

# Hornbill



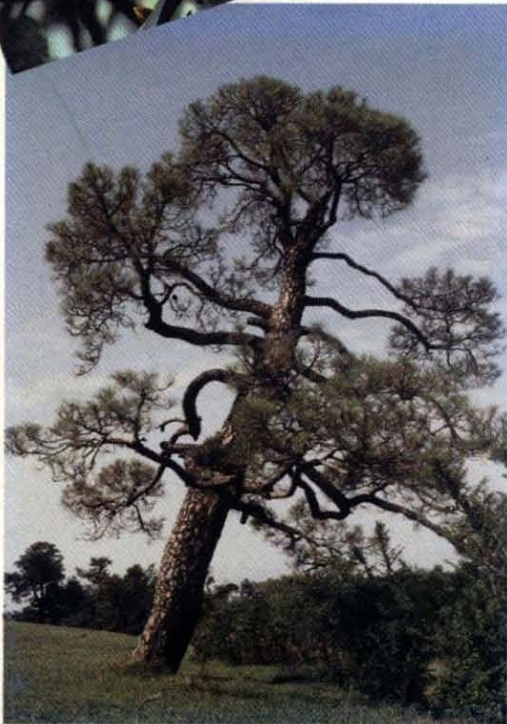
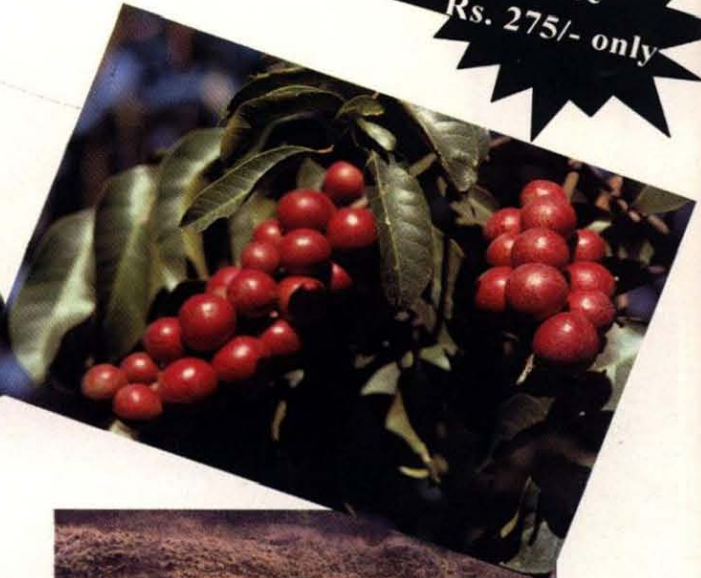
1998 (2) June

*about nature and us*



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*Lagerstroemia flos-reginae*

Vijay Tuljapurkar

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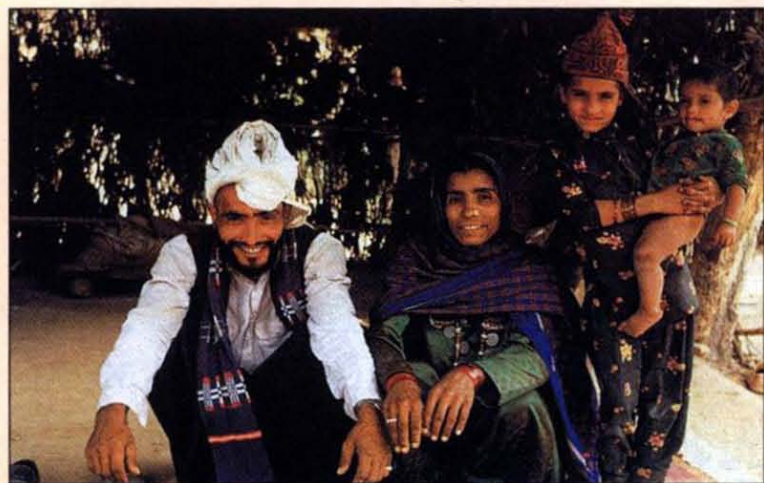


DOYLE MCKEY

The gujars vigorously protect their rights to lop the trees — a self destructive way of life indeed.

## VIEWPOINT

# Conflict of Interest



DOYLE MCKEY

Traditionally nomadic, these gujars have taken to a settled life in Rajaji National Park.

*I*n the management of protected areas the debate on whether wildlife or human interest is paramount is a continuing conflict between wildlife and environment conservationists and human interest groups. Inevitably human interest wins; animals do not have a vote. Certain fallacies are used to justify the dominance of



In the continuing conflict between wildlife and human interest groups human interest wins.

human interest in protected areas. An example is the propaganda that people, especially forest dwellers, have lived for ages in harmony with nature and therefore, they know best and should be left to manage their environment. This concept is based on the delusion that conditions have remained static and unchanged over the years. The fact is that resources have remained constant but their use has gone beyond sustainable levels. This is true of all forested areas in the country where human population, using forest resources, has grown to such an extent that there is continuing irreplaceable loss of resources and biodiversity.

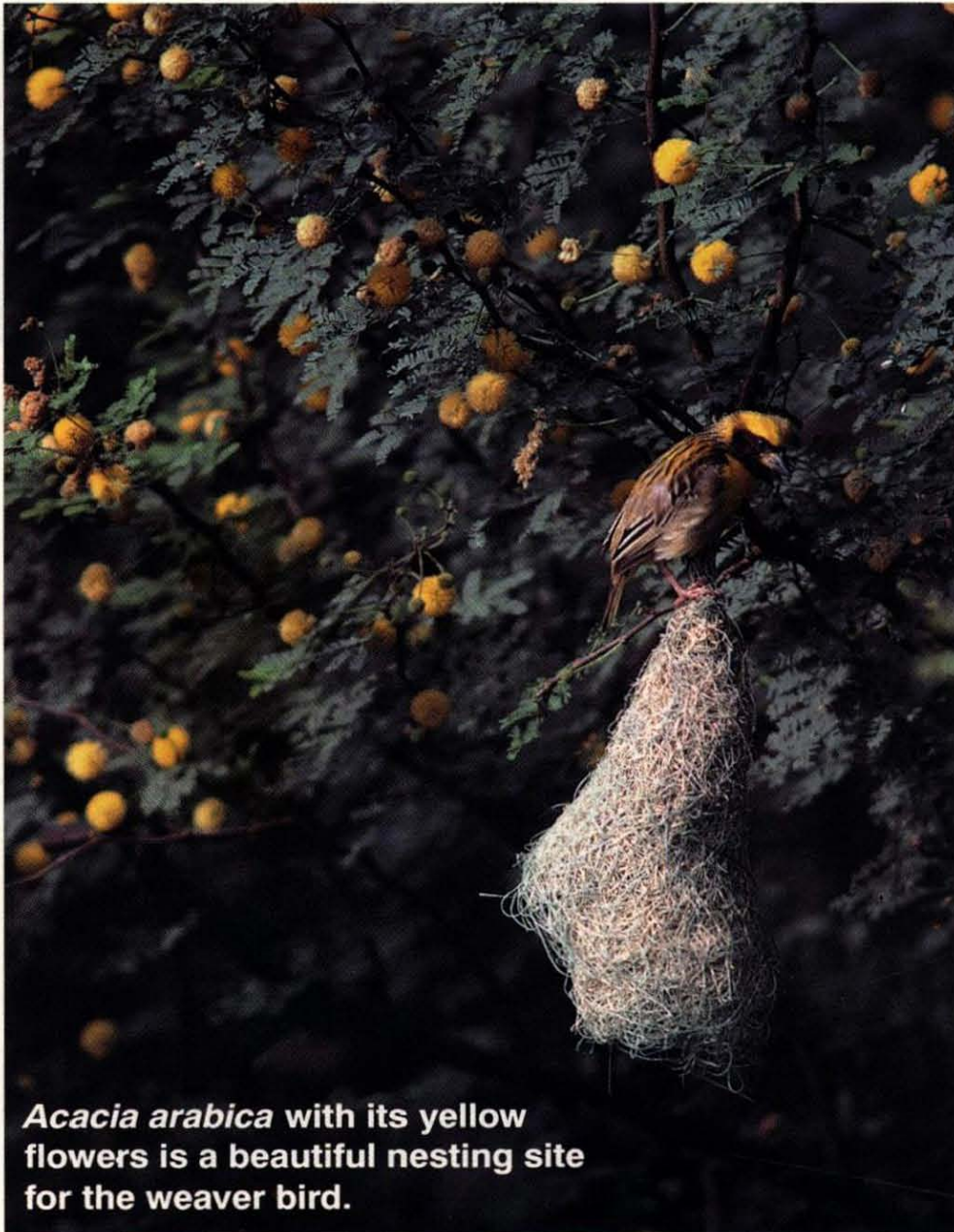
There are two critical problems; the first is to maintain forest in the best of health for animal and plant life and

secondly to ensure that forest dwelling humans receive all the benefits that are available to their non forest village and city counterparts. The two are incompatible; you cannot hold a wilderness area pristine if you introduce modern conveniences necessary for human welfare. At the same time, forest dwellers cannot be denied facilities available to people outside forests. The pragmatic decision would be to move people out of protected areas and to ensure that they are provided for all their material needs. Unfortunately, promises are made and hardly ever kept, and the abandoned join the millions of other homeless people.

