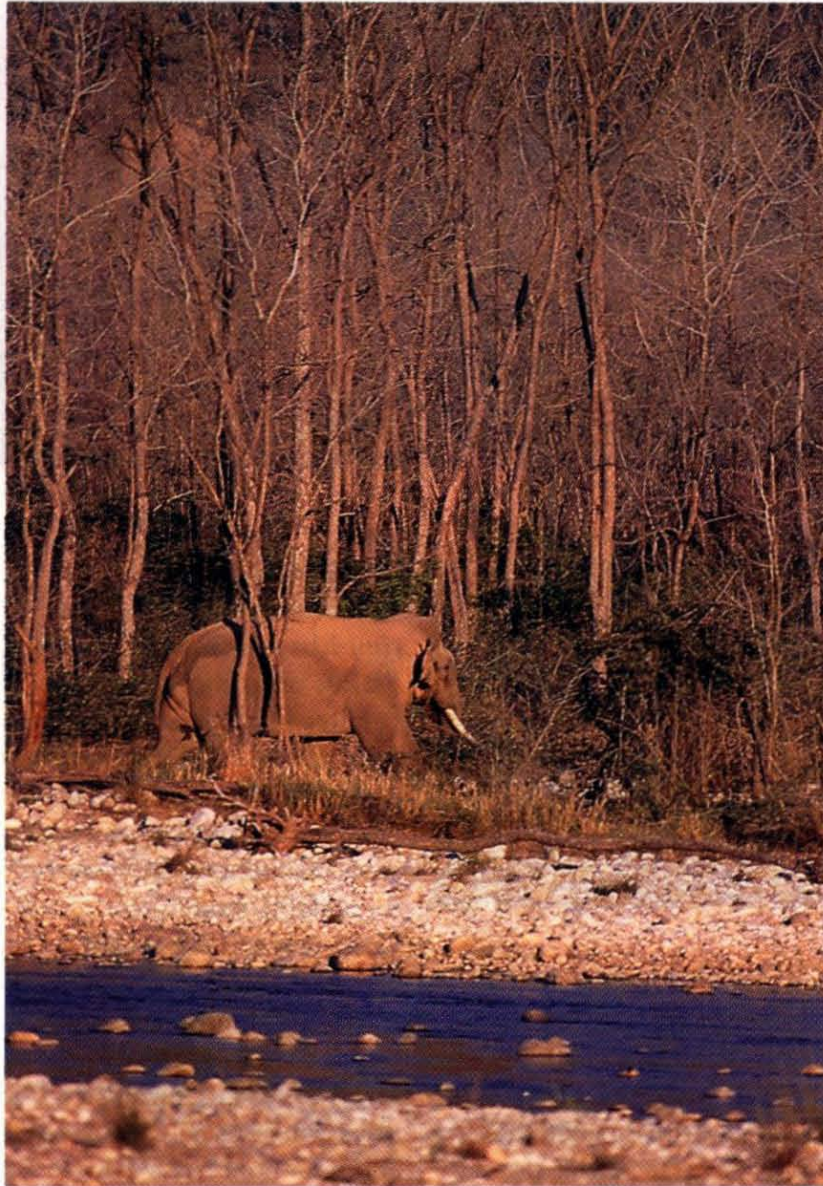
Since that impressionable trip, I have been studying raptors in many parts of the country. As a research associate in a BNHS raptor project, I was part of a three man team surveying protected areas throughout the country for suitable study sites. Corbett was the last Park to be surveyed. The number and variety of raptors was so great that it took us about three hours to reach Dhikala, a drive which usually takes about an hour. As we drove into the *chaur* we had close-up views of a short-toed snake-eagle rising from the ground

with the tail-end of a snake protruding from its bill. Among the many species of migratory and resident raptors, we saw the lesser fish eagle, mountain hawk-eagle, rufous-bellied eagle and the collared falconet, which were well represented in the Park.

My main objectives within the project were to study the breeding biology of raptors, and Corbett was chosen as the study area to investigate the breeding of some of the little known species. We settled into the park on 25th May, 1990, and were temporarily housed

at Gairal. The likely areas for future nest searches were also noted during our acclimatising period, when we realized that the highest diversity and concentration of raptors were to be found along the Ramganga river, and in the adjacent *chaws* and forest.

It was at Gairal that I experienced the first of many close encounters with elephants. At 2 am one night, I was awakened from a fitful sleep by an apprehensive colleague, as an elephant was grazing a few feet away from the rest house. It appeared to be the wide-ranging, ill-tempered *makhana* who, the forest staff had warned us, was in the vicinity of Gairal. He suddenly started butting the jeep and pushed it sideways right into the verandah, damaging the top and rear body. As we let out what we thought were deterrent blood-curdling calls, he moved unhurriedly towards the kitchen door (undoubtedly attracted by the enticing aroma from within) which he broke down. Not able to enter through the narrow space, he wrenched off the wire mesh netting of the kitchen window, and siphoned off fruit, vegetables and flour with his trunk, to the accompaniment of the din of plates and utensils being smashed around and broken. He moved off



Impressive tuskers move around the park, unmindful of human intruders.

only after our weekly stock of food was eaten, leaving a devastated kitchen in his wake, proceeding to the new rest house from whose porch he had earlier been evicted with great difficulty (as we found out later). He loitered in the compound completely indifferent to the torches and cries of staff and inmates directed at him. Even after two shots were fired in the air, he did not move away, but did so on his own accord later. In August, at the height of the monsoon, we confronted the same *makhana* face to face when rounding a curve near

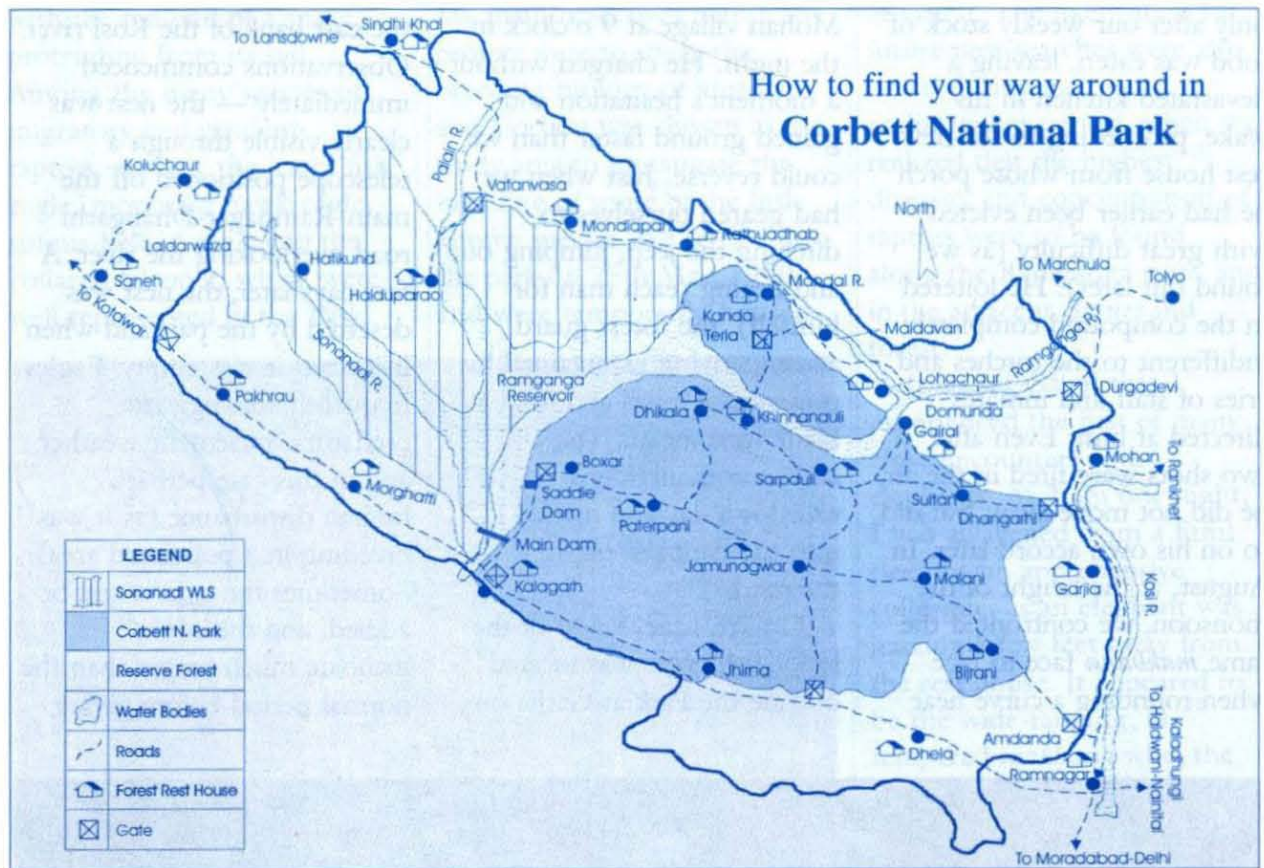
Mohan village at 9 o'clock in the night. He charged without a moment's hesitation and gained ground faster than we could reverse. Just when we had geared ourselves to ditching the jeep, jumping out and fleeing (each man for himself), the forest guard accompanying us regained his presence of mind and fired a blank into the air. The *makhana* thankfully called it a day and melted into the darkness off the road.