J.C. DANIEL

# A Reign of Colours

Text and Photographs:  
Dr. Vijay Tuljapurkar



***Acacia arabica* with its yellow flowers is a beautiful nesting site for the weaver bird.**

Dr. Vijay Tuljapurkar is a Consulting Physician and Medical Oncologist working at Miraj, Maharashtra. He is keenly interested in nature photography.



*Strobilanthes callosus* is a tall shrub with rigid, rough stems which undergoes mass flowering every twelve years.



The arrival of monsoon brings along with it a pleasant change, relieving both man and the land from the harsh summer. Vines spread their tendrils in all directions. The grass covers the hillsides with its green carpet. Tiny streams become raging rivers. The earth is covered with a floral mantle as millions of wildflowers bloom, weaving a magic carpet in all the colours of the rainbow.



Summer is an uncomfortable season, associated as it is with scorching heat, hot blasts of wind, dust storms, tired faces and parched throats of man and animal alike. The arrival of the monsoon and the first showers of the season bring relief to the land and its people — the patter of raindrops on roofs and diamond-like droplets of water, clinging to leaves, sparkling when touched by sunlight. The temperature drops, the breeze is cool and the dust settled everywhere is washed away. Streams in the hills turn into mighty roaring cascades, eventually becoming raging rivers in the plains. This change of climate brings a new vitality to nature. Grasses appear everywhere, converting waste-lands and hillsides



A small branched herb — *Cyanotis fasciculata* bears beautiful purple flowers.

into carpets of green. Vines spread their tendrils in all directions and the trees are adorned with thick foliage. Seeds germinate and a variety of wildflowers bloom, providing a feast to the eyes. Indeed, 'varsha' has been an inseparable part of our lives since time immemorial and has a place in folklore, fine arts, contemporary and ancient writings, and even in the Vedas.

The waste-lands which I visit for photography are bone dry in summer. The grass is like clumps of straw holding on to the parched earth. Come June, and the picture changes. Typical species of trees, vines, shrubs and herbs bloom during each season. The monsoon brings to mind the wild

flowers that bloom in millions in the countryside, and dominate the scene.

India has a remarkable biodiversity and each habitat has its unique flora and fauna. I have come across jewels of the wilderness around Miraj, a town in southern Maharashtra where I live, and I am sure many lovers of nature will find beautiful varieties likewise around their homes.

A few common and not so common trees are worth observing in the monsoon.



The juice of *Sopubia delphinifolia* is useful as an astringent to heal foot sores.



The fleshy, smooth pods of *Caesalpinia coriaria* are an important ingredient for tanning.

Tamarind (*Tamarindus indicus*) probably came to India from Africa, but has been so naturalized that there is hardly any housewife who is not aware of the uses of its fruit. However, its late and early monsoon flowering is largely ignored. The small variegated flowers which appear in profusion have red and yellow petals, with a sour taste, though not as strong as the fruit.

Babul (*Acacia arabica*) with its yellow pompom flowers, provides an excellent



nesting site for weaver birds when present near water bodies. The bayas select branches of babul sprawled over wells, streams, lakes and rivers and begin to build their nests just before the monsoon. The males in their breeding plumage, sporting patches of deep yellow on the head and breast, fly from branch to branch. Watching their activities on a flowering babul is a delightful experience.



*Millingtonia hortensis* bears fragrant white flowers during the rain.



The tangy chutney of *Tamarindus indicus* is as tasty as that of its fruit.

Kadamba (*Anthocephalus cadamba*) blooms with the onset of monsoon. The flowers which have a lovely fragrance cluster together to resemble a yellowish orange coloured ball, full of nectar and attractive to a number of insects.

*Lagerstroemia flos-reginae*, also called the Pride of India or Queen's flower, was named in honour of the Swedish botanist Magnus Lagerstroem. It is the state flower of Maharashtra, where it is called *taman*

and is seen abundantly in east and south India. The tree attains a magnificent size. It has delicate purple blooms which adorn the boughs at the beginning of the rains.

Travelling in the Western Ghats during monsoon is a wonderful experience, especially if one decides to tread the not so beaten track. June and July are the months of torrential downpour which somewhat restricts movement, visibility and opportunities for photography. However, after mid August the fury of the monsoon abates, the hillsides are green, with bubbling streamlets and flowers are seen in large numbers. One of the most beautiful flowers that bloom around this time of



A terrestrial herb, *Exacum bicolor* has showy terminal flowers.



Thrilled with the pleasing sound  
of the sombre cloud that heralds storm,  
Groups of peacocks  
Rend the air with their jubilant cries,  
To hail the friendly rain;  
And spreading wide their jewelled trains,  
With the love-play of the kiss and embrace,  
They hold their gorgeous dance parade

Ritusamhara — Kalidas

Transl. R.S. Pandit



the year is the glory lily *Gloriosa superba*. The vine arises from underground bulbs and climbs over nearby bushes and trees, snaking along with the tendrils at the tips of its leaves. Pale green buds appear which bloom into orange flowers. The petals eventually turn deep red in colour before the flowers wither away.

Many a flower has gained popularity for one reason or the other. Amherstia *Amherstia nobilis* is known for its beauty, whereas the ashoka *Saraca indica* is beautiful, and has been mentioned extensively in Sanskrit literature. The queen of the night *Cestrum nocturnum* announces her presence with a heady perfume, and parijat *Nyctanthes arbor-tristis* brightens the early morning with a mildly fragrant carpet of flowers that fall below the tree. The lovely Nilgiri lily *Lilium neilgherrense* is known for its rarity, whereas mahua *Madhuca indica* is closely associated with the adivasis of Central India who distil an alcoholic drink also called mahua from the flowers.

Rakta pushpa *Asclepias curassavica* is a common, small plant and has red and yellow flowers in clusters. The delicate blooms attract butterflies; such a combination can enhance the beauty of any place, be it a garden, a vacant plot in the town or on the roadside. *Gynandropsis pentaphylla* has a much simpler name in Marathi — tilwan. The

cluster of flowers with snow white petals, long pink stamens and brown anthers is easily identifiable. Another beautiful flower that appears in the rains is *Martynia annua* which has attractive blue and violet coloured blooms. It is commonly called the devil's claw.

As monsoon advances, the grass flowers, tiny buds appear and open up to display flowers with white petals; these are the blooms of *Chlorophytum laxum*.

White flowers spread over a patch of green, soothing the eyes. The herb is anchored firmly by its tuberous roots and helps to hold the soil together.

Soon small upright clumps of plants come up. The delicate white flowers of dropushpi *Leucas aspera* appear and offer a beautiful contrast against the green of the leaves. Known as tumba in Marathi, the plant is used for skin ailments in folk medicine.

Vishnukranta *Evolvulus alsinoides*, gokhru *Tribulus terrestris* and punarnava *Boerhavia diffusa* are common herbs which spread on the ground.

By late September and early October *Cyanotis fasciculata* appears in millions — one Sunday morning in October when I visited the hills I saw a carpet of blue spread over acres! The tiny deep purple petals with snow white fascicles above, topped with a deep yellow dot, in millions revealed a magnificent vista.

Days pass, the blooms of *Cyanotis fasciculata* gradually wither and the blue and purple tapestry covering the hills changes colour. Tiny seeds are left behind, scattered on earth to regenerate after summer. Walking amidst the herbs and shrubs, I realize that the southwest monsoon has waned.

At the end of the monsoon, I recollect the happy hours spent in the wilderness enjoying this bountiful season. ❀



### Artists at Work

FOUR FAKE tiger skins were seized from a group of tribals on 22nd March, 1997 in Shivpuri, Madhya Pradesh. The tribals were trying to sell these skins as original tiger skins. On being arrested, they revealed that they had the certificate permitting them to make tiger skins out of dog skins as a piece of art!

But for their smaller size and thinness, they looked like genuine tiger skins with paw and nails intact. Black stripes were made on the skin using an indelible hair dye. The tribals demonstrated their skill by making genuine looking tiger nails out of the horn of a bull in two minutes.

Making tiger skins as an art is a good thing but selling them as genuine ones is dangerous as it will encourage people to acquire original tiger skins.

*Dr. Rajiv Saxena  
Gwalior, M.P.*



### Welcome Change

I HAVE been receiving *Hornbill* regularly. However, recently I noticed a pleasant change, rather an eye catching one. The issues 1997, No. 1, 2, & 4 are just fantastic. The quality of photographs and printing is superb.

Being a botanist I feel it is absolutely essential to educate nature lovers about our endangered plants. The high quality snaps and good printing makes it easy to identify the plants in nature. My sincere thanks to *Hornbill* and the authors Mr. Isaac Kehimkar and Dr. Ashok Kothari. I want to see more snaps with practical information and field data.

*V.R. Pusalkar  
Alagapuram, Salem.*



### Catch 'em Young

I AM writing this to share some of my thoughts with the readers about how we, as parents or grandparents can create a friendly awareness of our natural surroundings in the minds of the very young, even babes in arms, by going back to certain nursery rhymes in the regional languages. For example, in Marathi, there are some very endearing nursery rhymes about how a baby can make friends with the birds it sees around the house, e.g. "chiao"—chimani—sparrow; "kaa-oo—kavala—crow, by inviting them for a feed and a sip of water placed on the palm of the baby. There is a rhyme chiding the parrot for eating *paan* in order to colour its beak red. In the very popular rain-rhyme, children invite the rain by luring it with a penny.

These rhymes are in stark contrast to the ones that we teach our children today — of blackbirds being baked in pies,

of blind mice having their tails cut off, and of spiders frightening little girls.

Nursery rhymes may not leave a lasting impact on the minds of children. But chosen properly, they can be used to introduce children to their surroundings as the first step towards environmental awareness and protection.

*Neelima Bhawe  
Mumbai.*



### An Ornithologist's Delight

THE ARTICLE on Stoliczka's chat, *Saxicola macrorhynca*, by Dr. Asad R. Rahmani ( *Hornbill* 1997 (2):29-32 ) is very interesting and informative. Future ornithologists should take note of the contents and should take maximum advantage of opportunities to record details of all species they encounter in the field. It is quite true that we do not pay adequate attention while watching smaller birds.

*Prof. H.S.A. Yakhya  
Aligarh.*



### Inspired Amateurs

I HAVE been reading your article on *Wild Flowers* with interest. The author's photographs have always inspired amateurs like me to take up photography seriously.

*Dr. Trisha Pandya  
Vadodara.*



# SAVE OUR TIGERS

भरतपुर वन विहार

Bharatpur Forest Lodge

Keoladeo National Park  
Bharatpur - 321001 Rajasthan India  
Tel. 22760, 22722 Cable FORESTOUR  
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To his Excellency the Ambassador,  
We, the children <sup>of India</sup> want you to save the tiger,  
Please ask your Chinese people not to believe in  
the so-called, "Tiger-bone medicines". These are all  
superstitions. Also tell them that we thought in  
China it was said that the '98' is the year of the  
tiger. Well look at what you're doing to them.  
The tiger is the world's most beautiful and graceful  
animal in the world according to us and even if  
Chinese people don't want to save the tigers from  
extinction, why take the tigers from India? China  
has already wiped out their own tigers and  
now they're after ours? This is totally ridiculous.  
They don't have the right to do it.



A number of 10-year olds from J.B. Petit School, Mumbai took the initiative into their hands and wrote letters to His Excellency the Chinese Ambassador to India, pleading the cause of our National Animal.



Dear Sir,

Save the tigers. Do not hunt them.

They will become extinct in the near future, as there are now only about 1,500 left in the world today. Please do not kill them for their skins out of which handbags, coats, rugs, etc. are made. Their bones are crushed <sup>into</sup> powder and made into medicines. Tiger fat is used to make tiger oil and tiger balm. From their claws, nails are made into jewellery pendants. All this may earn you a lot of money, but it's not worth it, as it lessens their population.

Thousands of tigers are killed each year thus no tiger will be left in a few years from now. Please do not hunt them, instead protect them as the tiger is a valuable species of wild life to the whole world and the ~~the~~ National animal to us, Indians.

From

Aysha Medhord

His Excellency,  
The Ambassador,  
The Peoples' Republic of China,  
50 D, Shantipath  
New Delhi 11001

Dear Sir,

You must be aware that the tiger is fast becoming extinct. A dead tiger is very valuable because of its beautiful pelt and as well as its body parts like flesh, bones, teeth, claws, which are used as local medicines and objects of desire specially in China. The tiger is far too regal an animal to suffer such a fate. It is necessary to stop killing the animal for such medicines that can be replaced by other materials. To kill an entire species for such reasons is not right.

I appeal to you to please ban the manufacturing of such and sale of such medicines and punish anyone who is found possessing any part of a tiger. We need to save them from the ~~country~~ cruelty of unthinking people. This might be our last chance.

Yours sincerely  
Ajit Trilokar



To,

The Chinese Ambassador

We the children of J.B. Pat school are asking you for a small favour. Please stop killing tigers. What do we get by killing a tiger? A set of clothes made of fur, its bones which give us medicines, its teeth and claws which give us good-luck, but this good-luck is more of a bad-luck to the tiger and also for us because then one more animal in this world becomes extinct and we don't want that to happen to any animal, least of all our national animal. Why can't we save them? Can't we give them a better future than being extinct? If we can, then we all can watch the tigers, because we all are one including the animals and birds.

From Anika, Sush  
I B J B. Petit Bony,  
India

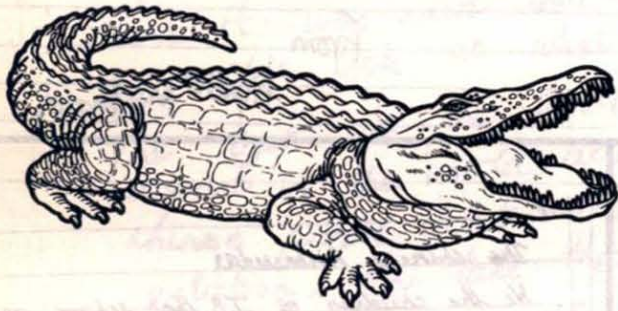
# MISCELLANEA

— Excerpts from the Journal of the BNHS

## A turtle killing a crocodile

A few days ago when out in camp I rested for a time on the bank of a small river. There was a pool of very clear water about 50 yards long and some four or five feet deep, and I could see the fish swimming about in it plainly.

Immediately in front of me was a submerged rock with a sloping surface, the top being some six or more inches under water. I happened to be watching a big fish moving near this rock, when suddenly a small fish-eating crocodile came and sat on the rock. He sat up with his eyes level with the water and began to watch me. I sat quite still and watched him. Suddenly I saw a swirl in the water, and something seized the crocodile from



behind and passed over the rock into deep water. I saw that it was a turtle about two feet six inches long. Then began a fight which lasted perhaps three-quarters of an hour. The pair splashed about all over the place. The crocodile was at times lifted half out of the water, and I could see him twisting round to try and catch hold of his enemy. After a time the crocodile became exhausted, and the turtle dropped him, and he rose to the surface and rolled over and over. Then the turtle caught him again, and began taking a series of dives from one end of the pool to the other. The pace was astonishing. Backwards and forwards they went, and at each turn, when they came to the surface, the crocodile's head came out of the water and he gasped for breath. The turtle was apparently drowning him. Eventually he no doubt considered he was harmless and swam with him to the tank and tried to get out of the water. The steepness of the tank, however, defied him, and he gradually

worked his way round to a place where cattle had made a path down. Here he pushed the crocodile out of the water where I, who had crawled to the spot, gave him a rap on the nose with a cane. In his astonishment he dropped the crocodile, which I appropriated. He probably thought it hard luck, but I wanted the skin.

This, however, was of little value, as I found that at the point of first seizure, namely, at the junction of the hind legs with the back bone, the animal was virtually cut in half.

It was a most interesting sight; and as it caused me some considerable excitement to view, it occurred to me you might care to hear of it.

MOIDART,  
*Ulwar, Rajputana.*  
September, 1895.



## Scorpion carrying a flower

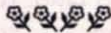
One evening last February, while sitting in the verandah of my house at Aden, my attention was drawn to an object advancing across the floor, which seemed to be some peculiar leaf-insect or *Phasma*. On looking at it closer I saw it to be a scorpion (identified by Mr. Pocock from my description as *Parabuthus liosoma*), which was holding over its back by one claw a large blossom of *Poinciana regia*, known in Aden as the white gold-mohur tree. Its tail, curled over its back, further assisted in retaining the flower in position. The nearest tree from which it could have obtained



it was at least 30 feet away, and to bring it the scorpion must have carried it over a low stone parapet and up two or three steps, so that intention seems to be proved. What that intention was it is hard to define. Hardly for concealment, for the size of the flower made it more conspicuous; besides it was night. If it was the lamplight it wanted to avoid, it is necessary to assume that, finding the light too strong, it went back to get the flower. It could hardly be as food, for scorpion are not known to live on vegetable substances; nor, as far as I know, do they construct nests. I regret that I did not allow the creature to reach its destination, and so ascertain its intention; but unfortunately, I gave in to my first impulse and crushed it. My wife suggested that perhaps it was going to a wedding, but this explanation is more poetical than scientific.

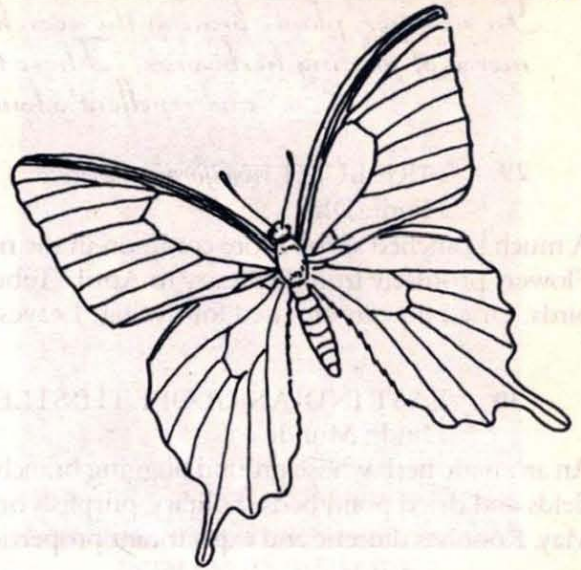
Some of your readers may be able to throw a little light on this curious instance; but Mr. Pocock of the British Museum, to whom I related the above, said he had never heard of a similar case.