On 7th June, a nest of the lesser fish eagle was located outside the Park at Garjia on

the east bank of the Kosi river. Observations commenced immediately — the nest was clearly visible through a telescope positioned off the main Ramnagar-Dhangarhi road overlooking the river. A few days later, the nest was deserted by the pair and when inspected it was empty. Eagles frequently lose eggs to predators, inclement weather, and in this case perhaps human disturbance (as it was breeding in a populated area). Sometimes the eggs could be added, and the adults incubate much longer than the normal period before giving



Mountain hawk-eagle (*Spizaetus nipalensis*), at its nest, an untidy platform of sticks and trailing vines.



up. Not much thought was given to the cause of this loss, and passed off as a natural phenomenon, though I was disappointed as I dearly wanted to study its breeding behaviour. Little did I then realize that this event was the forerunner of a series of similar mishaps and that the focus would shift to environmental problems affecting the breeding success of the species.

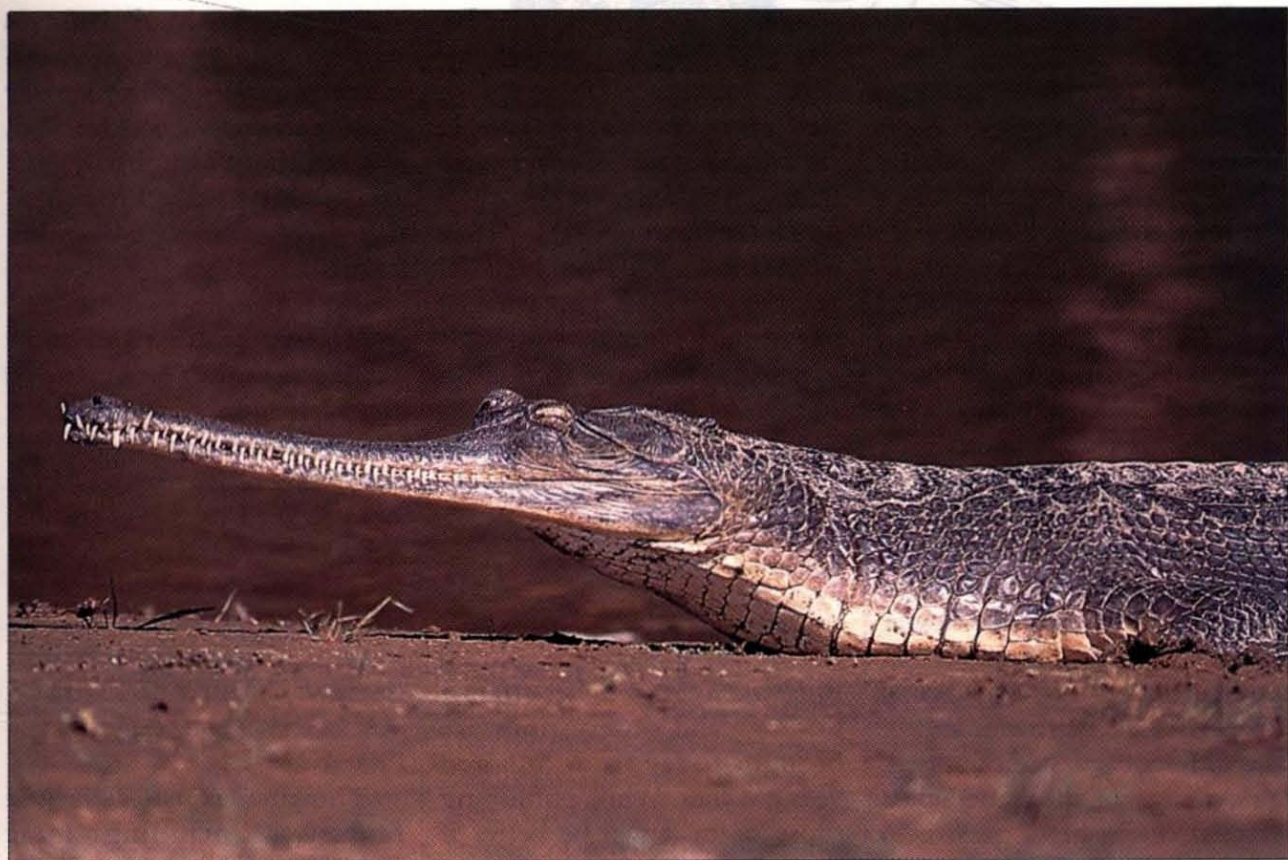
Birds are often located where they are not expected at all. On 14th June, 1990, I remember observing an adult Eurasian hobby *Falco subbuteo*

hawking insects and grassland birds such as larks, pipits and bush chats in Dhikala *chaur*, returning to its look-out — a boulder in the grassland — after each sortie. The species breeds in the Himalayas and is also a migrant. This individual should either have been breeding in the Himalayas or departed for its extralimital breeding grounds.

But the most exciting sighting the coming winter was an eastern marsh harrier, a juvenile way beyond its range; a new bird for Corbett Tiger Reserve and a range extension. It seemed to me

that the birds don't always read the books!

One outstanding experience within the first two months at Corbett was a savage encounter with the rock bee. Through early June there appeared an influx of bees in the Park. On the 21st, driving through the *chaur* near Sher Bhoji, accompanied by two forest department veterans, Harak Singh and Kesar Singh, we were suddenly attacked by an angry swarm of rock bees, probably because we had invaded their flight path through the grassland. Within seconds I was



The fish-eating gharial is often seen basking on the midstream islands and sandbanks in Corbett National Park

completely covered by the seething mass, and stung painfully on the wrist. Luckily that morning I was wearing a thick shirt, long pants, and a canvas hat which shielded my head and face. My experience with bees being limited, to say the least, I did not realize the full extent of our predicament. Seeing me thus put the fear of the devil into the two men (which at the time I thought unfounded), and they jumped out of the moving jeep and started running towards Dhikala — their only concern being to put as large a distance as

possible between the bees and themselves. The bees undertook instant reprisal for this understandable desertion. They lifted off me like a cloud of hot steam and viciously attacked the two men. A serious mishap was averted when Kesar Singh, almost blinded in the process of protecting his face and eyes, stumbled right in front of the moving jeep as we approached to rescue him, while Harak Singh took off his clothes and set them on fire, flaying his arms wildly, the smoke ineffective against this relentless attack. We

eventually got him into the jeep, but he was severely stung on the face and head, his ears were bleeding and swollen into red pin-cushions embedded with scores of stings. Kesar Singh aptly summed it up later, “a rain of bees fell upon us”. Needless to say, my respect for the rock bee increased tenfold from that day onwards. ♣

Rishad Naoroji, a raptor specialist presently working on a Handbook of the Birds of Prey of the Indian subcontinent, goes on to describe his birding experiences in Corbett. Read more about it in the next issue.



Keep it up

I've always enjoyed reading *Hornbill*, and so have the others to whom I pass on the issue after I have read it. At the outset I must clarify that I am neither a botanist, nor a zoologist.

One fairly recent addition in the *Hornbill* is the series on **Indian Wildflowers** by Isaac Kehimkar. The interesting point is that he chooses flowers which can be seen blooming when that particular issue of *Hornbill* is being received by members. The photographs are excellent and help to identify the flower easily in the wild. An important point included are the medicinal properties of the flower and of the different parts of the plant. Knowledge of these medicinal properties can be of great help to members, and others during their trails or camps where medical aid is not immediately available. Also described are the harmful properties e.g. the Mexican poppy is used as an adulterant for rapeseed and mustard oil.