A. NEWNHAM, Captain,  
Aden.  
Vol. XI JBHNS.



### Speed of flight in Butterflies

During the monsoon in travelling by rail from Bandra over the Mahim creek it has been interesting to note the way in which butterflies of all conditions and sizes have used the railway causeway as a road of safety to cross the water of the creek which is at this point of considerable width, probably nearly a mile. On a fine morning looking from the carriage windows one could very



clearly see the way in which the crowds of butterflies flew steadily over the embankment with its flowers and grasses and avoided the water. The difference in the number of butterflies seen on this particular embankment and others with practically the same vegetation, would seem to warrant the supposition that insects were using the bank as a safe road from the one side to the other. The trains run over this part of their journey at speeds varying from seven to fifteen miles an hour, and while most butterflies seemed to be unable to keep up with even a slow train, either not flying fast or straight enough, others, of whom *Papilio erithronius* was easily the best, seemed to keep their place without effort beside the windows of the fast train, thus making their speed of flight about fifteen miles an hour at a modest computation.

S.E. PRALL, Surg.-Captain,  
Bombay.  
October, 1897.



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.

# Indian Wildflowers

*In summer, plants braving the scorching heat are often the only greens left to the mercy of grazing herbivores. These tenacious ones are armed with thorns, hairs and repellent odours to keep off predators.*

**29** FIRE BUSH *Woodfordia fruticosa*  
Hindi: Dhai

A much branched shrub more common in the north than in the south, in the Himalaya upto 1500 m. Flowers profusely from February to April. Tubular orange flowers are a favourite with nectar seeking birds. Dried flowers are used for dyeing. Leaves have antibiotic properties. Often planted in gardens.

**30** EAST INDIAN GLOBE-THISTLE *Sphaeranthus indicus*  
Hindi: Mundi

An aromatic herb whose ground hugging branches have toothed wings. Seen in open areas in harvested fields and dried pond beds. Solitary, purplish or pink, globular flower heads are seen from January to May. Root has diuretic and expectorant properties. Powdered root is applied for treating skin diseases.

**31** CHRIST'S THORN *Carissa carandas*  
Hindi: Karaunda

An evergreen thorny shrub that grows upto 3 m, occurring almost throughout the warm tropical regions of the Indian subcontinent. 2-4 cm long thorns are often forked. Sweet smelling white flowers, usually in bunches, are seen from February to April. The ripe fruits have cooling properties.

**32** INDIAN TURNSOLE *Heliotropium indicum*  
Hindi: Siriyari, Hatta-juri

This aromatic, hairy plant grows along roadsides, railway lines, degraded land, dried pond and lake beds. Several pale violet flowers in pairs, laden on spikes curling at the tips, are seen throughout the year. Yielding an essential alkaloid, the plant is attractive to milkweed butterflies like the Tigers and Crows. Applied locally to ulcers, sores, wounds and insect stings.

**33** THORN APPLE *Datura metel*  
Hindi: Dhatura

Large trumpet-shaped white flowers on shrubs are seen along the roadsides throughout the year. This annual grows about a metre tall. Fruits covered with fleshy prickles give the plant its common English name. Though poisonous, it has medicinal properties. The juice of leaves is used for treating dandruff, while the seeds have narcotic and antispasmodic properties and are useful for delousing.

**34** YELLOW-BERRIED NIGHTSHADE *Solanum surattense*  
Hindi: Ringani, Berkateli

This perennial grows throughout India, preferring drier habitats. Common along roadsides, growing close to the ground with branches and leaves armed with sharp prickles. Blue or bluish-purple flowers are seen throughout the year. Yellowish-white, round berries have green veins. The root is one of the important ingredients of the well-known Ayurvedic medicine *Dasamula*. The plant extract has antiviral activity and antibiotic properties. ❀

Text & Photographs: Isaac Kehimkar



❖ *Summer Blooms* ❖



FIRE BUSH



INDIAN TURNSOLE



EAST INDIAN GLOBE-THISTLE



THORN APPLE



CHRIST'S THORN



YELLOW-BERRIED NIGHTSHADE

**Take them under your wing  
— the endangered Greater Adjutant Stork**

**PHOTO: HILLALJYOTI SINGHA**





Unlike most moray eels in Mumbai, the tessellated moray (*Gymnothorax favaginea*) is not hideous and ugly.



While almost all moray eels are marine, a few like *Gymnothorax tiles* are estuarine, and can even tolerate fresh water.

# Seashore Lore

Of the various fishes found near the shore in the tropics, especially in rocky areas, none commands more respect than the moray. Slimy, ugly, looking like a snake and swimming like one, and with a mouth full of needle-sharp teeth, it appears as ferocious as a cobra.

## No. 30 The Misunderstood Moray

*"Eelie, eelie, tie a knot,  
And I'll let you in the water float."*

Old English poem

### Beefsea

Of the various fishes found near the shore in the tropics, especially in rocky areas, none commands more respect than the moray. Slimy, ugly, looking like a snake and swimming like one, and with a mouth full of needle-sharp teeth, it appears as ferocious as a cobra.

Morays belong to a branch of the eel family, comprising some 120 species. With a scaleless skin, without pectoral and pelvic fins, and with small rounded gill-openings, they vary from 15 cm to almost 3 m in length, though most are a little over a metre. Lurking in rock caves or crevices and tunnels in coral reefs, they are abundant in shallow water, rarely being found in the open sea or below 45 metres. During the day, they hide among the rocks, rarely venturing out of their holes, but you can see plenty of them at dusk, with their heads protruding out, seeming to be perpetually yawning. Actually they are breathing, alternately opening and closing their mouth. Usually dull in colour, some appear greenish because of the coating of yellow algae

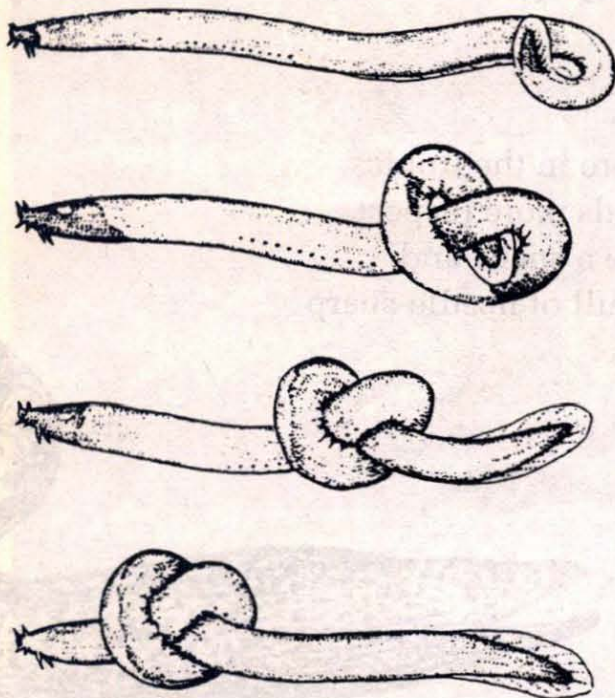
growing on the blue-gray skin.

Morays come out at night to feed. They have poor eyesight and hunt by smell, their most favoured prey being octopuses. But the latter, over thousands of years, have evolved a strategy to protect themselves. When attacked, they throw out a cloud of "ink". While this makes the water in the vicinity turbid, so that the octopus can slink away, the ink serves another purpose. It deadens the moray's sense of smell, so that it cannot locate the octopus.

I have often experimented with octopuses in the Aquarium. First I annoyed some octopuses in a bucket of sea water so that they released their ink. After emptying the bucket into a tank holding the morays, I released an octopus there. The morays would not react even if they accidentally bumped into the octopus.

Some parrotfish have evolved a similar strategy. Every evening, they secrete a "night gown" of slime around their body, with only a hole near the mouth for breathing, and go to sleep under this transparent blanket. This serves





The moray can twist its flexible body into knots and move a knot along its body to ward off a clinging octopus.

to prevent their body odour from seeping out into the water and attracting foraging morays to them. The blanket is broken up after the parrotfish wakes up, and a new one is made in the evening.

Some morays, like the snowflake moray (*Echidna nebulosa*), have blunt teeth and feed on lobsters, crabs and prawns.

Often, when a moray grasps a large octopus in its mouth, the latter fastens its arms around the moray's head, sticking fast with its suckers. The moray uses a strategy. Twisting its body, it makes a loop with its tail to form a knot. Now it slips its body backward through the loop, forcing the octopus's tentacles loose. If caught (by humans) when it has gorged itself, it will tie itself in a knot and then squeeze itself backward through the loop, forcing the eaten fish, one by one, out of its mouth. The same trick is used by a moray caught on a hook to break the line or pull the hook from its mouth.

Not much is known about the breeding habits of morays; they have flat, ribbon-like, glassy

transparent leptocephalus larvae just like their cousins, the eels.

During the Roman Empire, it was believed that morays tasted best if fattened on human flesh. A cruel Roman knight, Veddius Pollio, who was a friend of the Roman emperor Augustus (630 B C - 14 A D) was notorious for throwing disobedient slaves into his moray reservoir. At a dinner with Augustus as chief guest, a slave broke an expensive crystal goblet, whereupon Pollio ordered the slave to be thrown to the morays, exclaiming "Ad muraenas". Though the slave fell at his feet begging for mercy, Pollio did not relent. Whereupon Emperor Augustus intervened, dismissing the slave on imperial decree, and ordered all of Pollio's crystalware to be broken and his moray reservoir destroyed.

A wealthy Roman, Hircius, had a reservoir that could hold 6000 morays; these were used in a banquet held in honour of Caesar's triumph. The moray eel reservoirs of another Roman statesman, Marcus Licinius Crassius (112 B C) were also well known.

Why are morays held so much in awe? While it normally minds its own business inside its hole, it does have a territorial instinct. If approached, a moray uses body language to warn the intruder. While it normally opens and closes its mouth rhythmically for breathing, a wide open mouth is an indication to keep off. If this is ignored, the moray will swim out of its hole, trying to chase the intruder away. And we misinterpret this as an act of aggression by the moray.

Most of the so-called unprovoked attacks by morays actually involve some kind of provocation. A person carelessly putting his hand in a hole to search and catch a lobster or crab finds it grasped by a moray. A current fashion among scuba divers is to show off their bravery (?) by feeding morays. A dead fish is held close to a rocky cave to entice a moray to come out. When it does, the diver moves the food farther away. When it swims speedily to dart at the food, an inexperienced diver loses his nerve, drops the food and jerks his hand away. The moray, with its poor eyesight, ignores the slowly falling food but is attracted by the fast moving hand. The

Moray (*Gymnothorax favaginea*)

smell of the food has aroused its hunger and it snaps at the diver's hand. And yet another moray has acquired an evil reputation!

An injured moray is, of course, another matter. Divers also show off by spearing a moray. Using the "knot" trick, the moray can slide along the harpoon towards the diver's hand. And a moray caught on a hook can climb the angling line tail first and come aboard the boat. An injured moray thrashing about in a small boat is no laughing matter, although I have laughed heartily at the sight of three fully dressed men hastily jumping out of a boat because of such a moray, into the sea. I could afford to laugh because I was not inside the boat!

There are, however, a few stray instances of morays attacking without provocation. In 1902, Alcock aboard the Royal Indian Marine Survey Ship *Investigator* wrote of such an experience as follows:-

"As it was low spring tide, we had to leave our boat at the outermost edge of the Betrpar atoll and to wade across the reef to the island, and during this delicate progress — for growing coral is by no means pleasant stuff to walk upon, even when a man is shod — we were surprised to find ourselves furiously attacked by a swarm of the spotted reef-eel (*Muraena pseudothyrsoidea*), for it was their breeding season, a period when they are always strangely irritable and aggressive."

There are two misconceptions about morays. One is that its bite is venomous. It is not, but as the wound is not clean and has jagged, lacerated flesh hanging loose, it is advisable to bathe it with plenty of clean sea water and dab an antiseptic on it.

The second fallacy is that a moray has a "bulldog grip", and will grab and hold a diver tenaciously until he drowns. Nothing can be farther from the truth. A moray's bite is quick and brief, and it makes no effort to hold on. For its respiration, the moray has to constantly open

and close its mouth like all fish so it cannot hold its breath while clamped on to a diver's limb. In the absence of concrete evidence, it is like the tales of giant clams closing on divers' legs till they drown; perhaps possible, but unlikely and not authenticated.

Although moray flesh is tasty, there is one culinary hazard. The blood (uncooked) of all eels



Moray eels from coral reefs are gorgeously coloured.

is poisonous and can sometimes even be fatal. Drinking eel blood results in nausea and vomiting, frothing at the mouth, bloodstained stools, distress while breathing and sometimes death. If a drop of eel blood gets into the eye, within minutes there will be reddening and a burning sensation. Later, a feeling of some foreign body in the eye develops and lasts for days. A drop of blood on the tongue makes it red and burn, with copious saliva as our body tries to dilute it and wash it away. ♣

**MAN INSIDE THE SEA.** by B.F. Chhapgar. Published by the Director, National Book Trust, India (Popular Science series), New Delhi, 1995. Pp. xii + 188; 22 x 14 cm. Paperback Ed. Price Rs. 56/-

This book gives an insight into the various facets of man's activities under the sea, the methods and the various inventions leading to their present sophistication. A significant portion of the book covers the history and techniques of hard-hat (helmet) and SCUBA (aqualung) diving. Apart from describing how it is to be done, the author has also covered the evolution of diving gear and accessories, the so-called enemies to be encountered by a diver, and the limitations due to his terrestrial habits.

For those who would like to go down into the sea without getting wet, there is another, quite different, approach, viz. caisson (diving bells), military submarines and research submersibles. The next step in man's undersea exploration is to lengthen his stay underwater and strive to live there — successfully achieved for days and even weeks so far. The ultimate aim, to breathe like a fish while swimming may sound like a daydreamer's fantasy, but experiments under way to achieve this are going on and are briefly described.

Man has also used his ingenuity to devise instruments which enable him to see, hear and even collect objects for study. The steady improvement in these, starting from primitive instruments termed derisively as "throwing a bucket into the sea and seeing what it brought up", to the state-of-the-art robots used successfully to retrieve parts of Air India's plane *Kanishka* which blew up in mid-air and sank in the sea at a depth of over 2000 metres, has been vividly described in this book.

The book is written in lucid language for the lay person; still it brings out the erudition and wide extent of nautical knowledge of the author — a marine biologist by profession who has dabbled in oceanography, and is an accomplished SCUBA diver.

The book is profusely illustrated, which makes its technical portions easy to follow. Though elaborately covering naval submarines, the author has adroitly excluded the gory horrors of warfare.

The book is well edited, yet a few errors have crept in. The first paragraph in the chapter "Hard-

hat Diving" refers to Plates I and II for illustration of a hard-hat diver's helmet. But these plates are of a master-and-slave robot used in handling radioactive materials and of RUM (remote underwater manipulator) respectively. The colour photograph of diver's helmet and boots is given on Plate X.

A jarring note is the author's usage of obfuscating titles to his chapters, such as "The first steps, The enemy within, Going down in comfort". Instead of leaving the reader guessing, could he not have used simpler titles like "Remotely operated oceanographic instruments, Physiology of diving, Research submersibles".

In the relative absence of manuals of aqualung diving written for Indian enthusiasts, the author has taken special care to describe components of this diving gear and to elaborate the correct methods to be used by a novice. Thus this book will be of immense use to a beginner or instructor. But the author, in doing this, has dealt with equipment used earlier (during his diving days). A lot of this gear is now available in modified versions. He should have dealt with these too, as well as the current methods for clearing (removing water from a flooded) mask of the new type.

A glossary at the end of the book makes it easy for us to understand the (fortunately very few) medical and technical terms that the author had perforce to use, but the inclusion of an index would have made it easy to refer to any particular topic.

The book is most valuable to the armchair adventurer who wishes to know how man is so successfully mastering the difficult task of finding out what goes on inside the sea, as well as to budding oceanographers. And it is a "must" for all mariners who, though very well versed with happenings on the sea surface, are often ignorant of what is being done "down under".

The author must be congratulated for compiling such a diversity of information, culled from his personal experience of over forty years in fishing boats, state-of-the-art oceanographic ships and international ocean expeditions. ♣

TASNEEM PACHA

**ORGANISATIONS THAT HELP THE WORLD. WORLD WIDE FUND FOR NATURE.**

By Peter Denton. Published by Orient Longman Ltd., Hyderabad. First Indian Edition 1996. Pp. 64; 20.2 x 13.5 cms. Paperback Ed., with colour photographs, line drawings, Glossary, Chronology of important events. Price Rs. 55/-.

This small book is a good promotional effort on the part of WWF, highlighting the successful role played by the relatively young organisation in promoting the cause of nature conservation. The publication is profusely illustrated with some very dramatic colour photographs. It gives a good overall view of the conservation efforts made by WWF since its inception in 1961. As one of the largest nature conservation organisations in the world, it now tackles issues that cross all international boundaries.

A word of appreciation for the organisations that assisted in its growth locally, especially in India, would have been in place. Perhaps very few of us know that WWF-India fledged out of BNHS's Hornbill House in the early seventies. Surprisingly, the publication though an Indian edition does not contain any address of WWF-India!

The list of programmes successfully conducted by WWF and the lessons learnt, is impressive and will help in setting benchmarks. Some of the conservation issues tackled include the highlighting of elephant poaching when during a single year 1973, fiftyfive thousand elephants were slaughtered for one thousand tonnes of ivory; while in 1983, one hundred thousand elephants were killed for exactly the same amount! Similarly, in 1991, Mangrove areas were being destroyed at a rate of 500,000 hectares a year in Asia alone.

The book describes the setting up of Trade Records Analysis of Flora and Fauna in Commerce (TRAFFIC) in 1976, the largest wildlife trade monitoring scheme in the world, which helps in observing, recording, and investigating the illegal buying and selling of endangered species. The scheme has helped in checking poachers and unscrupulous elements to a very great extent.

Highlighting the medicinal resources, the book emphasises the fact that at least a quarter of known

medicines are from the forests and of the three thousand plants identified by the US National Cancer Institute as having anti-cancer properties, 70% come from tropical rainforests. Unfortunately, the tropical rainforests have been subjected to immense developmental pressures and cultural invasions which have overwhelmed indigenous communities.

The publication emphasises the various projects and campaigns undertaken by WWF, especially the world wide publicity that the conservation issues received because of WWF involvement. This in turn helped in generating an overwhelming public opinion for causes thought to be low on the priority list of governments but which later culminated into some highly successful projects like "Operation Tiger", "Operation Panda", "Operation Rhino", "Save the jungle - save the forest" — a campaign to save the world's rainforests. Its innovative money raising campaigns like "The 1001 Club: A Nature Trust" has helped channelise millions of dollars for worldwide conservation programmes. Interestingly, by its twenty-fifth anniversary WWF had invested \$ 110 million in more than 4000 projects in 130 countries.