What I found of special interest is **Miscellanea** with excerpts from the letters of service officers during the British Raj. These letters bring to our mind the keen observation and dedication of these men.

Needless to mention, the editorials and articles by Mr. J.C. Daniel are most readable.

Mr. Sunjoy Monga's articles are always interesting and educational e.g. **Happenings in the Indian Wild** by Monga and

Kehimkar. **Bombay's Jungle** is of special interest to Bombayites.

There are several other excellent articles on Natural History from different parts of our country. Needless to say this magazine continues to publish something of interest for all.

B.M. Maniar,
Mumbai.



II

Congratulations, for introducing the **Miscellanea** column in *Hornbill* whereunder strange findings and observations are brought today from hundred year old files. While publishing those notes it will be better if the editor gives comments in the light of recent findings, contradictions, corroborations to concerned subjects.

Bombay Municipal Corporation and BNHS deserve praise on their bringing *Dhanesh*, a wall magazine in Marathi for children. Would you please send me a copy of *Dhanesh* for inducing Nashik Municipal Corporation for such a scheme.

Digambar Gadgil,
Nashik.



Bushy Sea Cucumber

I have occasionally seen the bushy sea cucumber (**Seashore Lore**, *Hornbill* 1998, No. 1) on Mumbai's seashore, but it is rare compared to the commoner

ugly brownish *Holothuria pardalis*. Can I get its scientific name, and also if there are any publications on the sea cucumbers of Mumbai?

Dhun E. Kotwal,
Mumbai.



Beefsea replies: The bushy sea cucumber is called *Actinocucumis typica* Ludwig. The echinoderms of Mumbai (including sea cucumbers) have been studied by S.R. Sane and B.F. Chhappgar and have appeared in the Society's *Journal*, Vol. 59, No. 2 p. 672 onwards.



Cultivate Medicinal Plants

The new *Hornbill* is just fantastic, including Isaac Kehimkar's wonderful photographs. The 1997 September issue has a photograph of *Gloriosa superba*. The author is quite right that collection of bulbs has endangered this plant. However, foreseeing its fate clearly, we initiated the cultivation of this species in 1978, and switched over to seeds, which is a far better and renewable source. After the introduction and several research trials since 1978, today we have a plantation of over 1500 acres and produce 200 tonnes of seeds per annum. We also have similar plantations of *Coleus forskohlii*, *Passiflora incarnata* and *Mappia foetida*.

We work for conservation, but without fulfilling the

industrial needs can we conserve our resources? Industrial need is a need of the people and unless we make the plants available from cultivation, the wild species will not be secure. With this objective, we introduced cultivation of medicinal plants. From our side we are helping in conserving the biodiversity of medicinal plants. I urge BNHS to help us and encourage the cultivation of endangered medicinal plants. We can offer our help, seed material and agro-technology to the people who are interested in the cultivation of medicinal plants.

For further details write to:

V.R. Pusalkar,
"Shriman",

5/96-Q, Nethaji Street,
Alagapuram,
Salem 636 016.

* * *

Save our Tigers

I am a 6th standard student of Seventh Day Adventist High School, Kolhapur. I've read many articles about the tiger in newspapers, magazines and on the Internet. I wish to convey that I love the tigers, but if this regular killing continues very soon there will be no tigers left in the whole world. The coming generations will never know what a tiger looks like.

What do we achieve by killing a tiger, can we escape from all illnesses by eating medicines made from tiger bones or a little good luck from the teeth or claw that we wear

as jewellery. This killing may earn riches to some, but is it worth it? The national animal of our country deserves a much better designation than being called — **Extinct**.

Niharika K. Ghorpade,
Kolhapur.

* * *

Army for Nature Protection

This is in response to **Viewpoint** by J.C. Daniel in the September 1997 issue of *Hornbill*. Mr. Daniel mentions that to preserve India's protected areas, consisting of approximately 4.5% of the landmass, we will have to see that the remaining 95.5% of the landmass is sustainably managed for human use. This statement is true no doubt, but it also indicates that if we Indians are not able to sustain ourselves with 95.5% of our landmass, we will never be able to solve our needs with the remaining 4.5% that is left for our wildlife. This point is significant because there is a recent trend with wildlife conservation in India to see that people living in the areas surrounding wildlife sanctuaries derive benefits from them, such as grazing rights, fodder, fruit or honey collection. Do we have the right to gamble with the 4.5% land that is left for our wildlife? What is urgently required is for the government to treat our protected areas as precious possessions, out of bounds for use by people and

to be strictly protected as in the case of military zones. Can they be handed over to the army for better protection as in the desert areas of Rajasthan, where wildlife is doing extremely well in military zones?

Ranjit Manakadan,
BNHS.

* * *

Battle of the Giants

On an evening walk in Bharatpur, we came across a monitor lizard. After photographing it, we went on further to see the Siberian cranes. On our way back, at a distance, we could see dust rising from the same spot where we had seen the monitor lizard — it was a fight between the monitor lizard and a jungle cat. As the sun had already set we could not take any photographs of this rare event. The jungle cat looked straight into our eyes and vanished with its prey into the bushes.

Two days later we happened to pass the same spot; on seeing the struggle marks, we felt sad at the thought of the lizard which had posed for us. But on our return we were amazed to see the same monitor lizard. It had escaped with injuries to its head, but lay motionless and apparently paralyzed. After prodding it a little, we were happy to see the lizard bestir itself and disappear into the bushes.

Sanal K. Nair,
Mumbai.

* * *

Miscellanea — from JBNHS



Severe effects from the sting of the common Indian hornet *Vespa orientalis*

It is not generally known, I believe, that the sting of the common Indian hornet, *Vespa orientalis*, may give rise to serious symptoms, so the following may be of some interest.

Case I — A sepoy of the 53rd Sikhs was stung in the axilla at about 8 pm on September 1st. In about a minute he fell down in a semiconscious condition and was immediately carried to hospital on a charpoy. On arrival he was pale and somewhat cyanosed. He was sweating, the pupils were contracted and the extremities were cold. The respiration was shallow and sighing and the pulse 130 or 140, feeble and irregular.

He was treated with strychnine, hot water bottles, etc. and the pulse soon became regular and stronger, but he remained cyanosed, and complained of a tightness in the throat for about 1.5 hours, a slight oedema of the eyelids and face developed also. At 10.15 he had a short but severe rigor at the end of which his temperature was 101.4 °F.

Next morning the temperature was normal and except for a little weakness and fatigue the patient was well again.

Case II — Three days later another sepoy of the same regiment was stung on the head. He at once started for hospital, but became faint on the way and fell down two or three minutes after he was stung. He was carried to hospital. He also had a feeble and irregular pulse and complained of a feeling of oppression in the precordium and of constriction in the throat. I first saw him about half an hour later, when he was very blue in the lips and the respiration was shallow and feeble. The pulse was about 110 and small. There was no oedema. About an hour later he felt a chill which was of short duration and the temperature rose to 100.6 °F. A few hours later he was all right again. Both the above men were in excellent health at the time of being stung and both were quite certain what insect it was that had stung them.

Case III — A native officer of the 57th Rifles was stung a week later by an insect which he did not see, but from the symptoms I think it must have been the same. Almost immediately he felt faint and was brought to hospital. He was cyanosed, the respirations were feeble and shallow and the pulse irregular and weak. His face and neck became very oedematous. The temperature only rose to 99.2 °F and he was able to leave hospital in a little over an hour.

These hornets are very common here in Peshawar and I have seen other cases of stinging by them, but without constitutional symptoms. It is curious that these cases all occurred within about ten days. About the same time I heard of a native being stung by a hornet and dying on the way to hospital, but I cannot verify the story. ♣

R.C. MACWATTERS

Peshawar,

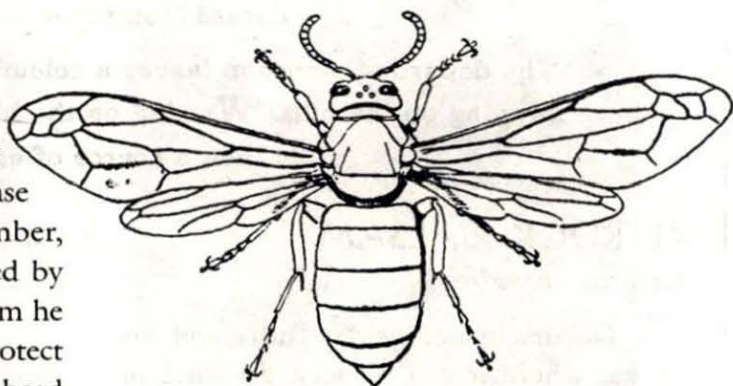
April, 1908.