The WWF policy for the 1990s is "to stop, and eventually reverse, the accelerating degradation of our planet's natural environment, and to help build a future in which humans live in harmony with nature". A tough resolution indeed, but given the will of its more than three million members in all five continents, coupled with its numerous wellwishers and an enlightened and much wider public opinion today, as compared to 1961, the task is not insurmountable.

The book is a commentary on the tragic and depressing state of the world's environment in a nutshell and though steeply priced at Rs. 55, will give environmentalists an overview of the conservation issues confronting us today. ♣

S. ASAD AKHTAR



# A Naturalist in the Northwest Himalaya — II

M.A. Wynter-Blyth

From *JBNHS*, Vol. 50, No. 2

SUNJOY MONGA/PORPOISE PHOTOSTOCK



Narkanda to  
Kulu by the  
Bashleo Pass

Arsu rest house is a little one-roomed shack, and I devoted the afternoon to washing my clothes in a neighbouring stream. There was a good view of the Bashleo Pass from the verandah of the bungalow, and very forbidding it looked. I began to wonder if it would be possible to get the mules over it.

However, when I questioned Chenan Singh, my very efficient Sikh muleteer, before setting off for Sirhan the next day, he had no qualms and assured me that it would be an easy matter.

Beyond Arsu, the road drops two thousand feet, gently at first, then steeply, down to the Kurpan bridge at four miles. The way led through scrub and cultivation, typical of the southern hill slopes at this altitude — standing barely and a young growth of potatoes, oaks (*Quercus leucotrichophora*) badly stripped for firewood, wild apricot trees (*Prunus armenaca*), roses, *Indigofera*

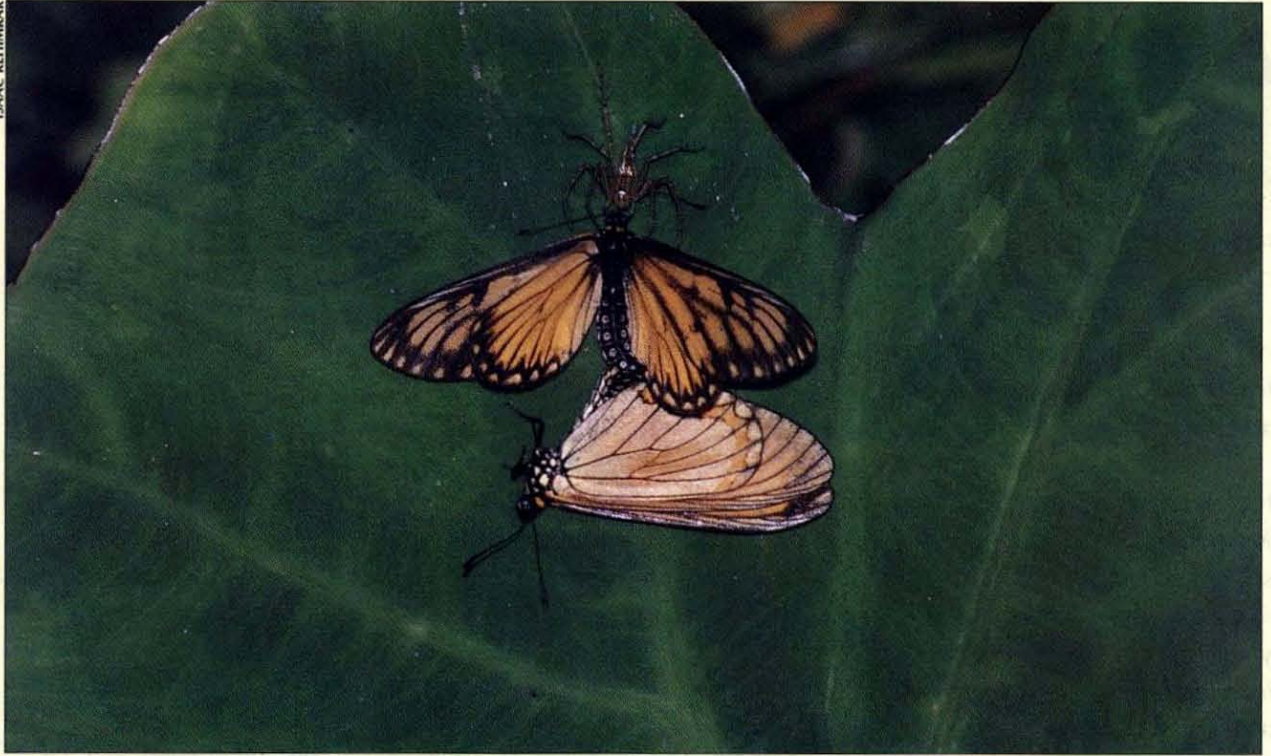
and bushes of *Berberis*, *Rhamnus*, *Spiraea*, *Cotoneaster* and *Crataegus*. Beside the river-crossing an alder tree was almost hidden under a mass of the yellow spikes of *Caesalpinia decapetala*, a scandent shrub whose limit according to Collet's FLORA SIMLENSIS is only 4000 ft. Nevertheless, as I also found it two days later beyond Batha flourishing at 6500 ft., it is obvious that its normal range is much higher than that.

Beyond the Kurpan the track climbs steeply from woods of *Pinus roxburghii* to enter the short valley leading up to the pass. A golden eagle (*Aquila chrysaetos*) glided past a few yards below me, giving me the closest view I have ever had of this magnificent bird, and further up, at 7500 ft, I saw a six-bar Swordtail butterfly (*Pazala eurous cashmiriensis*), a sign of the lateness of the season, for this extremely local *Papilio* appears with great regularity at this altitude in the Simla hills about April 15th.

ISAAC KEHINKAR



The symmetrically whorled branches of *Pinus longifolia* form a rounded head of light foliage high up on the trunk.



A mating pair of Yellow Coster *Pareba vesta* being attacked by a lynx spider.

After entering the little valley the path climbs gently through pleasing scenery, mixed forest, cultivation and scrub, to give way to a steep and unpleasant ascent that winds in and out among the huge unshaded boulders of the terminal moraine of an ancient glacier that once flowed down from the head of the valley.

There was, however, ample compensation for this tedious climb, for on reaching the upper end of the moraine a scene of great beauty suddenly revealed itself. A square half mile of flat green pasture, on which grazed the tiny hill cattle, lies enclosed on three sides by huge cliffs and steep forested hillsides to form a cirque, and at the head of the pasture a stream tumbles down the crags to meander peacefully across the meadow past a little wooden temple.

When I arrived the chowkidar was absent from the bungalow, which is disappointingly placed to face away from the cirque, but an elderly crone who was minding cattle came to my rescue

by emitting a series of eldritch shrieks in the direction of the village, three quarters of a mile away, which brought the chowkidar hurrying in a very short time.

The art of shouting from khudside to khudside has been highly developed in these parts, among whose simple folk it may almost be said to take the place of the telephone. I know of no place where it has been developed to a finer art than at Deha ... for there the inhabitants carry on conversations with the next village down the narrow funnel-shaped valley, fully two miles away. The replies float up from below, mere whispers of sound. Curiously enough, this form of communication does not seem to be much in use in Kulu.

On opening one of my food boxes a scorpion was found (I think it had made the journey from Takeleh where we had found another one) but otherwise the afternoon passed uneventfully and pleasantly among these delightful surroundings.

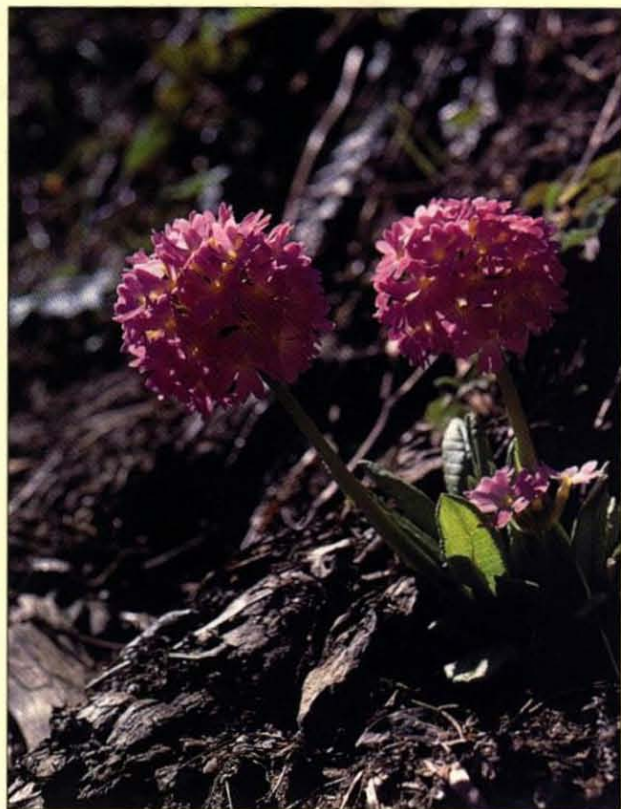
Nevertheless, the pass looked even more forbidding from close quarters. It seemed to zig-zag up an almost vertical precipice.

The weather was gloomy when we set out the next morning but, after a shower of rain, it cleared up to become brilliantly fine once more. Chenan Singh proved to be correct and the ascent of the pass was easy. Thirty-four cleverly engineered zig-zags take the road up the precipitous head of the valley. Then, at a gentler angle, it passes through a conifer belt onto meadow land and finally through a strip of mountain oak (*Quercus semecarpifolia*) to the summit.

The Bashleo, though a low pass — it is 10,800 ft. — is almost all that a pass should be, for it looks impressive from a distance, it is steep, it passes over a col between two high mountains, it is sufficiently high to be interesting, the ascent from Sirhan is not long enough to be tiring and there is a fine view back from the top, though the view towards Kulu is disappointing as it looks towards the lower hills.

On the pasture I saw my first Alpine choughs (*Pyrhacorax graculus*) and a snow pigeon (*Columba leuconota*). Of the latter more will be said presently for it is a very common bird above 10,000 ft. in Kulu. The chough is very like a small jungle crow with a short yellow beak, a character that readily distinguishes it from the other species found in the hills, though less commonly, the red-billed chough (*Pyrhacorax pyrhororax*), whose bill is longer, curved and coral red. It is a lively bird that is much given to mild aerobatics and possesses a variety of calls that are both more shrill and musical than is usual with the crow family. This bird, too, is abundant at Manali, over 8,000 ft.

The southern face of the pass was free from snow except for one or two deep drifts, and primulas (*P. denticulata*), the first heralds of spring, were just beginning to show their heads, but no other flowers were yet to be seen and the grass was still brown from its winter sleep. The northern side of the pass, however, was snowbound, and the mules had to descend with



ISAAC KEHIMIKAR

The purple to mauvish-blue flowers of *Primula denticulata* are the first blooms of spring.

care. I travelled rapidly, for my foot had recovered, and was soon at Batha.

Batha is prettily placed in the narrow valley on a small spur above the poplar-fringed Tirthan River, with forest all around. I spent the afternoon by the waterside watching the attractive bird life of a Himalayan stream. They are a cheerful lot. There was a trio of dippers (*Cinclus pallasi*), one cock and two hens, plunging now and then into the most swiftly flowing parts of the torrent to emerge yards away, shake their feathers and bob about on some rock. A pair of plumbeous redstarts (*Rhyacornis fuliginosus*), the female a grey little bird with a broadly white-bordered tail, very different from the deep slaty-blue, chestnut-tailed male, made brief hawking expeditions after insects or longer journeys close above the water from one stone to another. The male showed great displeasure at another of the species which had

strayed into his territory, and chased him away in a determined manner. There was also a pair of grey wagtails (*Motacilla cinerea*) about their lawful business by the water's edge, and the high-pitched alarm note and prominent pied plumage of a spotted fork-tail (*Enicurus maculatus*) compelled attention to this striking bird. Once I saw a paradise flycatcher (*Terpsiphone paradisi*) trailing his silver ribbons behind him, and a pair of yellow-billed blue magpies (*Cissa flavirostris*) made short flights, one following the other, from tree to tree. This beautiful bird is extremely common in Kulu, where the red-billed species (*Cissa erythrorhyncha*), the common magpie of Simla, is not to be found. A noticeable absentee, a bird that is so much a part of Himalayan streams for most of the year, was the white-capped redstart. They had left for their nesting grounds further into the hills.

Beside the rest house grew an apricot tree singled out for great attention by the Hill Jezebel butterfly (*Delias belladonna*) because it was infested with *Loranthus*, the foodplant of the larva. The slow, leisured flight and striking yellow and black markings of the undersides of its wings proclaim that this butterfly is protected by its unpleasant taste.

It is a curious and perhaps significant fact and one to which I have never seen attention drawn, that the majority of butterflies protected in this way feed in their larval stage on foodplants that are either poisonous or belong to a family containing poisonous plants. For instance, in addition to *Delias* (the whole of which genus feeds on *Loranthus* or *Viscum*), the danaiids (of which the entire family is protected) feed on plants belonging to three genera *Apocynaceae*, *Asclepiadaceae* and *Urticaceae*, (sic) of which the first two families contain many poisonous plants and the third at least some, for example hemp — and nettles certainly possess irritant properties. The large genus of the protected red-bodied swallowtails (*Atrophaneura*) feeds on the often poisonous Aristolochiaceae, and *Pareba vesta* on *Buddleia* of the Loganiaceae, the family that

contains *Strychnos nux-vomica*. In some cases, of course, the foodplants belong, as far as is known, to families which possess no species with toxic properties (such as *Aporia*, the Blackveined Whites, feeding on species of *Berberis*), but these are very much in the minority. Consequently I feel that there are grounds for suspicion that protection may not always be a mere matter of unpleasant taste, but that some butterflies may absorb the properties of the plants they feed upon and be actually poisonous.

Here then, surely, is an interesting avenue of research for the biochemist?

The bania at Batha was most attentive and, having sold me eggs at a price that was hardly anything above the market rate, presented me with milk and two doves for my dinner. I wondered what was afoot, but all he wanted was a certificate from me to say what a fine fellow he was. This I willingly gave him and everybody was satisfied; indeed, he was so pleased that he courteously accompanied me for a mile upon my way.

The twenty-two miles from Batha to Larji was very easy going, a pleasant relief from the arduous up and down of my journey since I had left Bahli.

The valley for the first few miles below Batha is attractive, and bird and butterfly life was in abundance, but after that, as we descended, it progressively became hotter and the scenery more barren and dull.

I remember little of these two stages except that I was thirsty and warm when I arrived at the comfortable and finely situated bungalow at Banjar, hot and very thirsty when I reached the fly-stricken civil rest house at Larji.

A three mile walk up the Larji Gorge early on the morning of the 11th took me to Aut on the main Kulu road where I said goodbye to Chenan Singh and his mules, both of which had given me the best of service, and boarded a bus for Manali. ♡

(To be continued)

# The Joy, and art of Birdwatching

Sunjoy Monga

**B**irds, more than any other form of life, have long enamored the human mind. Whether it was the gregarious, boisterous geese who, by their nasal and resonant warning cries, helped save Rome, or the canaries that were employed in the mining industry to warn coal miners of poisonous methane gas.

Biblical legends indicate that the pigeon was fancied by Noah, and pigeons were reared in ancient Egypt for food, and to carry messages, as early as 3000 BC. The red junglefowl, meanwhile, had reached Europe as early as 1500 BC. There are few other forms of life that so continue to enchant the human mind.

## Indian bird-life

On less than three percent of earth's land surface survives nearly fourteen percent of its

avian diversity — that's about 1235 species. Several reasons explain this great diversity, notably the subcontinent's location, in the zoologically rich Indo-Malayan region; in the Oriental zoogeographical realm, with the northern most reaches of the country merging into the Palaearctic. It is a region blessed with nature's riches.

## The fine art of birdwatching

I have observed that even today a majority of people, who would like to birdwatch shy away from it. Most people do so because they feel birdwatching involves technical jargon, complicated names, and moving and interacting with people who know so much more. Over the years, I have realised that nothing could be further from the truth.

SUNJOY MONGA/PORPOISE PHOTOSTOCK



The binoculars and scopes are the single-most indispensable tool of the birdwatcher.



Parrots — aren't you a birdwatcher already?

### How to watch birds:

There is a very important prerequisite to birdwatching. It requires you to go out and watch birds, and not just read books, — though, it must be emphasized, books can make the field-work much easier. It is not necessary to embark upon a long, arduous journey into the wilderness.

The reason birds are so universally popular, and birdwatching such a favourite international pastime, is because so many birds can be observed with such relative ease around where we live, in city or village. In comparison, most other wildlife, be it mammals, fish or insects, require a great deal of effort to be observed, and indeed, often to just manage a mere glimpse of, leave alone serious photography.

It may sound unbelievable, but of the peninsular Indian birdlife, nearly half the species (i.e. more than a quarter of the subcontinent's avian diversity) can be seen in and around the

towns and cities. Within a few kilometers around Mumbai, for instance, I have so far located nearly 300 species.

### What to look for in the field

The gist of birdwatching is best summed up by Ben King *et al* in their popular field guide, *THE BIRDS OF SOUTH-EAST ASIA* "Look at the bird for what it is rather than what you would want it to be". I am sure most of you can recognise a parrot, an owl, a peacock, crow and pigeon. Relax. Aren't you already a birdwatcher.

You must, very obviously, go out and look for other birds. And when you see one, there is something that at once tells you it is none of the abovementioned five. Perhaps it is its colour, or size, or its form and appearance. There is some visible character of this 'new' bird to confirm that it is none of the above five birds which you know well from past experience and observations. This is your first, and most important step towards birdwatching — observation. As you go along in your birdwatching 'career', you will learn a lot about the fine art of observation, precise observance of certain fine aspects, because birds, like most things of the natural world, aim for all around perfection. The fine art of birdwatching can be best discussed with reference to the following topics:

### Equipment

The birdwatchers of yore had no 'advanced' gadgets, not even good binoculars, and yet made precise observations, using just their keen interest, sincerity, dedication and patience. You can substitute the same for expensive gadgetry. Perhaps we should consider ourselves more privileged than birdwatchers of yore. Even those of just three decades ago; especially, with regard to the availability of, and easy access to, innumerable mechanical and other equipment. Of course, the birdwatchers of yore were more privileged in having much more wilderness. But few can deny the importance of being suitably 'armed' in today's birdwatching world.

The one experience even the most casual observer of birds longs for is to have a real close encounter with birds. This, in a way, is the very

essence of birdwatching. Yet nothing makes a more tingling, more lasting impression on the mind's eye than a gloriously coloured, exquisitely patterned bird in close-up. This is where binoculars or scopes come in. This has become the single-most indispensable tool for the birdwatcher, be it the casual observer, or the serious student of birds, the ornithologist.