A case of hornet poisoning

In Vol. XVIII of this journal (p.694) Capt. MacWatters reports three cases of hornet stings. In this connection the following case will be interesting. On the 10th December, Major H. whilst out shooting was attacked by hornets. Being unable to rid himself of them he lay down with his arms round his head to protect his face, thus rendering only the back of his head and neck vulnerable to their stings. Four settled on the scalp and neck, inflicting stings which smarted pretty severely, but not so much as to prevent his continuing shooting in a few minutes.

In about ten minutes' time he suddenly felt queer, handed his gun to his orderly and tried to speak but could not, though he made strenuous efforts to call out. He then fainted away. Major E., his companion, came to his assistance and found his face livid, eyes bloodshot, and his nose and ears blue. His hands were cold and blanched and he could not find his pulse. On regaining semi-consciousness he complained that he could not see. A state of semi-consciousness lasted for about half an hour. On finally regaining consciousness, he complained of intolerable itching all over the body and Major E. then discovered he had rash all over the abdomen. He then vomited. After a few minutes he walked to camp with assistance. Severe diarrhoea set in at about 7 pm and lasted all night and he vomited again in the night. He noticed too that his penis and scrotum were considerably swollen but not painful. The next morning he felt well enough to continue shooting and had no recurrence of untoward symptoms.

The *paharis* who were beating recommended lime-juice for the stings, and procured limes from a neighbouring village. Major E.



squeezed and rubbed the juice into the wounds which he says were visible as pink, shiny, small, round areas not in the least swollen. He gave whiskey internally and covered him warmly. The case is a very interesting one. The rapidity with which the symptoms set in and the profound prostration of the sufferer show that these insects secrete a most virulent poison when they sting.

The poison appears to me to have operated in two ways. Firstly upon the nervous system, and the full force of the neurotoxin agent appears to have fallen upon the heart.

There appears, too, to have been a toxic influence reducing the coagulability of the blood, hence the rash which was probably a nettle rash and the oedema of the genitals. The only other possible solution of the blood state is by assuming an absorption of citric acid from the lemon juice applied locally. There seems little doubt that had one or two more stings been inflicted the case would have ended fatally. ♣

E. WALL C.M.Z.S.

Major L.M.S.

Almora,

16th December, 1908.

Indian Wild Flowers

Text and Photographs: Isaac Kehimkar

The departing monsoon leaves a colourful trail of monsoon flowers swaying on the hills. Walking on the hillsides among these flowers is then a source of endless joy

41. ROCK BALSAM

Impatiens acualis

Occurs in peninsular India and Sri Lanka, where it can be seen growing in clusters on wet dripping rocks. Showy flowers are seen from August to October. The plant can be mistaken for a begonia, but for the flowers' distinct slender long curved spur. This 15 cm tall herb is known to be locally endangered.

42. LESSER RED-SPOTTED SMITHIA

Smithia bigemina

Distinguished by its much smaller red-spotted flowers and four leaflets. This spreading gregarious herb grows about 15-30 cm tall. Seen mainly along the Western Ghats in Maharashtra, 300 m and above. Flowers measuring 0.8 cm across are conspicuous from August to November. Some other Smithias also have red-spotted flowers.

43. GRAHAM'S GROUNDSEL

Senecio grahami

This gregarious smaller relative of the sunflower is commonly seen on the hills of the Western Ghats from September to November. The plant is named in honour of Mr. Graham, Deputy Post Master General, for his significant contributions to Indian botany. He died at the early age of 34.

44. MALABAR BORAGE

Adelocaryum malabarica

This much branching herb growing about 0.7-1.5 m, is common along the roads and forest clearings on the hills from August to December. The common hill borage *Adelocaryum coelestinum* has red stems and pale blue flowers with a dark centre. These herbs yield an essential alkaloid, which attracts milkweed butterflies.

45. COMMON HILL SPURGE

Euphorbia rothiana

This erect spurge is common on the hills in peninsular and central India, and Sri Lanka. Usually an annual, but at times perennial; the plant grows about 100 cm tall, flowering from August to November. Most herbivores keep away from this group of plants, being deterred by the acrid, poisonous milky latex.

46. GREAT CYANOTIS

Cyanotis tuberosa

This stocky succulent herb is seen flowering among the rocks in gravelly soil from August to September. It is known to grow on the hills of peninsular India and Sri Lanka. Usually grows about 10 cm tall and spreads about 90 cm long. Its tuberous roots are used in treating continuous fever.

Hill Flowers



ROCK BALSAM



MALABAR BORAGE



LESSER RED-SPOTTED SMITHIA



COMMON HILL SPURGE



GRAHAM'S GROUNDSEL



GREAT CYANOTIS

The Valley of Flowers





Hermit crabs are very selective about the 'houses' they live in.



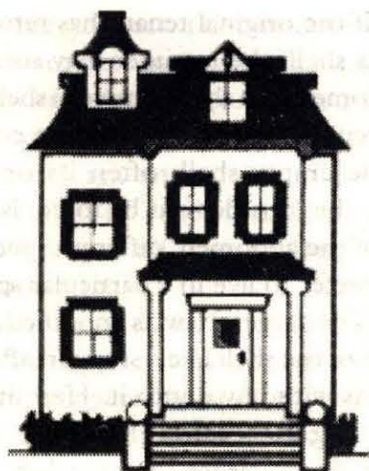
Seashore Lore

31. Home is where the heart is

— Beefsea

“Mid pleasures and palaces
Though we may roam,
Be it ever so humble,
There’s no place like home.”

John Howard Payne



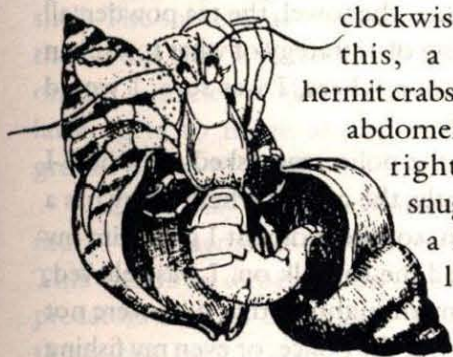
Millions of years ago, Nature played a cruel trick on one group of crustaceans. While all the others were provided with a hard outer covering, the hermit crabs were partially deprived of this. If you look at a hermit crab, you will see that the front half of its body and its legs are hard and well protected, but it has a soft abdomen. The hermit crab, however, did not accept defeat; it evolved a strategy to shield its vulnerable abdomen by tucking it inside an empty snail shell. And as gastropod shells have a spiral twist, the hermit crab’s abdomen has also acquired a twist. In fact, most snail shells are right handed, i.e. if you hold the shell with its apex towards you, you will see that the twists are

clockwise. Because of this, a majority of hermit crabs also have their abdomen bent to the right so as to fit snugly. Offer such a hermit crab a left-handed shell, and see how it tries in vain to fit its abdomen

in it. It’s like putting a left shoe on one’s right foot.

The hermit crab is very choosy about its shell-house. As it grows, it finds that the shell is a tight fit, like a shrunken shirt. It then goes in search of a bigger shell. On coming across one, it will roll the shell around, poke its head and claws in to see if it is suitable. If satisfied, it will hold the shell so that its lip is close to the lip of the shell it is occupying, and in a quick move withdraw its abdomen from its house and thrust it into the new one. But it often maintains its hold on the old shell, dragging it as it walks on the sea bottom. This is just to ensure that the old shell is available to it if it finds the new one unsuitable. If so, it will abandon the new house and go back into the old one.

If the hermit crab does not find a suitable empty shell, it tries to usurp one already occupied by another hermit crab. The latter may withdraw further into its house or push the intruder away. The intruder will, in turn, try to pull out its legal occupant, rocking the shell back and forth to induce its tenant to move out. If it succeeds in this, the dishoused tenant will go house-hunting, or sometimes occupy the intruder’s original house while the intruder goes into its new dwelling.



Hermit crab moving house

If the original tenant has retreated further into its shell, the intruder may sometimes push its abdomen into the (occupied) shell. It will carry the occupied shell about until it comes across a suitable empty shell; often its original tenant pushes the intruder out by force. Because of the twist of the abdomen, different species of hermit crabs prefer to live in a particular species of snail shell. The larger claw is modified to close the mouth of the shell like a stopper, after the hermit crab has withdrawn into it. Hermit crabs of the family Paguridae have their right claw almost always larger than the left; the reverse is the case in the family Diogenidae. The latter family is named after the Greek philosopher Diogenes, who is believed to have lived in a tub!

Hermit crabs without shells are desperate to hide their exposure. They will try to make use of unusual objects like sea urchin tests (skeletons) or medicine vials. If nothing is available, they will sit disconsolately on top of their abdomen or bury it in sand.

The importance of having a proper residence was realised by me one early morning. I was then as assistant director in charge of many fishing trawlers. To avoid boredom, I welcomed on board scientists who wished to carry out their work. One such person used to snip off different tissues from freshly dead fishes and preserve them in alcohol. He could not be present on one such trip and requested me to collect tissues for him. I had taken home a bottle of alcohol for this purpose on the day before the cruise.

My boats used to leave early in the morning, and as the distance from my residence to the fishing docks was short, taximen were reluctant for a fare, so I used to walk to the docks. Conditions on fishing boats are none too clean,

what with the heavily greased winch cables which would soil your trouser legs if you were not careful to stay away. The slime from the fish was an added spoiler of clothes, so I used to wear a pair of old trousers and jersey, and monsoon slippers for wear on the slippery decks of the boats.

Around 3 am I started from home, dressed in these well-worn togs, and carrying a sling bag with a towel, soap, tea and milk powder, sugar, and, this time an alcohol bottle. In the distance,

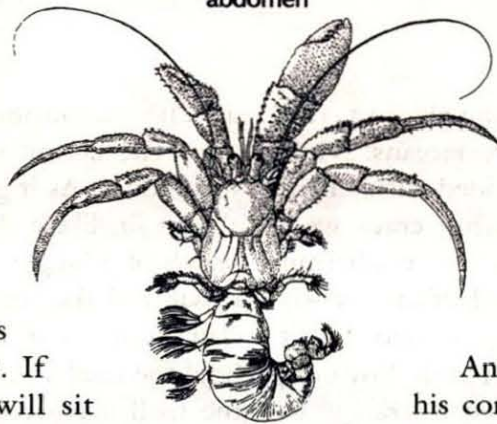
I saw a policeman standing on the footpath. I had nothing to fear, so

I walked on. When I neared him, he asked me to stop and tell him why I was out so early. I told him about my fishing boats, and who I was. Probably, keepers of the law think that assistant directors in government departments move about nattily dressed, in posh cars and generally throwing their weight around.

And here I was, looking so unlike his concept of an assistant director, dressed in unkempt, bedraggled clothes and, of all things, walking! His suspicions fully aroused, he asked me what I was carrying in my shoulder bag. It suddenly struck me that I was not carrying my permit for transport of alcohol. (Prohibition was strict then.) Slowly I took out, one after the other, the towel, the tea powder, all the while thinking of a strategy of what to explain at the police station where, I was sure, I would be marched off.

Suddenly the policeman asked me where I stayed. Apparently, the colony where I stay has a good reputation, so, the moment I gave him my address, he asked me to walk on. I was relieved, of course, but my thoughts at that time were not of my dilemma, nor the police, or even my fishing boats, but somehow strayed to the abode of hermit crabs.

Hermit crab removed from shell to show twisted abdomen



To help them stay put and avoid being pulled out of their shell, hermit crabs have little claspers at the tip of their abdomen. These anchor the hermit crab so secure to its shell that the abdomen may be torn off but the whole animal cannot be pulled out. The trick is to hold a lighted match near the shell so as to warm it gently, then the hermit crab will leave it. Hermit crabs also abandon their shells if conditions are unfavourable. An easy way is to reduce the dissolved oxygen of the water in which they are kept, or change the salinity. I have often added fresh water or passed carbon dioxide through the sea water to persuade a hermit crab to come out of its shell. Adding soda water is equally efficacious.

Like most animals, hermit crabs, too, have enemies. Box crabs (*Calappa*), stone crabs (*Myomenippe*) and spiny lobsters (*Panulirus*) feed on hermit crabs, either crushing their snail shell completely or, more often, chipping away the outer lip of the shell until the hermit crab is exposed. Octopuses are the greatest scourge of hermit crabs. The hermit crab's mobile home offers good protection, but many hermit crabs have an additional line of defence. They have sea anemones living on their small shell. The subterfuge is advantageous to both — the hermit crab is protected by the stinging cells on the tentacles of the sea anemone, while the latter gets to move about, with consequent greater access to food.

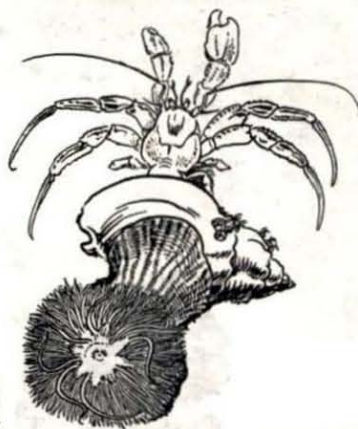
There may be one or more — even upto four — sea anemones on the hermit crab's shell. This number depends on the frequency of predators such as octopuses. In the absence of these, the hermit crab may not carry any sea anemone, while in areas with large octopus populations, the number of sea anemones on a

hermit crab's shell increases. The hermit crab goes in search of a suitable sea anemone and, on finding one, induces it to let go of the rock on which the sea anemone is attached. It does this by massaging the sea anemone, by tapping, rubbing or pulling it off, and then placing it on its shell and holding it till it reattaches. Rarely, the sea anemone makes the first move and transfers itself to the shell with no aid from the hermit crab. The sea anemones are placed in such a position that the overall balance of the hermit crab and its shell is maintained, but in areas infested with octopuses there is a tendency to keep the sea anemone near the shell opening, where it will deter an octopus.

It has been seen that a hermit crab without its protective sea anemone will be attacked and extracted by an octopus. On encountering a hermit crab protected by a sea anemone, an octopus, on being stung by the latter, will retreat as if hurt. After several such encounters, an octopus will even back away when a hermit crab so much as approaches it.

In some hermit crab-sea anemone associations, a young hermit crab places a sea anemone on its snail shell. As the hermit crab grows, the sea anemone secretes a chitinous membrane, called carinoecium, over the shell, thus extending the lip of the shell. Thus, the hermit crab does not have to change to larger snail shells as it grows. The artificial "shell" made by the sea anemone is, however, not large enough to cover the entire abdomen, so that it is prone to an octopuses attack. Some other hermit crabs plant a hydroid colony over their shells. The hydroids slowly dissolve the shell so that, in due course, the hermit crab is covered only with hydroids. These grow profusely and cover the hermit crab, so that it is adequately protected. ♣

Hermit crab with sea anemone attached



Answers to Odd One Out (facing page):

1. The fox belongs to the dog not the cat family.
2. The spider is not an insect but an arachnid.
3. Grasshopper is not a social insect.
4. The bat is a mammal.
5. Earthworms are not amphibians but annelids
6. Crab is not a reptile but a crustacean.

Answers: Monkey, rabbit, elephant, camel, squirrel, deer, fox, lion, tiger, bear, mongoose. Camels are not found in the jungle



Compiled by V. Shubhalaxmi and Vibhuti Dedhia

The Young Naturalist

ODD ONE OUT

1. Leopard, Cat, Tiger, Fox
2. Beetle, Spider, Housefly, Carpenter bee
3. Honey bee, Ants, Termites, Grasshopper
4. Owl, Bat, Eagle, Vulture
5. Frog, Toad, Salamander, Earthworm
6. Chameleon, Garden Lizard, Crab, King Cobra

Butterflies v/s Moths

You have all seen colourful butterflies fluttering over garden flowers, and must have also noticed some dark coloured butterfly-like insects drawn to the lights in your rooms at night. These are moths which, though similar to butterflies, differ in external characteristics and habits.