The best models, naturally with the highest quality optics available, cost a lot. Expensive models of Leica and Zeiss can cost Rs. 20,000 and more! But, there are many models available around Rs. 2000

to Rs. 5000, though the greater majority, perhaps indeed all, of the finest kinds are not readily available off the shelf in India.

It is better to buy a prism model binocular, with central focusing and a wide field. A pair with a magnification of at least 6x is a must, and is also most convenient. Check that the one you buy ensures sufficient light, and for this, the diameter, in millimeters, of the front lenses or objectives should be at least four to five times the power of the glass. What this means is that a 6x magnifier should be 6 x 30. The first figure — 6 — implies the power, and means that the instrument will enable you see the bird six times closer; and hence make your observations more rewarding. Generally, it is best to buy 6x or 8x binoculars. Anything above that is usually too heavy, and rather than making your visit enjoyable, they can be a bit of a burden lugging around. Today, you can also buy binoculars with the outer body neatly rubber-packed, a guard against wet weather.

#### The first step, towards field identification

The very first step of birdwatching, as mentioned earlier, is to go out and observe birds.



S.G. NEGINHAL/PORPOISE PHOTO STOCK

The first step — go out and observe the birds.

Begin by reading a good field guide, and if there is one, a specific guide to the birds of a specific region you are visiting. First try to recognize distinctive groups or families of birds. The world's 8000 plus species of birds are classified into various groups, based upon certain physical characteristics and preferences for habitats.

Broadly, there are the water-birds and the terrestrial birds. The water-birds themselves are divided into many sub-groups, so that we have the swimming and diving ducks and geese, and the wading storks, herons and cranes, and smaller waders such as the vast armies of sandpipers and plovers, not to forget the gulls and terns.

Some birds are so unique that they cannot be confused with any other, but very often, within groups themselves, there are species that might superficially appear very similar. How, for instance, can you separate a cattle egret from a little egret, or a golden-backed woodpecker from a black-backed woodpecker. Or a house crow from the jungle crow. The ability to place a bird in its own distinctive group or family is the basis, of birdwatching. ♡

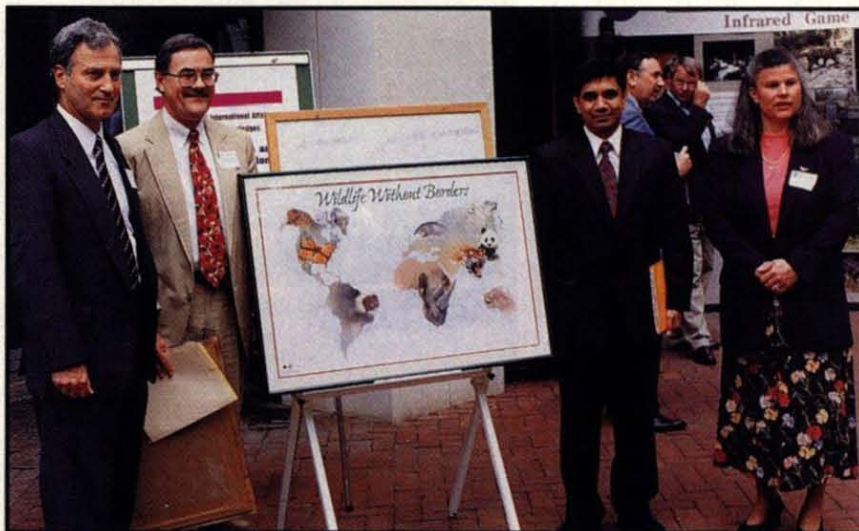
*(To be continued)*



The US Fish and Wildlife Service celebrated its 20th anniversary on 23rd September, 1997. The celebration was marked by a special programme to acknowledge its long-standing support groups and collaborators in wildlife conservation and research, during which Bombay Natural History Society was given an award for its outstanding contribution to international wildlife and habitat conservation.

Long before widespread recognition and appreciation of the numerous concerns regarding wildlife and conservation by governmental agencies, before the coining of such catchwords as biosphere and biodiversity, the BNHS devoted itself to the study of the natural sciences of the Oriental region, and promoted measures for its conservation. In recognition of this leadership, the USFWS was directed to BNHS in 1979, and has since then enjoyed a mutually beneficial relationship with the Society. Over

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DAVE FERGUSON/USFWS

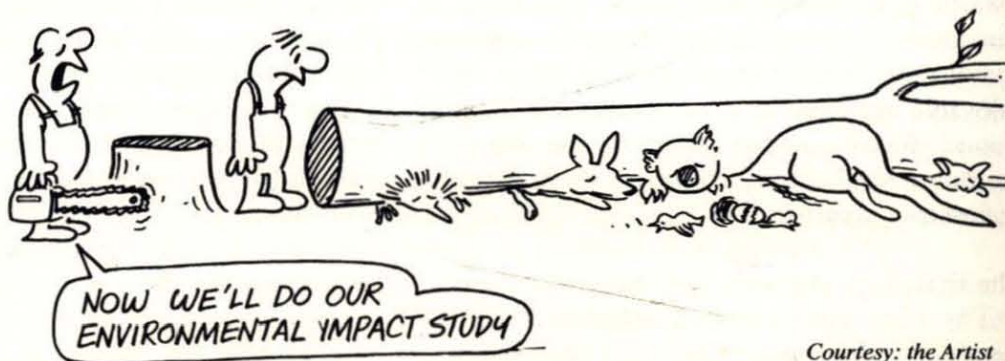
L to R Dr. Herbert Raffoele Chief, Office of Int'l Affairs, USFWS, Mr. Marshall Janes Asst. Director, Int'l Affairs, USFWS, Dr. Ashok Jain Counsellor, Embassy of India, Ms. Jamie Clark Director, USFWS, attending the 20th anniversary programme of USFWS.

15 major field projects on endangered species and habitats, e.g., Asian elephant, great Indian bustard, birds of prey, wolves, blackbuck and freshwater fish communities, yielded over 200 scientific papers.

Mr. David Ferguson, SFC Coordinator, Office of International Affairs, writes to say "We feel that one of our strengths of the programs is the ability to get help from cooperators like the Society". ♣

### Editor's Choice

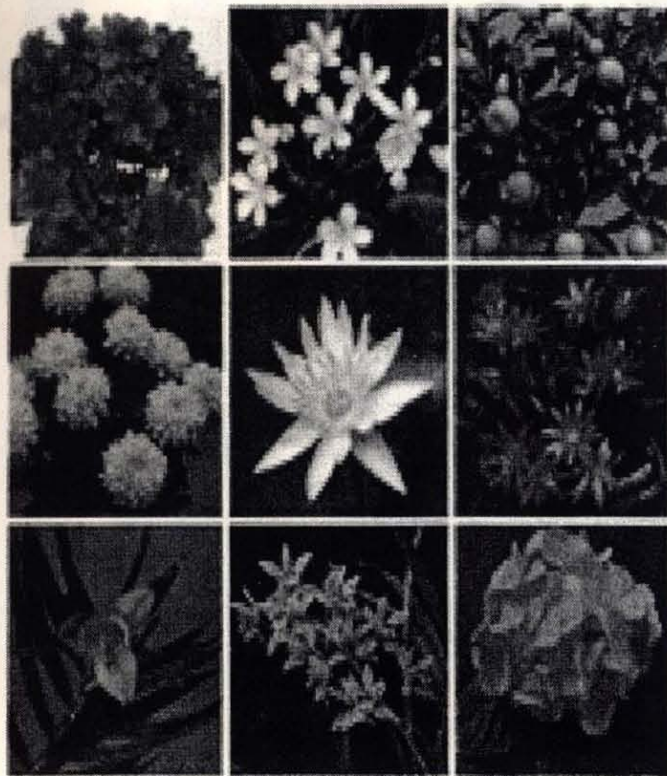
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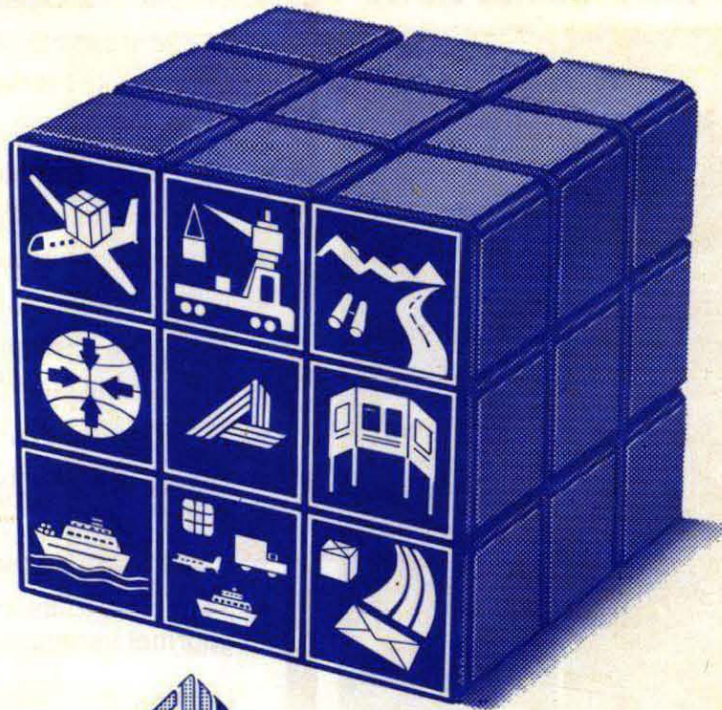
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