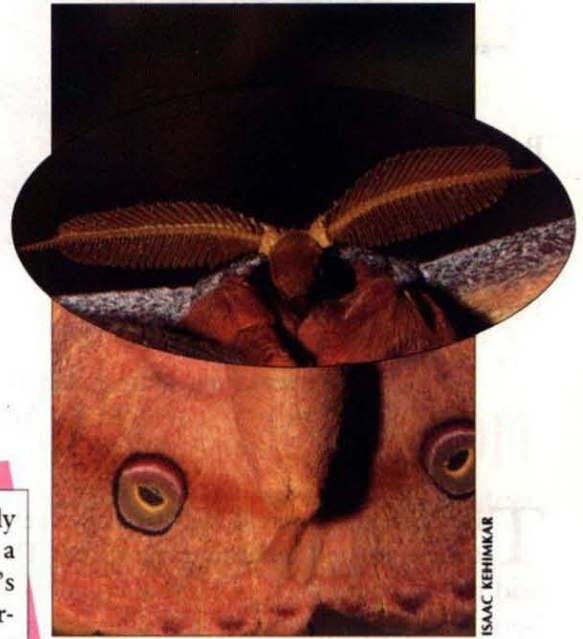
In fact, butterflies and moths belong to the same group LEPIDOPTERA which means 'scaled wings' (Greek: *Lepis*=scale, *pteron*=wing)



Butterflies fold their wings straight up above their backs, or spread them sideways; whereas moths always spread their wings sideways but never straight above their back.



Usually butterflies are day flying while moths are night flying.



ISAAC KEHIMKAR



The antennae of a butterfly are plain stalks ending in a club, while the moth's antennae are usually hair-like or feathery, but never end in a club.

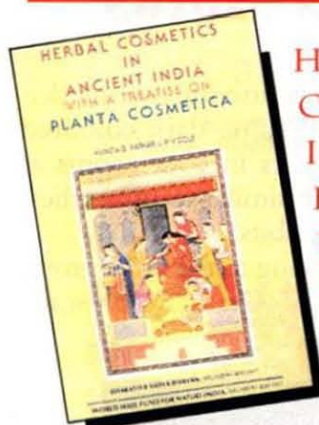
Caterpillars of butterflies always have, besides the three pairs of true legs, five pairs of false or sucker legs, whereas caterpillars of moths have five or less than five pairs of sucker legs.



Lastly butterfly chrysalids are naked — devoid of a cocoon, whereas caterpillars of moths weave a cocoon for pupation.



ISAAC KEHIMKAR



**HERBAL
COSMETICS
IN ANCIENT
INDIA
WITH A
TREATISE ON
PLANTA
COSMETICA**

By Kunda B. Palkar and P.V. Bole
pp. i-xxi + 1-295 (18.5 x 12 cm).
Published by Bharatiya Vidya Bhavan,
Mumbai 400 007. 1997.
Price (paperback) Rs. 225/-

Reviewed by: Naresh Chaturvedi
M.R. Almeida

The oriental ideal of beauty remains undiminished in India even today. This has led to the come back of Herbal cosmetics. The book is a compilation of popular home made remedies along with many other formulations in Ayurvedic literature. It provides details of various materials used and their descriptions in Sanskrit. It appears, that in all, 314 formulations are traceable in the old Sanskrit texts. These formulations are made from one to several out of the 210 species of plants of cosmetic value recorded so far. According to the authors, 151

plants from the old literature have been identified in terms of their modern scientific equivalents, but 59 still remain unidentified. The book occasionally mentions the availability of certain materials in the markets of Mumbai, but nowhere does it indicate the method for identifying the same.

The book is divided into two main parts: formulations and plants used in cosmetics or *Planta Cosmetica*. The formulations are classified in six categories:

- ❖ Facial cosmetics (59 formulations)
- ❖ Oral hygiene (35 formulations)
- ❖ Depilatories or hair removers (27 formulations)
- ❖ Body cosmetics (93 formulations)
- ❖ Cosmetics for hair (110 formulations) and
- ❖ 3 formulations of cosmetic oils

To help the general reader, besides the above mentioned sections the book contains: Glossary of Sanskrit terms used in the book, bibliography, index of scientific names, index of Sanskrit names, index of English and trade names and index of Sanskrit names of non-botanical ingredients.

The botanical nomenclature used in the book is not up-to-date and at many places old names have been used. The book has no illustrations.

Though some of the preparations mentioned are used traditionally, the rest are not known to the common man. This popular book will generate immense interest among persons willing to follow the natural way to maintain their complexion and oral hygiene, rather than to use synthetic cosmetics. ❖



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.*



I came across an article *Avifauna of the Anaimalai Hills* by Mr. Raghupathy Kannan about the Ceylon frogmouth in the BHNS's *Journal*, Vol 95(2). I am a prolific wildlife photographer working to photograph possibly rare and endemic avian species. I enquired about the Ceylon frogmouth in the Indira Gandhi Wildlife Sanctuary, where I visited Top Slip in August, 1998. Fortunately, a guide Mr. Ganesan promised to show me the bird. However, continuous rainfall delayed our trip into the *Shola* forests by 2 days, but on 13th August, the atmosphere became favourable for a photographic trip. That day I arose early and went to the Karanchola forest area with Mr. Ganesan. After an hour's walk through the moist *Shola* forest land, we reached a place where the frogmouths were resting. I was able to approach the birds right upto 2 m away

and take photographs using an electronic flash, since the available natural light at the place where they were roosting was hardly sufficient for a good photograph. I used one roll of negative and a roll of transparency using the electronic flash. Even so, the birds did not fly away, being unaffected by the flash light or our approach. As is obvious from the photograph, all the three birds were unfazed by my attention!

I went through Dr. R. Sugathan's article about the frogmouths in the BNHS's *Journal*, Vol 78(2), a small booklet given by him some years back, and also a report published by Mr. Faizi in the *Hindu* 21st October, 1984, both of which

were in my possession. From these articles I gathered that the Ceylon frogmouth occurs exclusively in the rain forests of the western slopes, of the Western Ghats in Kerala. Mr. Faizi had mentioned that this species is not reported from Tamil Nadu forests, even though the typical habitat required is available in some forest ranges.

Now I have confirmed that the Ceylon frogmouth also occurs in the Anaimalai Top Slip *Shola* forest. I did not search for the bird in other areas as I was satisfied with the photographs I took and returned having obtained photographs of this rare and endemic avian species. ♣

A Photography Expedition

Text and Photograph: K. Ramachandran

Mammals that Fly

Utkarsha Mantri, Vinod Narayane,
Shantaj Deshbhratar, Deepthi Uthaman

Many roosts in Maharashtra have already been discovered and reported, but no one had sighted this roost so far. So, we were interested in visiting this roost in particular. Like many other bats, *Pteropus giganteus* is

a colonial species. The roost comprised of approximately 1200-1500 bats hanging on trees such as the *Mangifera indica* (Mango), *Pongamia glabra*, *Ficus religiosa* (Pipal) and *Ficus bengalensis* (banyan). Along with these, we were also studying another roost in Mulund, Mumbai. We tried to compare these two roosts, and discovered that *Pteropus giganteus* are always found on huge trees, in close association with



Pteropus giganteus has an uncanny memory for the location and fruiting time of trees, it is hence held responsible for the destruction of orchads.

The world of bats has fascinated all mammalogists, the reason being that bats are the only mammals having true sustained flight. We have a tremendous diversity of bats, almost 1000 species of bats are found all over the world, out of which about 108 are found in India. Among the large bats, the flying foxes are well known for their size. In India, the most common species of flying fox is *Pteropus giganteus*.

Way back in 1996, during our team's visit to Mahad, we came across a huge colony of *Pteropus giganteus* along the

banks of River Savitri. The sudden discovery made us enthusiastic about the ecology and behaviour of this roost. One of the members of our team had already visited this area a couple of years earlier for the same purpose, but the visit had not been fruitful. Yet, she did not give up the search for the roost for a particular reason. She had come across a bottle of "bat oil" at a chemist's shop, and had been told that the oil was manufactured in Mahad. Consequently she supposed that the roost had to be in this area.

man. But though found near human localities, they always inhabit inaccessible places.

It is well known that *Pteropus giganteus* can be tamed and kept as a pet — one of us successfully reared a young *Pteropus giganteus*. However, despite being attuned to human presence, the colony was not happy when we visited it for the first time. The bats made a lot of noise, creating quite a commotion. By the time we could finish our observations on the colony, the horizon was dark with streaks of purple and orange of the bats — it was time

for their departure to their nocturnal haunts.

Pteropus giganteus are always considered serious pests on fruit trees and orchards because they feed mostly on fruits. The colony of bats was chucked out from their original roosting places regularly by guards of mango orchards. But to our surprise PETRO (name of the pet bat) when given fresh fruit did not eat it till it was over-ripe. The bats in the colony also behaved likewise. Over-ripe fruit has less commercial value, therefore, the allegation that *Pteropus giganteus* are pests of fruit crops is patently untrue. Bats primarily eat fruit, but in the non-fruiting season they are seen chewing soft leaves and tender twigs of trees. They feed on the nectar of flowers, playing an important role as pollinators.

The bats returned to their roosts before sunrise and settled on the upper branches of the trees in the morning. By noon they had occupied the lower branches, probably to be away from the direct heat of the sun. During this time when they were slightly nearer to the ground we could watch them more closely. The bats kept fanning themselves continuously with their wings. The yellowish orange fur on the abdomen and slightly darker fur on the back was clearly visible from our observation post on the ground. The females were a bit darker and slightly smaller than the

males. They were hanging on six or seven different trees. Medium sized bats, probably adolescents, were suspended from another tree adjacent to the one on which females with their new borns were roosting. Adult males and females could be seen on separate trees encircling the roosts of the mother and adolescent bats. This kind of arrangement was also observed in the Mulund colony. We saw that during the evening hours, a few kites were flying high in the sky, to prey on the disabled bats. However, the bats never left their young behind on the trees, when they left in search of food.

Several behavioural aspects were observed during our repeated visits to the same roosts. The movement of bats is more pronounced just before sunset, compared to other hours of the day. Prior to their dispersal for feeding, the animals from lower branches ascended to the upper branches of the trees. Before taking off for their feeding grounds the bats encircled the colony for some time and then proceeded to the river for drinking water. Only one bat drank at a time — once it had departed, the next one flew in and took a drink.

A noticeable change was that the colony shifted its roosting place frequently to nearby areas. Also, the intensity of their noise upon our arrival was gradually decreasing, and during our last

visit the noise level was very low, probably due to the fact that the animals had become very familiar with us and were growing friendly.

During one of our visits to Mahad, we visited the bat oil factory located there and obtained details about the process oil extraction. The bats are shot with air guns and then taken to the factory. Males, females and young ones are equally used for the process. The bats' digestive and excretory organs are removed; the remaining body along with the liver, fats and blood is boiled in linseed and mustard oil. Camphor is added to the extracted oil to deodorise and preserve it. The oil is then filtered to remove suspended particles and packed in bottles. Bat oil manufacturers claim its effectiveness in curing rheumatism, arthritis, backache, polio and even paralysis. According to them, they have been manufacturing this oil for the last forty years and getting excellent feedback from patients using their oil. Despite this massacre, the *Pteropus* colony has not relocated. Though *Pteropus giganteus* is not a threatened species, it won't be long before it also stands on the verge of extinction if this mass killing continues. ♣

We would welcome more information from our readers regarding this bat oil medicine, though we'd rather have the rheumatism than the remedy! — Ed.

The Sartorial Way

H. Daniel Wesley



The tailor bird is very common in Tiruchirapalli. One can hear it call from dawn to dusk everyday. My interest in the bird was aroused when I detected a pair building a nest in the *Terminalia* leaves in my neighbour's compound. The bird used the same nest for more than two successive broods. On 23rd March, 1998, I saw a male tailor bird collecting cobwebs and entering a clump of *Canna* about a metre from my compound wall. This intensified my curiosity and I detected a nest made of *Canna* leaves in the clump. The *Canna* leaf was doubled on itself and the terminal half was hanging down, the edges brought underneath and stitched

together to form a cup. At least three days had elapsed when I first saw the nest. Whether the bird had bent the leaf himself, or used some other means I know not. However, I did observe the nest being completed. The entrance below faced the under surface of the leaf base. The cup was made together by the pair remaining for a maximum of 50 sec within it. The female made the bed alone, lining it with pomeranian hairs that she had picked from the ground for three days.

Generally, three eggs are laid in a clutch; this one had only two. On 27th March, the female, clinging on to the leaf base, craned her neck to look into the nest and departed without entering. Was she checking if the egg that she had deposited was safe in there? Yes, she had done exactly that! It was perhaps a way of assessing the safety of the nest-site selected. The second egg followed the next day.

The female bird incubated her eggs alone; her tail bent tracing the inside of the back leaf-wall of the nest, and her head held stretched. She didn't mind being looked at closely and continued with her duties despite regular disturbance from children at play. She had been in and out periodically, either in



The pair used cobwebs and pomeranian hairs among other things to make a comfortable nest for their fledgelings.

response to her mate's call, or on her own accord. The male made different variants of the call all of which did not elicit a response. The calls that she responded to were loud *tuwi* and *teo*, with stress on the first letter. She would join him at the place he had called from and both would repeat the call, the male uttering the first and the female the second. Each day began with the male repeating this and the female responding by joining him in at the most nine minutes.

The first egg hatched on 10th April, and the second the next day. The eggs were incubated individually for 14 full days. The fledgelings were growing normally till I noticed that they were missing 6 days later. If a predator — a snake, had eaten them, the female would also have become its meal. All the

same, the loss of the brood was not without its advantage to me. This gave me an opportunity to observe the behavioural changes in the parents. The next day the male arrived as usual and called for the female early in the morning, this suggesting that the adults remained away from each other during roosting. They met at another location, 20-25 m away. I did not see the female spend the night in the nest thereafter. On 25th April, when the nestlings were to have fledged if alive, the male parent made the last early morning call. Two days



LOKE WAN THO

This small and restless olive green bird builds simple but cosy nests on almost any plant

later, I saw both of them foraging in the vicinity of the nest. The female went up to her nest, this time checking if the nest cup was safe from marauders. The pair had long forgotten the loss of their

nestlings and the presence of a safe nest was enough to begin their courtship display. Their physiological rhythm had reset, but not all was right for the pair yet; by evening the same day the *Canna* clump was dug up by a

zealous gardener while clearing the compound. However, these relentless birds continued to haunt the area and come what may, man or beast, their instinct drove them to go on with life — the Sartorial way. ♣

NEW BNHS
TITLE

The Book of Indian Shells

by Deepak Apte

With 16 colour plates
covering more than 300 species



Price for Members Rs. 225/-

Keep It Green

The trouble with the human race,
Which wears a smirk upon its face
To indicate its massive mind,
Is being dumb and deaf and blind.

It does not hear the warning bell
To all that on this planet dwell,
It cannot see beyond this week,
It has a tongue, but does not speak.

The forest dies deprived of rain,
Lead damages the childish brain,
Pollution poisons turf and tide
And makes for global suicide.

We court disasters and disease,
And if, brought on by CFCs,
The Big Heat doesn't make us ill,
Be sure untreated water will.

The smallest creature in the wild,
The dinosaur that rarely smiled
And roamed the earth when life began
Is nowhere near as dumb as Man.

Roger Woodis



Courtesy: Roger Woodis and Earthscan Publications Ltd.



The Purist

I give you now Professor Twist,
A conscientious scientist,
Trustees exclaimed, 'He never bungles!'
And sent him off to distant jungles.
Camped on a tropic riverside,
One day he missed his loving bride.
She had, the guide informed him later,
Been eaten by an alligator.
Professor Twist could not but smile.
'You mean,' he said, 'a crocodile.'

Ogden Nash

Courtesy: Little, Brown and Company and Quentin Blake

The Last Laugh

Q. Why did the frog get heart burn?

A. Because it swallowed a firefly!



Minister Visits BNHS

The Hon'ble Minister for Environment and Forests, Mr. Suresh Prabhu visited Hornbill House on 11th May, 1998. This being his first visit, he was shown around the different sections of the Society. He later addressed the staff members and assured support from his ministry for future endeavours of the BNHS. ♣



The hon'ble minister, Mr. Suresh Prabhu, along with (R to L) Mr. Humayun Abdulali, Vice Patron, Dr. A.R. Rahmani, Director, Mr. N. Chaturvedi, Curator, Mr. Ulhas Rane, E.C. Member.

ZAFARUL ISLAM

Strategic Planning Workshop a Success

A three day Strategic Planning Workshop was held from 16th to 18th September, 1998, at the Conservation Education Centre, BNHS, Mumbai. The workshop was organised to produce a draft strategy to formalise a network with other bird conservation organisations and individuals. BirdLife International, U.K., had earlier signed a Declaration of Intent with BNHS in December, 1997, to make BNHS a BirdLife Partner from India. The workshop was co-sponsored by BirdLife and the Royal Society for the Protection of Birds (RSPB) to help establish a national network for bird conservation action.

Mr. Adrian Long, Asia Programme Manager, BirdLife

International, and Mr. Pete Wood, International Officer, Mr. Dieter Hoffman, Head of Global Programmes, RSPB, and Mr. S.A. Hussain, Vice President, BirdLife International, Asia, with forty participants and many observers attended this workshop. ♣



ZAFARUL ISLAM

Wildlife Week Celebrated



To mark the beginning of Wildlife Week starting on 5th October, a wall calendar on the Tiger was released by the Hon'ble Minister of Environment and Forests, Maharashtra, Mr. Chandrakant Khaire at Hornbill House. The hon'ble

minister also inaugurated an exhibition on 'Rangoli in Nature'. The Bombay Natural History Society has the Tiger as its theme for the 1999 wall calendar, to remind the nation that saving the tiger is one of our most urgent national priorities.

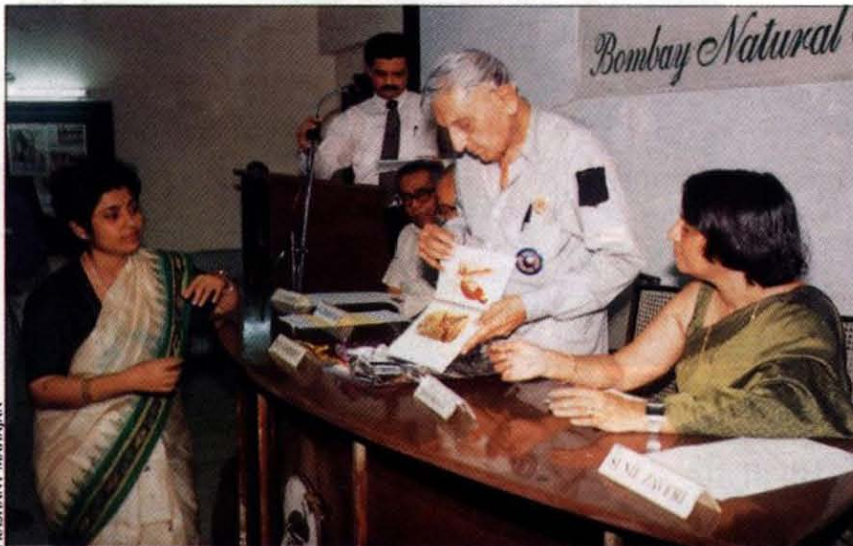
Mr. Peter Jackson, Chairman of the Cat Specialist Group, International Union of the Conservation of Nature and Natural Resources (IUCN), Switzerland in his letter to the BNHS President, Mr. B.G. Deshmukh, wrote "... The BNHS wall calendar needs to reach as many people as possible — thereby creating conservation awareness and the funds necessary for conservation action. I hope that the BNHS calendar will find place in every school and college, to make India's youth aware of the priceless heritage that India's national animal, the tiger, represents." ♣

Dr. Sálim Ali Remembered

On 12th November, 1998, the 102nd birth anniversary of the late Dr. Sálim Ali, was celebrated at a small function held at Hornbill House.

Mr. S.P. Godrej, a staunch supporter and friend of the BNHS, presided over the function, attended by the staff and members of the Society. Individuals related their personal experiences with him.

Mr. J.C. Daniel, Hon. Secretary, suggested that this day be declared the National Bird Day in memory of Dr. Sálim Ali. On this occasion, the BNHS desk calendar on endangered birds was released by Mr. Godrej. Mr. B.G. Deshmukh, President, called for nominations for the 2nd Sálim Ali Award for Ornithology and Nature Conservation, 1998-99. ♣

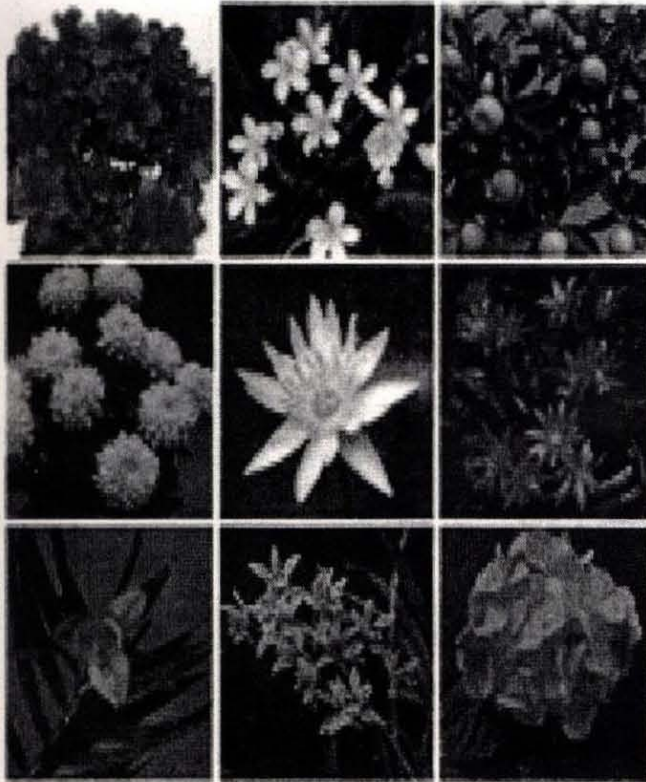


Mr. S.P. Godrej releasing the 1999 Desk Calendar of the BNHS

PRASHANT MAHAJAN

HORTICA

A COLOR CYCLOPEDIA OF GARDEN FLORA
IN ALL CLIMATES AND INDOOR PLANTS



ALFRED BYRD GRAF, D.Sc.

HORTICA DESCRIBES :

- 570 exotic indoor plants, including aroids, begonias, bromeliads, and gesneriads
- 180 orchids
- 215 palms and palmlike plants
- 147 ferns and their allies
- 512 cacti and other succulents
- 65 carnivorous plants and other curios
- 491 bulbous and tuberous plants
- 552 climbers and creepers
- 114 waterplants and near-aquatics
- 1,662 perennials and annuals
- 217 herbs and spice plants
- 197 grasses and bamboos
- 329 coniferous evergreens
- 108 trees and shrubs for hedges, topiary, and bonsai
- 2,408 flowering trees and shrubs
- 341 edible fruits and nuts, in addition to gourmet vegetables

Hortica also includes worldwide climate maps, a chart that graphically illustrates botanical terms used in the book, a pronunciation guide to botanical names, and a common names index.

A work of extraordinary scope, **Hortica** is a necessary reference for any gardener, botanist, or horticulturist.

Unparalleled in its comprehensiveness, **Hortica** brings together a kaleidoscope of **8,100 full color photographs** and detailed descriptions of more than **10,000 ornamental plants** for indoors and for every climate worldwide. Each plant entry includes information on mature height, hardiness zones, the native range of the plant, leaf and flower shape and color, bloom times, and any other ornamental features the plant may have—fruit, cones, autumn color, decorative bark. The entries are organized by botanical name but also include any common names by which the plant might be known.

Please send your orders to :

English Edition

Publishers & Distributors

City Office : 404, Ravi Building, (Next to Central Camera),
189/191 D. N. Road, Fort, Mumbai-400 001, (INDIA). Tel.: 261 8154, 263 2504.
Suburb Office : 5/105 Jogani Industrial Complex, V.N. Purav Marg, (Near AT1),
Mumbai-400 022. Tel.: 524 3531, 523 3158. Fax : 523 3158.

SPECIAL FEATURES :

PUBLISHED IN U. S. A.
IMPORTED EDITION,
HARD BOUND,
8100 FULL COLOUR PHOTOGRAPHS,
1216 PAGES,
A MUST FOR ALL INSTITUTIONS AND
CORPORATIONS DEALING IN DRUGS,
BOTANY AND HORTICULTURE.

PRICE Rs. 16,000/-
10% DISCOUNT
LIMITED COPIES AVAILABLE



LEICA



MINOX



Only Binoculars Not Available presently, due to govt. restrictions, will inform all the members through our advertisement in Hornbill magazine, when available.

Leica Fotografie International Magazine

Subscription (8 issues / one year) Rs. 2500=00, Inclusive of mail charges

Special Issue Leica M6, Rs. 450=00 each, Inclusive of mail charges

Also inquire for Handbook of Leica System - New Edition

We also deal in **Manfrotto & Gitzo** camera Tripods, Monopods & other tripod accessories.

Authorised Distributor

PHOTONICS ENTERPRISE

302-A, Manish Apartment, S.V.P. Road, Borivli (West), Bombay-400 092

Phone: + 91-22-8629152, Fax: + 91-22-8012170, E-mail: solitare@bom3.vsnl.net.in

Visit our web sites <http://www.leica-camera.com> and <http://www.minox.com>